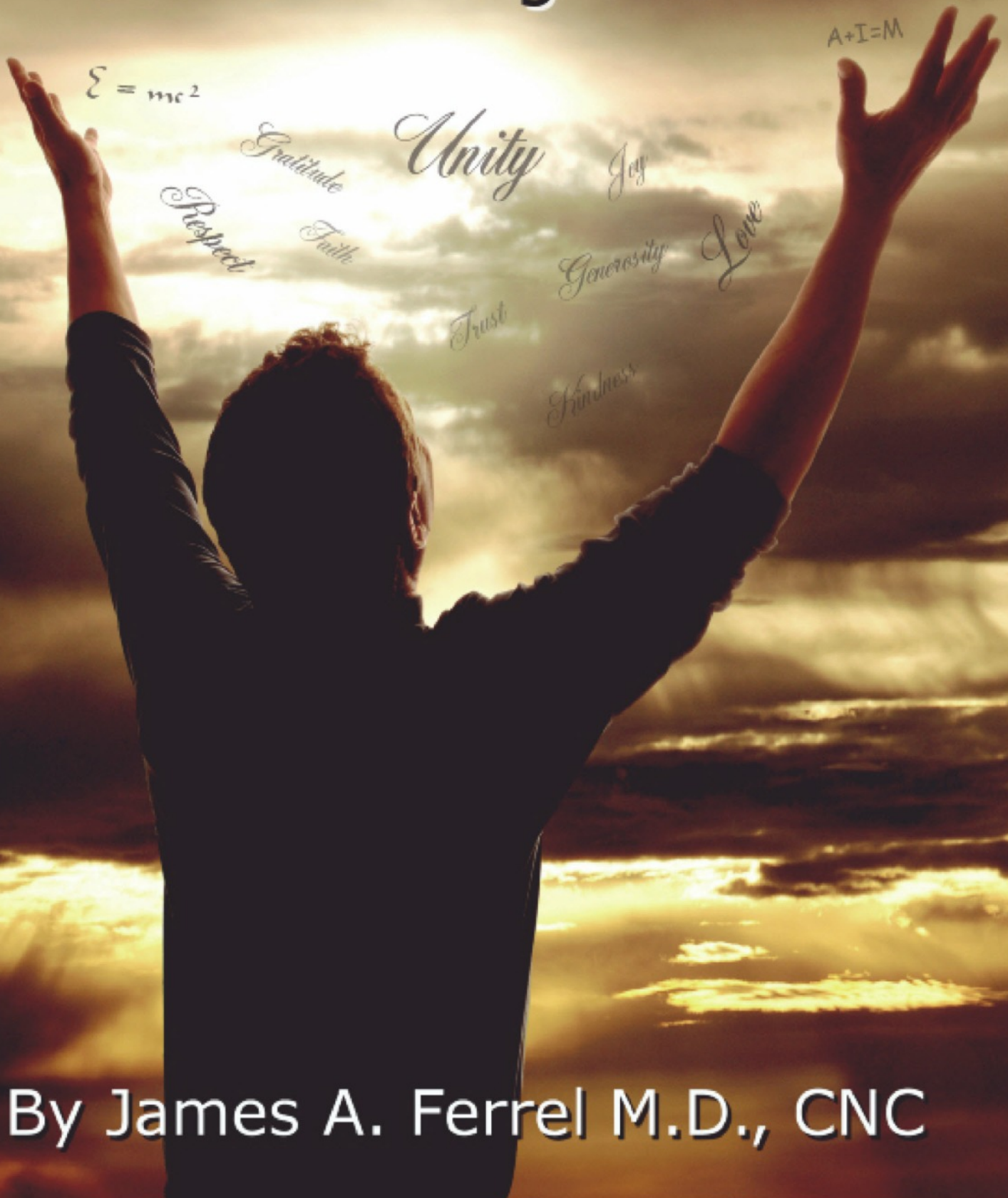


# NEOGENESIS

## Reconstructing The Self



By James A. Ferrel M.D., CNC



# Before Reading This Book, Please Take This Brief Quiz.

*The answers are inside.*

What is causing so many people to feel toxic? Hint -- the simple answer is very cerebral.

What one contaminant in our food chain may help explain many modern illnesses?  
Hint -- it relates to career advice Benjamin was given in the movie *The Graduate*.

What religion do most doctors in the USA practice? Hint - drugs are part of the rituals.

Does drinking one glass of red wine daily lower your risk for breast cancer?

Does drinking only one diet soda daily put you at significant risk for ill health?

Is the taking of supplements the healthiest way to avoid deficiencies of micronutrients?

Have laws limiting smoking venues made any improvements in our health?

TRUE or FALSE

According to one FDA scientist Vioxx contributed to 55,000 deaths in the USA alone.

Efforts of the EPA to improve the environment has increased our longevity.

The World Health Organization says that unhealthy lifestyle-living causes 16 million premature deaths annually.

Kindness will trump greed in the end.

The American Enterprise Institute and The American Chemical Council are US Government agencies that protect consumers from harm.

The second leading cause of lung cancer is radon gas.

Research shows cooking with an open wok causes lung cancer.

The Environmental Working Group doesn't work ---- to make money.

Having gum disease doubles your risk for heart attack.

Sticks and stones may break bones but words never harm anyone.

More than 25% of chemicals used in personal care products are toxic.

Psychological distress will more likely shorten your life than having high blood pressure.

Most children taking anti - depressant drugs are receiving counseling.

The VA was honest in their public disclosures regarding the suicide risk for our troops serving in the Middle East conflict. I am giving you this one because it's too easy; ---They lied to us -- again.

Lastly, the two most important health questions: fill in the blanks with the missing five letter words

First and foremost -- I am always \_ \_ \_ \_ \_ !

Secondly -- The best one thing that I can do to positively influence my health is to \_ \_ \_ \_ \_ better !

This 'work of heart' is dedicated to all the *cheerleaders* (positively inspiring individuals) in my life, such as you ---

This book reflects my unique perspective, opinions, and ideas. In lieu of a conventional bibliography, I credit the novel ideas and contemporary research of others which support that perspective, within the text. To distinguish very personal input I use this Comic Sans MS font, often in *deep blue* for strong personal bias. Similarly, as with 'cheerleaders' above, when I introduce unique concepts, perhaps unfamiliar to the lay reader, I **bold** and *italicize* them and proximately define or discuss them to render the overall text easier to comprehend. I use **bold** or underline for emphasis much like trail markers to allow you to more easily follow the theme.

The book is an ongoing product of decades of critical yet common sense observations, some epiphanies, and several years of researching and thinking about the subject matter at hand while struggling to express it. My effort is not a profit-making work; if there is any profit over the book's production costs it will be donated to charity.

Special thanks to my editor *Marilyn von Qualen* who saw both my passion to write *Neogenesis* and the challenges I had, due to my brain injury, to do so. She filled that gap with eloquence! Though neither of us speaks the same language, Italian graphic designer--*Azzurra*-- expressed my ideas exactly in most of the book's cartoons. My 'love you back' to my head cheerleader/wife *Corky* and my son *Steve* for their encouragement and expert help in making *Neogenesis* happen.

Due to my sense of urgency in getting this needed message out, you may find some errors in grammar, spelling and the like. What you see is the best I could reasonably do, given the time and other personal constraint. It does make it tougher to write when you think in terms of big ideas yet must struggle with the spelling of even small words. In that regard, I acknowledge too *Charla Jo Allen Lee*. She has spent her adult life in teaching. Now, pro bono, she teaches me.

As new science emerges, the free Internet version of this book is updated and periodically posted in a format allowing quick search of topics of interest at: [www.blissplanet.com/neogenesis](http://www.blissplanet.com/neogenesis)

This book is solely created to help disperse wellness information in an altruistic manner. It's not intended to replace the advice from your practicing physician. (*I retired as a doctor in 2015.*) If you have health concerns, consult with your physician and discuss those concerns before making any changes to your diet, lifestyle, physical activity, medications or other interventions suggested herein. The publisher/author expressly disclaims any liability, loss or risk, personal or otherwise, which is incurred as a consequence, directly or indirectly, of the use or application of any of the contents of this book. So necessarily said, any helpful critique will be appreciated. Enjoy.

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TABLE OF CONTENTS	pages
Preface	4 - 5
Book synopsis	6
Introduction	7 - 9
Soul's Food Diner Menu	10 -13
I. THE CURRENT HEALTH CRISIS -- COED SYNDROME	
Chapter 1-- <b>The Sudden Change in the Health of Our Species</b>	14 - 22
Chapter 2 -- <b>COED Syndrome</b>	23 - 40
II. THE MECHANISMS OF EXPRESSION FOR COED SYNDROME	
Chapter 3-- <b>Overloading Your 'SINK'</b>	41- 58
Chapter 4-- <b>The Dirty Precious Dishes of Toxic Brain</b>	59 - 77
III. TOOLS FOR SURVIVING THE COED SYNDROME CHALLENGE	
Chapter 5-- <b>Rejuvenating With NEOGENESIS</b>	78 - 91
Chapter 6-- <b>Using SEEK to Make Better Choices</b>	92 -100
IV. THE <b>LIFE DYNAMIX</b> LIFESTYLE	
Chapter 7-- <b>Cruising Toward Mental Mastery</b>	101 - 109
Chapter 8-- <b>Accelerating Toward Excellent Nutrition</b>	110 - 130
Chapter 9-- <b>Exercising Toward Optimal Fitness</b>	131 - 140
Chapter 10-- <b>Learning About Nontoxic Living</b>	141- 156
Chapter 11-- <b>Charging On Into Bioenergetics</b>	157 - 168
Chapter 12-- <b>Traveling the High Road to Hygiene</b>	169 - 177
Chapter 13-- <b>Thinking for Yourself to Avoid the Traps</b>	178 - 195
Chapter 14-- <b>Wrapping It Up With Honeymoon Heals</b>	196 - 198
Epilogue	199
Glossary	200



# Preface to *NEOGENESIS* *Reconstructing the Self*

Upon reading Doctor Jill Bolte Taylor's book, *My Stroke of Insight*, I was overjoyed. Finally, I found someone else on my 'wavelength.' My own experience seemed validated by a learned fellow traveler to 'Nirvana.' 'Doctor Jill' is a neuro-anatomist and brain expert who suffered a severe and life-altering stroke. She had, to that point, spent her entire celebrated career dedicated to the study of the brain. Then, rather suddenly, she experienced devastation in her own brain. Like me, she was fascinated by it all and sought special wisdom from her sufferings.

In the early hours of **March 27, 2001**, I suffered a less-apparent type of brain injury -- an irregular heart rhythm-induced **encephalopathy**. It was a sudden, life-changing, near-death event.

Already on **Vioxx** (see **Vioxx fiasco bottom p. 31**), I unwittingly set myself up for this event by taking some other meds too, for what I thought were just severe allergy symptoms. (I later discovered my 'allergy symptoms' were worsened by high level exposures to formaldehyde at both my office and home.) The event was preceded by diarrhea and vomiting, induced by an improperly taken Golytely prep for a colonoscopy I was to have the next day. I also did not expect what followed the prodromes above -- an excruciating headache that I, perhaps fortunately, chose to treat with a large bag of ice over my face.

Some frightening events rapidly evolved! I went from extreme distress -- excruciating pain in my head and chest, my heart irregularly pounding at a very rapid rate, followed promptly by a loss of body control -- to a state of amazing bliss. I experienced these seemingly sudden changes after desperately praying, out of fear of what I well-reasoned to be impending death, the four words -- **"I want to live!"**

All misery instantaneously left me as the pitch darkness of my bedroom transitioned into a calming array of lights connected to an endless dimension. Shortly thereafter, I enjoyed a pleasant 'ride' inside **the tunnel**! After awakening, thanks to **God**, perhaps the ice pack and **automaticity** - the propensity for a healthy heart's cells to spontaneously depolarize and potentiate sound heartbeats, I walked out of my bedroom a dramatically changed man. Focused on blessings and beauty, I then viewed 'my new world' as inviting, with fearless opportunities at each encounter. To this day I profess to those who will listen that I survived that near-death event only by help from **God**. My urgent prayer was answered!

**Validation Update 2013:** Studies show that only 4% of those suffering such an event at home survive it!

It's my supposition that my intense exposures to formaldehyde as well as the allergy meds, Vioxx and Golytely created a near-lethal cocktail for me. It likely triggered a heart arrhythmia to which, I later discovered, I am prone. My otherwise-healthy heart's temporary failure to adequately pump blood to my brain rendered a diffuse damage/disruption of brain tissue -- an **encephalopathy**.

**Update 2015:** Studies show about half of such **cardiac arrest survivors** have resultant brain injury.

Though I've much improved, two specific areas of my brain's injury had intriguing effects early on.

First, my **left amygdala**, the brain's checkpoint for suspicious sensory info, became porous. Breached, all sensory data entered without clear warnings of danger. Joyfully devoid of fear, my neuroses seemed explicitly removed, unfortunately, along with other notable brain functions. Namely, I could walk, but with subtle imbalance. I could talk, but I spoke in an unusual poetic-like style. I could generally function, but 'my thinking' had markedly changed. That 'immediately post-injury thinking' was absent of fear, urgency, or ego. Most notably, I felt blessed to be alive and fully empowered by gratitude.

Second, the memory-validating part of my brain, the **hippocampus**, was injured. The net affect was similar to **instant Alzheimer's!** That is, I had poor awareness of any function involving time. I could not properly make and sequentially link memories, especially new ones. For example, pre-injury I could listen to a new song a few times and easily memorize its lyrics. Post injury, I'd spend hours replaying a single song. Each time it seemed newly exciting, yet after each play I'd recall little, if any, of the lyrics despite having loved it. Similarly, my 'broken memory chain' prevented me from recalling things such as where I might have left my glasses, my car keys and other such items that I needed to move on with the day.

Many times, while maneuvering through my cramped-tight garage, I walked into my car's side mirror, cutting my arm on its frame; then, by not rightly recalling it seconds later, I would walk into it from the other direction, bruising the other arm. Yet, despite the pain and dripping blood, I'd calmly reposition the mirror, having 'learned' nothing! Such actions reflect injury to both the amygdala and hippocampus.

Early on, I did not realize my brain was significantly injured, I knew I was struggling mentally, but reasoned it was due primarily to formaldehyde toxicity and expected it would resolve. So, I went through most of my habits and routines and 'winged it' on the rest. Sleep was nearly impossible. I attributed that to my fascination with my new, brilliantly-colored, world filled with joy and absent of fear.

Like all things in my changed life, at work I was inspired. My intense focus was on each of every patient's troubles and needs -- all joyfully framed in the incredibly awesome '**now**.' What an amazing trip! However, there were big problems, some of which I was totally oblivious to. For example, unlike my normal thinking, I had no idea how long I was in an exam room with a patient. My brain's 'timing function' was severely disrupted. My receptionist would burst into the exam rooms in angst to tell me that ten minute scheduled visits were lasting over an hour each. I had no clue! Looking back now, (2016) my brain acutely lost **cognitive flexibility** - the ability to multitask. This feature persists to a lesser degree to this day! Uncharacteristically too, I left many tasks unfinished and my home and garage doors unclosed.

At the time, to most I appeared normal, except for the rhythmic speech pattern and an atypical 'laid-back exuberance.' So, these unusual struggles in getting sleep, searching calmly for lost things and playing the odd role of 'doctor fix-everything' persisted for about ten days following my brain injury.

My wife and close friends, though, knew that I needed help. They had never seen me like this and the behavioral changes were so sudden and dramatic. Unfortunately, they arranged for me to see a psychiatrist instead of a neurologist. The psychiatrist did not touch me, nor did he do a neurological exam. From across his room, he focused on the reported and observed behavioral manifestations of the brain injury, mislabeled me in a cavalier manner and gave me a medication which greatly worsened my condition.

Recognizing that rather quickly, I stopped the 'psych med' and went to an environmental medicine specialist. That doctor did a simple balance test. He had me try to stand on one foot with my eyes closed; I fell hard against the wall. He repeated it and, to my surprise, I fell again the same way. He then ordered an imaging study which reflected dysfunction of my left brain. Even before the imaging results were back, he confidently started aggressive treatment. This gradually brought noticeable clinical improvements as my injured left lower brain started to regain better functionality. Unfortunately, there were brain-injury deficits that were most apparent early on. Most of these deficits have since improved considerably.

Early on, though, I was unusually klutzy. I overreached for door handles and banged into door frames and other passageways as I seemed to have forgotten how big I was. As a result, my broken-open fingertips were covered in Band-Aids and my arms in cuts and bruises. I was unsure of the spelling of even small words because I could not 'internally visualize' them, or anything else, as sharply as before.

Although still frustrated by significant remnants of my brain's injury, I refuse to remain a 'victim.' Instead, as improvements in my 'thinking' allow, I maintain an academic search to understand how and why this happened to me and, most importantly, how that understanding could be of help to others. This persistent quest is focused on the event's two upsides: the **miracle** aspects -- I lived through it -- and thanks to the '**divine**' workings of our **design**' -- I've improved. My ongoing **reconstruction changes**; mostly good, yet some, as I age, not as good, have drawn my attention. These changes reflect what I herein coin **Neogenesis** -- the aggregate of all natural processes involved in growth, learning, maintenance, healing and, alas, the functional decline of the body, in general, and of the brain, most specifically.

I write **Neogenesis** to encourage a better understanding of **subtle brain injuries** such as or similar to mine, how often they are overlooked or misdiagnosed, their best prevention and treatment and, most importantly, their enormous implications, not yet fully recognized, in our increasingly toxic world.

This book is not a profit-making endeavor. It's offered in gratitude for all my countless blessings.

# BOOK SYNOPSIS

As trusted airline pilots fly us from departure to arrival, they have access to a manual that helps guide them. It provides specific details to help them prevent and address potential troubling scenarios associated with their craft's use.

While your physical body travels through life, you are given no such operational, maintenance, and 'what to do in the event' manual for your much more complex and dynamically changing 'vehicle.' If you were, such works would be continuously outdated and far too difficult to learn. Instead of attempting to provide you with such a source flush with rote details, this book offers a 'wise thinking paradigm' that can better help you meet your body's novel health challenges. Such 'insightful thinking' will help you navigate to a better state of health, longevity and happiness in your life.

This book attempts to encourage and empower you to make better health-impacting choices with much less confusion. Furthermore, it attempts to help you develop a durable mind-set so that those better health choices are made more easily. This book is timely because we are now being assaulted by a monstrous health challenge --- a crisis in the making.

**Chapter 1** describes a health profile change of dramatic and unprecedented proportion which is rapidly evolving in our species. This change reflects the immediate crisis. Such troublesome health changes, seen in other species as well, parallel a rapidly declining health of our planet, as both have common causes, connections and concerns.

**Chapter 2** argues that these changes reflect **epigenetic adaptations** (genes are being 'triggered' to turn on or off). As a result, our species is morphing! I name this environmentally-induced metamorphosis **COED Syndrome (COED-S)**. COED-S is driven by **three** factors. The **first** is our increasingly toxic environment from which our health and our survival as a species is threatened. The **second** is a greed-driven agenda to oversell 'symptom cover-up drugs' and questionable medical-related services. This subtle agenda is supported by a methodical overdiagnosing of illnesses. The **third** is our poor lifestyle choices. Better lifestyle choices will lead you to an enhanced state of health, happiness and longevity.

**Chapter 3** gives you a condensed review of the systems approach to understanding how your body works. It introduces you to two novel tools to help you gain insight into how these three factors are causing COED-S. The first tool-- our **detoxification system** becomes paramount in the prevention and amelioration of COED-S. This complex detox system is simplified by using my functional analogy--the **SINK**. The SINK helps explain, in simple terms, how natural body motions, when functioning in harmony, dynamically augment that detox system, and so how exercise benefits your health. The second tool --- what I call the **FEAST** system -- explains the roots of the obesity and the type 2 diabetes epidemics. Gaining knowledge of these tools will empower you to more easily obtain excellent health.

**Chapter 4** defines and demonstrates the major, yet often ignored, mechanism causing COED-S; I call it **toxic brain**. You will learn how common variations of this condition are and, in later chapters, how to prevent and mitigate them.

**Chapter 5** unveils our magnificently-innate growth, learning and healing mechanisms that I herein name **Neogenesis**. When understood, these bio-mechanics allow you to best appreciate and effectively deal with the forces driving COED-S. Your human Neogenic design dictates that changes in body and mind are inevitable and ongoing. The outcome of these changes can be greatly influenced, either for better or worse, by decisions you make and actions you take.

**Chapter 6** introduces a philosophically-based decision-making tool I herein name **SEEK**. It's my acronym; it stands for the **Safe, Effective, Easy and Kind** considerations in the choices you have. Use of this SEEK tool empowers you to make choices that positively influence health outcomes for you, your loved ones, your civilization, and even your planet.

**Chapters 7 -- 13** discuss seven facets of a lifestyle strategy that can greatly impact your well-being -- **Life Dynamix**. Each chapter offers knowledge to help you avoid or mitigate COED Syndrome by making better choices within **the seven Life Dynamix wellness elements**. These seven are: mental mastery, excellent nutrition, optimal fitness, non-toxic living, bioenergetics, hygiene and trap avoidance. Each chapter is framed in a fluid fashion because we never know everything. 'Scientific knowledge' is a mere snapshot in time. We must always remain in the pursuit of truth.

**Chapter 14** exemplifies, in story form, how the **subtle energies** that we share with others impact our physiology.

A glossary of novel terms, phrases, and acronyms follows the epilogue. I encourage the reader to adopt this lexicon, as it will simplify and enhance your understanding of the complex issues relevant to the subject at hand.

Throughout the book I emphasize that brain health is paramount to wellness. Conversely, brain disruption is a pivotal mechanism in many manifestations of COED-S. This book also carries a simple, yet health-profound, collateral message. The true panacea to excellent health is a group of nurturing energies. I term the aggregate of these subtle energies **#1Pie**. If you select **#1Pie** at the ultimate level of influence -- your soul, your body will work at its optimum. Even on autopilot your ride will most likely be longer, smoother and more enjoyable.

# NEOGENESIS

## Reconstructing the Self

### INTRODUCTION

*ne·o·gen·e·sis* (ne'ôjĕn'îsîs) n.

Derived from Greek, *neo* means 'new' and *genesis* means 'beginnings.'

**This book is about the innate method for the regeneration of our biological tissue and how we can, by taking advantage of this magnificent design, experience a healthier and happier life.**

### A NEOGENIC TALE OF A TAIL

Bathed in the shimmer of a new moon, the Sonoran desert comes alive. Nightjars prepare for flight while a rattlesnake weaves his way through the sand to hunt. Scorpions and centipedes bestir themselves below as owls feather their way high in the air, their calls alerting a kangaroo rat to danger. A bobcat rises languidly from sleep; a tarantula lifts furry legs high, delicately picking her way through the grasses. Centuries-old saguaros, their arms saluting the stars, cast smaller and smaller shadows.

A mangy gray coyote sniffs the air, switching his black-tipped tail as he observes the unfolding of the evening. His nose seeks the scent of rabbit, but he's not picky. He'll eat almost anything, melons even, but he desires a more savory meal. Coyote has rested well, and tonight he's king of the desert.

Fortuitously upwind, another creature boasting a black-tipped tail prepares to leave the safety of his grassy form. Since almost everything is his natural enemy, the black-tipped jack rabbit ventures out cautiously, looking up, down and sideways, playing it safe.

At the third and top point of this triangle (coyote and rabbit being the two bottom points) wanders yet another nocturnal being, the delicate western-banded gecko. Gecko spent the day sleeping under a stray log and has now emerged to search for food. She favors rodent burrows and the plethora of insects found within.

For a moment nothing seems to be moving. Nothing is heard, nothing is happening. And then suddenly, a spirited Sonoran symphony begins.

Coyote has caught a whiff of something interesting. He sees rabbit slinking along and the chase is on. Coyote's spindly legs are fast, but rabbit too is speedy, particularly when terrified as he is now. Rabbit leaps high and long to the right; coyote creates a dust devil as he changes direction and continues in hot pursuit.

Rabbit runs flat out now, ears down and determined; coyote's close behind and gaining. Gecko hears thunder in the desert floor. She scurries along on her slender toes in what she hopes is a direction away from disaster, but alas, she is too late. Just as she stands to survey the scene, rabbit's reaching, pounding feet run roughshod over her tail detaching it from her brown-banded body, the impact hurling it somewhere off to the east behind a cactus, never to be seen again.



For the moment, we will leave coyote that is chasing rabbit and focus on gecko, now minus a tail. Gecko isn't pleased at losing this body part. It's a problem, as her balance will be off and her fat storage area is gone. Fortunately, *Coleonyx variegatus* will grow a new tail. Gecko is one of the blessed of the creature kingdom. She's a classic example of the divine process of **Neogenesis**: the regeneration of biological tissue.

While *Homo sapiens* can't yet re-grow limbs as the gecko can re-grow a tail, *Homo sapiens* can do something even better. Our stunning elegance of design, our astonishing physical rhetoric permits us to better re-grow our entire body as we're so inclined. Within our embodiment of Neogenesis we can put a positive spin on our bodies and our lives that will allow us to enjoy a perfectly attainable state simply by making smart choices and working with this innate blessing.

On any given day, we have the opportunity to enhance the art with which we have been favored – our harmonics, our motif – features so amazing, that were we to use only one word to describe them, that word would have to be “miraculous.”

This work will unveil in simple terms the very complex health challenges that have come upon us all too quickly. It will focus on a dramatic **health-profile change** that has occurred and will define its roots.

This dramatic health-profile change is not merely an epidemic of an infectious nature resulting from uncontrollable forces of nature, but one of our own making. Its threat is subtle and insidious, yet powerful. With its progression it endangers our species, all life forms on this planet and even the planet itself.

This book explores the probabilities of how the forces causing this health-profile change have and will continue, by interface with our physiology, to manifest with our neglect.

I write from a perspective of **a retired practicing doctor** with forty years of experience in the health care field (**I retired in 2015**). I write also from my vantage point as a **consumer** and as a **patient** in that health care system, the original agenda of which, made paramount the idea that healing is to take place. Not static maintenance, not avoidance, not decline. Healing.

I write for those whose maturity has given them power, whose experiences have given them wisdom. I write for those who wish to take in hand what so often is taken out of their hands. I speak to frustrated persons who have had recurring experiences of seeking medical help only to find themselves feeling empty, exhausted and sicker after coming out of the wash, rinse, and spin cycles comprising much of ‘modern medicine.’

The book is based upon the philosophy that living in the simplest physical sense is about our bodies changing along a time-continuum axis. The direction of that change is along an aging curve. The actual trajectory of that curve represents length and quality of one's life. The general direction and configuration of that curve is defined by our specific genetics, our circumstances and our health-relevant choices.

We cannot, at this time, select or change our DNA. Too, we have relatively limited influence in modifying our circumstances.

Hence, the most controllable factors in our health outcomes are the health-relevant choices we make. Good choices render better outcomes that carry us farther on that curve. Bad choices shorten that curve. **Longevity follows good health like a shadow.**

This book encourages the reader to obtain superior health, contentment, and longevity by making better choices, both in prevention and intervention. It is not about self-sacrifice. It is about taking advantage of the excellent health opportunities we have been given by virtue of our magnificent design dynamics. I have appropriately termed these learning, growing and healing dynamics **Neogenesis**.

This is an empowering book. It's a solution-oriented primer offering the tools with which to make better choices, to more quickly find and apply that which is sought. It's a non-malicious, egalitarian, truthful roadmap of the path best followed as viewed from my perspective. It offers insights into the current conditions, into the usual impediments and the absolving vehicles that are part of our ongoing journeys. It explores interventions past, present and future in an effort to allow you to effectively find the solutions best suited to your quest for a sane, functional and joyful state of health throughout your life.

This book is not an itemized reference guide to provide you with specific health advice. It is intended to encourage you to understand the significance of choices as they apply to good health. It is formatted to help you think within a framework of seven categories of relevant strategies. Given that understanding, only you can make the specific choices that fit your life's dynamic needs within those seven categories. The **seven Life Dynamix wellness categories** are: **mental mastery, excellent nutrition, optimal fitness, nontoxic living, bioenergetics, hygiene and trap avoidance.**

This book emphasizes that of all of your blessings, **your brain is your most precious gift.** It encourages you to acknowledge that gift, understand its vulnerability, protect it well and use it for the benefit of all those you love to meet the challenges of an ever changing, now increasingly toxic, world.

This work is inspired by a three consecutive night sequence of dreams that I had in the spring of 2005. The dreams were vivid and comforting. The scene was the same, all three times. It was a glowing diner along the darkened highway of my subconscious. Each time the dreams would begin as the door of the diner would open, inviting me into this peacefully comfortable place. Each time the colorful interior was the same. There was only one seat at the counter. It was my seat and I took it. The only character in the diner stood tall behind the counter presenting an opened menu before my face. The character seemed extremely friendly, yet that apparent server did not move and he did not speak. Despite my intense effort, **I could not see his face!**

The focus of each dream was the fold-out menu. It described **#1 Pie** on the left side in brilliant colors. The **#2 Pie** was on the right side; it was described within a contrasting veil of darkness. Upon awaking from the dreams, I rushed into the kitchen to record them, so uniquely awesome they were. Intrigued by the dreams' clarity and warmth, I yearned to know their significance and who that mystery character was.

I now believe, while struggling to understand the germane factors that truly render excellent health, I was somehow directed to this cartoon-friendly place of peace buried deeply in my mind. I apply name this place -- **Soul's Food Diner.** I'll be detailing the diner and what is served there in the segment that follows.

You will also see me reference the two menu choices in this book as it proceeds. The most significant health-relevant choices you make in your life evolve from your menu selections at your Soul's Food Diner! The pies offered contain no substance. The ingredients are social connection-related subtle energies only. Pie choices are typically garnished in confusion, only rarely clear-cut. Further, it's only after you've 'dined' on them enough that you realize the strikingly different kinds of profound health effects that each renders. **#1 Pie** is soul-soothing, thus nourishes the body; while **# 2 Pie** poisons the soul, thus weakens the body.

**My hope is that you find the book helpful as it has been written with that in mind - and only with that in mind. My effort herein is not a profit-making endeavor; if there is ever any profit from sales of this book, it will be donated to charity.**

The two creatures of the black-tipped tails, by the way – coyote and rabbit – did not meet after all on that moonlit night in the desert. Rabbit ran free, coyote made do with melons and gecko's tail is growing out nicely.

To your health and your happiness,

**–James A. Ferrel**

# soul's Food Diner



## Menu

# SOUL FOOD CHOICES IN LIFE'S DINER

If you're spiritually hungry in your life, you may come across this little diner alongside the road in your sleeping mind.

It's an isolated, glowing place on a dark highway found only in your dreams.

When you enter the door, you see only a small counter and only one stool--YOUR stool. As you take your seat you see directly in front of you a menu. The choices are written in **uncommon clarity**.

The **Server** holds the **menu** open to you.

**He** stands erect, tall, spiffy-clean, and appropriately dressed. **He** is motionless and speechless, yet profoundly pleasant. You cannot see **His** face.

You are **His** only customer.

On this special **menu** you have but 2 choices.\*

**\*note -- the next page contains the most important message in this book -- the essence of my dreams. As I did, you may not appreciate its significance or even its relevance at first. Book-mark it and keep coming back to it as you progress with this book and your life to see how profound it is.**



# MENU

## #1 Pie



**Fresh  
Sweet  
Rainbow  
Fruit Pie**

ingredients

**Respect**

**Love**

**Faith**

**Gratitude**

**Kindness**

**Compassion**

**Forgiveness**

**Acceptance**

**Fellowship**

**Joy Comfort**

**Support**

**Caring**

**Generosity**

**Wisdom**

**Appreciation**

**Other Goodies**

**Price Free**

## #2 Pie



**Stale  
Bitter  
Drab Fruit  
Pie**

ingredients

**Disrespect**

**Hate**

**Fear**

**Bitterness**

**Unkindness**

**Indifference**

**Condemnation**

**Rejection**

**Isolation**

**Anger**

**Discomfort**

**Abandonment**

**Neglect**

**Greed**

**Ignorance**

**Regret**

**Other Nasties**

**Price Free**

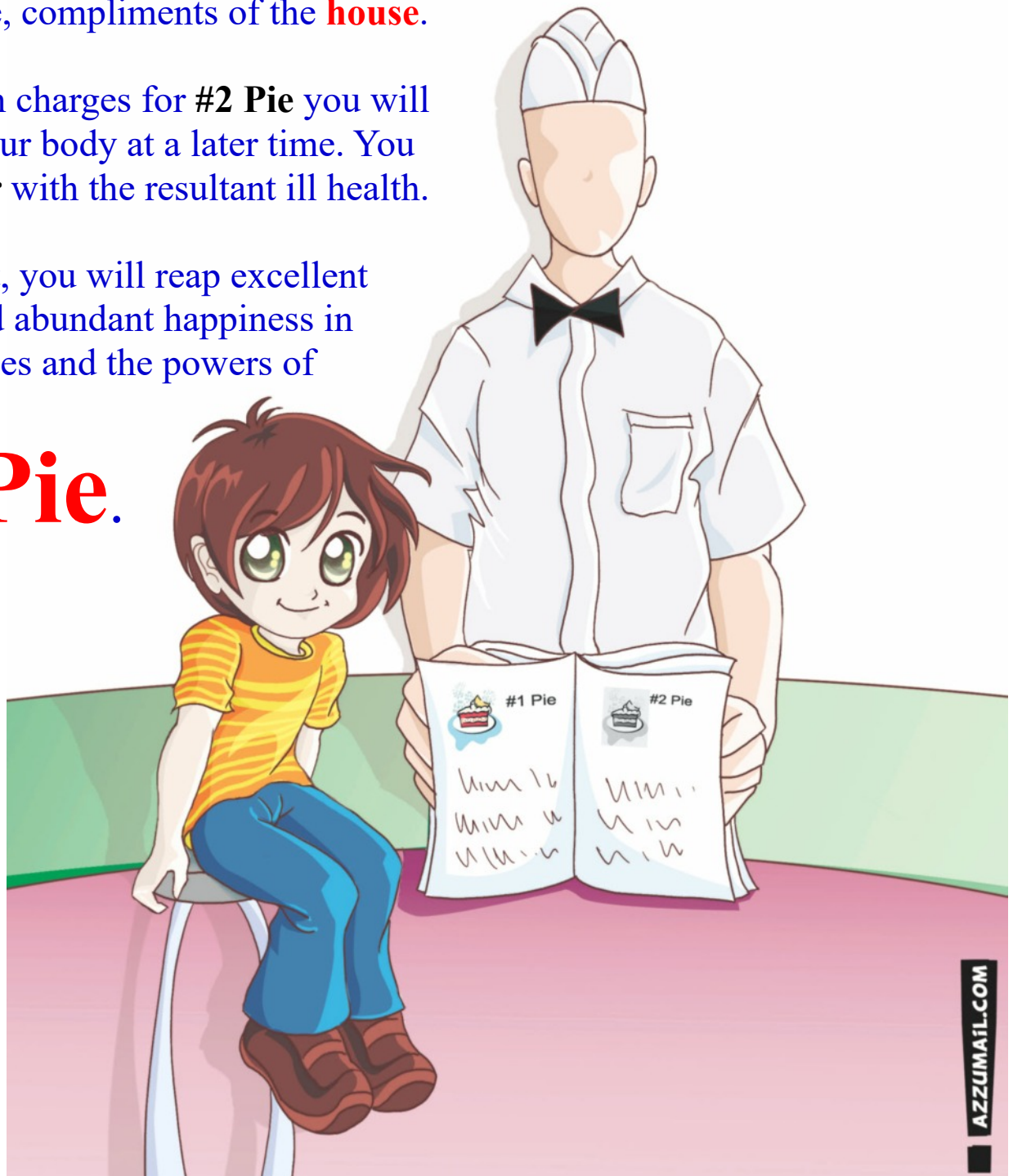
After 2 more short visits and then many years, I'm still unsure of who the **Server** is. I am a slow learner. It could be that I'm my own server. After all, it's my soul I'm feeding with my choices of Pie!

One thing is clear to me: although the price is free for either choice, the cost of all 'dark dining' was, is and will always be **enormous**. That ultimate **Service charge** was paid in full, in advance, compliments of the **house**.

The hidden charges for **#2 Pie** you will bear on your body at a later time. You will **suffer** with the resultant ill health.

In contrast, you will reap excellent Health and abundant happiness in the promises and the powers of

# #1 Pie.



# I. THE CURRENT HEALTH CRISIS -- COED SYNDROME

## Chapter 1

### THE SUDDEN CHANGE IN THE HEALTH OF OUR SPECIES

This chapter highlights a major, sudden and dramatic transformation currently progressing in our *Homo sapiens* species. This change is a true adaptation by our species in response to an increasingly toxic environment. This adaptation is caused by toxic environmental factors both external to us and ones that we generate inside our bodies from toxin-producing mechanisms. I argue that this change, reflected in the increased incidence rates of certain health disorders as well as an explosion of cases of illnesses barely known before, represents a clear and present danger.

Once acknowledged and understood, the roots of this monumentally-dangerous challenge can effectively be addressed. Ignored, it will not go away; it will be a disaster.

*"Truth has no special time of its own. Its hour is now - always."* ~ **Albert Schweitzer**

In 1837, Danish author Hans Christian Andersen wrote about a ruler so obsessed with his appearance that he spent vast fortunes on clothes and euphorically changed them several times a day. He paid scant attention to his people, his soldiers, the theatre, or the needs of the city. He wished only to revel in his vestments and gloat over his visage in a mirror.

The emperor's little city welcomed travelers from around the globe. One day the arrivals included two shysters – weavers they called themselves – who declared they could weave magical cloth and create clothes visible only to those of high mind and honest heart. They said that by donning such raiment the emperor would be able to determine who was good, who was bad and who was on his side.

His vanity massaged, the emperor embraced the idea and made it so. The shysters set about immediately weaving invisible cloth on invisible looms and every loon in the area stopped by to admire their work, including the emperor's honest old minister, who like everyone else saw absolutely nothing. Still, he told the emperor that the cloth, the colors, the patterns were dazzling, glorious, resplendent, truly beyond description. 'Beyond description' at least was true.

Came the day the clothes were ready, came the day of the grand parade whereupon the emperor would display his duplicitous visage to his poor, deluded subjects. Dressed by his aids in the invisible garments, he saw himself resplendent in soft velvet and gold brocade and found his reflection good. In a lavish open coach drawn by six lively stallions, he presented himself to his subjects who raved about how fabulous he looked. A fantasy he was! A hedonist's delight! The crowd applauded – and then suddenly became silent as a small boy's voice rang out:

*"But he has nothing on at all," said a little child at last. "Good heavens! Listen to the voice of an innocent child," said the father, and one whispered to the other what the child had said. "But he has nothing on at all," cried at last the whole people. That made a deep impression upon the emperor, for it seemed to him that they were right; he thought to himself, however, "Now I must bear up to the end." And the chamberlains walked with still greater dignity, as if they carried a train which did exist."* ~~ (from *The Emperor's New Suit*, by **Hans Christian Anderson**, 1837)

Anderson's tale is famous; his well-taken point is as enduring as is the 'ostrich with its head stuck in the sand' analogy. Naked emperors insisting they're clothed – with their heads stuck in the sand. Negation of the in-your-face circumstances affecting the health and well-being of billions of people. I speak of the huge increase in the number of people – all over the planet – who are suffering from a long list of diseases, many entirely new, that are physically and financially breaking not only individuals but entire health care systems. I'm no alarmist. What I want to share with you is the truth.

#### Identifying the new disease profile change -- a serious healthcare crisis in the making

Before I start painting the daunting truth picture, I'll first give you a short quiz.

Have you noticed how many people are fat? If you are one of these persons, have you noticed how difficult it is to achieve sustainable weight loss now as opposed to way back when?

Have you noticed how many people you know are affected by disabling diseases that were never heard of thirty years ago, or how many of them are on medications for **chronic pain**, **depression** and a host of other 'mental' conditions?

Are depression and chronic pain yuppie fads that will soon find disfavor? Or, is the routinely-used drug armamentarium of antidepressants and pain-relieving opioid narcotics simply an aggregate of newly-discovered essential nutrients we all will now need to stay alive and 'healthy'?

Have you noticed too how much more money we are now spending for healthcare and yet, despite it all, the health outcomes of our citizenry and patient satisfaction have seen a decline over the last thirty years?

If your answers are "yes", you may see my point that our health crisis is serious and it's not going to improve by ignoring it. It's going to get much, much worse if we ignore it. Presented in this chapter, and in the rest of this book, are the facts. They paint a picture of reality in its wonderment, of reality in its terror. It is the black and the white -- the yin and the yang.

More and more patients and doctors view the contemporary medical paradigm as ineffective. They feel disenfranchised by what seems like a series of revolving doors leading only to frustration and confusion. Their concerns are that this 'thinking paradigm,' in essence, discounts prevention and considers disease as the lack of drug or surgical interventions. Such a mind-set seems to define good health as a balance of such interventions. This deeply ingrained thinking also tends to discount the roles of one's environment and poor lifestyle choices as significant causes of disease. After all, in the final analysis of causes and effects, illnesses are products of 3 primary influences -- our genetics, our environments and our lifestyle-related choices. Genetics play an obvious role in the cause-and-effect equation of disease. American healthcare is currently dominated by health scientists who are burdened with a bias toward genetics.

In cutting-edge research, modern science has found a plethora of genes linking a diversity of diseases. Cancers of the prostate, breast and colon, among many others, are well known to be linked to genetics. Even proclivities to such conditions as Alzheimer's and traumatic stress disorder have been pinpointed to definitive genetic markers in some cases. In daily news reports, more genetic links are being reported fast and furiously. However, only when you read closely between the lines does the true picture of the interplay of our genes, environments and lifestyle choices surface. For example, if all of the several known genes predisposing women to breast cancer are added together, the sum would only account for a small percent of the total incidents of breast cancer. The primary role that toxic environmental factors and poor lifestyle-related choices play in the genesis of most cancers and other diseases seems to me to be foolishly ignored.

Genetics also tends to be the favored explanation for disease causation because it is easy to see connections. With racial and family appearances, our morphology and, of course, all of the genetic aberrations we health scientists have studied, the signatures of genetics are obvious. Connecting one's toxic environment and poor lifestyle-related choices with disease often runs counter to this current institutionalized thinking and is more difficult to comprehend and to validate.

Let's face it, we cannot select nor change our DNA. Our genetics may indeed predispose us to many states of pathology. However, we now know that, for many of those pathological predispositions to manifest, our genes must be exposed to environmentally-induced or lifestyle-rendered **epigenetic 'triggers'** that we most often do have control over. **The intent of this book is to empower you, the reader, to better understand and avoid those disease-expressing 'triggers.'**

### Move forward to understand and embrace Neogenesis

New **disease prevention thinking** which recognizes the primary roles of our toxic environments and our poor lifestyle choices and that accepts the supremacy of the body's design to heal itself seems refreshingly honest and timely.

**Michio Kushi**, the founder of Macrobiotics in America, said, **"Everything that has a front, has a back."**

It is my belief that the back is the frightening health crisis chasing us. The front is that supreme body design program that allows us to grow, learn and heal-- **Neogenesis** -- the upside, the truly promising facet of this particular reality.

In the early 1960's Thomas Kuhn (1922-1996) wrote a groundbreaking book, "The Structure of Scientific Revolutions." In it he showed that science does not progress in an orderly fashion from lesser to greater truth, but rather remains fixated on a particular dogma or logic -- a paradigm -- which is only overthrown with difficulty when a new paradigm is established.

It is now evident, with the polarization of the health care industry and the all-too-common feeling of discontent of many patients left so poorly served, that the elements demanding change are in place. My goal is to assist in applying a new, more productive paradigm with regard to our health and well-being. My suggested paradigm is based upon the making of better choices that lead us to disease prevention and a more pristine regeneration of ourselves -- Neogenesis.

The word **paradigm** is defined as 'an example or pattern.' The definition hasn't changed. The patterns within the medical world have changed though. The medical paradigm currently in place is not a forward movement; it seems bound and tangled in a clumsy balancing attempt at 'health maintenance.' Failing to primarily emphasize prevention, the current paradigm is ineffective in meeting the new seismic health-profile challenge.

The main expressions of this health-profile change are: 1) what's now called **the metabolic syndrome**, a conglomeration unto itself, and 2) the fallout from **overdiagnosing** -- the factitious and excessively-enhanced labeling of illnesses. Once created, such labeling is most commonly overly applied and then typically pharmaceutically overly treated.

The **metabolic syndrome** is diagnosed in individuals having variations of the following 4 elements: **central obesity** (abdominal and thoracic accumulation of fat), **diabetes type 2** (acquired rather than inherited diabetes), and the 'heart-breakers' of **hypertension** (persistent blood pressure elevations) and **hyperlipidemia** (high blood fats).

**Overdiagnosing** facilitates a Big Pharma-inspired strategy to sell more drugs. It reflects in the ongoing expansion of medical diagnostic labeling. **The Diagnostic and Statistical Manual of Mental Disorders (DSM-V)**, a creatively construed psychiatric diagnosis guide, is a prototypical tool for such factitious and excessively-enhanced labeling.

Other key health profile changes include increases in the incidence rates of mental disorders and neurological disorders such as Alzheimer's, autism and pain syndromes, as well as obesity-driven disorders such as type 2 diabetes, gallstones, weight-bearing-joint arthritis and **non-alcoholic fatty liver disease (NAFLD)**. Finally, more people seem to be getting **tissue-weakening disorders** earlier in life than expected, such as **gastroesophageal reflux disorder (GERD)**, osteoporosis, mitral valve prolapse, rotator-cuff tears, heart arrhythmias and others to be discussed herein.



Diseases previously unheard of or barely on the radar are now becoming common place, such as autism, fibromyalgia, polycystic ovary syndrome, sick building syndrome, multiple chemical sensitivity, Lyme disease and chronic fatigue syndrome. There's been a major profile change of these and other illnesses, and we appear to be lost in comprehending both cause and effect. I argue that these **'big picture changes'** relate to three primary drivers: **1) toxicity** due to our increased exposures to harmful environmental toxins **2) the poor quality of our lifestyle-related choices** and **3) the spurious diagnostic conclusions** drawn by Big Pharma and other healthcare entities aiming for high profits.

In epidemiology, an **epidemic** is a disease that appears as new cases in a given population, during a given period, present at a rate substantially exceeding that which is expected based on recent experience. The **incidence rate** is the number of new cases in a population during a specified period of time.

Let's take a look at some of the changes in the incidence rates associated with these epidemics. Also note that I often bold the word **women** when discussing these statistics, as women are more at risk. One of many reasons is that women, primarily because of their role in childbearing, have a more complex endocrine system, the delicate balance of which can more easily be disrupted by environmental toxins and poor lifestyle choices.

## OBESITY

The obesity epidemic is all over the news - on television, on the Internet, in magazines and newspapers. We read about it as our hand dives into a potato chip bag, as we help ourselves to another helping of what isn't helping us. We look at others and think, "Wow, they should consider losing weight." We look at ourselves and think we could lose some weight. We know our hearts would pump better, that our blood would course through our bodies better, that we might not get diabetes and that we could get rid of it if we do have it--if we just weren't so heavy. We debate over what the best method might be. We review diets and try some of them. And how does that work for us?

Everybody who's ever gone on a diet or knows someone who's been on a diet, raise your hand. Anyone who's been told by a doctor that her heart disease, diabetes or high blood pressure is related to being overweight, raise your hand. Those of you who have observed items in your shopping cart-- or someone else's shopping cart-- that certainly do not help one to maintain a healthy weight, raise your hand. I'm visualizing a lot of hands in the air.

Americans spend billions of dollars yearly on weight reduction products and services, diet foods, diet programs and diet products. Every week brings a new promise of some magical way to remove in a short time what it took a long time to create -- our overabundant selves. But if there were a magic potion, a super pill that removed excess weight in a healthy way and kept it off, wouldn't we all know about it? Wouldn't we be standing in mile-long lines waiting to buy it? The thing is, such a potion doesn't exist. We people of this now toxic world, on average, are becoming more obese by the minute. We are incurring serious diseases initiated by obesity and yet we deny that this is happening; our denial is killing us.

According to a September 2006 CDC study, 30% of U.S. adults over 20 years of age--over 60 million people--were obese, almost double the 1991 number. In 1991, no state had obesity rates above 20%, compared to 44 states back in 2005.

**Update Aug. 2011:** A study in *Lancet* projects that by 2030 half of all adults in the USA will meet the criteria for obesity!

**Update 2015:** The latest CDC study shows 38% of people in the USA are obese, up from 34% in the 2009 survey. **Update 6/7/16:** Reported in the online *JAMA*, the current national survey shows 40.4% of women in the United States are obese and 9.9% are extremely obese. For men, the numbers are 35% and 5.5%, respectively.

**Women** are hit the hardest. Their waistlines average 2 inches bigger than they did 10 years ago. In 2008 **strokes**, tied to the obesity epidemic, more than tripled in **women** ages 35 to 54 since the last national survey several years earlier.

**Update 6/21/17:** A Swedish study reported in the *BMJ* (British Medical Journal) of more than 1.2 million live births found that risks for **major birth defects** increased in step with the severity of a mother's obesity or overweight.

**Childhood and adolescent obesity rates** have skyrocketed. The rate of being overweight or obese among American teens has quadrupled in the past 25 years. What's wrong with this picture? When millions of people who have a great deal of food at their disposal are sick and dying of obesity-related illnesses and millions of people who don't have enough food are starving and dying as well, what does that tell us? Obesity has major adverse health consequences!

**DIABETES TYPE 2** -- (Some of the information below is derived from the American Diabetes Association web site.)

The most significant consequence of obesity is **type 2 diabetes** -- now the most common form of diabetes. With diabetes, either the body does not produce enough insulin or the cells ignore the insulin. Insulin is necessary for the body to be able to use the sugar **glucose**. Glucose is the basic fuel for all cells in the body, and insulin drives the glucose from the blood on into the cells. When glucose builds up in the blood instead of going into cells, it can cause two major problems:

- 1) Right away, your cells starve for energy and every tissue of your body weakens -- most importantly your brain.
- 2) Over time, abnormally high blood glucose levels damage your eyes, kidneys, heart, nerves, **brain** and other tissues.

Diabetes is the fourth-leading cause of global death. On average, people with type 2 diabetes will die 5-10 years before people without diabetes, mostly due to cardiovascular disease. Cardiovascular disease accounts for some 50% of all diabetes fatalities, also rendering enormous disability. Each year 3.8 million deaths are attributable to diabetes. An even greater number die from cardiovascular disease made worse by diabetes-related lipid disorders and hypertension.

**Women** are now more likely to become diabetic, which render them more likely to have a heart attack, and at a younger age. Diabetes can affect both mothers and their unborn children. Diabetes can cause difficulties during pregnancy such as a miscarriage or a baby born with birth defects.

In the last 30 years we have witnessed an alarming increase in the incidence rate and distribution of type 2 diabetes. It used to be seen almost exclusively in older, obese folks. Now, it is an unprecedented problem for children as young as age 6 and is quite common in adolescents and young adults. The same factors leading to adult diabetes are thought by most experts to be responsible for the rapid increase of diabetes in the young -- increasing obesity due to poor eating and lack of activity. This explanation seems mostly true, but [I suspect there's something much more to it than that!](#)

### **The rapidly changing data on diabetes:**

When I started writing this book in 2006, diabetes affected 246 million people worldwide and was expected to affect 380 million by 2025. What is frightening is that in 1988, when the cluster of diseases that now make up the 'metabolic syndrome' got underway, this number was a mere 30 million! According to the annual survey released 6/16/2010 by the *Centers for Disease Control and Prevention's National Center for Health Statistics*, nine percent of adults were diagnosed with the disease in 2009 compared with 8.2% the previous year. The rise in cases has increased steadily from 5.1% in 1997.

**Update 3/24/2010:** The bad news of diabetes is unfolding faster than previous projections, according to a survey published today in the prestigious *New England Journal of Medicine*. Today about 11% of children and adults in the US have diabetes, and almost one third of them do not know it. **Update 10/10/15:** Research reported in *JAMA* suggests that almost half of all American adults now have type 2 diabetes or prediabetes. The consequences of **childhood obesity-related diabetes** especially will continue to evolve as a major financial stressor on our already overly-stressed healthcare system.

**Update 3/7/2013:** The cost of diabetes-related healthcare in the USA for 2012 was just released. The tab -- \$245 billion!

A 2010 survey shows that the United States is not the only country experiencing an epidemic of diabetes. Rates in China are skyrocketing with one in ten Chinese adults already having the disease and another 16% on the verge of developing it. The healthcare systems of many industrializing Asian countries are being overwhelmed by the diabetes epidemic. What this suggests is that greater industry-gained wealth in a society leads to overeating and sedentary lifestyles. Certainly these lifestyle change factors play a role. However, we cannot discount the increasingly toxic environment that has spun out of industry-driven pollution. Pollution interfaces with our physiology and manifests to the greatest degree in people living in countries with rapidly developing industry. **Update 11/15/17 from Reuters:** The worldwide number of people living with diabetes has tripled since 2000, pushing the global cost of the disease to \$850 billion a year.

Diabetes experts say that up to 80% of type 2 diabetes is preventable by adopting a healthy diet and increasing physical activity. They suggest, and I agree, that preventive action is paramount. Governments have been called upon to structure plans incorporating preventive action. I can only add that if we do not recognize the contributing effects of our deteriorating environment in disrupting our physiology, those plans will be clear as mud. Unless we reduce toxic pollution as well as reverse unhealthy lifestyle-related trends, the incidence rates of diabetes and other epidemic illnesses will continue to rise!

We must initiate preventive actions to reduce human exposures to toxins from all venues post-haste! Venues becoming more toxically polluted include our air, water, foods, cosmetics and a host of other environmental vectors to be discussed herein.

### **PERIPHERAL NEUROPATHIES**

The increased frequency of the loss of the normal sensory feelings in the extremities is driven by both the epidemic of diabetes and a segment of apparent nerve damage independent of diabetes. Peripheral neuropathy in 2006 affected more than 20 million Americans and that number is rapidly growing.

### **BLOOD LIPID ABNORMALITIES**

Blood lipid abnormalities have also reached epidemic proportions. According to the *American Heart Association*, at least 50 percent of our adult population, nearly 107 million people, suffers from lipid abnormalities that identify them at greater risk of heart attack, stroke and death. Heart disease is the number one killer of both women and men in the United States now. Each year more than a million Americans have heart attacks and about a half-million people die from heart disease. Many health agencies are now recommending more medicines to be used on more patients in an attempt to achieve lower and lower blood fat levels to ostensibly lower the risk for cardiovascular consequences. This is an issue with which I had difficulty, as I feel we should look at the causes and address them rather than overuse drugs to simply 'manage' these lipid issues. I honestly wonder if this lipid crisis is, at least in part, a factitious illusion created by lipid-lowering drug marketing.

## MENTAL ILLNESS

Data developed by the *Global Burden of Disease* study conducted by the *World Health Organization* and others reveal that mental illness, including suicide, now accounts for over 15 percent of the burden of disease in established economies such as the U.S. This is more than the disease burden caused by all cancers. Mental ills – including anxiety disorders and depression – are prevalently diagnosed in many developed and developing countries. The highest rates are found in the U.S. According to the CDC, **women** have had 50% more mentally unhealthy days in the 2004-2008 time frame than men.

**Update Sept 2007:** A study in the *Archives of General Psychiatry* showed a 39-fold increase in the doctor visits of **children** under 19 who were diagnosed with or treated for **bipolar disorder** between 1994 and 2003. This paralleled the rising use of anti-psychotic drug use in children in the same time frame. What is happening here? Are we all going nuts or could there be some overdiagnosing occurring, or both? **I opine that it's both.** I'll explain more in detail in chapter thirteen.

## INSOMNIA

It is now estimated that 100 million Americans are afflicted with frequent insomnia. The majority are associated with other epidemic disorders such as **restless leg syndrome** and so called 'mental disorders.' Medications to treat these insomnia-related disorders have become big sellers in both the pharmaceutical and nutraceutical markets.

## ALZHEIMER'S (AD)

Alzheimer's disease is a form of dementia most commonly found in **elders**. It is a brain disorder negatively affecting one's ability to live a peaceful, coherent daily life. Whatever brought joy, whatever made life worth living is lost because life as one knew it is not recognizable. It starts slowly, insidiously and worsens over time. Family members become unrecognizable. Books are unreadable; writing is impossible. A simple walk down the block can turn into a nightmare. Eventually, people with AD lose the ability to care for themselves in the simplest of ways. It's a cruel disease. As we age, our risk for developing AD dramatically increases; the current epidemic trend can most simply be explained by the fact that we are living longer. What should concern us all, though, is that AD is occurring in younger-than-expected people at higher-than-expected rates. This should be a major wake up call.

Who gets Alzheimer's? Good question. Although having certain genes, such as the **APOE-e4 allele**, predisposes one for AD, for the most part, we don't know in advance who will get AD. When we forget a word, misplace our keys or suddenly find ourselves driving in a familiar area but feeling lost, we wonder if we're getting it. We even make jokes about it, but it's far from funny. It comes up from behind and surprises a vast range of people. Some we recognize: Charles Bronson, Perry Como, Rita Hayworth, Charlton Heston, Otto Preminger, Ronald Reagan, Sugar Ray Robinson and Glen Campbell.

In 2013, while only about 13% of the Medicare population had Alzheimer's disease, its related care accounted for 34% of Medicare spending. According to the Alzheimer's Association, it is estimated more than 5.4 million Americans have Alzheimer's disease. The prevalence is expected to quadruple over the next 40 years, affecting about 16 million Americans by 2050. **Women**, again, have a higher risk of getting Alzheimer's, particularly in the population older than 85.

Although, unfortunately, there is no cure for it, there is hope in **preventing it** from happening to you and your loved ones. Even if you are genetically predisposed, you can make lifestyle choices that will significantly lower your risk. If you begin to make those better choices now in the areas of nutrition, exercise, toxin avoidance, and if you provide nurturing energies and nontoxic home environments you will be much more likely to raise children with healthy brains. This will lead to healthier bodies, bodies that will be less likely to express AD and other diseases. Again, as with all else, it's your choice.

**Validation Update 7/13/14:** Research from the U. of Cambridge shows at least a third of AD would be prevented by better lifestyle choices, such as eating healthier, exercising regularly, avoiding tobacco smoke and other toxins.

**Update 8/20/15:** A study by Jin-Tai Yu, MD, PhD, also shows that 67% of AD associates with **9 modifiable risk factors --** obesity, frailty, carotid artery narrowing, low educational achievement, depression, hyperhomocysteine, hypertension, smoking, and type 2 diabetes. **Brain cell-saving Update 1/22/2018:** A study reported in *JAMA Neurology Online* today shows significant benefit of **lifestyle intervention** for participants who were carriers of *Alzheimer's-related (APOE-e4) genes*. The successful intervention included diet, exercise, cognitive training, and the lowering of risk factors for vascular disease by conventional means. **The Life Dynamix strategies I discuss in chapters 7-13 herein will reduce these and other such lifestyle-related risk factors not just for AD, but for the majority of other deadly disorders!**

## GALLBLADDER INFLAMMATION - CHOLECYSTITIS

Every year, more people are admitted into U.S. hospitals for cholecystitis; two thirds of those patients are treated surgically. In studies of 60-90 year olds, 60% of **women** and 30-50% of men were found to now have gallstones. A 2013 study shows the risk of gallstone disease increases 17% with every 1-kg/m2 increase in BMI. It's clearly a part of the obesity epidemic!

Trans-cutaneous removal of the gallbladder is one of the most common major surgical procedures electively performed in the USA. I'd say it's a surgical procedure often performed whether you need it or not. It's a surgery that's become a trend.

Yes, there are 'trends' in the world of medicine. Procedures for various conditions go in and out of fashion, like shoes. Thankfully we now feel that ovaries, uteruses, tonsils and the pre-frontal lobes of our brains are best left alone and wonder why they were overly addressed with a knife in the past. What a sad commentary! Are there choices that could be made to avoid gallstones in the first place? Remember that old saw, "An ounce of prevention is worth a pound of cure"? I opine: most cases of gallstones as well as many other health issues could be avoided with better dietary and lifestyle choices.

## **FIBROMYALGIA**

Essentially unheard of 35 years ago, ***fibromyalgia*** is now the #1 chronic pain diagnosis in the USA. It is a chronic syndrome -- a constellation of signs and symptoms characterized by both diffuse and specific joint, ligament, or bone pain and tenderness and extreme fatigue. It presents with a wide range of pain and other distresses that can include cognitive dysfunction known as '***brain fog***,' irritable bowel syndrome, compromised concentration, memory loss, chronic bladder conditions, sleep difficulties, headaches and a plethora of psychological features. Up to 6 million persons in the U.S. are now affected by fibromyalgia. Up to ninety percent of cases occur in **women**. Like the plague, it is spreading fast!

There is no established cause for fibromyalgia and there is no 'cure.' Traditional medical therapies have emerged and sometimes been found to be of limited help. Alternative medical therapies are sometimes successful in abating symptoms. People so affected are rendered more inactive, yet ironically, studies suggest exercise interventions offer the most promise. Again, I say there is hope by way of prevention -- avoidance of harmful substances such as pollution, cigarette smoke, drugs, processed foods - and the inclusion of healthy food, exercise and mental attitude. Do I sound like a broken record? Like I'm singing the same old song? Read on. In future chapters you'll find the song is one worth singing.

## **CHRONIC FATIGUE (CFS)**

Also essentially unheard of 35 years ago -- cases of CFS are now seen in huge numbers. CFS is four times more frequent in **women** than in men. CFS is one more condition that steals the joy from life. It's another one that is so complex, so multi-faceted that it's nearly impossible to deduce where it came from or how it started. I've heard people comment that, "Chronic fatigue is all in the head." I've seen it disdained -- thought of as not being 'real' when in fact it is very, very real. Eighty percent of those who have it don't even know they have it. They just know that something's gone wrong, that life has lost its luster. There's no cure. Can it be prevented? I believe it can and I'll explain how in future chapters.

## **ERECTILE DYSFUNCTION (ED)**

ED is an interesting 'epidemic' that exemplifies the 'confusion' of the profile change. The question is: Is impotency a real change in our species or is it an invention of the companies that profit from ED drugs, or both? I think both. It provides an excellent example of my conclusion that this all-encompassing profile change has 2 distinct drivers. For example, ED can be a result of real nerve damage associated with epidemic illnesses such as diabetes, atherosclerosis, hypertension and others, as well as a common side effect of drugs used to treat these disorders. Inactivity associates also. Chemicals from plastics and excessively used soy-based food additives can feminize men by acting on their estrogen receptors. However, many men who suffer ED from nerve, inactivity and hormone disruption don't get any relief from ED drugs at all. Furthermore, much of the demand for these 'lifestyle enhancement' drugs is generated by direct-to-consumer marketing.

Once established, the marketing demand itself generates more unnecessary patient visits and more inappropriate diagnoses. In other words, with no pun intended, it's much like the 1989 *Field of Dreams* movie premise -- '**If you build it he will come.**' The point is that each patient visit for which the drug is requested adds to the statistics of this 'disorder.' The skewed statistics then define the 'epidemic' and the drug companies can then use the stats to further justify the outrageous reimbursements for their products. By marketing directly to the public, companies have enhanced the 'epidemic' to increase consumer demand and costs for their drugs. As is typical in overdiagnosing, most doctors were unaware that ED was even an 'acceptable diagnosis' prior to the FDA approval of ED drugs!

Joel Lexchin wrote a beautiful exposé on Pfizer's tactic to promote Viagra in 2006 -- *Bigger and Better: How Pfizer Redefined Erectile Dysfunction*. (PLoS Med 3(4): e132 doi:10.1371/journal.pmed.0030132) An excerpt follows:

***Viagra for Any Degree of ED***—To make Viagra into a lifestyle drug, Pfizer needs to convince men that it is the first choice for therapy for any degree of ED, whatever the genesis of the problem. However, drug therapy may not always be the most appropriate treatment option. The National Health and Social Life Survey data indicate that emotional and stress-related problems, such as a deteriorating social and economic position, generate elevated risk of experiencing sexual difficulties. In these cases, Viagra may be less important than counseling or help in finding a new job. These possibilities are never mentioned on the Viagra Web site.

Here is a sample of the questions and answers on the "About ED" portion of the Web site:



Question: "I don't have ED because the problem doesn't happen often. Does this mean that VIAGRA is not for me?"

Answer: "Even if erection problems happen only once in a while, VIAGRA can help. You should know that most men with ED only experience problems some of the time. In one study, VIAGRA helped 87% of men with mild-to-moderate ED have better erections versus 36% of men taking a sugar pill" (<http://www.viagra.com/faqs/faqs2.asp>).

In case the message is missed, there is a couple on the Web page where the man looks to be in his mid-to-late 30s. Pfizer reinforces its message with direct-to-consumer magazine ads, such as one featuring a virile looking man around 40 saying, "A lot of guys have occasional erection problems. I chose not to accept mine and asked about Viagra."

In fairness to the makers of Viagra, we now see other drug companies spending big bucks to similarly promote products. The marketing tactics of Big Pharma is successfully driving the mainstream currents of medicine; they cultivate what I term **the religion of drugs**. In the past, doctors have been the prime targets of their elaborate marketing schemes. As more and more physicians see through the enormous illusion to face the greater truth, they question these marketing efforts. Big Pharma counters this growing skepticism by turning to **direct-to-consumer marketing**. Again they are successful, both through their marketing and political lobbying efforts. Unfortunately, these efforts are not restricted to their lifestyle-enhancement drugs. It is a successful ploy in the pushing of many drugs, especially now--far too many psychiatric drugs. The resultant overprescribing can lead to tragic consequences.

## AUTISM

Autism is a group of developmental brain disorders first noted in childhood. The clinical expressions of each case can be highly variable; we refer to this heterogeneity of expression as the **Autism Spectrum**. Until 2003 its cause was thought by most health scientists to be genetic. It is now apparent that the environment plays a major role, as we are clearly experiencing an autism epidemic -- one that can't be explained by classic genetics alone. Much of the 'epidemic' can be explained by the lumping together of various former diagnoses into this 'spectrum' of brain disordered children. However, the sum of prior parts does not come close to the total number of cases in the current consolidated 'spectrum.'

One would think that the recent rocketing rise in autism statistics would be a seismic environmental wake up call. That call came in a **JAMA** (*Journal of the American Medical Association*) study reported January 1, 2003. The study reported that the rates for this disorder increased about 2000 percent from a seemingly stable rate 15-20 years earlier. Now, years later the powers that be still seem to be in slumber as the rates continue to climb. This ongoing increase in autism is an eminent threat to our species. Its causes, not even reasonably understood, are a harbinger of worse things to come. I will discuss this scary 'epidemic' more at length in the next chapter. The autism epidemic is a prime example of how and why it is so difficult to determine the connections of any disease to specific aspects of our deteriorating environment.

## METABOLIC SYNDROME AND BEYOND

All of the above and more parallel the onset of the **metabolic syndrome**; it's the common denominator worsening everything. It's a moving target, subject to ineffective systems of medicine and denial of the environmental role connected to its presence. But we're a stubborn species! Even with incontrovertible data supporting planetary changes from bigger ozone holes, to disappearing forests, to diminishing species, to acidification of oceans, and even though we live with a cascading waterfall of pollutants and chemicals that compromise every aspect of our lives, we're still standing in the forest and missing the trees. We walk about with no clothes insisting we are not naked, that the diseases we now confront are almost -- what -- a natural course of events -- a manifestation of inherent destiny -- the way life was meant to be?

I don't think so. This is an extremely unnatural course of events. Among causes of our epidemics are environmental toxins. When our bodies don't properly process these toxins, they precipitate **inflammation** which in turn causes cellular damage and tissue degeneration. Poorly handled toxins disrupt our brains and in other ways hinder our bodies' signaling systems. The brain-body signaling snafus causes us to morph into odd apple-shaped weaklings. However, for all the attention paid to what looms as the clear source of our escalating epidemics, one would think we just came to this concept yesterday.

Remember Rachel Carson? In 1962 she published a book entitled *Silent Spring*. She wrote that the use and overuse of synthetic chemicals to control damage by insects had introduced harmful chemicals into everything that touches all life. She said that these chemical applications were poisoning human beings, animals, birds, the whole food chain and the Earth in its entirety. She posited that everything and everyone is connected; that when one goes down, we all go down. She was right. Think about your daily life. Could you live it on an island by yourself?

Theo Colborn, co-author of *Our Stolen Future*, has taken us to an even higher level of awareness. She and her fellow environmentalists have disclosed the main mechanisms by which many common innocuous-appearing chemicals are interfacing with our physiology, exerting their damage in all creatures that occupy our planet. They helped make **endocrine disruption** an understandable destructive force. Unfortunately, we've continued to gather knowledge and data, yet fail to amply apply any derived wisdom from it in meeting the rapidly growing threat. We are losing ground quickly!

'Dis-ease' is no stranger. We've been through the plagues and the locusts and the famines and the wars--a host of global afflictions. But if you took a snapshot in time you'd note a dramatic change in the profile of our 'dis-eases.' Back in 1980, for example, the picture reflects acute and reversible ills and only a smattering of chronic ills. Fast forward to today, to the new disorders now prominent in modern medicine. The picture now reflects a host of chronic and degenerative diseases that are spinning out of control. Profiles of patients being seen in medical care venues have changed from those in which acute/reversible conditions once predominated to those in which chronic/manageable-only diseases now predominate.

We doctors used to see clear, cause-and-effect conditions that allowed us to intervene in a simple and proper way. Our patients came in hurting; they left feeling better. We gave an antibiotic for a specific infection, sutured a wound or set a cast for a broken bone. Now, our health facilities are filled with diagnostic challenges that don't seem to be simple and which, in fact, are far from simple. We don't understand them and we don't cure them; we 'manage' them with drugs or surgical interventions. We apply a pill to the problem, we apply a knife to the problem, but there's no end, no resolution -- only ongoing management. It's what I call '**business as usual.**' And all the while the epidemics worsen, get bigger and become more and more unmanageable.

Within this chronic-illness profile there is a rapidly manifesting, differing predominance of diseases – diseases unheard of a few decades ago – that are now causing the majority of pain, suffering, aging and other concerns that we note in astounding numbers. This clustering of diseases is associated with what we now call the **metabolic syndrome** as our species adapts into its apple shape. The metabolic syndrome is like an overstuffed waste basket that transitioned into an overflowing trash bin, then into a dumpster and ultimately into an ever-enlarging landfill that may eventually bury us all, lest we change our thoughtless ways. **Update 2009:** The CDC estimates that about a third of Americans aged 20 years or older now have the metabolic syndrome and that percentage number is growing steadily.

### Is the destiny of our Homo sapiens species devolution into the 'killer shape?'

**Devolution** – defined as a gradual process of change – a degrading from a higher to a lower level of effective power or vitality -- to a lesser essential quality. It is the downside of **evolution**. **Morphological devolution** is happening now!

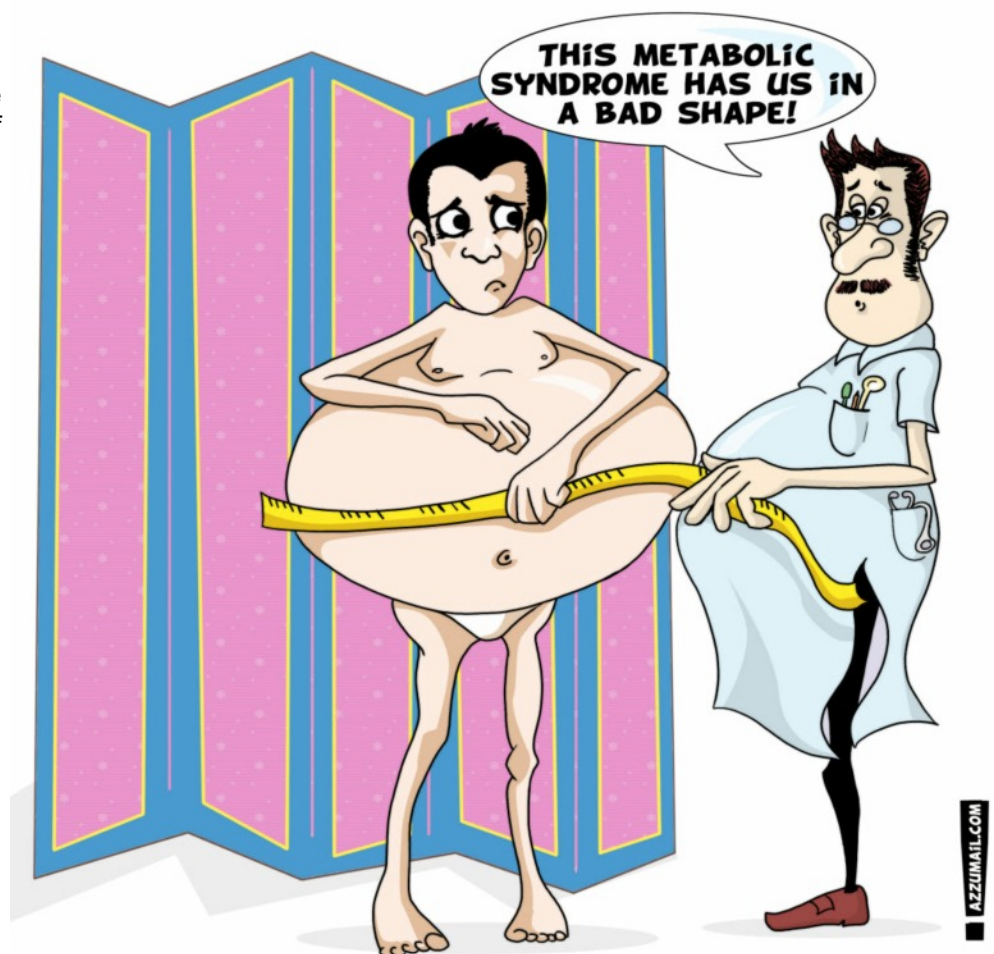
Have you noticed that you are seeing a larger percentage of people who have morphed into this apple shape? Their bellies are unusually large and out of proportion to the rest of their body. Their arms, legs, and buttocks seem undersized.

In medical speak it's called **central obesity**.

Folks, this is a killer shape. You don't want it!

You won't see this shape in the centerfold of **Playboy** or **Playgirl** magazines -- places you may not wish to be, either. Where will you see it?

You'll see it, prematurely and unnecessarily, in ill-health venues such as hospitals, doctors' offices, rehab centers, long term care centers, as well as handicap parking places, disability scooters and coffins -- places where you definitely don't want to be too soon!



**How can we avoid this?**

(see an extreme example of this unhealthy shape on page 148!)

## Prevention is the answer!

*“Every human being is the author of his own health or disease.” - Gautama Siddhartha~ (563-483 B.C.)*

How can you avoid becoming one more of these disastrous statistics? How can you avoid morphing into this killer shape? To find the answers, think about it and ask yourself just a few more questions:

**First**, is there a true change going on in the health of our country and in the state of health of our world, or has this disease profile always existed and only recently become appreciated?

If you accept a “yes, we are having a dramatic disease profile change” answer, you have taken the first step toward your successful attainment of wellness. When you consider what is happening so rapidly with the morphology of our people, you realize there can only be a “yes, this is new” answer. Obesity is now rampant; being overweight has become the norm. The fact is that the best prognosticator of metabolic syndrome is the abdominal girth measurement of a given person. We are a society – indeed, a world – manifest with larger girths and we are deeply entrenched into the metabolic syndrome.

The emphasis that the dramatic disease profile change is new should be quite evident. To wit, the anchor of this profile change and its now predominant driving presentation -- the metabolic syndrome -- was not even recognized prior to 1988!

**Next**, what is the cause?

The ultimate cause of such a dramatic change has to be related to a deteriorating environment and poor lifestyle choices. Traditional genetics alone cannot explain this rapid decline in the health of so many. In addition, casting futile blame on genetics alone would essentially render us powerless, when in fact we are far from powerless.

**Lastly**, and most importantly, **what can we do?**

We can and must make and encourage better choices, both as individuals and societies. To wit, when researchers in a 2010 study looked closely at the overall impact of just **4 lifestyle choices**, they found an alarming impact on longevity. The study followed 4886 people for an average of 20 years. It showed that **the choices not to smoke, not to drink alcohol excessively, to frequently exercise and to predominantly eat fruits and vegetables added 12 years to people’s lives** over those in the group who made the opposite choices! (origin -- *Arch Intern Med.* 2010;170:(8)711-718)

The 4 lifestyle choices mentioned above, as well as others to be discussed in this book, are highly relevant to the future health and happiness of you and your loved ones. **Update 1/22/15: World Health Organization (WHO)** research shows that unhealthy lifestyle choices cause 16 million people each year to die prematurely.

We can and must be proactive in gaining this kind of preventive medicine knowledge and use that knowledge to protect our health, the health of loved ones and the health of those we don’t know and will never meet. When we gain such new knowledge, when we find what works, what doesn’t work – when we come to some assessment of what’s going on – it’s our duty to spread that knowledge for the benefit of others.

Ergo, when anomalies and/or inconsistencies arise within an existing paradigm and present issues unsolvable within that given paradigm, our view of reality merits change. So too, do the ways in which we perceive and esteem ourselves and our world need to change. As conscious, intelligent agents of transition and renewal, we are responsible for transforming our theories and our traditions. It is incumbent upon us as well to review and reform our standards of medical practice, and in doing so, to apply new, better functioning paradigms to the novel challenges of this twenty-first century.

These twenty-first century epidemics are real and they demand our attention. Let us not walk about without clothes, thinking we’re dressed. Let us disdain blinders and view the picture of this disease profile change with clear eyes and an open heart, remembering that our brains and our bodies are perfectly capable of rising to the occasion. We are blessed by design with the natural, ongoing process of **Neogenesis** and we are persons of free will, well equipped to make the choices necessary to possessing a viable, enjoyable state of physical and mental function.

*“All truth passes through three stages.*

*First, it is ridiculed.*

*Second it is violently opposed. Third,  
it is accepted as being self-evident.”*

**~ Schopenhauer~**

## Chapter 2

### COED SYNDROME (COED-S)

**COED-S** is a pertinent acronym that I made up. It stands for the **Consequences Of Economic Desires Sndrome**.

COED-S is the metabolic syndrome and much more. COED-S is that **'big picture health profile change'** I described in chapter one. COED-S includes the epidemic portion of obesity, diabetes, hypertension, hyperlipidemia, and even the epidemic portion of autism. COED-S also includes the epidemic portion of other neuro-degenerative diseases that developed as manifestations of a **'toxic brain,'** such as **obesity** and related issues, insomnia, Alzheimer's, fibromyalgia, chronic pain syndromes and drug addiction. COED-S-related toxic brain also explains epidemic 'mental disorders,' such as ADHD, depressions, bipolar and others that are now seen with increasing frequencies.

It's important to acknowledge the fact that, as the medical community first noticed the strange epidemic emergence of these COED-S expressions about 1980, we physicians filed them into a folder called **syndrome X**. Later, the folder's name was changed but its contents remained similar. In 1988, this file came to be called the **Metabolic Syndrome**.

Over time, we've struggled to understand the alarming progressions of the folder's contents. I'm the first to call it what it is: **COED-S-- the consequences of economic desires syndrome**. All of the increases in the incidence rates of these chapter one illnesses fit into a much larger folder than was first considered. All relate to each other by common causes!

In renaming this file--this dramatic disease profile change-- I wanted a catchy acronym that reflected its origins and implied that both sexes of our species are affected. I first considered using the old analogy of 'the elephant in the living room.' The unisex acronym COED-S would fit here too. The **consequences of 'elephant droppings' syndrome** could rightly reflect the toxic environmental causes of this subtle, yet consequentially colossal, epidemic.

Most people know what the elephant reference means. It means that something huge and growing is living with us, perhaps right in the living room -- and we're ignoring it. We're experiencing all manner of deleterious toxic environmental conditions affecting the health of *Homo sapiens* and other critical species, as well as the health of our planet itself, yet the powers that be dither on -- with fabrications and illusion, with excuses and meanderings -- whatever it takes to avoid the bottom line and in the process make or save a buck.

Toxic environmental 'elephant droppings' are everywhere; maybe it's time we opened our eyes so we don't keep falling over them. Maybe its time we got to the bottom of what's going on with us and with our environment before we lose the beauty of ourselves and our Earth. Maybe it's time for a concept like Neogenesis to provide explanations, to share some revelations and to offer some hope.

#### What is the common cause of this rapidly developing Homo sapiens disease profile change?

Philosophically, the root cause of COED-S is sinful greed. The consequences of humankind's insatiable, unfettered **greed**, the lust for money and power, fuels the bottomline drivers of these health changes discussed in chapter one.

#### THE BIGGEST HOLE IN THE WORLD

That would be the one that's never filled, called **greed**. Its place of residence is the soul, although it can be felt physically throughout the body. It's an unpleasant sinful thinking that infects every entity it inhabits and the beings with whom it comes in contact. It's a thief. It steals joy and happiness. It fattens the exterior, diminishes the interior. It feels entitled and superior, when in fact it is small and shameful, selfish and arrogant. It's a fundamental cause of the disdain of our environment and the infringement of the health of every living thing. It lies in wait and pounces on people, flora and fauna, ever pursuing the refreshment that will slake its belly, but it is never refreshed. It cares not that today's imprudence is tomorrow's nightmare, that dishonesty is hand in glove with dishonor and disgrace. It is a force based on bad intent that, with forthcoming blessing, will be blasted away by those of intelligence and compassion.

#### Hunkapi

I love the wisdom inherent in this revered American Indian word. It's the word for a ritual that roughly translates into 'recognizing and accepting our relatives.' It is rooted in the understanding that we are all, as is everything in the universe, connected in a common oneness. It is the lack of application of this fundamental ideal that has gotten us into our present conundrum. We erroneously conclude that the results of our actions, our personal and collective agendas, either directly or indirectly have little impact in what happens to us and to our planet. We ignore this **hunkapi truth** as we ignore history. William Shakespeare said, "What is past is prologue." Everything, my friend, is connected!



I also love the word **namaste**. It is a greeting used in India that conveys goodwill. It implies a mutual understanding of and a respect for our individual equality of importance in that universal connection. These simple words reflect this simple connection truth. Hunkapi and namaste are not scientific words, they predate 'science' as we have come to know it. In the English language, there are no such words. In our English speaking society, for many, there are no such thoughts.

Bearing the wealth of this truth and wisdom, the Native Americans were doing a great job managing this patch of earth we now call the United States of America. Their virtues of simplicity, honesty, integrity and community consciousness gave them a magnanimous character. It was what they did not possess that made them great caretakers of the land. They shared, they gave away, bestowed upon and blessed others with. They were not greedy people.

Lacking hunkapi wisdom, we -- the now powerful but careless custodians of the planet -- begin to approach an understanding of our own negligence. Still, it may be too late. We're grasping the importance of these invisible connections, but only long after we painted our poison onto the Earth. In doing so we find that we have painted ourselves into some disappearing, nonexistent corner. As a society, we are a high-powered pollution machine driven at top speed by greed.

Unless we appreciate, accept and apply these simple truths of hunkapi and namaste and use common sense, the deterioration of our charge will continue to accelerate. Our folly shall be exposed if we choose to ignore the native intelligence that paid attention to **signs**.

### Pay attention to **signs**

In Elton John's song *Hey Hey Johnny*, Bernie Taupin's lyrics talk about a sad, empty garden somewhere in New York -- a garden once beautiful that was obliterated due to the damage one insect perpetrated -- one insect that managed to destroy the grain. Guess who the insect is? The signs started showing up early on in our 'civilization.'

In 1850 there were an estimated 100 million buffalo in North America. By 1900 the number was reduced to 2500. Overly hunted and consumed, the buffalo gift to man was nearly consumed to extinction by the hungry masses. To others it was viewed a nuisance to 'progress' in the building of America. They got in the way of the railroad trains and overran any weak fences. They were intentionally shot by railroad agents and others to protect their symbols of wealth. Many carcasses were left to rot. Progress is good to recover this species as the cause of their near extinction is quite evident.

Environmental toxic stressors on our species could much more quickly take our *Homo sapiens* herd down to a few thousand in a similar time frame. Specific toxic stressors on other vitally connected species will not be so evident. It may be too late to easily reverse the impact of our poor choices when organisms so basic to human survival such as the bees on land and plankton and coral in the sea have been decimated by man's carelessness. **Update 7/28/2010:** The journal *Nature* reported today that ocean plankton have been reduced by 40% since the 1950's. Plankton are the nidus of the marine food chain; they produce half the world's oxygen while consuming toxic CO2. The researchers suggest that global warming is the cause. All such consequences have at their root cause unfettered greed.

### Signs of our modern toxic world

The Bioscan® machine used by Pharmanex (a supplement- selling company) sends a blue light into the fat pad of the palm of the hand, just below the skin. Some of the light is absorbed, and that which isn't is reflected back. The machine is able to receive and quantify this reflected light and display a numerical reading. It's known that carotenoids absorb a particular frequency of light, and thus the reading offers a rough estimate of how much carotenoid is in this particular fat. In a nutshell, it tells those tested how yellow (presumably from carotenoids) the fat in their palms are. That's all it does.

Carotenoids are fat soluble compounds. So, by taking in Pharmanex supplements, which are loaded with carotenoids, one bioaccumulates large quantities of these chemicals in one's fat. This is reflected in a higher Bioscan reading termed '**body defense score**' (a Pharmanex term). I honestly opine that this 'score' reflects nothing significant about one's health. It's merely a novel marketing ploy. However, the technology shows me **the critical sign** that our fat tissues are the predominant places where **fat-soluble toxins** are sequestered as well. We're no different from the fish in the sea, in that we are both bioaccumulating more fat soluble chemicals, many of which are toxic, in our fatty tissues.

Even though exposure levels of many toxic environmental chemicals suggest that only low levels should be found in humans, studies reveal much higher actual levels in human tissues. They confirm the bioaccumulation phenomena are at work.

### Who's bioaccumulating here?

It's the big predators that bioaccumulate the most serious toxins, such as mercury, dioxins or PCBs. In the oceans, it's the sharks and whales. According to a study reported 6/24/2010 by **Ocean Alliance** scientists, the big sperm whales, feeding even in the most remote of Earth's oceans, tested alarmingly high for these toxins. This pollution threat to all ocean creatures threatens the natural balance of the ocean food chain. We humans are highly dependent on this balance of ocean life-forms.

**On land, man is the big fish** -- the top predator of the land-based food chain. So, it really is no surprise that we should be, and are, the land creatures whose tissues are most contaminated by **environmental pollution toxins** as well. Could we possibly be so arrogant as to think we, of all creatures, would be spared? We could be, but that will not serve us well. Man, in fact, has a special sequestration place, a chemical waste dump for toxic fats, if you will, called the **visceral fat**. This highly active fat is found deep in one's abdomen and thorax. This fat is the key location where the extremely toxic, fat-soluble waste accumulates, barring detoxification. In this special fat immune cells and toxic chemicals metabolically interact, producing destructive **inflammation** therein. This, along with other toxic mechanisms, explains much of what I call COED-S.

"We've poured our poisons into the world as though it were a bottomless pit; and we go on gobbling them up. It's hard to imagine how the world could survive another century of this abuse, but nobody's really doing anything about it. It's a problem our children will have to solve, or their children." ~**Daniel Quinn**~

**COED-S has two distinct drivers -- both fueled by greed.**

The devastating **first driver** relates to our increasingly toxic environment issue, pollution being the toxic 'elephant droppings.' The **second driver** is the spin out from excessively marketing drugs and medical services. In contemporary medicine, this driver gains strength by what I call **the religion of drugs** in which the spurious misclassification of illnesses is encouraged.

### **1) Environmental toxins -- the elephant droppings**

Consider the direct effect of deleterious chemicals. Damaging chemicals absorbed from outside of us and the destructive chemicals induced within us work in concert. External classic toxic environmental energies, such as damaging frequencies of radiation, convert to chemicals upon interfacing with the body. These impact us adversely. Unkind **subtle energies** reflective of the emotional states of others also translate through stress responses into destructive chemicals inside us.

A commonly discounted batches of toxic chemicals that adversely impact our physiology include the chemical derivatives of our own **toxic thoughts**. These are rapidly-generated toxins produced by our body. They are given birth by the toxic subtle energies of the #2 Pie choices we make. They're a critical part of the 'elephant droppings'-- the '**stinking thinking**' part.

**Although the elements seem diverse, everything converts to chemicals within us. We are, in a simple material view, a very complex bag of chemicals.** This 'human bag' can receive all **forms of energy** and converts these influences such as mechanical, electrical, radiation, chemical, thermal and subtle energies into chemical containment and use.

The 'elephant in the living room' that no one wants to acknowledge•represents our toxic environment. It is an environment that's becoming more and more toxic in its chemistry, energies and microbes. As all of these toxic influences interface with *Homo sapiens*, we manifest adaptive transformations in response – alterations and deviations that have caused disease-profile changes of immense proportion. The transformations manifest as individual expressions of our increasing toxicity.

As these changes evolve dynamically and with heterogeneous expression, we struggle to classify them independently and to draw specific cause-and-effect relationships. The difficulty arises because we as individuals are all genetically different. When seven billion differing human vulnerabilities are multiplied by hundreds of thousands of suspected-toxic chemicals, energies and microbes, it results in a big number. Conclusions, therefore, become mathematically difficult to directly derive. We are forced to ascertain probable cause-and-effect relationships based upon 'statistical associations.'

**The metabolic syndrome began to show us a powerful sign.**

The most easily observed and measured 'statistical associations' which define this pivotal health issue vary, depending upon which authority you asked. Most descriptions of this **metabolic syndrome** include the following **4 associated elements**:

**Central obesity** (large amounts of fat deposited in one's thorax and abdomen relative to the rest of the body)  
**Resistance to insulin** (a precursor state to Diabetes Type 2)  
**High blood pressure** (hypertension)  
**Abnormalities of blood lipoproteins** (bad blood fats)

As it evolves in its description to include more and more 'associations,' the metabolic syndrome can be seen for what it truly is: an idea, understanding or construct, based on observations - an organizing folder into which our scientists have rightly placed these seemingly-linked abnormalities. That folder, by the way, is getting bigger. More linkage is being added apace. And now, dear reader, we must rightly interpret these **signs** and realize that [the greed-driven production of environmental toxins, are the root causes of these consequences](#). Its now time to properly rename this file folder-- to best acknowledge its foundations and genesis and call it what it is – **COED-S!** Now is also the time to start addressing it 'head on' with prevention. [By encouraging and making better lifestyle-related choices, we can most effectively render better health outcomes.](#)

## 2) Excessive marketing of drugs and medical services

The second driving force is the truly subtle portion of the disease profile change. It is a sad thing that's a direct result of the excessive marketing and sales of drugs and professional medical services. This begins with factitiously diagnosed illnesses. The subsequent overprescribing adds fuel to the toxic fires inside us. We recognize our past folly in the infectious disease arena with faux diagnoses and antibiotic overuse. Now this ongoing mistake is most obvious in the psychiatric arena. Physicians are erroneously educated by an elaborate Big Pharma-directed marketing scheme to peddle 'psych drugs.'

This scheme causes an ongoing thickening of the **DSM series** -- postings that suggest most of us should be 'psych labeled,' stuffed nicely into boxes and prescribed 'psych drugs' as per protocol. Such drugs, in aggregate, add to our toxic exposures. The subtle consequences of ignoring more natural healing and prevention-based paradigms are often devastating.

### The trees are blocking our view of the forest burning around us

Unfortunately, we seem trapped in 'scientific methods' to the extent that we cannot see the larger picture. Actually, we are missing the picture altogether. The institution of medicine relies on application of the scientific method to establish cause and effect. The scientific method requires precise standards and firm rules in 'connecting the dots.' However, even when these standards are met, there may be an unnecessary lag period until any effective changes are made.

For example, duodenal ulcers were thought to be caused by hyperacidity and for at least 100 years were ineffectively treated with antacids and surgical interventions. The most common surgery involved removal of a portion of the stomach and the severing of the Vagus nerve, a sympathetic nerve known to stimulate stomach acid production. When the **H2 acid blockers** Tagamet and Zantac came out in the early 1980's, they were used with antacids. Then, **proton pump inhibitors (PPIs)** such as Prilosec, which work by a different mechanism to block acid, arrived in 1989 to become the 'standard of care.'

At about the same time (1984), two Aussie fellows, a gastroenterologist and a pathologist, stated that, in every case of duodenal ulcers, one could find an overgrowth of germs called **H. pylori**. They insisted and subsequently proved that if these H. pylori overgrowths were eradicated, the ulcers would go away. In 1997 the CDC finally acknowledged that the two doctors were correct. The Australian doctors, Robin Warren and Barry Marshall, were awarded the 2005 Nobel Prize in Medicine for proving that ulcers are caused not by high acidity, but by germs.

The sanctioned treatment went from antacids to H2 blockers, to PPIs, to discovering, and to finally treating correctly with antibiotics to control H. pylori germs -- the actual cause of duodenal ulcers. Despite all of this, we still see all of the antacids, H2 blockers and PPIs hanging around and being greatly overused. *IMS Health*, a reliable source for drug info, lists PPIs as holding second position in USA drug sales in 2007! An additional salient point is that from 1984 to 1997 and beyond, H. pylori and ulcer disease were allowed to flourish. Bottom line -- H. pylori could be controlled and duodenal ulcers cured by inexpensive off-patent antibiotics. Maintenance treatment with expensive, yet ineffective, patented drugs, on the other hand, was still enormously profitable at that time. **This undoubtedly speaks to a predominant source of physician education -- the pharmaceutical industry.** I will further address this erroneous education in chapter thirteen.

The drugs which were improperly employed for ulcer disease interfere with normal physiology and, in both the interim and final analysis, create unhealthy paybacks. For example, in a study from the Indiana University, researcher and expert in aging and dementia Malaz Boustani, M.D., found that those who took **H2 blockers** regularly for two or more years increased their risk of cognitive impairment (including Alzheimer's disease) by more than 200%! This is logical, knowing that diminished stomach acid interferes with B-12 absorption; deficiencies of B-12 can cause the brain to wilt.

PPIs also diminish stomach acid. Stomach acid kills dangerous germs entering the gut! It should be no surprise that PPIs increase the risk for acquired pneumonia and some food borne bacterial infections. **Update 5/27/2009:** A JAMA study relates that the use of PPIs in hospitalized patients increased the risk of pneumonia by 30% during their stays! **Update 6/1/2010:** In a *Family Practice News* report, **small intestinal bacterial overgrowth (SIBO)** was found in 50% of 450 consecutively tested GERD patients on PPIs. This compared to 6% of SIBO found in GERD patients not on PPIs. The longer the PPIs were used, the more likely SIBO occurred and the more difficult the SIBO was to eradicate with antibiotics. **Update 5/25/2010** — The FDA today advised doctors to exercise more caution in prescribing PPIs. The FDA suggests high doses or long term use of PPIs may increase the risk for hip, wrist and spine fractures. These serious 'drug paybacks' make sense, considering that stomach acid serves a role in calcium digestion and hence affects bone strength. Such serious side effects with all drugs are an all too common norm. We are finding many more problems with drugs much faster. The FDA has intensified their focus on the reported bad effects of drugs after their initial FDA approval. Kudos!

### COED Syndrome is an aggregate of environmentally-influenced illnesses

As with all environmentally-related illnesses, cause-and-effect relationships are often difficult to prove to the extent that consumer and public protection changes are demanded and enacted. Now you might ask, "[Why is it so difficult to prove the cause-and-effect relationships of environmentally-related illnesses?](#)" **Here come 13 parts of your answer!**

## SOME DIFFICULTIES IN 'CONNECTING THE CAUSE AND EFFECT DOTS' OF ENVIRONMENTAL ILLNESS

### 1) There is a wide variation in people's tolerances to the toxins which are suspected as causing illnesses.

This fact has come to light primarily as a result of the problems individuals have had with pharmaceutical drugs. Although pharmaceuticals represent only a very small fraction of the new man-made toxins that now challenge humankind, this group is relatively better studied in terms of toxicity. Because their intake by specific patients is more easily accounted for, adverse reactions representative of an individual's failure to efficiently detoxify them are more evident. By analysis, it has been determined that there exist many 'families' of enzymes involved in detoxification. A large number of genetic sites give rise to these families. Also, a wide diversity of environmental factors influences each gene's expression. There is, as a result, much individual variation in detox abilities that each of us has, at any given moment, to meet any toxic challenge.

Alcohol serves as an excellent prototypical example of **tolerance**. The lethal blood alcohol level for 50% of the population-- **the LD-50** for alcohol -- is represented by a typical **bell shaped toxicity curve**. The bell's hanger is at 0.4%. A small percentage of us are on the leading edge of the curve and would die with much less booze in our blood. Many would survive at a much higher dose -- the trailing edge. A Lithuanian drunk driver had the highest blood alcohol on record of anyone driving a car: 0.727% of alcohol in his blood -- a number repeatedly tested with various devices. Lithuania's legal driving limit is 0.04 %. The driver was 18 times above the limit. The fact that this individual was driving at a level at which most of us would be dead demonstrates the individual variation in tolerance to a chemical.

This heterogeneousness as it relates to tolerance to various chemicals explains why about 20% of lung cancer victims never smoked. The confusion is easily reconciled by the fact that this nonsmoker group still had adequate environmental exposure to **carcinogens** - the actual chemicals causing cancer. Individual tolerances to lung cancer-related carcinogens are merely lower for those nonsmokers who have lung cancer. Cigarette smoking is a delivery system that concentrates lung cancer-related carcinogenic exposures, hereby increasing smokers' risk for lung cancer.

### 2) Most non-pharmaceutical chemicals that the public is exposed to are not safety tested.

As a society we have operated on the risky policy of **GRAS (generally regarded as safe)** for the vast majority of man-made chemicals. This principle defines the chemical as safe unless proven or highly suspected of being unsafe. Using this policy, cigarette smoke was GRAS for most of the 20th century. Of course, since we've become more aware of cigarette smoke's toxicity consequences, we now realize that smoking is one of the worst health hazards around. Yet we still don't understand exactly how cigarette smoke does its damage. Would it not have been studied, and the outcomes of smokers extensively compared with those of nonsmokers, cigarette smoke would still be GRAS.

On the other hand we treat pharmaceuticals differently. With these 'drugs' we operate on the **precautionary principle**, which defines the newly made pharmaceutical as unsafe for human exposure until reasonable and extensive evidence strongly suggests that it is safe enough to use under the circumstances of that use.

Pharmaceuticals are, therefore, extensively tested prior to their approval by the FDA for human exposure. Even so, the toxicity profiles of many prescription drugs only become apparent after they have been more extensively used. Serious adverse reactions and deaths attributed to pharmaceuticals have nearly tripled since 1998 when the FDA made it easier to report these events. Most of those thoroughly-tested chemicals are taken in orally and absorbed through the gut, yet many chemicals are absorbed into the body simply through breathing or touching and remain inadequately tested.

Even very bright people often seem to have illogical thinking in that, despite the fact that airborne entry into the body renders a chemical faster-acting and more physiologically potent, especially in regard to the brain, they seem to think of the oral mode as the primary route of toxic entry. In many cases, the reverse is true. Our bodies are actually more able to rid themselves of many naturally occurring toxins taken in orally by virtue of the preparedness of our gut. The gut's readiness to deal with toxins is a result of adaptations that have likely occurred, over very long periods of exposures to such **food-related toxins**, throughout humankind's existence.

Society similarly discounts, and treats as GRAS, the man-made chemicals such as those found in cosmetics, soaps, cleaners and thousands of others that enter transdermally with little or no testing. We also ignore the adverse health effects of man-created toxic energies, which subtly generate toxic chemicals upon interface with our bodies.

### 3) The type of proof needed to ascertain cause and effect in environmental illness is often expensive.

If profit can be derived from an endeavor, no matter how dangerous or how expensive, it is likely to proceed. To prove that something profitable is unsafe is much less likely -- unless there is some profit to be made in proving it.

#### 4) Most toxic exposures of consequence involve more than one toxin; few exposures to toxins occur in isolation.

**Polypharmacy** (the taking of more than one drug) confounds outcomes that typically bring chemical toxicities to light. In our bodies, many different chemicals compete for the same enzymes to break them apart, thus rendering them nontoxic. This is why you may be told not to take certain drugs or eat certain foods, such as grapefruit, while on specific drugs. By ingesting both you **potentiate** the toxicity of each, due to their competition for the same family of detox enzymes. **Update 9/10/14:** There's now in excess of 85 pharmaceuticals that compete with grapefruit chemicals for their detox enzymes!

To wit, **Seldane** was a popular antihistamine. Tested alone it was safe. But, in the typical clinical setting, it was used with types of antibiotics (**macrolides**) to treat 'sinus infections.' Both drugs use the same limited enzymes to detoxify. Taking both caused Seldane to reach toxic levels -- resulting in many cardiac arrests. Unfortunately, it took years for this danger to become understood. Each new drug one takes can magnify this polypharmacy issue and its confusion.

To further understand this polypharmacy-detox confusion, consider **cigarette smoke**. Such smoke consists of thousands of individual chemicals. Such huge numbers makes it difficult to understand which specific chemicals cause lung cancer, emphysema and other smoking-related disorders and how it all happens. The environment now contains so many toxic chemicals that it is similarly difficult to identify which ones are involved in most other environment-related illnesses as well.

#### 5) Most toxic chemicals and energies exert their subtle damage over long periods of exposure.

The most common cause of hearing loss is **noise deafness**. Noise deafness, commonly resultant from high frequency incremental sound exposures, typically takes decades to manifest. Likewise, inhaling even a large amount of cigarette smoke in for only a moderate period of time wouldn't cause one to get lung cancer; prolonged exposures seem critical. Similarly, most skin cancers are the result of long term over-exposure to UV light. Epidemiological studies that can identify such associations must be large and protracted, with much effort needed to factor out specific differences in exposures.

In March 2008, Bob Egelko of the *San Francisco Chronicle* reported that a local jury ordered Georgia Pacific Corp., an asbestos manufacturer, to pay more than \$7 million in damages. The lawsuit claimed that the company continued making and exposing people to asbestos-containing material long after learning that asbestos was linked to a particularly devastating form of lung cancer called **mesothelioma**, and long after competitors had found safer substitutes. The company stopped distributing the product only after asbestos products were outlawed in 1977. Over many years there have been many similar asbestos-related mesothelioma lawsuits, most of which have settled out of court. We still see legal firms on TV soliciting clients to this day because it may take decades for this particular lung cancer to develop after asbestos exposures, even though it is now a certainty that inhalation of asbestos is a major cause of mesothelioma.

**Update 5/18/2010:** The cell phone -- cancer link remains strongly suspect but still unproven. A long-awaited U.N. study, spanning 10 years, was released this week. It suggests that cell-phone use may increase the likelihood of getting a deadly brain cancer-- **glioma**. But, relevant to this principle, gliomas may have a latency period of up to 25 years or more. This is longer than cell-phones have been in widespread use. Like the long latency period between smoking and getting lung cancer, we may not know if there is a definitive link until it is too late for many naive people. **Update 10/28/14:** A study in *Pathophysiology* now shows that glioma rates triple for those wireless phone users of more than 25 years that typically hold the device to their ears. This risk can be greatly reduced by using ear buds or the phone's speaker function.

#### 6) Organized denial by financially interested parties obscure the facts, even after strong suspicion is identified.

Typically, financially interested parties, like Georgia Pacific in the above action, insist that their products are safe until they're proven unsafe. They make it as tough as possible to allow that to happen. The American Tobacco Association's lobby delayed U.S. government actions necessary to protect the public, a practice continuing today. Recent huge money judgments against tobacco companies were a direct result of 'Big Tobacco's' failures to disclose unfavorable 'proprietary information.' The conspiracies to conceal this 'bad news' continued for many years.

For years I have been warning people about the dangers of plasticizers used in food containment and the similar cover-up emanating from the plastics industry. Finally, in the 11/17/2008 issue of *JAMA* the debacle came front and center. The issue's lead research article concluded that it is highly likely that the plasticizer **bisphenol-A (BPA)** causes morbidity in the adult population they studied. **Update 7/18/2012:** The FDA announced that baby bottles can no longer contain BPA!

**Update 6/24/14:** Manufacturers have removed BPA from many plastic products to make them '**BPA free.**' The problem is that most of their substitute plasticizers have not been safety-tested. To wit, one BPA analog used -- **BPS** has been found to toxically disrupt heart rhythms in female rats and may have similar EDC toxicity as BPA. These plasticizers leach into our food from plastic food containers! The petrochemical industry has been given too many free passes from safety-testing. When will our society realize humans are particularly vulnerable to petroleum-derived chemicals and accept the precautionary principle? Until then, I strongly advise you to select safe food containers, such as glass, whenever possible.



In 1992 the FDA knew there was a problem with the drug **Seldane**. Seldane was a huge money maker because it was an effective antihistamine that, unlike most other antihistamines, did not cause sleepiness. The toxic pathophysiology was complex, but should have been understood by those that could have recalled this killer drug. Despite this knowledge it was not until 1998, and only after the company had a similar less toxic replacement drug, did it stop selling Seldane.

In the fall of 2007 Bayer AG stopped selling the anti-clotting drug Trasyolol. It has been used for the prior 14 years to treat hundreds of thousands of heart bypass patients each year. More than a year before a federal hearing on Trasyolol's safety, Bayer conducted a self-funded study; its preliminary results indicated that the risk of death after surgery was far greater with Trasyolol than with a comparison drug. However, Bayer did not present those proprietary findings at the safety hearing. Now Bayer claims its own study, as well as one with similar findings before, was flawed.

Even the government is not exempt as an interested party in denial. The Veteran's Administration resisted connecting the dots for servicemen affected by **agent orange** in Vietnam and by **gulf war syndrome**-causing toxins in the Desert Storm conflict. **Update 2010:** The VA was caught in a blatant lie. They reported that fewer than 800 veterans of the current middle-east conflicts had contemplated suicide, while their private e-mails put the number at 12,000! Being accountable would mean that disability payments and services associated with these maladies would need to come out of their budget.

#### **7) Risky experimentation that prove something suspicious is unsafe is unlikely in our modern society.**

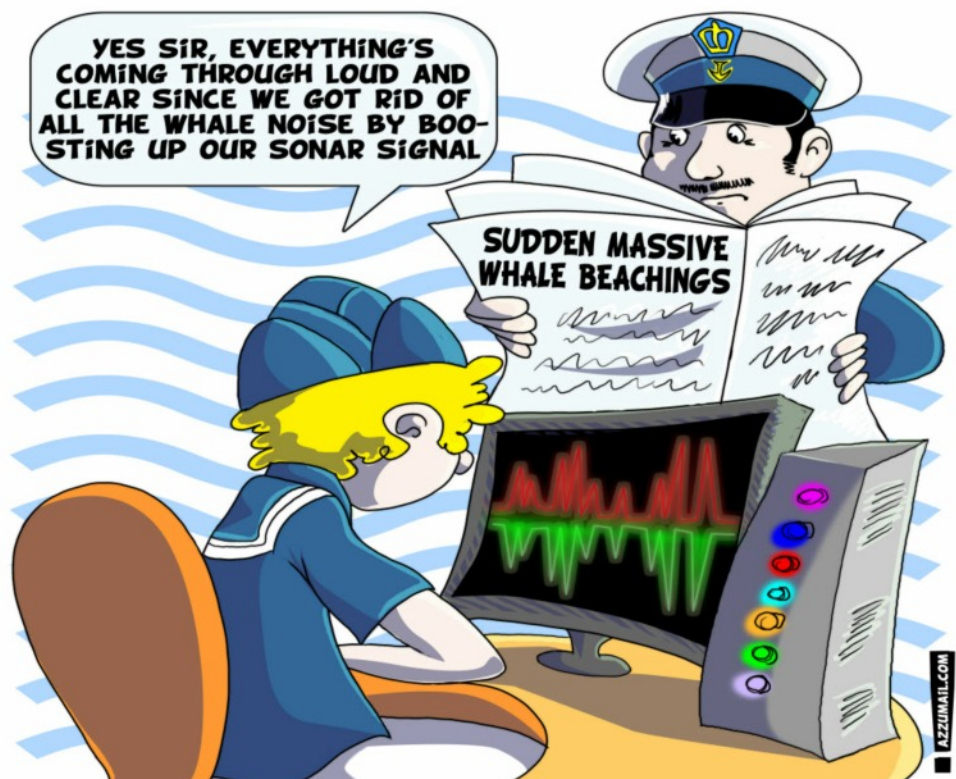
The physician Jesse William Lazear died on 9/26/1900 while proving that mosquitoes transmitted yellow fever. Lazear encouraged infected mosquitoes to bite him so that he could contract the life-threatening disease. This sort of experiment is unusual. In potential outcomes resulting in permanent brain damage or cancer, this inhibition will usually predominate. Even such experimentation on other species is highly resisted by animal rights groups. Often it's difficult to connect the complicated dots of cause-and-effect in the absence of such risky testing.

#### **8) Most toxic exposures are subliminal and their damages are cumulative.**

Incremental brain damage is not apparent after a single exposure or even multiple exposures in the same individual. Most people assume that all humans can tolerate similar levels of alcohol or other neurotoxins. They also believe that their risky behaviors with toxic forms of radiant energy, cigarette smoke, alcohol or other toxins are safe because the resultant changes are incrementally small and the overall cumulative change is insidious. People fail to see the damage they are inflicting upon themselves and fail to take serious action to mitigate the harm until significant damage is already done.

#### **9) Toxic chemicals and energies that are inherent in what we consider to be convenient or critical technologies strongly and illogically resist being labeled as 'unsafe.'**

You can argue for the social need for anything in our modern world that discourages examination of its safety. We don't wish to hear any bad news about our own bad habits or our profitable endeavors. Neither are we receptive to emerging knowledge regarding the risks of such 'convenient' things such as: off-shore oil drilling, navy sonar, plastics, microwaves, TV, movies and other electronic media energies, cell phones, power lines, fetal ultrasounds, laptops, pesticides, herbicides, antibiotics, cosmetics, 'happy pills' or other pharmaceuticals most often overly prescribed by us doctors.



## 10) Safety edicts influenced by 'authorities' are difficult to overturn, no matter how biased those 'authorities' are.

The American Dairy Association and the meat industry inspired a 'healthy' food pyramid that prevailed for decades before its folly was rejected by the nutritional community. Only in the last few years did the USDA finally replace the meat and dairy top-heavy bogus one that persisted unchallenged as part of the health curriculum taught to generations of students.

How did we ever survive before plastic? Plastic safety knowledge and **FDA inaction** are clearly predicated on advice from the **American Chemical Council (ACC)**, especially its **phthalate esters panel**. The ACC is a business group. The representatives of this 'panel' are predominantly from the chemical manufacturers of plastics. Each chemical advisory panel is similarly constructed. The ACC provides a successful lobbying vehicle for the rich and powerful chemical industry. The business of chemistry is a \$664 billion enterprise. Despite the stated safety guise of the ACC, it functions as a lobby. It influences FDA actions and inactions, which often appear to ignore any ACC bias regarding the safe use of chemicals.

Many unbiased scientists disagree with 'scientific conclusions' of the industry-biased ACC! Many of us believe that the [plasticizers in plastics and other man-made toxic derivatives from petroleum are major contributors to COED-S](#).

## 11) The distance between any two 'cause and effect toxicity dots' is usually not short.

Consider again the association of **lung cancer** and **tobacco smoke**. Smoke is inhaled directly into tissue that is affected – a very short distance. It's amazing how long it took us to traverse this 'no-brainer' leap of knowledge. Tobacco smoke contains from 3,000 to more than 5,000 different chemicals, a number of which are well known carcinogens, such as arsenic, cadmium, lead, formaldehyde, benzene, heterocyclic amines, nitrosamines and others; yet, even now, no one is certain which one(s) cause lung cancer and how they do it (the exact pathophysiological mechanisms).

Now consider the similarly strong association between tobacco smoking and **bladder cancer**. This association traverses both a longer physical distance and logic-leap. The simple explanation is that the carcinogen(s) involved are either water soluble or are rendered water soluble. These toxins likely travel from their lung entry point through the bloodstream, are concentrated by the kidney into the urine and are stored in the bladder. Even though the bladder is a long way from the port of entry, the bladder lining is ultimately exposed for much more time to the toxic concentrate. This seems very logical; yet, the only way any connection has been made is indirectly, after careful reviews of epidemiological investigations.

This same logic explains why the rate of bladder cancer in men is three times that of women. Besides the fact that there are still more men than women smokers, the male smoker at his most vulnerable age is much more likely to have **urinary retention** than the woman smoker because: 1) a man's prostate enlarges with age, increasing resistance to the flow of urine out of the bladder and 2) The male urethra is longer and therefore further increases the resistance to flow. These factors cause men to retain urine carcinogens in the bladder longer, thereby putting men at more risk than women for contracting bladder cancer even when both may be exposed to identical urine concentrations of carcinogens. Of course, no one has determined the specific chemical(s) that cause either lung or bladder cancers. At least we can reasonably narrow the suspects down to one or more of the 5000 plus different chemicals in tobacco smoke.

**Update 8/15:** For those who think it's fashionable to start smoking, take heed. Watch some of the testimonial T-V adds featuring actual former smokers who are now deformed, dying or struggling to live with emphysema or oral-pharyngeal, lung, or other cancers caused by their smoking. God bless these courageous patients! They can't help themselves now. They can only hope their gruesome message helps others make the choice to nix smoking.

## 12) Political and financial interests proactively obstruct safety and health legislation.

The American Tobacco Association effectively lobbied against public safety messages and legislation concerning the adverse effects of cigarette smoking. There is little question that our twentieth-century legislators turned a blind-eye to the adverse effects of tobacco while their campaign coffers were being filled by this lobby. Another more recent example is the former administration's politically inspired complicity in trying to cover up health issues regarding the environment. *The Christian Science Monitor* reported, "More than 120 scientists across seven federal agencies say they have been pressured to remove the references to 'climate change' and 'global warming' from a range of documents, including press releases and communications with Congress." <http://www.climateark.org/shared/reader/welcome.aspx?linkid=68203>

A related exposé by the British newspaper *The Guardian* reported that Exxon Mobil, through its financed American Enterprise Institute, offered scientists \$10,000 each to undercut the information coming out on global warming from the United Nations unbiased panel. <http://www.guardian.co.uk/environment/2007/feb/02/frontpagenews.climatechange>.

The *Union of Concerned Scientists* reported that Exxon Mobil spent \$16 million in 'donations' to support groups to discredit the science of man's influence on negative climate change. [http://en.wikipedia.org/wiki/Exxon\\_Mobil](http://en.wikipedia.org/wiki/Exxon_Mobil).

These actions reflect the power and influence - the greed - that holds our nation's health system and the health of our citizenry hostage. Every time we question the responsibility of a financially interested party we see the stonewalling, the denial of the obvious – from the benefactors of the questionable entity or from others with an interest in denying liability.

**13) Typically, not until large groups of people are exposed and sickened by the same or similar exposure is there a fairly uniform expression of toxicity that allows us to connect the dots of cause and effect.**

Lake Powell was formed between Arizona and Utah in the early 1960's when Glen Canyon, a scenic geographical wonder, was flooded by the construction of Glen Canyon Dam. It quickly became a recreational hotspot. Groups can rent or time-share purchase large houseboats to take family and friends for a week of great water sport fun. For decades many isolated drownings occurred near houseboats at Lake Powell before the dots were connected to the well known odorless, colorless toxin--**carbon monoxide (CO)**. Typically, a child would be seen in the water without apparent distress and simply slide under the water; not to resurface. The deaths were ruled drowning because the victims were swimming at the time and CO is not routinely tested by medical examiners unless specifically indicated.

After decades, the mystery drownings were finally solved when several kids died under identical circumstances. The victims were determined to have been rendered intoxicated by the exhaust from generators on the houseboats. The toxic invisible gas concentrated in the areas around the swim platforms on the back of the houseboats. Many people during the decades of the mystery-drownings timeframe had been sickened by the toxic gas. They survived without suspicion because the nonspecific symptoms mimic those of heat stress, fatigue and hangover. Of course, Lake Powell is a hot lake where a lot of hard play, drinking and sleep deprivation predominates during that fun week on the houseboat.

**The toxicity of CO** has similarly been overlooked for decades as it relates to children involved in indoor ice hockey. Only recently was it discovered that the ice resurfacing machines spew out invisible and unnoticed toxic exhaust. It was not appreciated until many kids were simultaneously and severely sickened by the toxic cocktail of pollutants, including CO. It's now out in the open after the CO and particulate levels in these indoor rinks have been tested and found to be unsafely linked; yet, there is ongoing denial by rink owners. Motivated players and parents also often choose to turn a 'blind-eye.' To me, no hockey experiences are worth the cost of brain damage and asthma induction in innocent children. We need mandated air quality standards to protect children and others so exposed. Society has to catch up with science!

We see the extent of most poisonings only in retrospect. An example is the 2006 pet-food toxicity case involving gluten imported from China. Scrap chemicals high in nitrogen were added to the products to make them appear higher in protein content. About 39,000 pets were simultaneously sickened before the crimes finally came to light. This greedy practice, not exclusively of Chinese origin, probably had been going on and the perpetrators getting away with it for years. It was fortunate that the symptoms of those affected pets were so consistent and dramatic. At first the scope of the crimes seemed limited; as authorities look closer they appreciate how extensive the pet and people food-chain contamination is.

We now look more closely at other Chinese imports and, not surprisingly, find many problems relevant to the lack of or enforcement of safety standards. The China-toxins connection is now being more appreciated in 'people food,' toys, drugs, building materials and other products as well. One wonders about the toxic content of the paint on Chinese-made cookware, dishes and other products that we continue to use and which come into contact with the food we Americans eat. Has China's 'favored trading partner status' worked to conceal a major toxicity issue? The contingency of ongoing toxic exposures, without recognition of their toxicity, accelerates such exposures by concealment. I herein name this common scenario the **contingency concealment principle**.

**Vioxx-- like cigarettes-- is a painful contingency concealment lesson.**

**Vioxx** is the best pharmaceutical example of this principle. Vioxx toxicity would have been successfully concealed for many more years had the maker of Vioxx not subjected the drug to additional testing to get FDA approval for its use in another condition. In that study it was found that taking Vioxx for 18 months increased one's chances of dying from a heart attack or stroke by a whopping 50%! This 'news,' suspected much earlier by the maker's own scientists, came out 5 years too late for 80 million people already on Vioxx. The maker finally acted properly and withdrew Vioxx from the market.

Millions of people, mostly elders who commonly die in these scenarios, had taken Vioxx daily for pain in complete naiveté. None of these individual deaths would be noticed because heart attack and stroke are 'natural' ways elderly people die. If one mathematically extrapolates for this **Vioxx fiasco**, doctors in the USA alone, also completely unaware, contributed to tens of thousands (FDA scientist, Dr. David Graham, estimates about 55,000) of their patients' deaths by writing for Vioxx!

The contingency concealment of Vioxx toxicity demonstrates the difficulty in 'connecting the dots.' It's rare that we see dramatic Bhopal or Chernobyl-type exposures in which thousands are sickened or killed rapidly and by obvious cause. However, the aggregate of mostly subtle and insidious exposures to environmental toxins kills most of us prematurely, as this principle predominates in toxic exposures to non-pharmaceutical chemicals, toxic energies and pollution in general.

## DOT-CONNECTING DIFFICULTIES USING AUTISM AS AN EXAMPLE

Medical texts written prior to 2003 stated that autism was a rare genetic disorder. They supported this idea with the suggestion that if one twin has this disorder, the other twin would also likely have it. After more than a decade later we now know better. We base our current knowledge on the following **autism facts**:

1) Autism is **not rare** anymore. Despite a spurious incidence rate increase from reshuffling disorders within the DSM's to form an all-encompassing category -- **autism spectrum disorders (ASD)**, ASD presents as a true epidemic. Three studies in the late 1980's and early 1990's showed classic autism at a rate of about 1 case in 2500 children born. This rate had remained fairly steady for decades. In the mid and late 1990's, reports began to show a dramatic rise.

Attempting to confirm and to quantify this rise in prevalence, a large, well-funded study was undertaken and reported on January 1, 2003, in *JAMA*. It found that the rate suddenly vaulted nearly 20 fold. Autism spectrum disorders were then thought to occur about once in every 100 to 150 births in the USA. There are now more new cases of autism spectrum disorder in the USA than all new pediatric cancers, diabetes and AIDS cases combined.

**Update 10/2009:** The latest data published in *Pediatrics* comes from the CDC's 2007 National Survey of Children's Health. It found that 1 in 91 Americans ages 3 through 17 fit the criteria for autistic spectrum disorders. **Update 3/27/2016:** The **autism rate in the USA** has gradually climbed to 1 in 68 births. Interestingly, it's been stable for the last two years.

What is quite apparent is that, similar to psychiatric labeling, which I discuss in depth in chapter 13 herein, the diagnostic criteria for autism have become much more liberal. Initially reserved for kids with severe retardation and social difficulties, the diagnosis has been expanded to include much milder impairments. After all, there's often financial incentives, not just for the diagnosing doctors', but for families of children so-diagnosed with autism too. **Diagnostic incentives** include special education and disability benefits, less severe punishment for criminal conduct and other incentives.

2) The epidemic portion of autism **cannot be explained by classical genetics alone**, unless this portion reflects genetic changes caused by environmentally-induced **mutations** (sudden alterations in the sequencing of a gene's DNA) or by **epigenetics** (existing genes being activated or inactivated by environmental factors). The epidemic portion of the autism spectrum, not accounted for by reclassifications and more liberal diagnostic criteria, must be related to detrimental changes in our activities or our environments. Families with affected children are now aware of this total reversal in cause- effect thinking. Twin studies that favored a genetics explanation were flawed. After all, twins spend their gestational period in the same amniotic environment and received the same chemical and energy 'nourishment' – and the same toxicity!

**Confirmatory Update 1/29/16:** A study from online *Pediatrics* suggests that the autism epidemic may be, in part, due to immunological and metabolic disturbances associated with maternal obesity and diabetes --the two anchors of COED-S! The study found that among mothers with pre-pregnancy obesity and pre-pregnancy diabetes, the risk of having a baby that was later determined to have ASD was nearly fourfold! Having either pre-pregnancy obesity or pre-pregnancy diabetes, independent of each other, increased their babies' ASD risk greater than twofold. This study was authored by Mengying Li, MSPH, from the Johns Hopkins Bloomberg School of Public Health in Baltimore, Maryland, and colleagues.

Early attempts to determine cause and establish liability focused erroneously on childhood vaccines, especially on **thimerosal**, a mercury salt preservative that used to be prevalent in vaccines such as MMR (Measles-Mumps-Rubella). **Thimerosal has been extensively studied and has been shown NOT to be a cause of our autism epidemic.**

**Stacking of vaccinations** -- giving several shots at the same visit in order to get the child 'caught up' with the vaccination schedule --may bring to light some actual cases of vaccine toxicity. Doctors have been encouraged to take this possibly-dangerous tack of over-stimulating children's immune systems. Such was judged to be the case in which 9 thimerosal vaccines were given simultaneously to, and seemingly aggravated, one child with **mitochondrial disease** -- one of many disorders now incorporated into the **autism spectrum**. The positive impact of that litigated case was certainly an increased public awareness of vaccine toxicity. Unfortunately, the result, which found for the plaintiff parents, may have contributed, it is sad to say, to a loss of public confidence in vaccination programs, even ones critical to public health.

The benefits of most vaccination programs are well proven. Most physicians, including myself, view vaccination programs as one of the most beneficial public health interventions of all times. Yet, I now witness a dangerous loss of confidence by a significant segment of the populace in our vaccination programs from a misperceived association of vaccines with autism. As a result, hundreds of kids have died unnecessarily from vaccine-preventable measles. Too, thousands of girls will likely develop cervical cancer because their parents are naively avoiding HPV vaccinations. Can we solve this autism mystery without jeopardizing those vaccine programs that are proven beneficial? Yes we can!

Suspect environmental changes include any sudden deficiencies of vital substrates or activities or by novel exposures to toxic chemicals, energies or microbes. It's reasonable to narrow the suspects down to such deficiencies or toxic exposures occurring in the timeframe from the autistic child's conception through the first few years after birth.



Autism is typically diagnosed at two to four years of age when it's clear that the child fails neuro-developmental assessments. Most autistic children are diagnosed before the children are eight years old. However, abnormalities in the brains of some affected children are evident as early as the first trimester in the uterus. Most autistic brains clearly develop abnormally, with volume and other discrepancies evident on imaging studies until about the age of 12 years. This suggests a cause most likely much earlier than the MMR or other vaccine interventions in most cases. If brain-damaging toxins are not in the vaccines, other toxins in the child's environment are likely involved.

**Many 'culprits' causing autism remain at large!** No one knows the totality of deficiency, dysfunction and toxicity influences that contribute to this epidemic portion of autism. Strong suspects include toxin or deficiency exposures that occurred to autistic kids from their conceptions through their early childhoods. We should also reasonably narrow the search's focus to those exposures that started or greatly increased during the 1980's or 1990's and persist to this day.

**Some autism suspects based solely on this timing of increased population exposures include the following:**

#### **~Toxic heavy metals**

Evidence suggests that environmental toxins are causing various forms of brain disorders in children as well as seniors. Many heavy metals are **neurotoxic** (toxic to brain and nerve tissues). Lead, mercury and cadmium are certainties. Excesses of aluminum, iron, uranium and fluoride are strong probabilities. There is no consensus among experts as to the levels of metals needed to cause the brain damages seen in such disorders as autism, Alzheimer's or Parkinson's.

I reason that if we get our essential minerals from the lesser-contaminated plant sources, as opposed to meat sources, we are better protected from excesses of toxic metals. Now, as a predominantly meat-eating society, we don't have that protection with animal foods. Animals bioaccumulate toxins and pass these toxins on to us when we consume their tissues. We add to the problem by restricting the motion of animals that we later eat. This adds more stress toxins to their flesh and diminishes their abilities to detox. Such '**caged**' livestock and fish are then fed in the cheapest manner possible. To make up for mineral deficiencies in their feed to boost production, these creatures are fed special pulverized rock.

This is a problem, as ground-up-rock is not a normal livestock food! One such commonly used '**mineral booster**' has a clear toxicity potential based on its composition of fluoride (900 ppm), lead (6.2 ppm), and uranium (6 ppm). For more than 30 years (a great chronological fit for our COED-S epidemics) literally billions of 'caged animals' such as chickens, fish and others have ingested this mineral booster. It would be nice to know what the levels of these metals, which are suspected to be neurotoxic, are in the flesh of these freedom-restricted creatures, as compare to their 'cage free' cohorts.

The latest report authored by Jonathan Sebat and others from Emory University strongly suggests that the epidemic portion of the autistic spectrum most likely is related to multiple and random genetic mutations. This is extremely bad news because this disorder may be passed on to progeny children of future autistic parents that now carry the mutations. The causes of the mutations will also continue to exert their toxic influences as well. This autism problem may get much worse before we can get a handle on it. The fact that Sebat's mutations occur at multiple locations on chromosomes of both sexes randomly makes a radioactive decay element, such as uranium, a strong suspect for causing autism.

With respect to **uranium**, prevailing toxicity standards are based on work done by Gilman on rabbits in 1999 and were determined to be 2 micrograms/Kg/d. More recent work by Konietzka (2005) shows a much higher resorption of uranium in humans than animals. Konietzka's work suggests a safe level of consumption to be no more than 0.2 micrograms/Kg/d. (Konietzka et al.: Vorching fur einen gesundheitlichen Leitwert fur Uran in Trinkwasser (Proposal for a health based guide value for uranium in drinking water) in: *Umweltmedizin in Forschung und Praxis*, Vol. 10 (2005) No. 2, p.133-143.

Again, fetal exposures present a unique risk because of the increased vulnerability of a rapidly growing fetal brain. 'Safe levels' of pharmaceuticals and other chemicals in adults can not be presumed safe for the fetus or child. As to **lead**, there is no safe level for a fetus, infant or child. In light of autism and other epidemic parts of COED-S that have incurred over this identical 30 year time frame, perhaps authorities should reconsider the 'safe for animal feed' status of this product by the *Organic Materials Review Institute*. Perhaps the FDA will also look into the possible toxicity of this 'mineral booster.' After all, humans are at the top of the animal food chain; so positioned, we become the ultimate bio-accumulators!

#### **~Something vital missing from 'foods' that fetuses and/or babies are consuming**

The more unnatural or processed a 'food' becomes, the more likely it is that nutrients vital to some individuals will be missing from it. Because some micronutrients deficiencies may only manifest brain damage in genetically-predisposed fetuses or infants, such deficiencies may be difficult to link to autism. It's possible that such deficiencies are 'flying under the radar.'



The fetus is entirely dependent upon the nutrition coming via its umbilical cord. As our environment becomes more toxic the body's endogenous metabolic enzymes can become suppressed. One such enzyme -- **delta-6-desaturase (D6D)** -- is essential in converting the fats we eat to a fat that is critical to healthy brain development -- **docosahexaenoic acid (DHA)**. There are likely millions of Americans, including pregnant ones with suppressed function of D6D secondary to excessive exposures to pollution, alcohol, trans fats, cigarette smoking, stress and/or other environmental toxins.

A child's fastest brain growth occurs when it is in the uterus of its mother. Pregnant and nursing American women, on average, consume only a fraction of the dietary intake of DHA necessary to optimally support the needs of their fetuses and/or nursing infants. Breast feeding, still unequivocally preferred, must also now be suspect because mother's D6D may be similarly depressed. Hence, her breast milk may be similarly DHA deficient.

It is currently advised for women who expect to get pregnant to consume adequate intakes of DHA and sustain said intakes throughout their nursing period. (See further discussion of this issue on page 128). Also, work done by Joseph Hibbeln of the **National Institute of Health (NIH)** and published in *Lancet*, supports that advice. It shows that women who ate fish during their pregnancies, boosted the IQ of their children. Fish is an excellent source of concentrated DHA!

**Breast feeding** is associated with many health benefits for both mother (less cancer, especially breast cancer,) and child. Breast-fed infants have lower rates of ear, respiratory, and gastrointestinal infections than formula-fed infants. Too, breast-fed children have a lower rate of cancer, asthma, obesity and type 2 diabetes than kids who were formula-fed. The child benefits likely relate to the early implantation of healthy microbes that result in a robust **microbiome** (see the top of page 111). An enhanced microbiome, along with unique chemicals in breast milk, renders a healthier immune system to the breast-fed child. Too, I advise mothers who don't breast-feed to give their infants formulas containing Life's DHA™.

#### **~Plastics, free amino acids (FAAs) and other contaminants in the 'food' of the fetus/child**

The proliferation of **plastic food containment** runs parallel with this epidemic. During the dramatic rise in autism statistics, glass baby bottles have all but disappeared, having been replaced with plastic bottles. The **plasticizers—phthalates and bisphenol-A (BPA)** are fat-soluble toxins. The baby's brain is high in fat. BPA is found in the highest amounts in canned liquid baby formulas. Despite denial by the ACC and other industry biased panels, these chemicals significantly migrate from their containers into foods. Also, these toxins are now found at high levels in most children's urine samples. **Urgent Update 3/4/15:** A report in *Autism Research* shows that BPA is not detoxified well in children with autism compared to otherwise-matched kids without autism. This implies that genetic differences in the ability to detoxify BPA allows BPA to bioaccumulate in autistic kids, likely rendering brain damage via BPA's endocrine disrupting roles. **Reflection Update 6/19/16:** Could ongoing efforts to remove BPA from the food chain account for the recent stabilization of autism rates?

**Update 10/29/2018:** **Phthalates** are commonly found in cosmetics, plastic toys and food (generally originating from the food packaging). Research published in *JAMA Pediatrics* shows that early prenatal exposures, as evidenced from mothers' urine metabolite levels, increase the odds ratio of **language-development delay** in their children by 25% to 40%! Prior studies have already shown inverse associations between phthalate metabolite level in prenatal urine and subsequent good behavioral outcomes and mental, psychomotor and neurological development in children.

During the last 30-plus years, a perfect fit for the autism epidemic, there have been changes in baby food manufacturing processes. These new processes break food proteins apart in order to make their amino acids more easily digested. There is concern that the resultant 'free amino acids' can be neurotoxic. A **'free amino acid' (FAA)** is one that is artificially created by the processing of protein outside the body. Such products are then added to the final baby meal. In the production of FAAs, most often other toxic contaminants are also produced that become part of the product. I question the safety of baby foods, meal replacements and supplements that contain these 'unnatural' chemicals.

Manufacturers of such FAA products targeted for use by babies, bodybuilders and supplement-foolish adults, as well as the elderly, argue that they are safe simply because they are a natural component of dietary protein. What they fail to acknowledge is that natural dietary proteins are complex molecules which contain many chemically bonded amino acids that are rendered slowly in the normal digestive process. This normal process requires our body enzymes to break apart the natural protein food bonds. This natural process frees the individual amino acids gradually and safely into the blood stream in proper proportions. Many amino acids are neurotransmitters. Taken in surges as unnatural isolates, they may cause false messages to be sent, or even worse, neurons to be overly stimulated and thus killed. Neurosurgeon and popular author Russell Blaylock M.D. authoritatively addresses this issue in his first book *Excitotoxins the Taste that Kills*. The archetypical FAA-associated products are **MSG (monosodium glutamate)** and **aspartame**.

#### **~Pesticides**

Enormous amounts of these overt neurotoxins are made and put into our environment each day. Pesticides are, by intent, chemicals designed to damage brain cells of insects. Autism clearly reflects brain damage. Although human brain cells

are thought to be better protected than the brain cells of insects, brain cells of both, as well as other critical species, have similar structure, function and vulnerability to toxins. Furthermore, the brain of a human fetus or child is much more toxin-vulnerable than that of a human adult.

Pesticides aren't exactly treated as GRAS chemicals, but neither are they viewed by the FDA using precautionary principle standards. This is a huge and ongoing mistake! To wit, research done at Harvard by Chensheng Lu shows the problem as it relates to one group of pesticides – **neonicotinoids**. The European Union banned this group of neurotoxins, yet our FDA still permits their use despite many scientific 'red flags.' In the early 1990s the first commercial neonicotinoid gained wide usage – a perfect timing match for the autism epidemic! **Update 2012:** A study on neonatal rats reported in *Plos One* confirms that neonicotinoids may damage early-developing human brains! For more info on **neonicotinoid toxicity** see pages 116 and 152 herein. **Update 8/15/2018:** A metabolite of the long-banned archetypical pesticide – **DDT**, when found in the blood of mothers at a threshold level, links to autism. The Finnish study showed no link with maternal PCBs and autism. **PCBs** are other **Persistent organic pollutants (POPs)** -- organic compounds that resist degradation. Due to their environmental persistence, POPs bioaccumulate, yielding potential adverse impacts on human health.

### ~Toxic energies

The exploding use of imaging studies, laptop computers, cell-phones, and other waveform energy-emitting technologies well-fit the time frame of the autism epidemic. We also know that energies in the ultraviolet portion of the spectrum cause the most common cancers in humans -- skin cancers. They cause specific mutations. So, we should consider those waveforms introduced or highly-disseminated beginning in the 1980's as potential contributors to the autism epidemic.

One such source, **Fetal ultrasounds (FUS)** have special abuse potential in places where **infanticide** is a dirty little secret. Without using FUS once, I delivered many babies in the early 70's and conducted routine developmental follow-ups on many. To my knowledge, I never delivered a baby that was later diagnosed as autistic. My stats have no significance to the issue except that during that time frame, when the autism rate was stable and low, very few fetuses were exposed to FUS. Although FUS can render crucial info in some cases, they are now routinely used in every pregnancy, often multiple times. Contingency concealment could easily be at work here by unnecessarily exposing fetal brains to this waveform. Ultrasonic (US) waves can kill cells. We use US waves to kill thyroid and lung cancer cells. **Brain Concern Validation Update 8/26/16:** We're now 'studying' focused US waves that kill brain tissues which give rise to age-related tremors.

**Supporting Update 12/15/09:** Two studies in today's *Archives of Internal Medicine* show how we systematically discount and poorly regulate exposures to suspect energies that have recently emerged in the medical field. This research shows that **Computerized Tomography (CT) scans** expose people to many times the doses of radiation than were previously thought. These studies show that CT scans alone cause 29,000 new cancers and 14,500 deaths in Americans each year. My advice to expectant mothers is to avoid any imaging studies for which there's no sound medical merit. Choose wisely!

Waveform energies emanating from **laptop computers** are of concern as well. Obviously, the 'lap' of an early pregnant woman is very close to the highly vulnerable and rapidly growing fetal brain.

Too, much of our modern electronic gadgetry, including TVs, computers, cell phones and the like contain **plasticizers** and **flame retardants** that outgas continually to become part of the growing indoor pollution. From chemical analysis testing we have recently discovered that in the last two decades these toxins have dramatically increased in the tissues of most Americans. Of course, we can only speculate on how these chemicals will pharmacologically impact the fetus or child. Most such flame retardants and plasticizers are fat soluble **endocrine disrupting chemicals (EDC's)** and thus will tend to bioaccumulate in fatty tissue and fluids like the breast and breast milk. Therefore, they are passed on to a nursing child. All brain tissue is high in fat content, and the brain of any fetus or child is particularly vulnerable to toxic chemicals.

### ~Toxic microbes

The microbial threat to humans is a continually changing one. Some microbial toxicities, such as seen with bacteria, viruses and even **prions** (agents that cause **mad cow disease**), are subtle in their pathology and expressions rendered. Typically they fly under the radar, only understood as conditions favor their understanding. **Update 1/28/16:** Spread by mosquitos, infections of **Zika virus**, recognized since the 1940's, were thought to be no more harmful than the common cold. WHO experts have most recently connected Zika to a surge of neurological disorders including fetal ones, rendering some newborns with **microcephaly**, a congenital defect resulting in very small heads with incomplete brain development!

**Update January 2012:** Research published in *Mbio online* found that gut biopsies from autistic kids with gut dysfunction showed two species of bacterium (*Sutterella* and *Alcaligenaceae*) not found in similar biopsies from kids with similar gut dysfunction, but without autism. Could it be that certain gut germs, the growth of which are encouraged by poor nutritional choices, are continually poisoning the developing brains of children, some of whom, eventually express autism?

## ~Other suspected causes of autism and their possible mechanisms of action

The FDA says that pregnant women take an average of 3 to 5 **prescription drugs** during their pregnancies; 13% take antidepressants. Autism occurs in a high percentage of children born to mothers who take the epilepsy drug **valproate**. Epidemiological studies on prescription drugs can be easily done. **Update 12/14/15:** online *JAMA Pediatrics* features research that shows women who took **antidepressant drugs** in the last 6 months of their pregnancies were 87% more likely to bear an autistic child from that pregnancy! **Update 1/18/18:** The CDC said today that the number of reproductive-age women in the US who receive prescription **medications for ADHD** jumped more than 300% from 2003 to 2015.

Most people would not know what **environmental chemicals** they have been exposed to. New chemicals are continually being created and disseminated into our environment with very little toxicity testing. Many of these **non-pharmaceutical chemicals** act as drugs in our physiology and most have not had any study as to fetal harm.

Total body burden chemical analysis coupled with epidemiological studies may identify some of the factors contributing to the autism epidemic. For example, it could be possible to freeze urine, breast milk and other source samples from large numbers of pregnant and lactating women and selectively analyze them for unique chemical commonalities if their child is later determined to be autistic. By comparing those to normal child-bearing mothers' samples, we may identify causes. Unfortunately, if some cases of autism are caused by **MSG or aspartame** such an approach may be futile because their metabolites disperse and disappear rapidly without giving any unique signatures to the test samples. Likewise, brain-damaging suspects like **herbicides, pesticides** and **food-related plastics** are in most people's urine already.

It's likely that only those children who have a genetic intolerance to our new chemically emphasized and highly charged waveform energy environment are most at risk. If so, we will see a leveling off of the epidemic numbers in autism. In a worst-case scenario, the problem may take a long time to be resolved, if ever, if autism is merely a manifestation of an increasingly toxic environment that is spiraling out of control. That environment, so toxic in both its chemistry and energies, confounds and confuses the determination of causal mechanisms for autism as well as other COED-S diseases.

As outlined above, it becomes problematic to determine what causes might be involved in the genesis of a disease because of the huge variety of potential toxins that interface with our physiology. As science emerges, periodically we do connect the dots. Research done by Dr. Andre Nel at UCLA and reported in *Genome Biology* shows that particulates from **diesel exhaust** and 'bad' cholesterol work synergistically; they 'turn on' genes that cause excessive blood vessel inflammation chemicals to be made. This beautiful example of **epigenetics** is important because we now strongly suspect that this **inflammatory mechanism** is involved in most heart attacks and strokes, the major killers in our species.

**Update 8/4/16:** many recent studies further link **fossil fuel-generated air pollution** exposures to heart and lung diseases.

**Update Nov. 2008:** Research on children and dogs in Mexico City demonstrates the inflammatory mechanism in which **traffic-related air pollution damages the brain!** (Calderon-Garciduenas L, et al, *Brain Cogn.*, 2008 Nov; 68(2):117-27).

**Brain Pollution Update 12/2010:** Pollution is especially high near freeways. In *Environmental Health Perspectives online*, Doctor Heather E. Volk, et al reports that expectant mothers living within 1000 feet of a California freeway during the third trimester of pregnancy are 2.2 times as likely to bear an autistic child as those who don't. [Pollution is likely teratogenic!](#)

**Update 11/21/18:** A Canadian study posted online today in *JAMA Pediatric* links prenatal exposures to **nitric oxide (NO)** in air pollution with Autism. No link with **nitrogen oxide (NO<sub>2</sub>)** or **small particulate matter (PM<sub>2.5</sub>)** to ASD was found!

**Update 5/25/2011:** Rebecca J. Smith and her UC-Davis colleagues suggest that a **vitamin deficiency mechanism** may be another cause of autism. Their findings were reported in the journal *Epidemiology*. [They found that women who took prenatal vitamins during their pregnancy were only half as likely to have an autistic child as those who did not.](#) The authors suggest that the key ingredient in the supplements is likely folic acid. It is possible that toxic environmental factors, yet to be fully determined, may suppress the endogenous actions of the metabolic enzymes necessary to produce adequate amounts of **L-methylfolate** in individuals predisposed for autism. This could create a vital '**deficiency thorn**'\* accounting for at least a portion of autism. Deficiencies of L-methylfolate have already been implicated in depression, dementia, migraines and cardiovascular disorders.

**Confirmation Update 2/13/2013:** A large Norwegian study published in *JAMA* compared mothers who took [prenatal folic acid supplements](#) with mothers who did not during the [specific period](#) from 4 weeks before to 8 weeks after conception. This was a prospective study of 85176 children born in 2002-2008. The children were followed for an average of 6.4 years. It showed double the likelihood of bearing a child later diagnosed with **autism disorder** (a subset of ASD) for moms who did not take prenatal folic acid supplements during that critical time period over those who did.

**In summary 8/14/18:** Considering all current evidence, [the epidemic of autism](#) is most likely a result of a **diverse array of preventable** environmental [deficiency, dysfunction and toxicity thorns\\*](#) (influences) acting on genetically-vulnerable fetal and infant brains. Too, these individual influences likely [damage the brain through a diversity of mechanisms.](#)

\* To understand '**thorns**' see further discussion on page 40 herein.

## By what mechanisms can exposures to environmental toxins cause illness?

In the simplest material sense, each of us exists as a highly organized 'bag' of chemicals functioning within an exquisitely adapted, delicately-balanced design. As such, we are extremely vulnerable to poorly planned, or unplanned, toxic exposures. Damage to one's body, from any type of toxin, ultimately involves chemistry. Our genetics limit the chemistry, but for the most part, damaging outcomes are significantly influenced by the exposure choices we make for ourselves.

**Toxic exposures can damage us in many ways including the following common mechanisms of action:**

### **~~Indirect action involving the immune system**

An inflammatory response purposefully destroys what the body perceives as a threat, such as an unwelcome chemical, microbe, or foreign tissue. However, damage to the body's own tissues can occur when these immune chemicals are wrongly released. **Inflammation** comes in two types. Firstly, 'hot burn' damage rapidly evolves, and is characterized by, three cardinal signs in the tissues involved: heat, redness and swelling. It can be detected by these observable clinical signs, as well as by an elevation of a blood test termed the **sedimentation rate**. An example is rheumatoid arthritis.

Secondly, 'slow burn' damage is also mediated by chemically induced inflammation, but it manifests little heat, redness or swelling. Its insidious nature makes its presentation more subtle. The 'slow burn' is detectable through other serum markers such as the **C-reactive protein** and other serum cytokines, as well as in the **persistent elevations of white blood cells**. 'Slow burn' is the manner in which arteries are damaged in the most common cause of human death -- **arteriosclerosis**.

### **~~Perfusion disruption (interruption of the blood flow)**

Tissues which are highly metabolically active require a constant supply of blood to function and survive. If their blood supply is disrupted, those tissues will degrade. The more metabolically active the tissue is, the quicker it can be depleted of energy, and the quicker any perfusion disruption will result in damage. Disruption of perfusion is most common when arteries to the tissues become blocked. Blockage of arteries most often occurs slowly, by the common artery-damaging process of **arteriosclerosis**. It can also occur rapidly, by the process of blood thickening or clotting. Often the final precipitating event, preceding tissue damage, is a combination of both mechanisms. Toxic chemicals are implicated in both processes. For example, cigarette smoke as well as stress chemicals clearly accelerate arteriosclerosis. Pollution-related chemicals as well as the estrogen mimics found in **hormone replacement therapy (HRT)** and birth control can induce blood clotting. **Blood clotting** and the **induction of arrhythmias** are likely mechanisms for **Vioxx toxicity** as well, yet this still remains obscure.

### **~~Direct action on specific vulnerable cell lines**

Each cell is a complex entity dependent on many separate chemically related functions that involve many different chemical structures within it. The underlying destructive chemical process may be simple. The toxic chemical or energy may generate **free radicals** that act like bullies and steal electrons from the chemical building blocks of any particular cellular structure. Specific cells are more vulnerable to specific toxins. Such a theft may weaken an entire structure. If that structure happens to be DNA and causes mutations that interfere with our healthy mechanisms for DNA repair, it may change a healthy cell to a cancer cell. That cancer cell could then propagate, unchecked by the normal DNA repair program.

Damage to any chemical or structure may damage cells of a particular cell/tissue line, which might be vulnerable to a particular toxin. Such toxins can have tissue line or organ-specific toxicity. For example, **pesticides** are intentionally made to be **neurotoxins**. They're made to kill the brain cells of insects. They kill our brain cells to a relatively much lesser degree than the lesser-protected brain cells of insects. The fact remains, they are big-time killers of human brain cells as well.

**Acetaminophen** and **trichloroethylene** are primarily liver poisons. **Nonsteroidal anti-inflammatory drugs** can damage one's stomach or kidneys. **Alcohol** often damages brain cell and liver cells. **Ozone** and the herbicide **paraquat** specifically can damage lung tissue. Excessive exposures to **U-V light** cause most skin cancers.

Many other **carcinogens** are also tissue specific. **Asbestos** causes a unique type of lung cancer called **mesothelioma**. There are distinct types of nitrosamines which have been implicated in distinct cancers. Ultraviolet light can enter the skin, generate free radicals and cause specific DNA damage. This DNA damage can ultimately manifest as specific types of skin cancer. However, we have very specifically 'connected the dots' in only a small percentage of our exposures to toxins. By the time we have established a cause and effect relationship on one toxin, a hundred more new ones have been made. Only a small percentage of such chemicals, other than pharmaceuticals, get much human safety testing. We're losing ground fast.

When the number of toxin-caused malfunctioning cells in a tissue exceeds the number that are replaced and functioning, that tissue line or organ degenerates. This commonplace ageing scenario results in **degenerative diseases**. This attrition results in the gradual loss of cell function and leads toward major weakening of the tissue line, including failure. Good examples of this deterioration process are: degenerative arthritis, osteoporosis (multi-factorial-caused bone thinning), solar dermatitis (excessive sun exposure-caused thinning of one's skin) and the senility of **cerebral atrophy** (brain shrinkage).



## ~~Interfering with the function of *metabolic enzymes*

Many pharmaceutical drugs, such as **statins**, exact their influence by this mechanism. They are designed to impede the function of one or more specifically-targeted enzymes that inhibit endogenous metabolic reactions. Specific pollution chemicals and energies, working independently or in combination with other chemicals and energies, can similarly interfere with our body's vital metabolic enzymes. In 2006 contaminants were criminally used to factitiously boost the protein assay of some Chinese-made gluten for cat food. One such contaminant, **aminopterin**, competes for the binding site of the **enzyme reductase** and thusly interferes with DNA, RNA, and protein synthesis. Others on the long list of vital enzymes vulnerable to interference include the herein-mentioned D6D and those enzymes which make L-methylfolate.

**Update 1/8/2014: Bisphenol A (BPA)**, mentioned on p. 28, is found in plastics and the linings of food cans. It's long been thought to be an **obesogenic EDC** (see below). New German research has found that it also interferes with **GTPases --** enzymes that are responsible for transmitting signals within cells. This study suggests that BPA may increase the risk of cardiovascular and neurological diseases, as well as both breast and prostate cancers. The German researchers have echoed my long standing concerns and recommend eliminating BPA plastics from food-containment products.

## ~~Indirect action by binding with and tying up vital biochemicals

Many classic toxins poison the body by this method. For example, the blood pigment **hemoglobin** is a vital protein that carries oxygen molecules to our cells. Our cells need a constant supply of oxygen to stay alive. Carbon monoxide is poisonous because it has such a high affinity to hemoglobin. If enough carbon monoxide gets into our blood there's inadequate space remaining on the hemoglobin molecule to carry the competing oxygen that our cells vitally require.

## ~~Disruption of normal messaging systems of the body by EDCs (Endocrine Disrupting Chemicals)

Although we live or die on a cellular basis, we function as a multi-cellular organism. Our overall workings require interacting groups of communication chemicals to best orchestrate our physiology and well-being. At the top of this chemical messaging system is our chromosomal DNA. DNA contains the construction plans for the entire orchestra of these messenger chemicals. DNA directs the production of **three groups of messenger** chemicals that allow us to function optimally with the brain in a position of command and control.

The first group is the **neurotransmitters**. These chemical messenger mediate the 'wired' system carrying messages between brain cells and to and from the brain and body parts by nerves of the **nervous system**. This system allows the brain to store data, integrate thought, and sense the needs of the individual body parts and direct them in a purposeful manner. Serotonin offers the best example of this group, and most people are aware of **SSRIs**. These overly-prescribed drugs artificially increase the neurotransmitter serotonin in their synapses; thusly, they increase our 'feel good' signals.

Certainly SSRIs have temporary merit in some cases. My concern is that the intended drug effect of temporarily feeling good is purchased with a price -- a high price. SSRIs mute normal feelings of sorrow and grief. Thus they can impede healthy behavioral change and coping. For example, it's been shown that people on SSRIs find it difficult to fall in love!

In her book entitled *Why We Love: The Nature and Chemistry of Romantic Love*, Rutgers University anthropologist Helen Fisher comments that the use of **Selective Serotonin Reuptake Inhibitors (SSRIs)** as antidepressants may reduce the capacity for falling in love. The SSRIs block some changes in serotonin metabolism that would normally occur when one falls in love. SSRIs can cause a serious emotional disconnect. Let's examine the potential impact in a common scenario. Two college students go through the sexual motions on these drugs and produce a baby. The product of the artificial encounter is a baby child not necessarily blessed with the love of the two participants on SSRIs.

What kind of world are we heading for? Each participant in the production 'feels good' individually as long as the SSRI is on board, but there is not necessarily a strong 'us.' The blessing of the family love is artificially stymied. Furthermore, love is often associated with emotional pain when it is lost. Should we be insulating ourselves from the grieving process, and in doing so, prevent the potential bliss of compassionate love's future promise? Are we insanely overusing these drugs?

Transmissions in these structurally 'wired' messaging systems can be enhanced as in the case of SSRIs. They can also be diminished or muted entirely. Most people are familiar with **Botox** as an example of a muting chemical. Botox works by blocking the release of the neurotransmitter **acetylcholine** at the **neuromuscular junction**. This causes the paralysis of muscles so innervated. It is interesting that chemists figured out a way to utilize this natural toxin. They dilute it down and employ it very locally to paralyze muscles intentionally. Back in the times prior to critical improvements in the sanitation of our food chain this toxin killed many people. **Warning:** Go easy on botox folks; just because your doctor gives you the injections doesn't mean it is safe. We now know the folly of that thinking.



The second messenger group is produced in specific organs known collectively as **the endocrine system**. These chemicals are referred to as **hormones**. In this system, the hormone messages flow through the blood stream and affect any tissues whose cells have receptors for the messenger chemical. These chemical messengers generally emanate from specific specialized tissues and locations and can involve the brain as both the receiver and sender of messages, although they are not restricted. This system allows for regulation of common, ongoing, major messages. Growth hormone, estrogen, testosterone, insulin and thyroid hormones, among many others, are in this class.

The third group is a diversity of messenger chemicals whose designation is not yet standardized in the scientific lexicon. Currently referred to as **cytokines**, many of these have been recently discovered as we gain more knowledge of human physiology. These diverse chemicals, in general, affect message transmissions between organelles inside the cell as well as between adjacent cells and, like hormones, have the ability to travel via the blood stream to affect tissues distant from their origin. Some can even exit the body and signal other beings to whom we have social connection. This group includes messenger RNA, prostaglandins and other eicosanoids, blood clotting factors, secretagogues, peptide sequences, pheromones, and others you need not commit to memory. There are scores of cytokines now well known and, most likely, many more that await discovery. All have specific tasks and work harmoniously in our DNA-transmitted design to allow us to function optimally.

Pertinent examples of this extensive signaling cytokine group includes **tumor necrosis factor (TNF)**. TNF is released by an immune cell to signal another cell to self-destruct when the targeted cell becomes degraded and of no utility. Like any of the **inflammation-causing cytokines**, TNF has potential for collateral damage. Allergy symptoms are commonly triggered by the release of the inflammatory cytokine **histamine** by circulating **mast cells**. Asthma is similarly mediated by inflammatory cytokines called **leukotrienes**, and the inflammatory cytokine **bradykinin** signals us to cough.

Many pharmaceutical drugs are intentionally designed to interfere with cytokines to ostensibly impact our physiology in a positive way. They fall into various categories. For example, antihistamines intentionally block the histamine message. That histamine message gives us the itchy eyes, runny nose and sneezing, and likely has some teleological purpose. Man-made chemicals can disrupt the normal function of all three groups (neurotransmitters, hormones and cytokines) of our messenger chemicals; they are, however, most commonly referred to as **endocrine disrupting chemicals (EDCs)**.

The resultant messages may be disrupted either intentionally by pharmaceuticals, or inadvertently by environmental toxins that convert to chemicals and act just like drugs in our physiology. Some harmful examples of the ways they do this are:

- 1) Man-made chemicals can induce a counterfeit message if the receptor on a cell cannot differentiate a counterfeit from a natural chemical messenger. A now common example would be the **plasticizers** such as **phthalates** and **BPA** found in plastics. They unnaturally activate estrogen receptors. These now ubiquitous EDCs therefore feminize exposed humans and other species, thus threatening our mutual existence! Natural estrogen receptor activation causes beneficial weight gain to support pregnancy and nursing. However, EDCs cause girls to begin their menses and breast development prematurely. Also, because they activate estrogen receptors in both women and men, they are some of many significant **obesogens** -- new man-made chemicals that make us obese. Women have more estrogen receptors than men; thus, women are hit harder by these environmental obesogens.
- 2) Receptors can be physically blocked by man-made chemicals that have an affinity for, but fail to completely activate, a receptor. This action prevents the normal messages from being transmitted as strongly, if at all.
- 3) Just like the ways psychiatric drugs work, man-made chemicals can interfere with the production, degradation or re-uptake of a neurotransmitter, thereby altering normal brain transmissions (typically healthy messages).
- 4) Man-made chemicals can poison the enzymes that either make or degrade our normal chemical messengers. A good pharmaceutical example would be the commonly used **statin drugs**. Statins lower cholesterol by suppressing a specific cholesterol-making enzyme (**HMG-CoA reductase**). Environmental pollutants can similarly inhibit the D6D enzyme. Such D6D inhibition interferes with the delicately-balanced production of cytokines called **prostaglandins**. An intricately-ordered balance of the complex series of prostaglandins allows for proper control of inflammation, blood vessel tone, blood clotting and other functions vital to our well-being.
- 5) **Anabolism**, the construction of all chemicals that are used to build all things in us, is an elaborate process. To consider how complex it is, just imagine the process of moving the London Bridge from its origin to its current location in Lake Havasu, Arizona. Each stone had to be numbered and sequence-labeled as the bridge was disassembled in London, carefully transported, and cautiously reassembled in Arizona. On a nanoscale, the cell must function in a similar way for its constructs. A chemical identity tag would direct each part to the exact location in the specific construct. Most projects the body undertakes to build are more complex than the London Bridge. It's easy to surmise how toxins could replace the proper messages with graffiti and thus undermine the healthy precision work; with the resultant weakened tissue constructs ultimately manifesting as disease states.

The bottom line is: Adverse environmental influences interface with the human body; in doing so, they ultimately generate toxic chemicals that, in the final analysis, act just like drugs by interfering with our magnificent physiology. These man-made or man-influenced **toxins** come in 3 forms - **chemicals**, **energies** or **microbes**. All 3 forms of toxins present potentially unhealthy and complex challenges. Cause-and-effect relationships are difficult to prove; but, toxins obviously play a major role in the pathogenesis of most modern onset diseases. Our increased exposures to such toxins that are spun out of our own ambitious endeavors explain a large portion of the COED-S-related epidemics.

### **'Removing the thorns' -- the best prevention strategy for wellness**

Conversely, amelioration of this modern disease profile would result from prevention of unnecessary toxic chemical, energy or microbial exposures. Such a proactive intervention is what I term **'removing the thorns.'** The idea relates to the common knowledge that if one's skin is penetrated by some foreign body (the thorn), and so is inoculating the area with germs, neither the skin nor the secondary infection is likely to heal without removal of that foreign body. One can use all kinds of antibiotics to keep the infection in check, but as long as the skin is held open with 'the thorn' the problem does not resolve. **'Thorn removal' emphasizes prevention and allows complete healing by addressing the underlying causes.**

Unfortunately, modern medicine has evolved into a less-effective paradigm of addressing symptoms and consequences of illnesses with 'maintenance drug interventions' rather than the primary root causes with thorn-removing strategies. Again, 'thorn removal' emphasizes prevention and addresses the actual causes. **'Thorns' -- the primary causes of ill-health, misery and premature death come in 3 forms -- toxicity thorns, deficiency thorns and dysfunction thorns.** Let's generally define and discuss these three 'thorns' individually:

**'Toxicity thorns'** are derivatives from: 1) chemical 2) energy or 3) microbial origins that damage our bodies. Because we physically exist in a dynamic biochemical form, toxicity thorns ultimately exert their damages via chemical processes.

**'Deficiency thorns'** are the absence of or inadequate amounts of things we need to achieve optimal health. Adequate motion is vital. Deficiencies of motion, movement and exercise preclude optimal tissue perfusion and detoxification.

Chemical 'deficiencies' are the inadequate amounts of any essential thing involving physical substance known as **mass**. The simplest ones are air, water, food nutrients and the like. More complex ones include genes and substances derived from genes such as cells and bodily fluids and the substances within them.

We also need adequate amounts of **energies**. Energies that can be easily measured are called **measurable energies**; they include mechanical, electrical, radiation, chemical and heat energies. Energies that we need for optimal health, yet that can't be easily measured, are termed **subtle energies**. Subtle energies include complex, yet profoundly relevant, things such as vital nurturing, sleep and the aggregate of energies which make up the **#1 Pie** that I emphasized early on.

**'Dysfunction thorns'** are improper, poorly timed, unnatural, inadequate, excessive or disturbed activities and movements. Examples would be unnaturally excessive activities that result in **overuse injuries** such as **carpal tunnel syndrome** or **stress fractures**. Excessively sunbathing or using various types of tanning equipment which, in excess, emit harmful ultraviolet light waves will result in **premature aging features of the skin** as well as various types of **skin cancers**. Habitual use of poorly-fitting footwear results in a **hallux valgus** (bunion) deformity. A now quite common contemporary dysfunction and deficiency thorn is a high degree of inactivity. It's tied to **osteoporosis** and many other health issues.

**'Thorn removal'** involves identifying and locating the 'thorns,' then avoiding them or minimizing their impact. This strategy involves changing the way we do things; this makes the things we need to do less damaging. This tact also includes ongoing efforts to strengthen our detox systems; this helps us deal with those toxic thorns we cannot reasonably avoid.

### **'Thorn removal' results in people living healthier, happier and longer lives.**

As for greed – in the final analysis, greed is driven by negative energy from the **#2 Pie**, that stale, bitter, rotten fruit pie. It is a sour pie full of fear; fear begets hate, which begets disharmony, lies, neglect. Nothing good comes from choosing pieces of that unhealthy, polluted and stinky-smelling pie. But by paying loving attention to ourselves, to others, to our world and by making smart choices that are **safe, effective, easy and kind**, we can eventually put greed out of business. Money doesn't buy everything. The best things in life are free. Neogenesis rules.

The disease profile change that I call COED-S is wreaking havoc on our species. **In the next two chapters** I will offer you tools by which you can connect the dots of environmental causes and effects for yourself. All you need is common sense and an open mind to understand the genesis of COED-S. Much of COED-S is ultimately a result of toxins overwhelming our detox systems. This toxicity results in injuries to various tissues and organs. When one's brain is the injured organ, the **toxic brain** impact can potentially be projected to any part of one's body, most often with confusing manifestations.

## II. THE MECHANISMS OF EXPRESSION FOR COED SYNDROME

### Chapter 3 OVERLOADING YOUR DETOXIFICATION 'SINK'

Detoxification is the key to prevention  
~Sherry Rodgers M.D. ~  
*Detoxify or Die*

In this chapter I will show you how your detoxification system compares to your kitchen sink. I will explain why the size of the visceral fat deep in your abdomen is directly related to how toxic you are, and what results that toxicity perpetrates upon your mental, physical and spiritual health. That toxicity can lead you and your loved ones into COED Syndrome.

I want you to understand the whys and the wherefores, so I will start way back and take you on a brief logical journey through the history of the science about how your body works. I will point out the strengths of this science as well as its weaknesses relevant to understanding COED Syndrome. I will demonstrate how your anatomical/physiological design adapts to the stressors of an increasingly toxic world wherein poor choices can be made based on a number of factors, from simple lack of knowledge to greedy merchandising and, unfortunately, more. I'll be telling you about your detox SINK so that you may understand how your body meets the fundamental challenge of toxins. The SINK is the perfect metaphor for your detoxification system.

**Detoxification** is a complex and dynamically motion-driven function involving organelles in most metabolically active cells in your body, but to a much greater degree in your gut and liver cells. Detoxification works like the sink in your kitchen and may suffer extremely from overloading and other ill-use. And just like the kitchen sink, it may rebel - only with humans you can't call a plumber to come fix it. YOU have to fix it. The good news is that you CAN fix it.

If the choices you've made haven't served you well, if you're concerned about yourself and those you love and our planet and the other people who share it - stay with me here. There's just all kind of hope. Neogenesis isn't a pipe dream.

#### Atlas drugged

Humankind, driven by greed, has essentially painted the Earth with poison. It has happened somewhat insidiously, but most importantly, in a very brief time with regard to the existence of the current organisms inhabiting this planet. The basic mechanisms involve production and dissemination of toxic chemicals. Most result from the extensive burning of fossil fuels or from separating the ingredients in petroleum and modifying them chemically. Once generated these products either enter the air (**outgas**) or enter the universal solvent—water. Since both the air and water media of the 'paint' circulate globally, there is virtually no reasonable sanctuary from the effects of global pollution.

Back in the 1960s I was told that the last place in the continental USA that had no detectable smog was Flagstaff, Arizona. I'm sure even then that was only because the 'detectors' were deficient. In the 1960s I graduated from college in Flagstaff and started medical school in the smog infested innards of Los Angeles. What an environmental change! At first it was appalling. Then what was interesting is that, after a while, I didn't even notice it. It truly became the elephant in the living room I came to ignore. I sort of discounted the cough and burning of the eyes the same way a novice smoker would adapt to smoking. I'm sure the ten million or so residents there now think the same way I did then with the internal dialogue of, "There's nothing I can do about it, so why let it bother me by raising it to the level of my concern?"

My thinking has radically changed since then. I believe what is insidiously happening to our species is much like the answer to the old question of how to boil a live frog. In the answer that has been commonly used to describe our insidiously worsening environment, it's said that if you throw that live frog into a pot of boiling water, it will hop out. On the other hand, if you put him into lukewarm water and very slowly increase the temperature, the frog will gradually weaken, lose consciousness and eventually boil. What is happening is we are gradually retreating from a powerful and greedy foe which will eventually boil our entire species unless we change course.

I now strongly feel we can and must take action immediately to save ourselves and this planet from our ongoing ignorant actions. We are in serious peril at this time. Toxic chemicals are now found in Earth's high order life-forms in much higher than expected concentrations. The implications are frightening. It was short sighted to think that this would not happen; because most of planet Earth's higher order life-forms need water and air to live. Most take both air and water into their bodies and use them in their metabolic processes. Now along with the air and water they have been designed to use come these mankind-generated toxic chemicals.

Higher order Earth organisms, such as humans, that are comprised of significant amounts of fat are particularly vulnerable to the bioaccumulation of toxic pollutants. This is because most of the toxins of concern are derived from petroleum, which is fat. Furthermore, we humans have a metabolism that preferentially values fat as a food. Fat is energy dense, yielding 9 calories per gram, as compared to the 4 calories per gram of both protein and carbohydrates. We have genetically adapted over tens of thousands of years to function like we do. This pollution challenge has suddenly skyrocketed over the last 100 plus years. If we let it continue, it will direct our fate in an unacceptable direction. We will continue to bioaccumulate the fat soluble toxins and suffer as a result.

**For you to understand how this has happened and will continue to worsen, you must appreciate how your body works in general and specifically how it deals with toxic challenges. With this knowledge of your vulnerabilities and strengths you can develop strategies to meet these challenges more effectively.**

**Toxins** come in three forms: chemicals, microbes and energies. For the most part, all forms of toxins ultimately convert into toxic chemicals upon entry into your body. Inside your body they are in the realm of chemistry— biochemistry to be precise. Bio means life. **Biochemistry** — the chemistry of life -- predominates in allowing you to function.

In the physical sense, we exist and function simply as amazingly well-organized bags of chemicals. Our ingredients perform as programmed within a complex, interactive and exquisite design. The intercommunications of these chemicals allow us to live. Both anatomy and physiology are at work here. **Anatomy** is concerned with the structural manifestations and morphological organizations of our magnificent design. **Physiology** is the quest to understand the function of our anatomical design. Both are best appreciated using a systematic approach.

### **Medicine—a science of systems**

The **systematic approach in medicine** is merely a method to better organize and perceive knowledge relevant to the human being as such knowledge emerges. As more knowledge is apprehended should our science tools be modified for better understanding? Since we now live in an extremely toxic world, it behooves us to comprehend just how this toxic world impacts the well-being of humans and all other species on our planet – an effort best accomplished by adding systems to the science toolbox.

I believe that the first addition, the most important pursuit in the understanding of your body involves comprehension of the **detoxification system**. We must differentiate this system from the immune system to more effectively use these system tools.

As all systems of your body do, your detoxification system intersects other systems in harmonious orchestration so that the aggregate of all systems function to perfection.

### **The evolution of the systematic approach to understanding your design -- historical heroes**

Human anatomical dissections and descriptions were initiated by ancient scholars beginning with the 'father of medicine' – **Hippocrates** (460 B.C. – 377 B.C.) – the author of the Hippocratic Oath. He believed that medicine's goal was to build a patient's strength through correct diet and proper hygiene and referenced more drastic treatment only when absolutely necessary. I will later argue that his famous dictum—**'first do no harm'** -- has come to be ignored in modern medicine.

The great thinker **Aristotle** (384-323 B.C.) studied medicine as well – probably with his father, as at that time the practice of medicine was handed down from father to son. He believed that living things have natural ends or goals, that their structure and development can be understood only within that context. As to this he said, "We must not listen to those who urge us to think human thoughts since we are human, and mortal thoughts since we are mortal; rather, we should as far as possible immortalize ourselves and do all we can to live by the finest element in us — for if **it is small in bulk, it is far greater than anything else in power and worth.**"

One great anatomist also worthy of mention is **Andreas Vesalius** (1514-1564). His publication in 1543 was "De Humanis Corporis Fabrica" (On the Structure of the Human Body) – a seven-volume text that contained the first accurate illustrations of internal human anatomy. It relied on direct observation of the human body rather than the study of old tomes popular at the time. These books were later referred to as 'the workings.' I love that term 'workings' because it brings into focus the idea that structure – without function – is fairly meaningless.

### **The story of Henry Gray and his dwarfs**

The featured player, however, in this short history lesson must be **Henry Gray** of *Gray's Anatomy*– an anatomist and surgeon. Gray was the initial author of the six pound textbook which has given quite a few freshman medical students hernias by carrying it back and forth to anatomy classes. Unfortunately, as big as the book has become by the additions

of other latter collaborators, the number of **systems** that the work has spun out is not adequate to provide the framework for current essential knowledge.

Henry Gray was born in England in 1827. In May of 1845 he became a student at St. George's Hospital in London. He was not of aristocratic bent; he was one who got down and dirty. He would wander the streets of London at night looking for and finding bodies. The bodies he worked on were those that had perished from exposure or other unfortunate scenarios, bodies unclaimed by anyone. Gray learned anatomy by the tedious but truthful method of first-hand dissection.

He was a man on a mission, captivated by the human design we yet struggle to understand. As he organized the data and information that he discovered by working 'hands on' with bodies, he arranged the information in what is described as a **systems approach**. In his book Gray meticulously describes the integration of these various systems as they join each other in this magnificent total physical body.

**Please pay attention here because there is going to be a one question quiz coming up soon. That question is:**

**As a result of the ongoing effort that Gray initiated, how many systems of the human body are now recognized?**

Let's start counting these **systems** to find the answer.

Gray could see that there was a connection of the brain with the nerves as they coursed through the body. As the book he created morphed over the years, and as new knowledge presented, this brain/nerve anatomical connection became classified as the **neurological system -- 1**.

He described the respiratory system as being connected to the nose – the trachea and on into the lungs. The lungs contain branches like that of an inverted tree, and are called bronchi. Gray showed these branches leading to and ending in little alveolar leaves, and he described each and every fold of tissue that covers this tree like a canopy. Of course, his description was later recognized as the **respiratory system -- 2**.

Gray's genius was that he left nothing uncovered that he felt important in his conception of the overall design. He could see that there was a connection of the heart and all the blood vessels, and he understood that they formed a circle. He later described this circle as the **circulatory system -- 3**.

He understood that all of the skeletal parts were connected and he described this connection as the **skeletal** system. He realized that the muscles were connected to the skeletal system by tendons and ligaments. Later, this system of skeleton and muscles was taken by further scholars and put into the same system – the **musculo-skeletal system -- 4**.

Gray came to understand that there was a connection of all of these internal digestive organs beginning at the mouth, then going through and connecting the esophagus to the stomach and to the small intestine. Everything was meticulously named by Gray. He began with the duodenum part of the small intestine which connected to the jejunum and lastly the ileum, which then later connected to the large bowel. He named it all the **gastrointestinal system -- 5**.

In a like fashion Gray recognized that in either sex, the reproductive organs and urinary tracts were intricately connected. That anatomical association has evolved into a single folder of knowledge known as the **genitourinary system -- 6**.

Gray presented his final text from three principal points of view: first, a descriptive or systematic anatomy; second, a regional or topographical anatomy; and third, applied or physical anatomy. As it turns out it's the systematic descriptive anatomy that was of greatest importance. This was because we could later use these systems as tools for understanding this parallel approach to gaining knowledge about the function of our design, called **physiology**.

Physiology follows anatomy like a shadow. This thinking implies that the body as a whole is composed of systems whose parts are related to each other by physiological as well as anatomical considerations.

The *Gray's Anatomy* edition I toted around my freshman year of medical school was the 27th of Gray's production. Gross anatomy knowledge hasn't changed much in 140 years. The latest focus of anatomy has, by necessity, become more microscopic to merge with and keep pace with its shadow. Such tools as the electron microscope allow anatomist to examine the finest intricate details of our structure.

This other parallel science – the interlocking shadow of anatomy called physiology – is quite the opposite. It is now appreciated how complex, how elegant our design is. Information about it now pours in as science moves forward. Physiology is somewhat like a house with its roof ripped off by a daily hurricane. We need to keep remodeling it to reach a stronger understanding of the way we function; and perhaps ultimately why.



A point I'd like to make at this time is that Gray, genius that he was and respected as he is, was in some cases short-sighted. For example, early on he realized that there was a connection between the heart and the vessels, and that they formed a circle. He was aware that there was blood associated with these vessels.

The thing is, the corpses upon which Gray worked were dead. The blood was congealed in death. He did not comprehend that in the gleaning of an accurate picture of blood that it must, by its very nature, involve something that was living. Blood after all is not congealed in a living design, and too, it's not just a component of the vessels he described but part of an independent system. The understanding of this design in later editions was described as a separate system – the **hematological system -- 7**.

Advances in physiology helped us determine that this hematological system is comprised of water and cells. The cells are birthed in bone marrow and are placed in a cardiovascular system. The cells are composed, in general, of white cells and red cells. The blood contains unique proteins and each has a special job. We are continually learning that there are more and more special proteins, and that although blood contains mostly water, it boasts an elegant, balanced composition of all minerals necessary to allow for its function.

As time went on, further contributors came to understand that this hematological/blood system also contains special messengers called endocrines that direct and integrate the function and physiological aspect of the design. These endocrines were made in specific organs and then released into the blood; hence, this came to be appreciated as the **endocrine system -- 8**.

As we gained understanding of infectious diseases, we eventually came to realize that the white cells in the blood functioned in concert with specialized tissues in the body to help us fight infections and further develop immunity. We filed this new knowledge into a folder we call the **immune system -- 9**.

In careful dissections, Gray also saw, and others came to describe, the function of other channels that carried a distinctly different bodily fluid called lymph. This information evolved and came to be labeled the **lymphatic system -- 10**.

Sadly, while studying the anatomical effects of infectious disease, and at the young age of 34, Gray contracted smallpox from his nephew and died just after the publication of his 1860 second edition. Work on his book was continued by others.

On November 24, 2004, the 39<sup>th</sup> British edition of *Henry Gray's Anatomy of the Human Body* was released.

When I add up the systems that evolved from Gray's work, they total **11**. How many do you get? You got **10!** Ah; you miscounted because I forgot to mention the largest anatomical organ in the human body—the skin. What an oversight! The **dermatologic system is #11**. Sorry, my bad! Well, nobody is perfect -- not even Doctor Gray and his subsequent contributors. The point I wish to make here is: [our scientific search for truth must be dynamic and unrestricted!](#)

### Something else is missing from the 'Gray' connection

Gray's most obvious omission has to do with fat. Again, by oversight, he and his subsequent collaborators on the book did not bring fat into focus. In the 46 page subject index of my 27<sup>th</sup> edition copy of '*Gray's Anatomy*,' which contains about 10,000 subjects, neither 'fat' nor its 1800's English correlate, 'adiposity,' is one of the indexed subjects. Were the corpses that Gray worked on emaciated to the point that fat did not exist in them? Was the average body fat percentage in the 1800's less than 10? I doubt it. It is as though the word 'fat' were taboo.

Now we live in a society experiencing an obesity epidemic. How can we effectively address this challenge if we don't have, and do not understand, a systematic entity called fat? Surely its lack of presence was an oversight. Should we at this time, for obvious reasons, perhaps add a system called *fat*?

### FEAST is the answer

I don't like the term 'fat system' either, so I propose another name for a new system that's more appropriate and reflects the purpose of its design. I like the acronym that I herein name FEAST to describe this brain-directed, yet fat-focused, system. My FEAST acronym stands for **Food Energy Acquisition, Storage and Timing** system. The physiological understanding of FEAST is rapidly evolving. We now realize that fat is much more than just a storage depot for energy. ***Fat*** is a living endocrine-like organ, its secretions-- ***adipokines*** -- are intricately involved in effecting your healthy weight. The toxic environmental disruption of FEAST is a major lead-in to the obesity epidemic and on into COED-S.

Remember, systems of the human body are simply folders of knowledge; merely tools for understanding our design. In the daunting task at hand, the understanding of the disease profile change as described in chapter one, we need all the necessary tools at our disposal. I believe this FEAST system tool can and will be useful. If you're interested in fat, why you have too much of it, or ultimately how to lose some of it, you will want to read more about FEAST in the next chapter.

There has always been a lag in incorporating new knowledge into even such a fluid text as ‘*Gray’s Anatomy*.’ However, with the advent and intensification of our current ‘information age’ an urgent need for even more body systems is clear. Regarding the pursuit of knowledge about how we function within the concept of our body design, it’s my argument that we need to create at least three more separate folders. These additions would be timely and necessary to deal with the contemporary challenges derivative of our rapidly worsening toxic environment.

Other systems will need to be added as this explosion of knowledge continues. Needed tools are: #12 -- the **detoxification system**, #13 -- **FEAST**, and #14, which I would term as the **soul** or the **vital force energy system** – the system most directly influenced by our Pie choices. The 14th system fulfills the Aristotle purpose concept; the “small in bulk thing” that Aristotle described and that we alluded to earlier. One’s ‘state of mind,’ one’s emotional attitude, one’s very soul is a supremely powerful system unto itself -- a system that is poorly understood and foolishly discounted as health-irrelevant by many. It’s a system that I won’t try to hard-sell to you at this time.

## 11 CLASSICAL SYSTEMS AND COMMON EXAMPLES OF THEIR DYSFUNCTION CORRELATES

SYSTEM	DISORDERS
Cardiovascular	heart attacks, arrhythmias, thrombophlebitis, high blood pressure
Musculo-skeletal	osteoporosis, rotator cuff tears, osteoarthritis, disk herniation
Neurological	psychiatric disorders, Alzheimer’s, Parkinson’s, multiple sclerosis
Respiratory	asthma, emphysema, colds, pneumonia, lung cancer
Endocrine	diabetes, hypothyroidism, menopause, andropause
Gastrointestinal	gingivitis, gallstones, ulcers, colitis, IBS, GERD, hepatitis
Genitourinary	kidney, uterine, and prostate cancers, cystitis, urinary infections, nephritis
Hematological	anemias, leukemia, blood infections
Immune	allergies, lupus, AIDS, rheumatoid arthritis
Lymphatic	lymph infections, mononucleosis, Hodgkin’s disease
Dermatological	dermatitis, skin cancers

## 3 PROPOSED SYSTEMS FOR YOUR CONSIDERATION AND THEIR DYSFUNCTION CORRELATES

Detoxification	COED syndrome, which includes most of the profile change illnesses including the currently designated metabolic syndrome, mislabeled psychiatric illnesses, environmental illness, sick building syndrome, fibromyalgia, multiple chemical sensitivity, chronic pain syndrome, chronic fatigue syndrome, and the <u>increased portion of autism, Alzheimer’s disease, cancers and many other diseases that temporally correlate with our increasingly toxic environment</u>
FEAST	the obesity epidemic and its COED-S correlates such as epidemic portions of diabetes type 2 and its associated eye and kidney problems, joint dysfunctions; GERD, gallstones
Vital force energy (the soul)	<b>Unhappiness, hopelessness, and social disconnection</b> -- increasingly common and devastating <u>states of mind</u> which are powerful precursors to ill health

### The detox system is a separate system. What is it?

Simply stated, the detoxification system is the aggregate of all tissues and mechanisms employed by the body to prevent entry of toxins and to render harmless, break down, eliminate, or sequester toxic chemicals that are within us.

### The detoxification system cannot be described well in association with a single anatomical correlate.

Scholars shackled by the existing scientific paradigm seem reluctant to accept this system because of this snag. I suggest we must now start thinking out of this all too rigid anatomical box to solve the health problems related to our now toxic world.

## THE DETOXIFICATION 'SINK' CONCEPT

I've found prior descriptions of exactly what the detoxification system is and what it does to be grossly deficient. The widely described two phases of detoxification don't begin to reflect the importance and elaboration of our design. Prior descriptions discount the importance of natural movement. They fail to appreciate our genetic adaptability and differences in us, both as individuals and as adapted members of genetic subgroups.

Most importantly, prior descriptions fail to show how the dots are connected within the framework of environmental cause and effect. This leaves us without understandable and solid prevention strategies and non-drug interventions that would, were they present and understandable, empower us to better augment our detox systems.

Because the complex detox system crosses so many anatomical boundaries, because it integrates inseparably with so many of the other systems to give the overall picture of how it functions, I think it can best be understood in conceptual analogy by using an item familiar to us all — the kitchen sink. To avoid confusion, when I talk about the **detox SINK** it will be in all capital letters.

Modern kitchen sinks have 2 containment areas: The dirty side where dirty dishes are placed and washed, and the clean side where dishes are rinsed and set to dry.

Our analogous SINK works in a similar manner with one exception -- our detox SINKs constantly clean all of '**our dishes**' (our cells, tissues and organs) automatically. I'll point out later how **our extra efforts will get our 'dishes' much cleaner!**

Toxins enter the SINK via the faucet into the dirty side. The aggregate of all toxins in the dirty side of one's SINK represents his **total body burden** -- that level of toxins that one has in one's body at any given time. This level is critical because if it reaches the top it will spill over into the side where our clean 'dishes' are placed. This causes major problems for those clean 'dishes.' Remember, in this SINK analogy, the dishes represent our cells, tissues and organs.

Like the conventional kitchen sink, our detox SINK has various 'cleaning tools.' They work similarly to sponges, scrubbers, and the like that come pre-loaded with the soap. Our SINK's 'soap,' in our analogy, includes enzymes, cofactors and coenzymes. In reality these various cleaning tools are organelles within cells that are simply working places where the 'soapy' elements meet and are organized in special arrangements in cells to do the 'cleaning work.' The organelles provide the framework to organize the worker chemicals in perfect order. **The 'key workers'** are the **metabolic enzymes**, but they require helpers that are designated as **cofactors** or **coenzymes**. These 'collaborative workers' are much simpler compounds or elements, such as iron, zinc, and other trace elements. A deficiency of any type of helpers will not allow the work to be done efficiently by the 'key' workers — the metabolic enzymes.

In our conceptual analogy, these critical detox enzymes are of a diverse variety similar to different keys. These 'keys' are needed to remove the toxic chemicals (clean the dirt) by unlocking the bonds that hold the toxic molecules together. As with any key we have on our key chain, minute differences are crucial. Only when any key is well-made and possesses all the correct dimensions of teeth, grooves, shaft, and nape will it open the lock for which it is designed.

Likewise enzymes are very specific in configuration. Enzymes, even though they are relatively huge and complex molecules, perform simple and specific tasks. They open or lock bonds between atoms or groups of atoms in building or degrading specific molecules. Our detox enzyme 'keys' are designed to unlock many different bonds holding the parts of the toxic molecules together, allowing toxic chemicals to be broken up.

The critical 'detergents' in this toxin breaking-up process are the metabolic enzymes. There are many distinct metabolic enzymes which are products of our DNA. Unlike digestive enzymes, they can't be obtained from any external source. If you don't have any one of the many essential metabolic enzymes on board you're likely at a serious disadvantage for now.

In the total picture of detoxification, motion is a critical element that augments your SINK's efficiency. However, the absence or decreased concentration of any specific detox enzyme will limit the maximum rate at which the specific toxic chemical it acts upon can be detoxified.

## THE DISHES

In our SINK analogy, the dishes can be thought of as various cells, tissues and organs that comprise your body. Once cleaned the dishes are placed in the 'clean' side of the sink for ongoing use. As your 'dishes' are in constant dynamic use, they need constant cleaning.

The most important dishes, the fine set of precious China, if you will, are those dishes relating to your brain! The brain is where you live. The brain is where you feel everything. Like the finest China, this special and fragile set of dishes is both

awesome and vulnerable. It is your command and control center. Isolated and attacked by toxic chemicals, it is quick to sustain serious damage or destruction. Damage to your brain is projected to other parts of your body. Most often many aspects of this projection are quite subtle as we will discuss in the next chapter.

## THE FAUCET

Your detox SINK has an abstract water faucet which, in our analogy, provides what can be thought of as both hot and cold water, as is typical of modern kitchen sinks.

In our SINK analogy, **cold water** coming through your faucet contains additional elements needed for the cleaning. Those elements include micronutrients, antioxidants, and all of the other good chemicals you need to produce energy and optimally replenish your body and soul. This mix necessarily includes the expression of chemicals resultant from the consumption of #1 Pie energies of nourishment.

## THE 'DIRT'

In our SINK analogy toxins are the dirt. Environmental medicine physicians use the term **xenobiotics** in reference to the chemical toxins. Xenobiotics and toxins are synonyms. I herein define a **toxin** as any factor derived from a chemical, energy, or microbial origin which upon production by or entry into a living organism threatens the health and well being of that organism. The organisms of paramount importance are you and me and the ones we care about.

In our analogy the **hot water** is the 'dirt' and represents toxic chemicals. This chemical 'dirt' gets on the dishes from the following sources:

### Sources of Toxic Chemicals Originating outside of Your Body (**exogenous toxins**)

- 1) The polluted air you breathe
- 2) The polluted food you eat
- 3) The polluted water you drink
- 4) Chemicals you take in through your skin or mucous membrane barriers
- 5) Chemicals you generate inside your body from the conversion of the following exogenous energies you come into contact with:
  - a) Mechanical
  - b) Electrical
  - c) Radiant
  - d) Chemical
  - e) Thermal
  - f) Subtle

### Sources of Toxic Chemicals Originating from inside of Your Body (**endogenous toxins**)

- 1) Your normal metabolically produced toxins (carbon dioxide, mistakenly made chemicals, misfolded proteins, free radicals, and others)
- 2) Environmentally induced and often counterproductive immune system response toxins
  - a) Allergy-related such as histamine and leukotrienes
  - b) Inflammatory cytokines with collateral destructive messages such as IL-1-beta, IL-6, TNF-a, and TGF-β
- 3) Neurological response toxins generated from your painful and stressful experiences such as cortisol, epinephrine, insulin, and others
- 4) Toxic-thought chemicals- a complex mixture of neurotransmitters and cascade chemicals which evoke **SHAGGY feelings** -- emanating from #2 Pie energies you have chosen. Most often these choices are by default when not choosing #1 Pie. 'SHAGGY' is a descriptive term; a common acronym that stands for feelings of negativity such as Shame, Hurt, Anger, Guilt, Grief, and Yucky.'

You take toxic chemicals of exogenous origin into your body from the liquids you drink, the food you eat, drugs you take, the air you breathe, and things you touch, Chemicals are generated as well inside your body from the conversion of energies to which you're exposed and from those you initiate by virtue of your metabolism and neurological activity, such as toxic thought, bad experiences, stress, and pain.

Like with modern faucets, you can control, to a substantial degree, the temperature of the water coming into your SINK. Through your own choices, you are able to bring more toxins into your SINK or bring detoxifying, healing elements in. Your control of your SINK's faucet is most critical!

**Diminishing the intake and construction of toxins within your body is the most important issue in an effective wellness strategy.**

## THE FILTERS IN YOUR FAUCET THAT WORK TO KEEP EXOGENOUS TOXINS OUT OF YOUR BODY

### **Barrier function**

Whether the toxins are in packages such as is the case with microbes, individual chemicals, or energies that ultimately generate toxic chemicals upon interface with your body, detoxification begins at any portal of entry into your body.

Think of your body as an extremely odd-shaped doughnut. Visualize that the doughnut's hole is the gut lumen. The lumen, like the hole in the doughnut, is outside of you; it's not a part of you. Your skin and the gut lining are your main **external barriers**. There are many **internal barriers** too, such as each cell's wall. The **blood-brain barrier** is an especially key one. Like checkpoints in a war zone, barriers regulate passage of molecules, ions and energies across 'protected' areas. You are tightly wrapped, with many different barriers designed to keep certain chemicals in or out of various spaces.

To grow and meet your full potential, you need to extract chemicals and energies of nourishment from your environment through many portals of entry across these barriers. You need food and water; you need air; you need to sense your direction; you need nurturing energies. So, all barriers are **semi-permeable** -- allowing passage of certain molecules, ions and energies but resisting entry to other unwanted ones. Barriers are vital to your optimal function.

All cells forming the barriers between you and the external world are able to address the toxic challenges that are part of the mixed bag of environmental presentation. For example, sunlight contains a mixture of therapeutic and toxic frequencies. You need ultraviolet light for optimal health, yet excess causes skin cancer. Your eye and the skin cells are portals of entry of UV light and have unique mechanisms to control the quantity of entry of the waveform. In addition, both have an elaborate system to detoxify as well as repair any resultant damage from excess entry of such energies.

As sophisticated as they are, all barriers are imperfect and have limits. Barriers take time to develop integrity with our maturation, and such time varies in individuals. Barriers degrade with age and abuse as do all other living tissues. Further, quantity of toxin is always an issue. In excess, most anything can be toxic, even essential nutrients like oxygen and water.

### **The X-out function of your gut**

What? You've never heard of the **X-out function** before? Of course not—that's because I just coined it in 2006. It is real, though. I was just simplifying my own understanding of this complex detox feature by giving it a catchy name.

Working alongside our immune system, we have a one-two punch defense against well-known trouble-making chemicals that naturally enter our guts as 'food.' This part of the detox job is the xenosensor/antiporter function of gut and liver cells. **Xenosensor** is a term for special proteins in those cells which are DNA-programmed to recognize food toxins to which our species has adapted. **Antiporter** is also a new word in the lexicon of cell physiology. It describes a cell's ability to control concentrations of specific types of chemicals inside of the cell by removing excesses. In our guts, such 'teams' of proteins 'kick out' excesses of potentially toxic food-derived chemicals. I call this action our X-out function for short.

An example of the complexity and role of the X-out function is in iron absorption. Iron is a vital element in many metabolic reactions in many different tissues; yet, it is toxic in excess. A protein -- **hepcidin** is the antiporter for iron. It is counter-balanced, in fine tuning the amount of iron absorbed, by yet another protein -- **ferroportin**, which, in turn, is influenced by several xenosensor proteins emanating from the specific tissues in which appropriate concentrations of iron are needed.

Importantly too, without our gut's X-out function, many of the fats in our natural foods would interfere with our internal messenger systems if not detoxified upon entry or rejected passage through the gut barriers. In this potentially **endocrine disrupting role**, many of these plant chemicals are potentially toxic to us and excesses of them need to be broken down by the gut or liver cells or escorted back into the gut lumen for removal with the waste.

This is most easily exemplified by the way our guts handle **phytoestrogens** -- plant chemicals which have a close chemical resemblance to mankind's natural feminizing hormone -- **estrogen**. We are able to consume these plant fats, in reasonable quantities, as they are contained in yams, soy or other plants without any disruptive endocrine effects. Our gut's X-out function merely kicks them back into the gut or facilitates their detox in a 'first pass' to the liver.

Skin cell's lack of X-out functionality explains why natural phytoestrogens, extracted from plant and used **transdermally** (through the skin), can be used with precision for menopause symptoms to reverse the aging decline of hormone levels. This path to their targeted tissues avoids their 'first pass' liver breakdown. Too, unlike **HRT's (hormone replacement drugs)**, such skin-administered 'natural drugs' do not increase the bio-markers associated with cardiovascular disease. In fact, a study by Dr. Kenna Stephenson of the U. of Texas Health Science Center shows that such therapy reduces those inflammatory bio-markers while effectively diminishing the **menopausal symptoms** of hot flashes and irritability.



Apparently skin cells lack this X-out functionality to the same degree, thus skin can become an easier entry portal for phytoestrogens and other naturally occurring toxins as well. This is why biologically active chemicals in cosmetics pose a toxic threat even if they are 'natural.' For example skin or hair products containing tea tree or lavender oils have recently been determined to cause **gynecomastia**, an abnormally large breast tissue development, in some boys. Skin cells apparently don't detoxify or kick out the phytoestrogens contained in these natural oils because skin cells of those affected individuals lack the degree of critical X-out functionality that gut cells normally demonstrate.

This **recognition and discrimination** (sorting) ability of the X-out function adaptation has undoubtedly taken eons to evolve and has done so in a relatively static condition as it pertains to our chemical environment. That is, the genes that dictate the design of your food source plants have not changed rapidly. Hence, your X-out sorting function has not had to further adapt to new and different fat soluble components of the plants that are toxic to you by virtue of potential disruption of your various messaging systems. This is a salient point in understanding how our rapidly changing and increasingly complex chemical environment is disrupting the physiology of our species, thus causing COED-S to manifest.

### Identity theft is a contemporary problem

In the last 100 years--a mere blip on the time continuum of human existence -- tens of thousands of new chemicals have been made. Many are toxic. New toxins include **CNS excitotoxic contaminants** and products derived from the processing of free amino acids such as MSG. Chemicals of this group interfere with healthy neurotransmissions. Many others are made from crude oil distillates such as the plasticizers BPA and phthalates. Some of these are circulating message-disrupting chemicals, a.k.a. **endocrine disrupting chemicals (EDCs)**. The chemical assault on our internal messaging systems is a part of the complex cause of the dramatic disease profile change that I herein call COED-S.

EDCs can wreak subtle havoc in your body. Unfortunately, our X-out chemistry can not 'reprogram' at the same intense pace to meet our new environmental chemical challenges. Many of these imposter chemicals are cleverly made by the chemical, food and pharmaceutical industries to appear as 'safe chemicals' in order to get by your 'X-out staff.' However, once these subtle toxins enter your body they create trouble and ultimately cause calls to be made to 'your body's police and the fire departments.' **Inside your body your police and fire departments are your immune system.** Your body's programmed calls to 911 most commonly result in problematic inflammation, as I will explain later in this chapter.

Good examples of such pro-inflammatory chemicals are **non-bioidentical hormones**, as in **HRTs** (hormone replacement therapy) drugs. With only a few chemical bonds differing from a woman's natural hormones, drug companies got these drugs patented as unique 'forgeries' of our naturally occurring hormones. HRTs pass women's X-out protection to ostensibly boost post-menopausal women's waning hormone functions. We have only recently become aware of their toxicity. They increase the risk of heart attack, stroke, venous thrombosis, breast cancer and probably other cancers as well. We naively used them with impunity for decades before we understood their subtle toxicity!

The X-out aspect of our detox systems is now inundated with many EDC trouble-making fat-soluble chemicals. Most are derived from petroleum distillates. Unrecognized as harmful, many can now pass through our X-out restraints. Many are pharmaceuticals whose toxicities have not yet surfaced. Mostly inadequately tested, many new chemicals of fat construct are purposefully being manufactured. Others are carelessly produced offshoots of industry. Most eventually disseminate as **pollution** into Earth's two fluid media -- air and water. Many ultimately enter the food chain and you eat them. If they are volatile, you breathe them into your airway. When such toxins contact your skin, many transdermally enter. These last two ports of entry (airway and skin) bypass the critical X-out function of our detox systems. Thus so, COED-S emerges. **Pollution is a dire threat to our species!**

### SINK CLEANING SUPPLIES

Once in the body, the molecules of various toxins are extensively disseminated by natural motion called **diffusion**. Diffusion randomly brings toxic molecules into contact with the numerous bond-busting enzymes concentrated on various cleaning tools, thus completing their breakdown. Thereafter, their fragments can be reused, eliminated or sequestered.

### The dirty workers of detoxification—your detox crew

Detoxification occurs to the most complete extent within cells of the gut and liver, but also must occur inside other metabolically active cells. Each such cell has **specialized organelles** designed to address specific types of toxins. Each type of organelle has highly organized machinery with enzymes on it that break down toxins and other metabolic scrap chemicals with lightning speed. Each intracellular organelle is like a tiny cleaning factory, a meeting place where the main worker chemicals, called **metabolic enzymes**, come together in exact spatial placement with their helper chemicals. The helper chemicals are **antioxidants, cofactors and coenzymes**.

These 'intracellular cleaning factories' are referred to as **detox organelles** -- structures where various toxins are broken down. The **endoplasmic reticulum** looks and works like a multi-layered strainer. **Peroxisomes** and **proteasomes** look and function like sponges of differing shapes. **Lysosomes** are tiny balls that draw toxins inside their acidic interior to dissolve them and then leak out less toxic remnants. To be most effective these detox organelles have to be in **motion**. **Motion enhancement** on this nanoscale explains one aspect of why exercise accelerates the detox process.

**There are two ways in which toxic chemicals are broken down in your body's detox SINK.**

**First**, they're broken down by 'friendly' detox system enzyme pathways -- processes genetically well established for chemicals that occur naturally in the environment. This breakdown is smooth and efficient and produces minimal heat. It involves highly-controlled use of metabolic enzymes. Overall it is an **energy-generating** breakdown as your body utilizes what chemicals it can as 'food.' The main energy product is a chemical called **adenosine-5- tri phosphate--ATP** for short.

The **second** way is by the **immune system**. This process is more akin to an **energy-consuming destructive burn**. Our immune systems are designed to meet microorganism challenges. Microbes exact their damage by virtue of their ability to produce toxic invasion and infection chemicals as they attempt entry in one's interior. If entry is gained, the germs defend themselves with chemicals, including enzymes, as they reproduce. One's immune system responds with a similar barrage of defensive chemicals to destroy and halt the microbial invasion. Our immune systems are composed of special cells which, when 'activated' by recognizing foreign invaders and their associated chemicals, engulf the attack chemicals and the microbes that release them. This entire situation is an ongoing chemical warfare, most often with collateral damage. The collateral destructive process is generically termed **inflammation**.

Inflammation is the mostly-defensive way that toxins are broken down. It has a net effect of consuming metabolic energy. Many man-made chemicals contain **chemical bonds** (forces that hold the atoms in chemicals together) that are difficult to break by your 'friendly' detox enzymes; hence, they must be broken by such less-preferred, inflammatory processes.

If the specific enzymes do not exist in an individual's DNA design to detox any specific chemical in a 'friendly' manner, the resultant inflammatory breakdown may well harm that individual. In the past, such cases were recognized as genetic aberrations that could be traced back to 'defective' genes. Now a goodly portion of us blessed with what was once considered a 'full complement' of genes will fall short of what is needed to avoid such harm in our increasingly toxic world. Many modern man-made chemicals have not been programmed into our design to be either utilized as food or recognized as 'friendly;' therefore, many cannot be broken down efficiently by the first healthy way. Our design allows for adaptation. The result of that **epigenetic adaptation** is gradually reflecting in the disease profile change that I herein name **COED-S**.

### **The bigger picture**

Over time, all species will naturally 'select' genetic (DNA) variants that can tolerate a toxic challenge. This is why we see the development of antibiotic resistance in bacteria as antibiotics begin to pollute the planet with their overuse. Bacteria reproduce rapidly. Those **strain variants** which are resistant to the specific antibiotic stressors will survive to become the predominant strains on the planet if the antibiotic overuse stressor on the species continues unabated. Our species is at a disadvantage in such a 'natural selection' survival because of our long (9 months) gestational period for reproduction.

The modern chemical challenge has happened too rapidly for the slowly reproducing human species to similarly adapt. Over the last hundred years, our species, as well as all other life forms on Earth, has had to adapt to trillions of tons of man-made chemicals and a rapidly-expanding host of novel energies that adversely challenge our mutual existence. Our design does allow for environmental **epigenetic adaptations** -- gene expressions caused by mechanisms other than changes in the underlying DNA sequence. The manifestation of these epigenetic adaptations is **COED syndrome**!

Epigenetics most simply affords an extra layer of genetic protection for our 'privileged' human species to avoid extinction, but at a huge price. That price is COED-S. We have already begun to pay that price. We can easily see the contemporary burden. As our population ages and COED-S continues to accelerate, the impact on our healthcare systems and economies may become unbearable. We must understand and proactively address the fundamental association between our dependence on toxin-related fossil fuel-derived energy production, an uncontrolled chemical industry, and the resultant deteriorating environment, with the emerging expression of COED-S. Many other species have similarly 'adapted' or have already succumbed to our common environmental challenges. Again, the signs can to be seen everywhere if we look. We continue to ignore these signs, and in doing so put our species at risk.

**The strong bonds of unnatural chemicals can have subtle, yet potentially serious, adverse health effects.**

Bonds of living things, constructed by nature, are generally easy to make and easy to break. Most living things are **biodegradable**. In most cases of manmade toxins, some bonds of a natural chemical have been modified to make it unnaturally strong. A good food fat example is the **trans fat bond**. In a natural state, food fats biodegrade by oxidation.

This first natural breakdown step renders the food fat rancid. To resist this step and preserve the shelf life of some fats and the foods that contain them, chemists use the **hydrogenation process**. This process modifies fats by strengthening the bonds that hold the molecules together. We now know that the resultant **trans fats** are subtle toxins.

Similarly, in the automotive and manufacturing industries, **lubricating oils** would 'break down' in the high temperature of engines or other friction points they are designed to protect. Again the chemists are able to prevent the heat-degradation of these oils by strengthening their bonds. Long chain polymers of **plastics** are ubiquitous and made more functional by bonding 'plasticizers' into the molecules to prevent the final plastic products from cracking. In doing so, we have created trillions of tons of nearly-indestructible plastic waste. Even though such plasticizers are fat soluble, these EDCs are increasingly being found in significant drinking water sources. This is not surprising, as water is the '**universal solvent**.'

In the biocide industry, chemists make **biological weapons, pesticides, and herbicides** stronger-bonded so as to increase their potency by making their target organisms less able to break their bonds. In the pharmaceutical industry, stronger bonds are created both intentionally and unintentionally. **Antibiotics** are intended to resist breakdown by the target organisms. Many drugs are made more difficult to break down to work longer. Often drugs are unintentionally made stronger as a matter of creating a patentable product, something different enough from its natural roots or a competing profitable drug to make it unique. Stronger bonds are a typical part of the industry in the manufacture of pharmaceuticals or other **petrochemicals** (chemical distillates of petroleum) that act as 'drugs' in our physiology.

### What is a drug you ask?

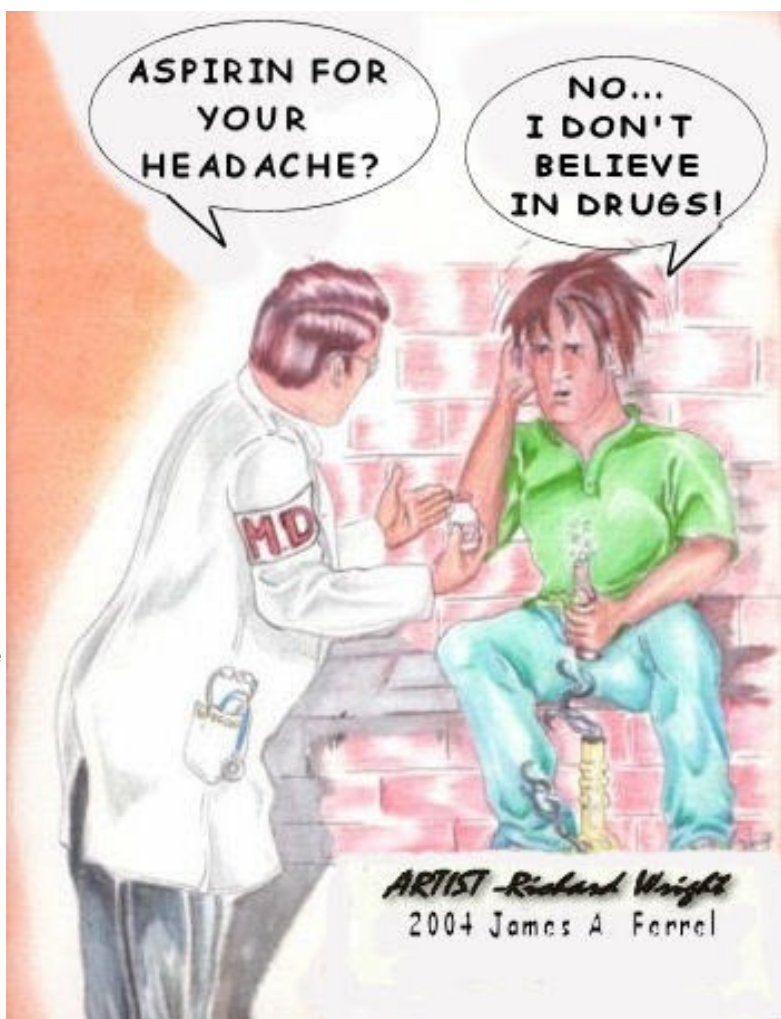
There's a lot of confusion as to how various people define **drugs**, as this cartoon suggests.

To me, a **drug** is any chemical that has an unnatural physiological effect in a living thing.

The effects of a drug may be good or bad or both. The natural drugs associated with **marijuana** have been stigmatized for decades. Most recently they have been shown to have special utility by relieving human suffering in a variety of circumstances. Yet their physiological effects, both good and bad, are unnatural. Such effects clearly fit my definition.

Most people think only of pharmaceuticals as being drugs. This limited thinking precludes an accurate understanding of the broader challenge at hand. To understand the COED-S challenge we now face, we must expand our thinking. The reality is that 'drugs' are being spun out from all endeavors of mankind. They often interface with our physiology in complex ways to render mostly unchecked destruction.

For example, Dr. Andre Nel's work, alluded to earlier, supports my point. He showed that **diesel exhaust** and excesses of 'bad' cholesterol work synergistically to 'turn on' genes which increase the production of endogenous chemicals that damage one's own blood vessels.



### Man-made 'drugs' - a major problem for mankind

Many of these unnatural, super-strong bonded, man-made molecules function as EDCs. Many such petroleum-derived drugs and pollution chemicals can't easily be broken down in your detox SINK. Once taken into your body, they are prudently directed to areas where they will do the least amount of harm. Once there, the chemicals become addressed by your immune system. This interaction evokes an **inflammatory immune response** wherein your immune cells are activated in the way they are programmed to respond to chemicals associated with threatening germs or foreign tissues. In such cases your immune cells release destructive chemicals (**cytokines**) which collaterally damage your own tissues.

In the typical case, an immune system cell called a **monocyte** circulates in the bloodstream. When 'activated' by an alerting signal, this monocyte enters tissues that contain suspicious chemicals, morphs into a **macrophage**, engulfs the chemicals, and releases its toxic cytokines and destructive enzymes to digest those suspected toxins. This immune response is very destructive locally, as it generates additional **slow burn inflammation** response chemicals. These resultant inflammatory chemicals are like embers from a fire. They can travel via the blood stream to damage distant tissues. COED-S thusly emerges. COED-S is not the result of a flaw in our human design; it's a result of the fact that we are, as a species, making and disseminating excessive amounts of unnatural chemical toxins.

**Activity augmentation**, the epitome of which is 'exercise,' helps clean our dishes most efficiently.

Unlike the typical kitchen sink, your detox SINK functions like an automatic dishwasher in that the movement of the washing water is an inherent part of the detox machinery. Movement of all fluids within the body is critical for efficient detoxification. Movement of fluids within each cell, in and out of cells and through all channels of flow within the body is a fundamental function of the SINK detox process.

Without activity augmentation, the cleansing processes in your detox SINK would proceed at a snail's pace. Your dishes would get washed only by the lesser force called **diffusion** -- the constant movement of molecules in liquid form. All normal body movements enhance diffusion. To demonstrate this, think of what happens when dye is poured into an undisturbed swimming pool. By diffusion only, molecules of the dye gradually spread in the pool's water. The next day the water in the pool would have a uniform tint from the dye, having been spread by diffusion. However, if one actively agitates the water in the pool, for example with a pumping motor, the time needed to scatter the dye molecules is greatly reduced. This principle of activity augmentation explains many of **the health benefits of exercise**.

### **The heart of the matter**

The **heart** is the main pump that propels most nutrient fluids to and waste fluids from your body's cells. However, all bodily movements, especially when intensified (as in exercise), cumulatively augment those propulsion processes. Augmented motions speed intercellular entry of nutrients and egress of toxins across cellular membranes, thereby vitally enhancing the movement of toxic molecules within the cell and along all anatomical transport routes. Toxic molecules must move from cells to the liver, kidney, lung or gut along these anatomical transport routes for detox completion and elimination.

As its name implies, the **circulatory system** is a circle and its pump is the heart. It carries arterial blood, containing high levels of vital nutritive **oxygen (O2)**, to cells. There the O2 carrier molecule called **hemoglobin** exchanges the O2 for the body's primary metabolically produced toxin, **carbon dioxide (CO2)**, in the process termed **internal respiration**. The circle is completed by the veins that carry blood containing higher levels of CO2 back to the heart. A second circle propels blood to and from your lungs. At the lung, toxic CO2 is exchanged for O2 from the outside ambient air in the process of **external respiration**. The circulatory system is under pressure from your pumping heart to ensure the flow of its fluid— your blood. It is easy to visualize how the heart functions as a vital pump in this blood system.

### **The natural activity and detox augmentation feature of our design—the reciprocating gait**

**The reciprocating gait** – the way we normally walk and run --is hard wired into our design. We are designed to move in an upright position. The reciprocating gait propels us forward as the legs and arms move in opposing directions. Notice that in walking, in this natural gait, as your left leg goes forward your right arm follows and vice versa. We actually have to expend a lot of energy to walk in any other way. Unless your brain is wired incorrectly, or you're otherwise handicapped, this gait occurs automatically.

If we analyze this gait, we can see how effective it is in propelling the low pressure fluids back to the circulatory system. This natural gait facilitates the most effective propulsion of fluids in all anatomical transport routes, especially those fluids not pumped by the heart. These fluids are the **lymphatic and the cerebral spinal fluids**. The 'pump function' for these fluids is much more subtle than that of the heart.

### **How our natural reciprocating gait works as a detox pump**

"Come on baby, let's do the twist," ~ a 1960 **Chubby Checker** song written by **Hank Ballard**~

The **interstitial fluid** is by necessity under low pressure as it surrounds a portion of each cell thus allowing for transit of nutrients into the cell and toxins out of the cell. It essentially bathes the cell, and this wash water has to be cleaned. The interfacing circulatory system is a high pressure heart-driven system. It is limited in its duty to carry digested fat and toxic debris (including microbes) suspended in the low pressure of the interstitial fluid. This is where the **lymphatic system**, which connects to the interstitial fluid, comes in.

Your lymphatic system is not a circle but a one way street, serving multiple functions. In relation to your detoxification system, it clearly functions as a sewer system. It carries away many toxic by-products of cellular metabolism and processes some of this sewage along the way. It relies on several dynamic mechanisms to propel the fluid it contains. Although lymph vessels have smooth muscle in their walls that offer some propulsion force, sequential skeletal muscle contractions, natural to reciprocating gait activities, serve as one of its many essential 'pump' factors.

When we look carefully at the reciprocating gait, we see that the neurologically-directed sequence of these skeletal muscle contractions act to 'milk' the low pressure **lymphatic fluid** in a direction toward its final destination. Starting from the lowest point, for example, in rapid and well-ordered sequence, your foot muscles squeeze the fluid up into your calf and the calf muscles squeeze the fluid along to your thigh. Your thigh muscles in turn move it to your belly and so on in an upward direction. All along the way there are valves in the lymph vessels that discourage reverse flow.

At your trunk it is then apparent, in observing the reciprocating gait dynamics, that there is a twisting motion of your trunk resulting from the reciprocating gait actions. This acts much like the wringing out of a wet towel, as it propels the fluid in the large lymphatic vessel that strategically lies just anterior to your twisting spine. What a magnificent design coincidence! The gait, as it increases in pace and intensity (running), accentuates this 'wringing out' action.

Furthermore, along with increased intensity, you generate more energy. This produces more **carbon dioxide (CO<sub>2</sub>)**. Your brain knows CO<sub>2</sub> is toxic in excess. With rising CO<sub>2</sub> levels, it automatically directs an increase in both the length and strength of the movement and contraction of the muscles of your heart and diaphragm to expel the excess CO<sub>2</sub>. Thus the CO<sub>2</sub> is more quickly pumped by your heart to your lung. The increased excursion and intensity of diaphragm contractions acts like a bellows in increasing your lymphatic flow by the resultant sucking motion. Therefore, the faster you reciprocate, the more you detox. By this 'revving up the engine' you accentuate lymphatic flow and the resultant removal of lymphatic system-carried toxins. The optimal pace will be the one which you can sustain for a reasonable length of time as well. I would encourage you to safely push toward finding that ideal pace by gradually increasing that pace as you '**condition**.' The above described detox mechanism accounts for many of the health benefits observed by exercising aerobically.

The detoxification efficiency of the spine-twisting action involved in the reciprocating gait is made possible by virtue of the positioning of the main lymphatic vessel. This **thoracic duct** lies just in front of your spine. Twisting the spine torques the thoracic duct, resulting in increased lymphatic flow from this 'wringing out' effect.

The same twisting spine action has a direct detox effect on yet another vital fluid system, the vast majority of which is located strategically within the protective framework of your spine itself. This is the **cerebrospinal fluid (CSF)**. The reciprocating gait effectively acts as a pump, efficiently providing torsion-propulsion and agitating motion to this critical fluid mass. The CSF washes and cushions the brain and spinal cord. Further, the CSF, delivers and disperses vital nutrients and important chemical messengers, including neurotransmitters, while simultaneously eliminating toxic wastes.

Consider this: most of your brain has no lymphatic drainage to carry off waste, yet your brain is the most metabolically active tissue in your body! Even at rest, your brain is a gas guzzler. Overall it uses about 20 to 30 percent of the oxygen and blood sugar you employ as fuel – yet it weighs in at about 3 pounds. Compare that with the weight of your body as a whole. The brain's a powerhouse, my friend, and it's truly where things are happening. Yet despite this enormous consumption, your brain as a machine is exquisitely efficient. If considered in automobile mileage terms, this organ gets in the range of a thousand miles to a gallon. It's a smooth and, most importantly, a clean operator.

### **Reciprocate to clean up your mind**

The brain controls the body. Our design places the highest value on the protection of its most valuable organ -- the brain! To function best, your brain needs to be the cleanest place in your body. Improved lymphatic and cerebral spinal fluid flow, associated with reciprocating gait activities, explains much of the physical and mental health benefits of regular exercise. Such benefits relate to optimizing cellular nutrition, detox and messaging by reciprocating gait activities.

**Update October 2010:** For years I've expressed my theory that reciprocating gait activities are fundamental to good health, suggesting that the health benefits of activities, such as walking, relate to the detoxifying effect on the body in general and the brain most specifically. **Validation** has arrived. Research published in *Neurology* online shows that it is likely that walking helps prevent brain shrinkage. Kirk I. Erickson, PhD, of the University of Pittsburgh followed 78 year olds for 9 years. At the study's start, all 299 participants were screened to ensure that each was cognitively normal. High resolution brain scans and cognitive testing at the study's end showed that those who walked at least 7-9 miles per week at the study's onset maintained the highest brain volumes and reduced their risk of memory loss by an average of 50%!

Also, walking farther than the 7-9 miles weekly did not further increase brain volume retention! To put this finding into the context of our SINK analogy, it shows what any expert dishwasher would know: You only need to wash any 'dish' until it's thoroughly clean. You can't clean even your most precious 'dish' (your brain) any better by excessively washing it!



## Special protective features of your most precious dish -- your brain

The special design features we all have to protect brain tissue are **threefold**. Failures in any of these protective features may lead to **Toxic Brain** -- the wide array of individual expressions of brain toxicity that we'll discuss in the next chapter.

The **first** key feature is physiological in design. Only the purest fuel is ordinarily used to feed this special organ. Glucose is the preferred fuel as it burns cleanly and efficiently, therefore producing little waste in the production of energy for its use.

The **second** is anatomical in design. Much of the brain is specially wrapped in elaborate barriers that tend to impede entry of toxins. This protective design feature is called the **blood-brain barrier (BBB)**. Remember, all barriers are imperfect.

The **third** feature is dynamic in design. Aside from surrounding the brain to protect it from mechanical injury, the pristine cerebrospinal fluid (CSF) distributes vital neurotransmitters, hormones, cytokine messengers and other nutrients. It also acts as a sewer system for the brain and spinal cord. No stinky lymphatic vessels or lymphatic fluids travel through the brain. The motion augmentation action of reciprocating gait activities on the flow of CSF has the net effect of providing the most efficient distribution of nutrients and chemical messengers and removal of toxins. Such **brain toxins** may include excesses of **beta-amyloid**, a contributor to Alzheimer's disease, and the potentially toxic **'excitatory neurotransmitters'** such as glutamate and aspartate. In excess, excitatory neurotransmitters may kill brain cells by overly stimulating them. Failures to remove these and other brain toxins impair brain functionality and likely lead to neurodegenerative diseases.

Among other things, this dynamic detox design feature explains why walking tends to 'clear the head.' It may also be the basis for the saying, "jog some sense into you." Ancient Greek scholars used to share teachings while walking. Aristotle recognized the benefits of this **peripatetic method** of teaching. However, it's doubtful that even he understood the physiology which explains the scope and function of our marvelously designed bodies in producing such clear thinking. The explanation is: reciprocating gait activities help propel vital nutrients into, and pull toxins out of, the brain.

**Update 10/8/13:** In addition to walking, **sleep** is a critical brain-detox dynamic! U. of Rochester researchers reported in *Science* that, when asleep or inactive, brain cells actually shrink. This shrinkage enlarges interstitial spaces around such 'calmed' cells by about 60%. The brain's **'glymphatic system,'** as they term it, is made up of billions of interconnecting, CSF-filled, spaces that coalesce with large CSF reservoirs deep in the brain called **ventricles**. Sleep, thereby, allows for CSF to circulate more freely. They also think that **glymphatic system failures**, resultant from aging and/or brain injuries, likely lead to Alzheimer's! Conversely, quality sleep and activity, when adequate, both promote optimal brain health.

### Let's go for a walk on the moon.

The reciprocating gait not only facilitates detox movement of lymphatic and cerebral spinal fluid, it dynamically enhances neurological messaging. This helps regulate vascular tone for the circulatory system. Individuals with poor vascular tone are prone to **fainting** when they arise too quickly. This reaction, called **orthostatic hypotension**, is common in older folks who have a low level of cardiovascular conditioning or age-stiffened vessels or both. Lack of vascular tone in older or out-of-shape folks diminishes the flow of blood to their brains when they arise too quickly from a lower position. While arising, the fainter's brain, being in the highest position, may be briefly deprived of an adequate supply of blood needed to function optimally. In this scenario gravity pulls too much blood towards his feet and away from his brain.

The brain is so metabolically active that if blood flow to one's brain is impeded for only a few seconds, it shuts down and that person faints. The point here is that this can be avoided if the person merely walks. With each repetition of the reciprocating gait, neurological messages that help regulate vascular tone are reinforced. This enhanced messaging then reduces the inappropriate pooling of blood in the lower body, thereby increasing blood flow to the brain.

Fainting is not limited to old folks with orthostatic issues. It is often seen in young, healthy military recruits. It's important to note that they don't 'pass out' when doing the marching part of the drills. They faint when they stand at 'attention' too long. By preventing orthostatic hypotension-related fainting, reciprocating gait activities demonstrate their importance in efficiently reinforcing and synchronizing the flow of blood to ensure adequate brain perfusion.

Natural reciprocating gait activities can be used to condition one's body to better tolerate the **forces of gravity (G forces)** that normally would cause loss of consciousness. This was clearly demonstrated in the 1960's by a United States Air Force physician and researcher -- Kenneth Cooper. Doctor Cooper was assigned the job of determining how to condition pilots to tolerate the G Forces that would be expected when sending astronauts into space.

President John F. Kennedy sent us into after-burn to catch up with the Russians in the space-race after our Sputnik embarrassment. Astronaut candidates had to be selected on the basis of their individual tolerance to these G Forces. To determine tolerance to G forces, the Air Force used a centrifuge to spin candidates around until they lost consciousness. There was a wide variation in individuals' tolerances to G Forces noted.

Doctor Cooper wanted to know what factors contributed to these differences. He was determined to discover if pilots could actually be 'trained' to tolerate more G Forces. He not only found that the answer to that question was yes, but he also discovered that, by the same training methods, he could render the astronauts to more efficiently utilize oxygen. This would certainly be a plus for space travel. The method Cooper used was an intense application of the natural way we move—the reciprocating gait. Out of this discovery his blockbuster book *Aerobics* was born. Almost immediately the national jogging craze took hold. People were anxious to take advantage of Doctor Cooper's '**training effect.**'

Exercise physiologists came to accept Dr. Cooper's term **aerobic conditioning**. It doesn't matter what we call it as long as we realize that it involves detoxification and improved brain-body messaging associated with vigorous body movement. The most efficient movements in aerobic conditioning are those that incorporate elements of our natural reciprocating gait. Incorporating healthy doses of the reciprocating gait into your daily activity is the most important thing you can do to detox. Motion augments the anti-inflammatory function of your detoxification system by this 'cleaning effect' of your SINK.

Besides the aforementioned anti-inflammatory/detox and enhanced neurological messaging **benefits of exercise**, there is also huge **psychological benefit**. As you walk, jog, or run forward, your mind is moving in a direction away from much of the psychological 'baggage from the past' that you may neurotically tend to hold onto. This feeling of freedom is especially appreciated if you do your reciprocating gait activities outdoors. The constant variation in sensory stimulations helps you focus forward and away from your mental burdens. On a biochemical basis, such exercise activities reduce the input of toxic-thought and stress chemicals into your detox SINK.

*"The best remedy for a short temper is a long walk.." -- Jacqueline Schiff*

## THE SINK'S DRAIN -- ELIMINATING TOXINS

Your SINK's drain leads to the 'sewer system' where unusable or detrimental chemical fragments are disposed of by your kidneys (urine), liver (bile), gut (stool), lungs (exhaled air) and, to a much lesser degree, your skin (sweat.)

One's gut requires special detox mention as it is well-prepared to prevent entry of, metabolize and eliminate many toxins. The gut's smooth musculature contractions, collectively called **peristalsis**, provide stool-passing detox motion. Peristalsis can be most effective when adequate fiber and exercise are part of the equation. Fiber acts much like a sponge to hold onto the toxins and prevents their reentry into the body from the gut lumen. Inadequate exercise or fiber, toxic thought, poor diet and many chemicals, including pharmaceutical drugs, disturb peristalsis and thus impede detoxification.

## TOXIC STORAGE

Our physiology appears to be suffering from a modern neurotic conflict of sorts. It has been conditioned for eons to know that fats are highly valued because of their energy density. However, these modern toxic fats cause trouble. In a healthy body, fat is an integral part of a well-functioning FEAST system. **Healthy fats** are stored, as concentrated energy reserves, under the skin (**subcutaneous fat**) and in other peripheral areas such as in the extremities, the buttocks and the breasts.

Now in our species a dramatic increase in fat-soluble toxin exposures has caused the obesity epidemic by a survival mechanism -- **epigenetic adaptation** -- in which 'survival genes' are 'turned on' by modern world toxins. These 'activated genes' cause growth of larger storage areas to accommodate the increase in retained toxic fats. When so sequestered, in healthy fat storage areas, such fat-soluble toxins render less damage to the body. This explains the '**obesity paradox.**' That paradox is this: obesity is a risk factor for diabetes, hypertension, strokes, heart disease and kidney failure; however, naturally obese individuals with these disorders have a better prognosis than their lean cohorts with these same disorders.

In opposition, the typical COED-S patient has less peripheral fat and an unnaturally large and more metabolically-active visceral fat mass. This toxic fat is centrally located in the abdomen and thorax; it accounts for the dreaded '**apple shape.**' Given an equal total body burden of toxins, the healthy obese have more room to store toxic fats so that those toxins have less interface with their immune systems. Immune system interactions with bio-accumulated fat toxins, predominately occurring in one's visceral fat, ultimately results in inflammatory tissue damage. Thus, a portion of COED-S emerges.

## Your SINK's grungy dish rags

Ever notice that close by most kitchen sinks there are final clean up cloths? They're the first things we grab to clean up a kitchen spill and the last thing we use to wipe up all the surfaces with. Finally, we rinse them out and drape them somewhere convenient to grab again when needed. In our SINK analogy, these tissues contain the largest part of the problematic **visceral fat**. In your belly these tissues drape over your gut. Their official name, **omenta** is Latin for 'aprons.'

*"The greater omentum is usually thin and . . . .in fat people accumulates (fat) in considerable quantity." --  
The description from the 27th Edition of Gray's Anatomy --*

No longer thin in most unhealthy people with COED-S, these slimy dish rag-like tissues are thickened and loaded with visceral fat. Grungy and swollen from intruding toxic chemicals, they become like nanoscale war zones, especially after a body's 'police and fire departments' (our immune systems in this analogy) are called in to battle the toxic intruders. In this conceptual analogy, the 'police' use 'chemical bullets' and the 'fire department' doesn't put out fires - it starts them!

On this nanoscale, responding *immune cells* can be thought of, by analogy, as 'emergency vehicles.' Upon arrival at their visceral fat destination, they release cytokines to 'burn up the oily scum.' Such processes don't start roaring fires; they start subtle, yet highly significant, 'slow burns' of **inflammation**. In this inflammatory 'battle,' much collateral damage results if the 'triggered alarms' continue unabated. The key adverse result is **obesity-related insulin resistance**, the major lead-in to type 2 diabetes and ultimately to COED-S.

### COED-S- you are most likely to die from the 'inflammatory fires' inside your arteries.

The catastrophic sequence of events can best be appreciated, again by analogy, if you visually magnify the visceral fat 'battle scene' by billions of times in your mind. The battle unfolds as the relatively large blood transport vehicles that carry condensed energy fats (**triglycerides**) enter this battle zone. These big rigs are the **very low density lipoproteins (VLDL)**. VLDL are like large trucks of spherical shape which open their 'doors' to dump off triglyceride 'war supplies.' In doing so, they shrink into smaller trucks called **low density lipoproteins (LDL)** -- often referred to as 'bad fats.'

Imagine these now-smaller LDL rigs and their exposed remaining cargo of cholesterol getting 'shot up' (oxidized) by the free radical 'bullets' in the 'visceral fat battle.' Normal LDL 'transport rigs' are spherical, allowing them to glide smoothly in blood vessels. The 'battle' damages them; it both distorts their shape and weakens their containment integrity. Further, their now-oxidized cholesterol cargo is extremely harmful, as the now-leaky LDL rigs exit the visceral fat to continue their now-wobbly travel through the blood stream. These now-deformed rigs steer poorly and scrape snags as they bump along rough linings of diseased arteries. Damaged LDL vehicles, so snagged, spill some of their now-toxic cholesterol cargo upon the interior walls of the arteries. Such spillage from a continuous LDL caravan stokes ongoing 'inflammatory fires' that accelerate this **atherosclerotic process** -- the most common premature death scenario for humans.

Atherosclerosis commonly results in sudden diminished blood flow-related tissue deaths, called **infarctions**. The most significant infarctions are to parts of the heart (**heart attacks**) and brain (**strokes**). Even more commonly, the process slowly and silently degrades tissues in the heart, brain, kidneys and legs by the gradual attrition of blood-starved cells.

### Your shape matters

It was estimated that 75 million Americans had the central obesity-related metabolic syndrome in 2010 and that number continues to grow. It most often manifests in an **apple body shape**.

This dreaded apple-like shape is typically caused by an enlargement of that centrally-located fat.

In healthy people the dish rag-like **omenta** (plural of omentum) are thin, clean and fresh. By contrast, in COED-S sufferers, they're typically enlarged, inflamed, swollen and full of toxic oily goop. Fat-laden omenta are a major part of what we regard as one's **visceral fat**.



This visceral fat is such an important issue, especially in women, that I consider waist measurement as **the first vital sign in wellness assessment**. Serial waist measurements, reflective of the change in the size of one's visceral fat, provide an excellent barometer of one's state of health or the progress of any applied wellness strategy. These serial measurements are very relevant predictors of how likely a person is to develop diabetes, hypertension, cardiovascular disease, Alzheimer's, polycystic ovary syndrome and many other diseases that make up the disease profile change of which I'm concerned. **Remember, the metabolic syndrome is a major part of the more inclusive folder that I name COED-S.**

### Counterfeit food currency, junk bonds, and 'stink from the SINK'

The obesity epidemic and its associated ills seem to be linked to COED-S by this centrally-located visceral fat connection. The immune system has a primary involvement in this linkage. We know that circulating immune cells called **monocytes** are attracted to this fat, enter it, morph into 'activated' **macrophages** and release destructive cytokines. What we don't know is why. What is angering the monocytes, causing them to chase into this oily dishrag?

Thinking logically, we know that the immune system gets involved like this when packages of chemicals that are not normally part of us try to enter. Unwelcome packages include microbes, critters, transplant tissue from another person or any other batches of chemicals the immune system perceives to be foreign (not supposed to be there). We also know that many inflammatory diseases are a result of such improper recognition and overreaction by the immune system. In this centrally located visceral fat no one has really proven what sets off the alarm at our fire department-like immune system.

I favor the theory that metabolic remnants of fat-soluble toxic chemicals become sequestered in these special fat areas. The body holds onto many of these toxic '**counterfeit**' fats; it perceives these toxic fats as high energy food of potential value. They're in the visceral fat as remnants because the body is the ultimate recycler. It will use everything of value in the food molecules it receives. Containing '**junk bonds**' that we can't break down for use, these mostly man-made fat remnants concentrate. Once conglomerated, they are recognized as problematic. Activated macrophages release inflammatory cytokines to slowly burn up these conglomerates. Our 'fire department guys' are just doing the job they are trained for -- to burn up what they perceive as 'dangerous junk.' Their 'fire igniters,' of course, are inflammatory cytokines.

The **inflammatory cytokines** produced by activated immune cells have specific names that you need not remember, such as: IL1beta, IL6, TNFa and IFNγ. In the resultant inflammatory 'fire,' free radicals are thereby generated. These free radicals likely oxidize the LDL cholesterol in the local area, making the oxidized LDL cholesterol a more destructive circulating package as it exits the fire zone of the central fat to become part of the destructive 'embers.' These cytokine and free radical-generated 'embers' are carried through the blood stream to ignite 'distant slow burn inflammatory fires.' This results in damage to tissue throughout the body. This mechanism helps to connect some dots of environmental cause and effect said to be so difficult in chapter two. It helps explain part of the genesis of much of COED Syndrome.

These '*slow burn embers*' consisting of damaging cytokines and oxidized LDL cholesterol can be released whenever there is a low-grade ongoing inflammatory immune response. This mechanism explains the association of chronic gingivitis or psoriasis with arteriosclerosis. The size of the 'slow burn' fire in the visceral fat, in most cases, has come to dwarf other sites of such similarly damaging cytokine release. The common denominator -- the inflammatory cytokine and oxidized LDL cholesterol release from any ongoing macrophage or other types of immune cell attack is the '**stink from the SINK**' in our SINK analogy. Once released, these stinky 'embers' can travel through the blood stream from their visceral fat origins to affect organs such as blood vessels, the heart and the brain itself.

The size of one's visceral fat is directly related to how toxic that individual is. Furthermore, we see a link between features of COED-S and mental illness as well as the medications used to treat mental illnesses. This mental illness link is greatest in children and those over 50 years of age. To wit, anti-psychotics when used in children render them 2-3 times as likely to develop obesity, diabetes and heart conditions. Additionally, obesity in children puts them at much risk for ADHD and a host of other toxic brain-related ailments. The protective **blood brain barrier (BBB)** is not yet fully developed in children. The child's weaker, yet more flexible, BBB allows for his developing brain to expand without compression. The protective BBB, like most tissues in the elderly, weakens by age-related degeneration. Having a weak BBB more easily allows toxic chemicals to penetrate that BBB, thereby damaging the brain and/or disrupting its activities, rendering a **toxic brain** state.

### Psychiatric misdiagnoses

People described as 'mentally ill' are often misunderstood. Many have environmentally-induced toxic brain states. Such toxic brain sufferers are frequently made worse with psychiatrically-used drugs. The abnormal behavioral manifestations of their toxic brain states generate misdiagnosis and mismanagement with 'psych drugs,' instead of removing the causal 'toxicity thorns.' In such cases 'psych drugs' are then typically prescribed which further confound the brain toxicity. I will further address this common medical misunderstanding in chapter 13 when I unveil 'the religion of drugs.' **Update 11/15/09:** A study published in *Biological Psychiatry* supports my above opinion. Researchers report a significant association between **ADHD** and children's urine levels of **phthalates** -- man-made fats most commonly found in plastics.



**Update 10/24/11:** a study released in *Pediatrics* online today shows a strong linkage between the urine levels of **BPA** (another major **plasticizer**) in pregnant women and later behavioral problems of their daughters from those pregnancies.

**Update 7/27/2012:** A study in *Pediatrics* links ADHD with a deficiency of dietary **polyunsaturated fatty acids (PUFAs)**. ADHD has previously been strongly linked to prenatal exposures to cigarette smoke and to children's exposures to lead.

**Update 2/24/14:** A study of more than 60,000 Danish kids reported in *JAMA Pediatrics* shows that the risk of ADHD-like behaviors at age 7 years increased by 13% among those whose mothers had used **acetaminophen** during pregnancy.

### Are you dying from the **tire fire** inside you?

Ongoing '**slow burn inflammatory damage**' is slowly progressive. It produces few clinical inflammatory signs or heat. '**Rapid burn damage**' such as seen in rapidly progressive and destructive inflammatory diseases like rheumatoid arthritis and inflammatory bowel diseases manifest these classic signs. You know when you have these 'rapid burn' illnesses; their symptoms highly motivate those so afflicted to address them promptly.

On the other hand, slow burn inflammation is subtle and insidious, but devastating! This slow burn is a likely cause of many **degenerative diseases** such as arteriosclerosis, Alzheimer's and many other COED-S-related ones. This is why you need to understand your SINK and proactively keep it efficient if your goal is healthy longevity!

The metaphorical 'fires' burning deep inside these COED-S sufferers are slow but unrelenting burns. Slow burn fires prove difficult to extinguish short of using 'thorn removal strategies.' Because they primarily occur in the centrally-located visceral fat and are fueled mostly by fat toxins, with pun clearly intended, I liken them to **tire fires**. I recall such a fire in a giant old automobile tire dump. Once ignited and allowed to gather momentum, all the firefighters could do was to contain the toxic smoke by bulldozing over the tire hills with mountains of dirt. They could not put out this fire! The tires continued smoldering inside the dirt mounds for months.

To put out our individual tire fires, which collectively reflect as COED-S, we must cut off their fuel sources -- remove their relevant deficiency, dysfunction and toxicity thorns. Chapters 7-13 will discuss the specifics of such wellness strategies.

### Moving forward to **toxic brain**

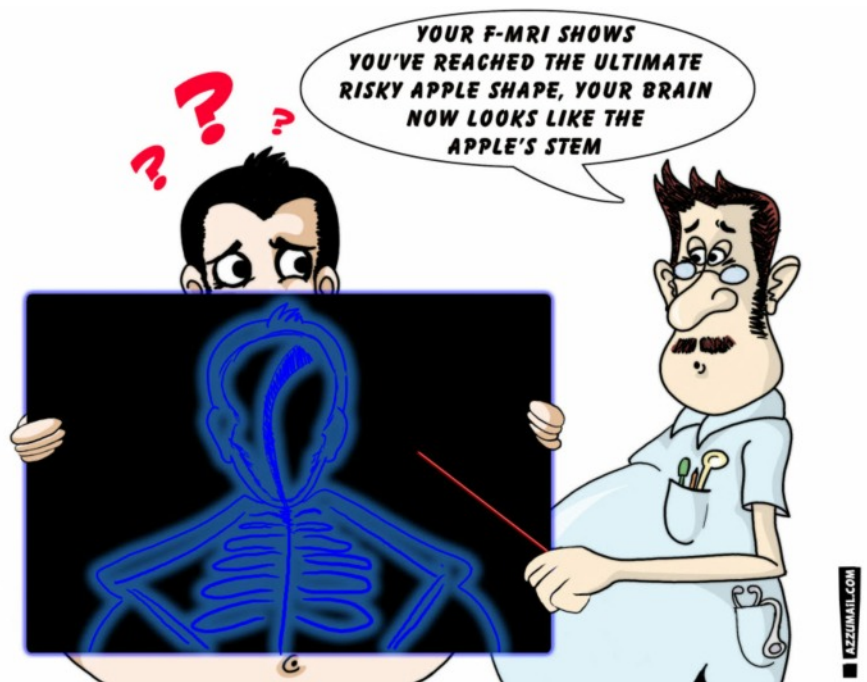
Now that you understand the function of the detox SINK, you know how human bodies deal with toxic chemicals. You can see how one can exceed his SINK's intrinsic limit, and how such 'overloads' could manifest in a variety of disease states. **COED-S is a disease profile reflection of those increased SINK overloads in our aggregate population.**

The next chapter will focus on the brain as the organ most vulnerable to toxic overloads. It relates to you subtle **toxic brain mechanisms** which help further explain the COED-S epidemic described in chapter one. With this knowledge of **toxic brain** you will be better able to implement appropriate thorn- removing strategies.

### Confirmatory Update 1/9/19:

Since I authored the cartoon to your right in 2007, neuroscience has progressed to the point that the cartoon's subject matter stands this day as validated! The following is why I can rightly say this:

In 2009 we discovered that central obesity is associated with dementia. Secondly, we later determined that the loss of **grey matter** in one's brain is also a risk factor for dementia. Lastly, the latest research posted in *Neurology* this day shows that **central obesity** itself is directly linked to a lower volume of the grey matter in one's brain.





## Chapter 4

# THE DIRTY PRECIOUS DISHES OF TOXIC BRAIN

“The chief function of the body is to carry the brain around.” ~**Thomas A. Edison**~

**Toxic encephalopathy--neuropathy (Toxic brain)** is damage to any parts of the neurological system by toxins. Such toxins kill neurons or cause them to malfunction to the degree that the system's energy transmissions are degraded. These 'spun-out' toxins (free radicals and acids) are the ultimate derivatives of deficiency, dysfunction and toxicity thorns.

When your SINK is overwhelmed and so overflows, the most devastating impact will be on your brain and nervous system. That impact is propagated or projected in **heterogeneous** (individually variable) somatic expressions. These expressions are made even more confusing by the complexity of the brain-body connections. Toxic brain is a significantly discounted mechanism that, along with other mechanisms, is causing COED-S, the disease profile change of chapter one.

**Jet-lag** is a good example of the many typically complex forms of a toxic brain. Jet-lag demonstrates how you can start out for Tahiti and end up with actual holes in your brain and feeling very poorly - and it's not just about the brain's disorientation from the international roller coaster ride involving diminished atmospheric oxygen levels, changing time zones and disturbed body clocks, lack of sleep, or flying east to west or west to east. It's more complicated than that.

Like everything else, it all starts with a thought: in this case, to travel from point A to point B. You initiate the plan, choose the dates, check the weather, compare prices. You search the Net for deals, type info in boxes, make bids, cross fingers and wait. You choose between 3 daylight stop-overs with a 9 am takeoff and a 1 night stop-over that leaves at 1 am.

Clothes--wash, iron, pack. Put liquids in tiny bottles. Arrange your world in a small black carry-on with big rubber wheels. Passport--yes or no? Passport yes. Not a bad thing to bring along, leaving the country or not. Might need to prove who you are. Or aren't. Plane leaves in 6 hours and the **toxic energies** reflective of '**stress**' are building up.

Body sleeps, sort of, wakes up in the shower, sort of. Cab it to the shuttle that shuffles to the airport or drive your car, park in a lot larger than the state of Rhode Island and catch shuttle from there. Stand in line, check in. Show your ID. Stand in a new line. Off with the shoes. Aloe Vera juice opened, smelled. Underwear squeezed, book turned upside down. Then sit and wait, at last board, bin your carry-on, strap in, turn on the air jet and close your eyes. But only for a minute.

Your flight is full; hence, all the crammed-in passengers are thus **motion-restricted**. They have no choice but to share their airborne-contagious **toxic microbes**. Aisle mate sneezes into fistfuls of used tissues. You turn the air jet on high and wish you'd bought one of those things that hang around the neck that sanitizes your own personal air. But, you didn't.

You're in the middle. Window seat has computer up, is running a game -- a loud game. You listen to this **toxic energy** too, like it or not. The cabin is full of **subtle energies** -- some happy thoughts, hopes and dreams, along with buckets of anxiety, worries of vast and sundry natures, and a certain amount of fear, this being an airplane and this being post 9/11 and people being people. Minds being what they are, one thing can lead to another - negativity can arise and turn into **toxic thoughts** which become waveforms of dark energy wishing to share themselves with everyone on board. Someone up ahead is using cologne; Old Spice and a insect repellent perhaps. Each whiff of air, filled with a mix of such brain-toxic **volatile organic compounds (VOCs)**, makes you dizzier! Desperate, you vent the concoction over to your neighbors.

Food is difficult. Most depend on the shiny bags of peanuts dragged through a chemical garden, and perhaps spiced with MSG but not much else. Others choose from coffee or tea made with suspect water, sodas, diet sodas, wine, martinis, bourbon, vodka. Now there's something for anxiety. Alcohol -- an antidote for anxiety. Thing is, there's no antidote for stupidity. Drinking alcohol on airplanes is not a smart thing. Alcohol's a **neurotoxin** (a toxin that harms nerve and brain cells) and yours are already getting worked over. You choose. You pass. Your brain says thanks. Window seat, however, chose to toss this yet additional toxin onto his conflagration. Aisle seat opted for a soda can full of **toxic chemicals**.

The hotel's nice. It has more than 3 stars. You still wouldn't want to look at anything under a microscope though. You'd just be amazed at what **toxic microbes** you'd find. It wouldn't make you happy. Why do that then? You'll ruin your trip. You think strong, thanking your immune system, your DNA, all your ancestors and ultimately the Lord above.

Still, you arrive home exhausted with general malaise and poor functioning, other more specific complaints, or worse. But look what your brain's been through. In analysis, your brain cells have been 'hammered' in a variety of ways in moving back and forth between points A and B. And that's not the half of what constitutes jet travel, much less everyday life. Your brain is in a 21st century war. The toxic attacks don't let up for a minute. Most of its toxic threats are subtle and invisible.

As in my jet-lag example, many toxic brain presentations are reflective of neurological damage or dysfunction caused by the ultimate chemical derivatives from exposures to a variety of toxic chemicals, energies, and microbes acting in concert. Brain toxicity results from a complex array of '**thorny factors**' which finally expresses itself with individual heterogeneity.

**You are unlikely to “see’ your own toxic brain because your focus is always aimed outward.**

If you are one who suffers with the common symptoms of allergy, you’ll likely appreciate that you’re just not yourself. You feel out of sorts, tired, uninspired, and spacey – all **feelings** that you tend to blow off as irrelevant. You don’t even wonder much what it’s all about. You sort of figure all these feelings are about the mucous that seems to be trying to sneeze its way out of your face. Somehow you equate it all - quantitatively - to the number of yucky tissues that are filling up all the garbage cans and places around you as you blow, cough, and spit snot. As the number of tissues increase you can see – outwardly – that it’s time to invest in some caplets for the nose nozzle. You take note of these ‘**external things**.’

As you look in the mirror you can see you look sort of puffy around the eyes, like you’ve been crying, and that the pile of tissues on the bathroom sink has doubled. Oh! That’s because you’re looking at a mirror, of course. How silly. So you move on to look for another box of tissue.

**Allergy** is more than a runny nose. It’s a form of **toxic brain**. We just don’t ‘see’ it because looking outward is the primary way we are designed to view our world. Many of the diverse and most important things influencing that world are, in fact, invisible anyway. The paramount ones are thoughts derived from subtle energies of the two contrasting types of **Soul Food Pies** such as **fear** vs. **faith**. Our senses — visual, auditory, tactile, olfactory, and taste --- all collect ‘**external data**’ of that external world around us. Our cognition for the most part follows that outwardly directed sensory data.

What does this all have to do with the subject at hand, you ask? The thing is, we need a functional imaging tool like an **f-MRI (functional magnetic resonance imaging study)** to see what’s happening in one’s brain. We need ‘**inward data**’ from such tools to tell us what parts of one’s brain are in action or may be damaged or disrupted at any point in time. We further need that data to understand how it correlates to one’s ‘thinking’ and behavioral manifestations.

Let me offer a common example of what I’m talking about. You’re at a wedding, the band is terrific and you don’t sit out a tune. What a night! Every friend seems happy. You don’t drink alcohol, but at the end of the night you notice one of your raucous good friends has been sipping too much of the champagne and can barely walk. He starts to go to his car to drive home. Naturally, you refuse to let him drive. The guy insists he is totally OK and is willing to fight anyone who gives him a hard time. You are looking at him from the outside. You can’t see exactly how his brain is malfunctioning, as you have no functional brain imaging data. However, it is obvious to you or any astute observer that three distinct categories of things are reflective of what is occurring in his brain at this moment. The aggregate observable expression of those three things such a brain-toxic person manifests is what I call **The NBC broadcast**.

### **The NBC broadcast of toxic brain**

This toxic brain message is usually subtle. Look closely to appreciate all of **my acronym’s NBC elements**.

**The N is for neurological.** Your inebriated pal can’t walk straight. He’d flunk a neurologically-based **field sobriety test** given by any police officer who might observe his neurological impairment if he drove home from the wedding.

**The B is for behavioral.** That friend is not the joyful, happy, friendly soul that he normally is. He’s not acting obnoxious. His behavior is not an act. It’s a true reflection of his toxic brain dysfunction.

**The C is for cognition.** Cognition is a brain function involving both perception and processing of information. Your buddy is not **thinking** logically or reasonably, and he’s misinterpreting the reality of that information his brain is processing.

And guess what – unless you tell him, he often doesn’t even know the extent or exact mechanism of his incapacitation! He can’t even contemplate that he has a brain, or that it is malfunctioning at that moment. Even if he’s a genius he believes emphatically that he can drive “juss fine” because he is looking outward like we all do.

What I have described is a prototypical case of toxic brain. The primary toxin is alcohol.

But you ask, “What does this have to do with me? I don’t even drink.” My answer is: It has everything to do with all of us. Alcohol is simply one of thousands of chemicals that can and do intoxicate us. I use alcohol only as an example because it is commonly used and its metabolism is well known. With nearly every breath you take in, there are ‘invisible’ toxins that can adversely affect your brain, directly impact your NBC Broadcast and make you feel and function poorly.

Feeling toxic is now pervasive but often discounted. We live in a modern toxic world in which all of us have a subtle degree of toxic brain. One most often can’t comprehend what exact mix of **toxins** (chemicals, energies, and microbes and derivatives thereof) is causing one to feel and function poorly. For example, it’s estimated that 20% of man-made chemicals alone are neurotoxic to varying degrees. At least the alcohol-intoxicated person knows what the main culprit is.

## Feeling toxic

In 1965 James Brown first sang the lyrics, “I **feeeel** good!” I love his focus on feeling good. It’s a real important focus.

On the other side of the feeling spectrum, I see and hear so much out there now about people feeling ‘toxic.’ They know something is wrong because they feel or function poorly, but they don’t understand why. Most mainstream medical doctors don’t understand why they ‘feel toxic’ either.

In conventional, mainstream doctor-speak, ‘toxic’ is in the realm of the pathologist, and it’s mostly about what caused a patient to die. Most conventionally trained doctors also know about common drug overdose toxicities such as heroin, digitalis, aspirin, tranquilizers or the chloral hydrate that ‘officially’ did in Anna Nicole Smith. None of this conventional doctor-thinking relates to what people are feeling when they talk about “feeling toxic.”

I see so many people offering strategies to ‘detox.’ Most of them suppose that the problem resides in their liver or colon. I’m here to tell you folks, not discounting the role of toxic failures in the liver or colon, **feeling toxic is all about the brain!** The operative word is **feeling**. A feeling is a neurological construct. The brain is where all ‘feelings’ are born.

## A brainy creature

Do you doubt how blessed you are to have been gifted with this uniquely special brain? Your brain is like a awesome high tech, 1,000 horse power race car. It reaches incredible speeds and performs fabulously when it’s working right. All those high performance features come at a price, however. The price is vulnerability! This vulnerability relates to neurotoxins that impede brain function by killing or crippling neurons. Many are endogenously created **free radicals and acids** that are the chemical end-products brought about by any interruption of the supply of either of **two vital substrates** needed for its necessarily ceaseless operation. Brain cells need an uninterrupted supply of both **blood glucose** and **oxygen** in proper concentrations to avoid death and to function optimally.

Both fuel components are carried to your brain via a part of the circulatory system called the **cerebral vascular system**. Because of the brain’s constant ongoing high energy consumption, any interruption of blood flow in any of its fuel line-like arteries can be devastating. If such a disruption is brief it will result in a **TIA (Transient Ischemic Attack)**. The reduced blood flow results in a transient toxic brain state, the NBC broadcast of which includes a variety of symptoms and signs related to the specific part(s) of the brain so affected. **Amaurosis fugax** is a common TIA affecting the brain-associated part of the eye -- the **retina** -- and results in transient visual defects. TIAs result in no observable permanent damage.

In a **typical stroke**, a prolonged blood flow interruption (**ischemia**) occurs. Such strokes overtly affect arteries which feed blood to the **motor cortex** of the brain. They result in NBC Broadcasts in which the N (Neurologic) signs dominate. Such brain damage reflects easily recognizable malfunctions in speech and movement. But, a third of strokes are ‘**cryptogenic strokes**’ -- ischemic brain injuries of unknown origin. Sadly, many are misdiagnosed as psychiatric disorders when their resultant behavioral and cognitive (B&C) manifestations of toxic brain predominate. **Update 12/11/15:** Patients suspected of having a cryptogenic stroke should have heart monitoring for weeks afterwards to rule out intermittent arrhythmias. Proper treatment of such arrhythmias (anticoagulation followed by cardioversions, ablations and antiarrhythmics) would greatly lessen the risk of further brain damage from subsequent strokes or cardiac arrests. Reference: Sanna et al. Cryptogenic Stroke and Underlying Atrial Fibrillation (**CRYSTAL AF**), *N Engl J Med*. 2014; 370(26):2478-2486

When a high tech race car doesn’t get enough fuel, it sputters. Similarly, when your lightning-fast brain doesn’t get enough fuel, it can more than sputter; it can die. Brain cells are highly metabolic, hence need a constant energy supply to maintain integrity. Cut off the fuel even briefly and **neurotoxic** (brain cell damaging) acids and free radicals rapidly accumulate.

A likely part of the fuel mix to suddenly become deficient is oxygen. This toxic brain state is called **hypoxia**. If not corrected promptly, the brain quickly shuts down and brain cells start dying. This is why flight attendants tell you about the yellow masks that will fall on top of your head in the event of cabin decompression. Airplanes fly with compressed air in all areas where people are, and fly at up to 40,000 feet. There’s inadequate oxygen at flight altitudes to keep your brain functioning, hence the yellow masks are attached to tubes emanating from oxygen tanks. Air force pilots are required to periodically experience such hypoxia in an altitude chamber in order to recognize the early signs of this form of toxic brain. Without early recognition and prompt correction such an unlikely and often subtle event in their aircraft could spell disaster.

The brain is impaired too by low blood sugar levels -- so called **hypoglycemia**. A 2009 study out of Tufts University showed that after only a week on a very low carb (carbohydrate) diet, healthy subjects demonstrated cognitive and mood dysfunctions. Such states of dietary-related hypoglycemia are also familiar to most people who recognize the lethargic, sleepy feelings they get after eating a high carb meal too quickly. When lacking glucose-related energy, brain functions (thinking, memory, learning, signaling, and others) are quickly impaired. If one hastily consumes lots of the kinds of carbs that rapidly convert into sugars (**high glycemic index foods**), the resultant food bolus is called a **high glycemic load**.

Quickly absorbed, such a load raises one's blood sugar rapidly. This signals the pancreas to secrete excessive amounts of insulin. The net result of such excessive insulin secretion is a low blood glucose state termed **reactive hypoglycemia**.

All hypoglycemic scenarios diminish glucose availability to brain cells. It's important to avoid hypoglycemia, especially in the elderly. In older people brain perfusion is often compromised by corrosion of vessels supplying blood to the brain. The two conditions (low blood sugar and diminished blood flow) work in synergy to compromise glucose entry into the brain. To avoid hypoglycemia, don't scarf down your food and avoid both extremely low carb diets and meals loaded with **simple carbs** such as starches and sugars. Instead, eat more slowly and select well-balanced meals that contain **complex carbs**, such as whole grain and high fiber foods which render their sugars slowly.

Diabetics often will inadvertently take too much insulin or other hypoglycemia-inducing drugs. These may cause a more profound low blood glucose state called an **insulin reaction**. In this more extreme hypoglycemic state you will observe the diabetic with his eyes open but unable to respond. In such a toxic brain state the individual loses body control and may convulse. The condition can be reversed quickly with an infusion of glucose, which 'wakes up' the brain. Such very low blood glucose states cause brain cells to die unnaturally and correlate with developing dementia later in life. A 2009 Kaiser Permanente study shows that such episodes requiring just one ER visit or hospital admission increased one's risk for later life dementia by 29%! The lower and the longer the low blood glucose state persists, the more brain cells die.

When assessing the causes of toxic brain injuries, one can easily appreciate the 'deficiency thorns' relevant to the brain's constant need for oxygen and glucose. Contrarily, the 'toxicity thorns' causes of toxic brain are always more subtle. Subtle toxic brain states, as with jet lag, are most often caused by a complex mix of toxic chemicals and a wide variety of toxic energies acting in concert to render the brain's chemistry and energy flow disturbed and malfunctioning.

**Toxic Brain examples – loosely placed from mild & common forms to more severe include but are not limited to:**

Feeling spacey, stupefied, nauseated or out of sorts -- so called '**brain fog**'

'Spring fever' (**Allergy** is more than just sneezing or congestion; it's one of the most common forms of toxic brain).

**Premenstrual syndrome (PMS)** - - A women's child-bearing physiology renders her vulnerable to this form.

Jet-lag

**Post-traumatic stress disorder (PTSD)** is now an epidemic toxic brain type caused mostly by toxic experiences.

**Restless leg syndrome** features intense urges to move the legs to relieve strange and unexplained sensations.

Migraine and other types of headaches

**Addiction-induced encephalopathy spectrum** presents with symptoms, feelings, and expressions reflective of the 'mind alteration' of addictions to harmful thoughts, behaviors or substances. Its most common subgroup is

**Alcoholic encephalopathy.** Its spectrum includes inebriation, hangover, syncope and memory blackouts.

Sleep disorders include insomnia, hypersomnia, parasomnias and sleep deprivation states.

Eating disorders, the now most relevant being **toxic brain-driven overeating** (see p. 67 for lengthy discussion).

**Diabetic neuropathy or encephalopathy** -- Diabetes alone increases one's risk for Alzheimer's by 2 to 3 times!

Chronic fatigue syndrome and Lyme disease

Chronic pain syndromes including **fibromyalgia**

Severe environment-related **toxic encephalopathies**

Temperature-related encephalopathies such as 'heatstroke'

Transient global amnesia and other types of amnesias including **date rape amnesia**

Aberrant metabolic states such as uremic encephalopathy, dialysis disequilibrium syndrome and others

Misdiagnosed 'psychiatric illnesses' such as silent strokes, sleep apnea and common environmental illnesses

**Gulf war syndrome** is a cluster of symptoms like fatigue, headache, joint pains, nausea, dizziness and others.

**Chemobrain** and '**radiation brain**' are common side effect encephalopathies resulting from cancer treatments.

**Delirium** is a confused brain state associated with surgery, infection, electrolyte imbalance and other illnesses.

**Traumatic brain injury (TBI) syndromes** These vary greatly from mild (concussions) to severe (hemorrhagic) and from isolated to repetitive. The latter result in **chronic traumatic encephalopathy (CTE)** presentations.

Neuro-degenerative neurological disorders such as epidemic portions of **amyotrophic lateral sclerosis (ALS)**, Alzheimer's, Parkinson's, **multiple sclerosis (MS)**, autism, and others

**Increased intracranial pressure events** emanate from injuries, tumors, infections and other causes.

**Brain blood perfusion deficiencies** occur with strokes, emboli, thromboses, **cardiac arrests or arrhythmias**.

All of the disorders above are expressions of damage or dysfunction of brain and/or nerve tissue. I include all the manifestations of these similarly affected neurological tissues in the 'toxic brain' category. Brain and nerve tissue are similar in general construct, function and toxin-vulnerability. Some parts of the brain and some nerves are less protected because of their specific function, hence are more vulnerable to toxic damages. For example, the olfactory nerve and the small fibers of the autonomic nervous system are not protected by a myelin sheath and have little X-out protection, and thus are more vulnerable to toxins. Similarly, the hypothalamus and brain stem, because their functions necessitate the rapid entry and exit of large messenger cytokines, lack typical **blood-brain barrier (BBB)** integrity. The chemical-toxin vulnerability of these similar tissues allows for similar mechanisms of toxic injury – common thorns, if you will.



For example, having 'common thorns' explains why **early Alzheimer's** may be suspected by finding olfactory nerve dysfunction. The unmyelinated olfactory nerve allows us to discriminate smells. The olfactory nerve enters the main portion of the brain close to a part of the brain known to be commonly injured in Alzheimer's -- the hippocampus. It is likely that both Alzheimer's and olfactory nerve injury have common or similar noxious 'thorns.' **Anosmia**, the loss of the sense of smell, is also found in other neuro-degenerative disorders, although it can be less serious or totally benign as well.

As with the degrees of hypoglycemia, severity may vary widely, calling for severity placement either higher or lower in each category above. As examples, quickly reversed **heatstroke** may leave minimal brain sequelae, whereas untreated it could lead to death. A severe **TBI** may cause extensive damage; whereas isolated mild ones may not even be noticed. **Sleep deprivation** damage is clearly dose-related. At the 2 day mark one could appreciate changes in mood and function. At 2 weeks more severe brain dysfunction would be evident, such as hallucinations, psychotic behavior, and varying degrees of extreme cognitive impairment. Just like the alcoholic's NBC Broadcast will differ with one, two, three and more drinks, so will the individual whose brain is toxic from increasing concentrations of neurotoxic chemicals and energies. Toxic brain is never just black and white; it is always shades of gray, which are of darker hue as the brain toxicity is increased. Common end-stage observable brain pathology resulting from accumulated brain injuries is termed **cerebral atrophy**, -- an incremental wilting of the brain. When the accumulated brain injuries are traumatic ones, the result is **CTE**.

**Gulf war syndrome** is an excellent example of how a complexity of toxins, working through toxic brain mechanisms, results in such a diversity of expression. The symptoms, in aggregate, best fit the DSM's description of **post-traumatic stress disorder (PTSD)**. However, it occurred in 250,000 Gulf war vets -- 3 times as frequently as vets in other conflicts. Common features are typical of toxic brain: 'brain fog,' fatigue, various projections of somatic pain, sleep disturbance, skin rashes and a diversity of gut symptoms. **Update 4/11/2010:** Upon extensive review by the *National Academy of Science's Institute of Medicine* there was found to be a definite association with this specific conflict, but, the causes remain unclear. It's a diverse form of toxic brain due to many factors! Aside from typical war stressors, the region's dust is uniquely toxic.

**"Date rape" type drugs**, legitimately intended to be used for amnesia, have been dangerously and abusively misused. These drugs render the victims of their abuse extremely vulnerable. Such victims are often misdiagnosed or undiagnosed. Their NBC Broadcast will vary. One common denominator for such victims is the dense amnesia while intoxicated. This relates to the fact that the drugs impact neurons in areas of the brain that form new memories (the **hippocampus**).

In the same sense that the date rape victim did not expect or choose to become intoxicated, most victims of a **severe environmental encephalopathy**, such as **sick building syndrome**, made no such conscious choice. Similarly these victims are often misdiagnosed, undiagnosed, and tend to internalize their resultant confusion. Most are so disabled that, despite their struggles, they don't know what is wrong or how they can help themselves. Unless such victims see doctors with insight, they're at risk of the 'business as usual' mistreatment with harmful drugs that obscure their symptom's causes.

**Update:** Be proactive to protect your brain. **Preventable brain injuries** are most often insidious and cumulative. For example, much mechanical injury to the brain is typically done out of innocent naivety. University of Michigan's Institute for Social Research studied 1,063 retired NFL players to see if their football careers put them at risk for future brain dysfunction. They reported in **Sept. 2009** that Alzheimer's disease and dementing diseases appear in NFL players at a rate of up to 19 times that of the normal population. Former NFL players and their doctors were naive to such CTE risks.

Injury to the brain can occur if it is subjected to **toxic intensities of any of the six forms of energy:** mechanical, electrical, radiation, chemical, heat or subtle! It's easy to visualize how the physical forms (the first five listed) can injure the brain. **Subtle energy-related brain injuries** are more subtle! To point, studies out of Duke and Tulane show that **spanking** has a detrimental effect on children's behavioral and mental development, typically lowering their IQs and making them more likely to be demanding, defiant, become frustrated easily, have temper tantrums and lash out physically against others.

Neurologists may argue with the paradigm in which I list these conditions, but few have had my observational perspective. Also, I see merit in looking at them in this unconventional way to explain the profound disease profile change -- COED-S. Lastly, this viewpoint helps us refocus away from DSM-derived symptoms and onto the 'thorns' that are the actual causes of those symptoms. For example, if we subjected all soldiers now diagnosed as PTSD to imaging studies, we'd see that many have **traumatic brain injuries (TBI)** instead. Once understood, we could more effectively address their causes. We now seem stuck in a less-effective paradigm of 'symptom drug cover-up' for often ill-contrived DSM diagnoses.

The obvious brain involvement in the disease profile change described in chapter one is evident in the clustering and overlapping of the diagnostic criteria of the so called '**functional syndromes**.' We're talking here about fibromyalgia, chronic pain, insomnia, chronic fatigue, IBS, tension headaches, migraine, interstitial cystitis, primary dysmenorrhea, and restless leg syndrome, among others. They are called 'functional' because we see little or no substantive somatic explanations as to their cause. Furthermore, the vast majority of the symptoms of these real and consistent syndromes relate to **feelings**. Emotional symptoms such as anxiety, panic, pain, fatigue, and abnormal sensations are all feelings. Feelings are constructs of the brain. The brain is complex; and so will be the expressions of its toxic sufferings.



## Certain groups of people are more vulnerable to toxic brain

All kinds of toxins can mess up brain performance. Ones that injure or kill brain and nerve cells are termed **neurotoxins**.

Environmental Medicine specialists refer to the totality of toxins, including all energies that convert to toxic chemicals inside one's body, as **xenobiotics**. In our SINK analogy, they represent a dynamic chemical mixture present in one's detox SINK. When the SINK's level (**the total body burden**), exceeds the capacity of the washing side of one's SINK, it overflows. Such an overflow 'dirties' (disrupts) the clean dishes. An '**overflow event**' is most serious in its consequences when brain or nerve cells are disrupted, and is most likely to clinically present in the following **more vulnerable groups**:

### Those of us prone to allergy

Overflow events are more likely to happen during allergy season. If you have allergy, your body makes and releases more toxic cytokines such as **histamine, leukotrienes and kinins**. Such allergy-response toxins greatly add to your total body burden of toxins. Allergy-related toxins raise one's SINK level quickly, accounting for much of its ongoing challenges. This leaves less room in one's SINK to accommodate further exposures from subsequent toxic challenges. Histamine is especially problematic, as it competes for the same enzymes that detox the brain-toxic **volatile organic compounds (VOCs)**. Along with other pollutants, VOCs are becoming better understood in their ill-health-rendering roles.

To mitigate allergy-related illness, I favor **desensitization techniques**. I also support community efforts to diminish **allergens** -- chemicals that induce our immune systems to produce these toxic cytokines. Stringent building codes that prevent mold and mandate against planting common vegetation offenders are also effective allergen-reducing strategies. Unless, however, we reverse **global warming**, the pathological manifestations of 'allergy thorns' will continue to grow.

### MCS individuals

We are all genetically different, thus our tolerances to chemicals will differ. **Multiple Chemical Sensitive (MCS)** people are a rapidly growing segment of our people who have intolerance to many chemicals, even at low concentrations. MCS individuals can be thought of in our SINK analogy as having very small SINK capacities. Their SINKs fill quickly with much smaller exposures to toxic chemicals. MCS is a true epidemic and it renders insight to the disease profile change. MCS is an increasingly significant component of the psychiatric portion of COED-S. MCS individuals are most commonly misdiagnosed as being psychiatrically ill and then made more toxic with 'psych drug' treatments for their MCS symptoms.

### The youngest and the oldest

One of the most important issues in determining the extent of dysfunction of the brain from SINK 'overflow' is the integrity of the individual's **blood-brain barrier (BBB)**. The BBB of fetuses and pre-pubertal children is necessarily weak and/or underdeveloped to allow for a rapidly growing brain. This brain-protection tissue is also weaker in older folks, just as they have weakening of their skin, hair and bones. Every tissue line, including the BBB, weakens as we age.

After humans reach their early 20's, their brain size stabilizes and the BBB reaches its full strength. Given equal exposures, **fetuses, children and elders** will be more vulnerable to toxic chemicals by virtue of their relatively weak blood-brain barriers. Individuals in these age groups have and will be the most toxic brain-affected as our world continues to become more toxic. This entire group can be thought of as having small SINKs in our SINK analogy.

Best demonstrated by **childhood obesity**, it is indeed these age groups that are exerting the major influence in the disease profile change we describe in chapter one! The strengthening of the BBB is likely a part of the complex reason why we see most cases of the now epidemic **Attention Deficit Disorders (ADD)** start to abate after maturation is complete. The BBB affords more protection to the child as it gains competency near the completion of the brain's growth.

Does anyone doubt that we're now seeing an epidemic of childhood ADD in our modern world? Like me, any teacher or pediatrician in business for the last 40 years who has been observant can tell you that something is very wrong. The statistics speak for themselves. There has been an explosion in the prevalence of these disorders and other psychiatrically-labeled illnesses in kids, as well as the use of drugs to treat children who are so affected in this time frame.

On the positive side, children are more active. This gives them a detox advantage over elderly adults in avoiding 'toxic overflows of their SINKs.' However, this is not the case in **the fetus and infant**. This group is particularly vulnerable from the standpoint of having not yet fully developed the ambulation (reciprocating gait) skills vital to most effectively detox. Their BBBs are not yet fully developed either. We know the cause and effect of some of their toxin-derived ills, such as **fetal alcohol syndrome**, but most remain obscure. Though all causes of autism are not yet fully understood, toxic brain mechanisms are predominately suspect.

Aside from the fact that **elders** have a weakening BBB that affords less protection to neurotoxins, they are further challenged because they're generally less active. Remember, motion augments brain detoxification. Also, compared to young adults, most elders have bioaccumulated more toxins. Elders typically thin with age and so run out of fat storage to sequester additional toxins. To avoid toxicity, doctors must downwardly adjust the dosages of many types of drugs when medicating older folks. Elders can most simply be thought of as having small and inefficient detox SINKs.

### **Females -- they are predisposed to more than just PMS**

The term ***hysteria*** is derived from the Greek term *hysterikos*, meaning "of the womb." It unfairly suggests that symptoms of somatization are female-like. Because of their reproductive function, women have more complex endocrine systems which best be balanced. This makes women's endocrine systems more vulnerable to toxic disruption. In the last few decades we have produced and disseminated enormous quantities of EDCs, many of which activate hormone receptors. This causes brains of both men and women to inappropriately send out other chemical relay messages to direct their bodies to support the resultant 'false pregnancies.' Their messages read: **"eat more; you and your baby are starving!"** This drives the obesity-related part of COED-S. EDCs fatten us all, but women dominate most COED-S stats. One BIG reason is women have more pregnancy-related hormone receptors that can be toxically corrupted by **obesogenic EDCs**.

Women are especially hard hit by the anchor of COED-S — the obesity epidemic. Obesity, especially abdominal obesity, is also related to the subtle differences in brain activity of women vs. men. A unique study reported in the 1/20/2009 edition of *Proceedings of the National Academy of Sciences*, offers insight. Both men and women participants underwent brain scans while being presented with their favorite foods after being taught cognitive inhibition techniques to suppress thoughts of hunger and eating. Both groups said the technique reduced their hunger urge, but the scans showed that while activity in the part of the brain that responds to food diminished in the men, it remained active in the women.

Another factor that makes women more vulnerable to COED-S is they have less **alcohol dehydrogenase (AD)** activity than men. AD is the rate-limiting enzyme for the **aldehyde detox pathway** -- a primary pathway for VOC detoxification.

Still, toxicity is so pervasive in our now toxic world that no one group is spared the risk for toxic brain presentations.

### **At least some of it must be in the head!**

**'Psych' epidemics** are an easy fit for a toxic encephalopathy explanation. Function of the brain's higher centers allows for feelings, perceptions and initiation of all volitional actions, as well as cognition and behavior integration. Individuals are now being thrown into highly questionable categories of psychiatric ills described in factitiously expanding DSM guides!

In our disease profile change we see an enormous growth in the percentage of our population, including children, then being placed on psychiatric drugs such as SSRIs and stimulants, ostensibly to correct neurotransmitter malfunctions in their brains. If these medications are being used appropriately, which is dubious in many cases, the only conclusion one can make is that we are experiencing epidemics of psychiatric illnesses, reflective of malfunction of our higher centers.

For those interested in sophisticated neuro-imaging, I recommend a book by Daniel G. Amen called *Change Your Brain Change Your Life*. Doctor Amen, a psychiatrist and neuro-radiologist, shows that distinctive patterns in imaging studies correlate to various psychiatric diagnoses. He emphasizes that these patterns coincidentally improve with behavioral improvements associated with cognitive, nutritional and drug therapy, as well as interventional lifestyle changes. Another neuro-radiologist, John D. Port M.D. demonstrated that certain brain imaging patterns associated with psychiatric diagnosis were also correlated with the metabolites of certain neurotransmitters in specific areas of the brain.

I'm taking it one step further by suggesting the obvious, that **the abnormal imaging and neurotransmitter patterns they are appreciating, in many cases, reflect brain dysfunction and/or injury caused by environmentally-related toxins.** These toxins include both those produced outside the body that are part of our external environment as well as those toxins produced inside the body by stress, allergy responses, metabolic aberrations and, most commonly, toxic thinking.

As our environment has rapidly changed, it has simply become more toxic. Many of these novel toxins directly impact the brain. The toxicity comes not only from the changing chemical and microbial mix to which we are exposed. The toxic energy exposures from an increasingly complex world also greatly impact our internal chemistry.

### **Two ways to become a modern toxic brain statistic**

There are two connections that explain COED-S. The **first** is a specious one related to the successful over-marketing of drugs and medical services. I will explain this one more at length in chapter thirteen when I discuss the **religion of drugs**.

The **second** important connection reminds one of a magic show. A magician keeps our focus distracted while he creates his illusions. We tend to forget that the brain is truly in charge. Like the magician, the brain is the command and control center for the big NBC Broadcast of the body's somatic expressions.

When the brain's function is disrupted, the body it controls will be affected in subtle ways. We continue to believe in the magical illusion because we focus on the somatic expressions rather than the subtle yet powerful actions of the brain acting as the master magician. It puts on a fantastic show! I'll unveil the 'magic tricks' in the following examples.

**Fibromyalgia** has a plethora of highly variable toxic brain-related biochemical abnormalities. To wit, increased levels of nerve growth factors and substance P in the spinal fluid, low blood levels of serotonin and growth hormone and low ATP levels in red blood cells are a few. Yet, there are no definitive diagnostic chemical markers for fibromyalgia. Fibromyalgia is very real and predictably patterned. Granted, the symptoms are projected to somewhat specific musculo-skeletal locations; however, highly variable feelings predominate in fibromyalgia. Its symptoms are pain, fatigue, joint tenderness without tissue pathology correlates, headaches, depression, **paresthesia** (numbness, tingling, or other abnormal sensations), restless legs, disturbed sleep patterns and the obvious brain-related dysfunction known as **'brain fog.'**

A very strong argument can be made that these symptoms have a component caused by diffuse toxic brain/nerve dysfunction. First thought to be reflective of hysteria, the hallmark findings are unexplained fatigue and pain. Such **feelings** are neurological constructs highly suggestive of a toxic brain. Also increased sensitivity to pain perceiving neurons (NMDA neurons), disruption of signals between the hypothalamus and pituitary gland and dysfunctions of specific neurotransmissions that are commonly seen in fibromyalgia point directly to brain dysfunction. Further, brain-detoxing exercises and techniques offer the most consistent amelioration of these feelings.

**Update 11/16/13:** at the annual meeting of the American College of Rheumatology, a study was presented that showed that treatment with **hyperbaric oxygen** dramatically improved joint tenderness in fibromyalgia patients. This makes sense because oxygen is a vital substrate for optimal brain functions, including the Neogenic growth and healing of the brain.

**Chronic pain syndrome (CPS)** affects a rapidly increasing populace seen in our healthcare system. **Update 6/19/2014:** Chronic pain now affects 1 in 3 Americans and is the leading cause of adult disability! "You can think of chronic pain as the inability to turn off the memory of the pain," said Vania Apkarian, a Northwestern University researcher. His research suggests that chronic pain involves the area of the brain involved in cognitive and emotional learning. Chronic pain can be thought of as a perverted nonstop memory from the toxically dysfunctional brain. The 'feeling' of pain involves the brain's NMDA system. The NMDA system synapses utilize glutamic acid and aspartic acid interchangeably as neurotransmitters. In this CPS epidemic's critical timeframe we have had an explosion of food chain-related products introduced that render **'free amino acids.'** Such MSG and aspartame-related products are now being ubiquitously consumed by our populace.

CPS could easily be mediated by damage to the brain from excess dietary glutamic or aspartic acids, or a host of other neurotoxins acting in concert. I suggest that classic genetics alone cannot explain the apparent rapid increase in these disorders. An increasingly toxic chemical environment is a viable explanation in most cases of each, as pain is the predominant feature, and the perception of and response to pain clearly resides in the brain.

Consider a severe pain in the arm of prolonged duration caused by an infection. We cut the arm off to save the rest of the body. Then the magic happens. The patient still experiences severe pain in his arm, even though he can see his arm is missing. We call it **phantom pain**. Is it real? Absolutely! The point is the pain is not about the missing body part. It is about the neurons that perceive pain. It's well known that the specific neurons involved in the perception of pain are the NMDA system neurons. They reside in specific brain distributions, use the specific neurotransmitters aspartic and glutamic acids, and connect in a complex way. In the phantom pain patient these brain cells haven't been removed with the limb. They are still alive and sending the 'hurting messages.' I would argue that much of these pain epidemics could similarly be explained on the basis of their toxic brain causes. The toxic brain projects its perverted messages to various body parts. Our mistake is that we then erroneously conclude that those projected pain messages originate solely in the tissues into which they are so projected.

My concern is that we are squandering huge funds by masking these patients' pains with drugs and spending too little on lifestyle changes and prevention! This less-effective tack fuels an already critical societal problem -- **opioid addiction.**

**Chronic fatigue syndrome (CFS)** is a disorder that is all about 'subjective feelings' -- little to do about 'objective findings.' Patients with CFS have an unusual diversity of somatically-unexplained symptoms closely paralleling both fibromyalgia and MCS; CFS has a hallmark of a sudden onset of extreme fatigue. When we see such an unexplained diversity of symptoms the brain is the likely source. In fact, this condition is now commonly known as **myalgic encephalomyelitis**. **Update 2/23/2010:** Like CFS, the most devastating symptoms of **Lyme disease** are also feelings. Today in *PLoS One* scientists published findings from a sophisticated analysis of 2500 proteins from the spinal fluids of 45 CFS patients and 25 Lyme disease patients. When compared to the spinal fluid protein profiles of 11 normal people, abnormal profiles unique to each disease were found. This lends strong support to my theory that both are primarily toxic brain disorders!

**Sleep disorders** fit quite well. Normal healthy sleep is a complex brain function. Normal sleep patterns rely on the well-orchestrated integration and functioning of healthy neurons in the brain stem and hypothalamus. Both of these brain structures lack the typical BBB protection and therefore are more vulnerable to toxic chemical damage.

The current epidemic of **Restless leg syndrome (RLS)** clearly has a toxic brain origin. Quoting right out of the drug ad that describes the now common problem of RLS, “patients experience an urge [a feeling]... to move their legs at night. The uncomfortable leg sensations [feelings]... often interfere with their ability to sleep.” Of course, sleep is clearly a brain function. Once again, feelings are appreciated and constructed in the brain.

### **We still believe the rabbit came out of the hat**

I recently witnessed a discussion on a popular TV talk show in which the subject of **severe nausea associated with chemotherapy** was discussed with a famous cancer survivor. In the ensuing conversation the moderator asked the extremely bright physician on the panel, “From where does the severe nausea come?” In a knee-jerk answer, the physician implied the nausea was from collateral damage on cells lining the G-I tract that chemotherapy affects. I think this would be the first off-the-cuff explanation most doctors, including myself years ago, would give. I know better now! Nausea can be a symptom reflective of many gastrointestinal disturbances. However, in chemotherapy the severe nausea comes from the chemotherapy’s direct toxicity to the brain -- so called **‘chemobrain’** aka **Post-chemotherapy cognitive impairment** -- as well as the brain’s recognition and response to that toxicity threat. Let me explain.

There are four sensory pathways in which toxicity information is sent through the blood stream or via nerves to the **vomiting center of the brain**. This ‘center’ is diffusely located in the brain stem and medulla. These parts of the brain are poorly protected from toxic chemicals, by virtue of their necessarily weak blood-brain barriers. Neurons in this center must be weakly protected in order to quickly receive and send chemical toxicity messages rapidly. Having a hefty blood brain barrier would delay reception of this critical information sent by blood stream routing.

Without involvement of the vomiting center, the ‘feeling’ of nausea would not occur. For example, morning ‘sickness,’ car ‘sickness,’ ‘sea sickness,’ and the nausea related to spinning around have little to do with pathology of the G-I tract. Given data from many sensory organs, including the gut, nausea, like all ‘feelings,’ originates in the brain. They only secondarily cause the G-I system to heave. The vomiting center by innate reflex directs the upper gut to empty. Because toxins most commonly enter our bodies via the gut, the brain’s ‘vomiting messages’ lessen such threats by signaling us to puke.

Furthermore, a severe brain injury will present with nausea or its more severe correlate—vomiting, as swelling of the brain sickens the neurons. The G-I tract is not injured in such a head injury. One’s brain in such a case is obviously very sick. When steroids are used early-on in such severe brain trauma cases, more brain cells and their circuitry survive and neurological outcomes thereby improve. Steroids diminish the inflammation and swelling that drives the toxicity of any bodily tissue. When the steroid dexamethazone is added to many of these chemotherapy regimens it dramatically reduces the vomiting and nausea of chemotherapy.

Steroids are always irritating to the stomach and therefore should aggravate G-I irritation and hence worsen nausea if the G-I cell injury was the cause. Steroids benefit chemotherapy-related nausea by reducing brain toxicity -- the inflammation, swelling and other damages induced by chemotherapy agents.

The major point of my preceding argument is that we often ignore the obvious brain involvement in somatically- projected symptoms. Instead, we direct our thoughts and explanations about feelings, such as nausea, toward other organs involved only in the somatic expressions of toxic brain. We simply bypass the brain and give it little credit for its actions and sufferings. In doing so we further discount its vulnerability!

### **Toxic brain-driven overeating**

What about the **‘BIG players’** in the disease profile change? **Obesity associated illness** such as diabetes type 2, GERD, gallstones, weight bearing joint arthritis and the metabolic syndrome are rapidly causing our healthcare ship to take on too much water. Overeating seems to be the common denominator in all of these ‘BIG players.’ [How can we not consider toxin-induced brain dysfunction as a major contributing cause of obesity?](#)

Does anyone doubt that we are experiencing an epidemic of obesity? In an April 2007 article in *USA Today*, Nanci Hellmich reports the latest statistics. Unfortunately, they represent a snapshot taken 5 years ago. I’m sure things are even worse now. She said that in 2005, 66% of the American population was overweight or obese. I think she just got lucky with the accuracy of her story’s headline: “Mind boggling gain in obesity,” the study said. I have been telling people for years now that obesity is about a ‘boggled mind.’

In the last 15 years the obesity rate for adults has doubled and, more importantly, in **children** it has tripled! At least half of **women** and a third of men now fit the definition criteria for the **Metabolic Syndrome**, a now commonplace association of findings, which was not even described until **1988!** Type 2 diabetes is skyrocketing. Before the 1990's type 2 diabetes was rarely seen in children and now it's commonplace as well.

There is a concerted scientific research effort to work out all the relevant physiology that seems to be causing this epidemic that I call COED-S. Unfortunately, most research is directed at finding drug treatments for the problems, rather than aiming towards a sound explanation that would better allow for prevention. All the desperate interventional focus seems to be the **business as usual** use of drugs and surgical interventions. The emphasis must be refocused on preventative measures to address these COED-S issues more appropriately; we must take out the thorns!

Now you might say, "The obesity problem is simply caused by people eating too much. Why don't these obese people just eat less to solve their problem?" My simple answer is that their toxic brains are likely getting in their way. All behavior is a result of thoughts that precede those behaviors. Overeating is a patterned behavior that now dominates and shortens many people's lives. Could newly introduced environmental toxins be poisoning the brains of people so affected?

### **FEAST imbalance -- the magician's trick that explains the obesity epidemic**

**FEAST (food energy acquisition, storage and timing)** is a system -- an elaborate design mechanism the body uses to deal with an important function. I made up the appropriate acronym but the system is real, as I will describe. It is about more than just fat; its focus is metabolic **food energy** and the efficient **acquisition, storage** and **timely** utilization thereof. It is apparent that as we struggle to curtail this obesity epidemic we'll need to understand the FEAST system. We need to appreciate FEAST, build upon it, and use that knowledge to address this E X P A N D I N G obesity problem.

FEAST, like many important body functions such as sleep, is ultimately directed by the brain. FEAST calls for **hunger messages** to be appropriately transmitted to alert us that it is time to put food into our mouths. There is no better example of how FEAST expresses itself than in the newborn baby. These FEAST messages are relayed to the mother with the baby's cry. If unanswered, the crying doesn't stop. The messages, when answered by feeding, stop the crying for a while. Mothers of several children can testify that timing will vary from child to child -- FEAST has a relative periodicity in each baby as it does in us all. This periodicity variation is influenced by social, cultural and food availability factors.

The fact remains this system is 'hard-wired' into every human brain. Each species' FEAST system serves the same survival purpose but each one is influenced by environmental factors such as the climate and food availability. If we analyze the FEAST system of bears we see it is distinctly and differently patterned. The bear messages start strong in the spring and persist until the food supply diminishes. Bear FEAST messages are timed to then shift their metabolism to energy conservation. These result in hibernation until the internal timing-mechanism alarm goes off in their brains. The life cycles of bears and their food availability have determined how FEAST is 'wired' into bears' brains.

Our FEAST messages even directed us as to what kind of foods we needed. Given an ample selection we didn't need a nutritional guide book; we just needed a healthy brain. **Hunger** is, after all, a feeling. A feeling is a brain construct -- a message. We're not talking about the deprivation of adequate food. 'World hunger' also is a misnomer, now passé. By the way, that idea is now officially replaced with the phrase 'very low food security,' so don't get confused.

On the other side of this food energy balancing scale are the 'I'm full' messages of **satiety**. Satiety is also a feeling. The messages in the FEAST system are automatic for the most part, but are also subject to influence from higher cognitive centers. Both hunger and satiety feelings result from a well-coordinated, complex aggregate of cytokine signals and nerve impulses. All such signals, regardless of site of origin, gather in the lower part of the brain, coalesce to form such a feeling and ultimately gain enough strength to express it. We can't easily tune such automatic hunger messages down or turn them off, because the more we try the louder they get! This is the reason that dieting is so difficult.

FEAST hunger messages are critical for our survival and for the survival of our species. Our design is not flawed. It is a sophisticated, efficient, well-orchestrated design. Throughout history there has always been a bit of obesity. What's changed in our modern world that's made so many of us fat now? It's clear that, at least, three factors have changed:

First, our modern environment is more toxically corrupted. Our normal chemical signals, originating from tissues that feed the brain FEAST data, are now counterfeited by EDCs. Many people's brains have also likely sustained subtle toxic injury in the most vulnerable areas which control FEAST -- the brain stem and hypothalamus. Second, our modern lifestyle has gotten out of sync with our brain's innate circadian rhythm. This disrupts FEAST in a similar way as it does our sleep, driving us to **untimely overeating**. Third, our modern poor stress-management has, by expediency, directed us to more comfort foods. We've become grazers and gluttons who 'mindlessly' seek stress relief by over-eating.

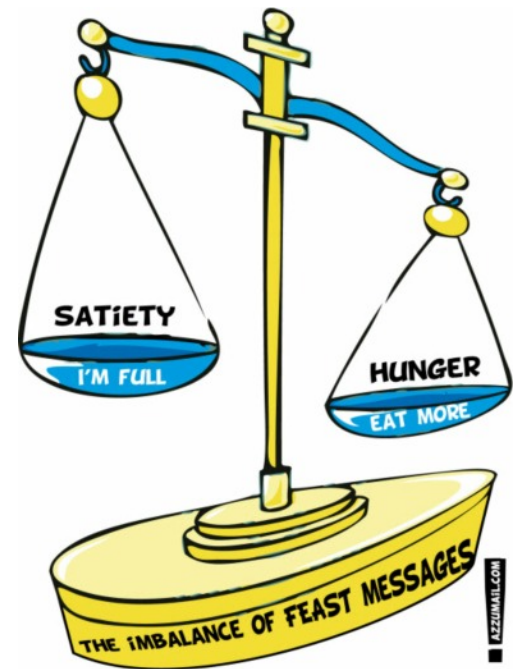


The resultant toxic brain-related **FEAST message imbalance** typically results in overeating; hunger messages, driven by our innate 'survival agenda,' usually predominate. An exception, **anorexia**, is clearly an acquired disorder suggestive of toxic corruption of the anorexic brain's normal FEAST messaging.

The relevance of EDCs to our current obesity epidemic is complex and multi-faceted. **Obesogens** come in many forms. Most are man-made fats which are similar to estrogen in chemical configuration. These estrogen look-a-likes bind with and activate our estrogen receptors. Although these receptors are present in both women and men, they predominate in women; as estrogen plays a critical part in reproduction.

The false FEAST message that such obesogens convey is: "Eat more you are pregnant!" Poisoned with enough of these obesogens, one's FEAST system ramps-up relay messages that drive one to eat more food in order to adequately support that falsely-perceived pregnancy.

The most common obesogenic EDCs are **plasticizers** – chemicals intentionally put into plastics to make their products less likely to crack. The problem is that these FEAST-disrupting chemicals migrate from containers into the contained liquids that we consume. Other obesogen suspects that carry this same 'eat more message' are **phytoestrogens** related to GM soy. GM soy is now added to a rapidly growing list of foods. When consumed, EDCs bioaccumulate and slowly but steadily express themselves in imbalanced FEAST messages of hunger. The aggregate of such corrupted messages reflect in an obesity epidemic.



Two parts of our brain predominate in regulating FEAST activity.

Firstly, the awareness portion of FEAST is located in the brain's right prefrontal cortex. This is where food info can be interpreted, evaluated and acted upon. This is where we think about and decide what we eat. Food addictions are born and nurtured here by unfulfilled emotional voids and mismanaged life stressors. Thoughts here will select our choices definitively. This higher brain function is the choosing part; it is frequently adversely influenced by choices based upon toxic or poor quality thought. In *Mindless Eating*, author Brian Wansink Ph.D. of Cornell University offers a great deal of insight as to how issues relevant to this part of the 'boggled brain' contribute to the obesity epidemic. His helpful book reflects years of research on how food addictions, comfort food, food availability, marketing practices, the subtle energies of 'hidden persuaders' and weak resolve drive us to make inferior food choices based upon poor quality thought.

Secondly, in parts of the lower brain (the brain stem and hypothalamus) chemical FEAST messages are constructed, sent, received and processed automatically. We don't have to 'think' about these things. If the lower brain is healthy, it doesn't make any mistakes; excellent choices are programmed in. The protective blood-brain barriers of the lower brain are necessarily weak as its transponder FEAST function requires large messenger molecules to be able to enter and leave rapidly. This lesser-protected lower brain is, therefore, more vulnerable to injury from environmental toxins.

Many obesity-related factors in the disease profile change could be explained by injury or disruption to the FEAST system. The 'thorn' causing the obesity epidemic seems to be a one-two punch to the brain's FEAST system. Toxic subtle energies of our modern world impact FEAST's higher brain centers. Toxic chemicals disrupt FEAST messages acting in the lower brain -- the brain stem and hypothalamus. Special satiety neurons reside there. These cells, if not poisoned, send the satiety messages that control appetite. Energy acquisition and storage is such a vital function to our survival that many distinct 'eat more' back up message circuits are programmed into this automatic part of the FEAST system.

If specific brain cells, such as satiety neurons, are injured by neurotoxins or rendered dysfunctional by EDCs, the correct and healthy satiety transmissions will be interrupted. The resulting perverted and unhealthy FEAST thoughts that the brain will then transmit will read, "**eat more, you are starving!**" It will not matter how unhealthy that resultant hunger message is, we will then be driven to inappropriately overeat.

"Hunger is insolent, and will be fed." ~Homer~

We appreciate how very complex, sophisticated, and integrated FEAST is as new knowledge about this system comes to light. The FEAST system has many chemical signals with names such as the **endocannabinols**. You may recognize one active ingredient of 'pot' residing in that long word. If so, you may also be aware that no matter how you take it, marijuana will likely give you the 'munchies.' It was probably some Baby Boomer research chemists who had some experience with having been 'stoned' and knew about marijuana munchies who helped figure out this piece of FEAST.

The problem is these smart chemists have friends who graduated with honors with their major in Monopoly. The friends of course, now driven by greed, modify the natural molecules that act as messengers in this system so they can patent a drug to mimic their actions. They presume that such a drug would help fix this overly 'stoned' circuit associated with the epidemics of **obesity and diabetes**. This toxic brain-related problem cannot be fixed correctly unless you understand it completely and address its causes. Our toxic environment and lifestyles are what's 'stoning' us into the dark ages of obesity. To fix it properly, we must 'take out' **chemical** (EDCs and others), **energy** (all energies that disrupt the brain including subtle energies), and **deficiency** (such as inadequate activity) 'thorns'! Detoxing the brain is a must!

### **FEAST-- understanding the 'physiology of fatness' is a work in progress**

There is a concerted effort by scientists to understand the physiology of the FEAST system. Most of the effort is motivated by greed. It is directed at finding profitable drugs that address specific parts of the FEAST system. I'm concerned that we'll start pulling the trigger with these drugs before we understand that the target will begin to move once we start shooting at it. If we dampen one of the many 'eat more' signals by using satiety messengers such as leptin, amylin, incretins, or pharmaceutical mimics thereof, FEAST will automatically compensate to stabilize the appetat 'set point' by amplifying other FEAST 'eat more' signals. Furthermore, our interventions will not be without unanticipated paybacks. FEAST is an intricately orchestrated system and the obesity-anchored epidemics have complex, 'thorny' ties to the toxicity of our deteriorating environment and poor lifestyle choices. **Update 7/1/13:** A study presented at the annual meeting of the *Endocrine Society* shows that a deficiency of **sleep** (a subtle energy) increased blood levels of a particular hunger- driving endocannabinol in test subjects. The study's author suggested her work might open the door for the development of drugs which might curb the obesity epidemic! I've got a better idea -- make adequate sleep a part of your wellness plan.

Other elements of the FEAST orchestration are rapidly being exposed. Leptin, alpha melanocyte-stimulating hormone, neuropeptide Y, PYY, ghrelin, adiponectin, adipsin, amylin, incretins, IKKbeta/NK-kappaB, orexin and others are a few FEAST messengers of which we're now aware – and whose names you need not remember. We're also seeing how old but incompletely understood messengers such as melatonin, insulin, growth hormone, human chorionic gonadotropin, cholecystokinin and the neurotransmitters of the Vagus and spinal nerves play additional roles of which we knew nothing. As we continue to uncover the pieces of our complex FEAST system's design, we can appreciate its brilliance.

Let me demonstrate how sophisticated and well-orchestrated FEAST physiology is with just one of the many chemical messengers involved; it's **cholecystokinin** or **CCK** for short. Note its special relevance in the T (Timing) part of **FEAST**!

Like all messengers, CCK is a molecule of special design. It is constructed in the intestine in response to fat entering the gut. The more fat in the meal, the more CCK is secreted. CCK is uniquely recognized in four separate locations relevant to its FEAST duties. From its intestine origin, it travels, like many messengers do, through the blood to other locations, playing its part in the FEAST orchestration.

CCK's first stop is to the local area – the gut muscle itself. In response to CCK, the muscle activity of the gut, called **peristalsis**, diminishes. This slows the **transit time**, or pace of flow of gut contents. A reduction in tempo is necessary because fat is a highly valued energy commodity, yielding 9 calories per gram vs. only 4 for carbohydrates and protein. Furthermore, the gut's **X-out function** mentioned in the preceding chapter takes time. This is a critical toxic challenge associated with food fats and the body wants to meet that challenge with necessary time expenditure in sorting out the 'known' fat culprits.

CCK is then recognized simultaneously at locations #2 and #3. At the gallbladder CCK instructs the gallbladder's muscles to contract, causing the gallbladder-stored **bile** (a liver-produced digestive-emulsifier) to spill into the exact location of the fat food that's now the focus of attention. The bile is needed to aid in the complex digestion of fat. At the pancreas it causes the release of a bolus of **lipase** – a fat-specific digestive enzyme. The result is that all the right mix of special molecules pours into the exact area of the gut where the fatty-food bolus has progressed to, and in perfect time.

Fourthly, at the brain stem and hypothalamus parts of the brain, CCK's message is received and acknowledged, setting off additional chemical dispatches of blood-running cytokines which carry the momentary brain message that wisely reads: "**Do not eat anymore at this time!**" This is an important and timely, **FEAST** (notice the underlined T for time) message because it would be unwise for us to continue to cram food into the mouth when there is an intentional traffic slow-down going on ahead wherein the gut is working diligently to digest this highly prized, energy-rich fat.

I emphasize the word 'subtle' because all this happened automatically. We didn't have to even 'think' about it in the conventional sense. We were able to allow that higher order of 'thinking' to be directed at what I would term more exciting and entertaining focus. Such focus might be the acquisition of knowledge, life issues, love, gratitude and the quest for all things of a higher order. Higher-order-thinking focus might be on the Super Bowl for many, research and a poker tourney for me or PBS Masterpiece Theater and Nova for others. It could also be the successful acquisition of a meditating technique or an 'aha' inspiration found in this or any other book. It's whatever takes you to the high road of satisfaction.

I speak of this FEAST physiology in the past tense, because the challenges of our now toxically-perverted world require us to seriously 'think about it.' Our magnificent design is now under siege. The cytokine messengers for many obese people have become crippled and/or counterfeited by phony messengers from the polluted environment inside them and are disrupting their FEAST systems. Their FEAST appstats have gone from automatic pilots designed to keep them on a healthy weight path into road hogs.

The mind-bending magician's performance in this illusion is so amazing and powerful that the brain, when so affected, is able to convince people even when they're sleeping. Let me unveil the trick for you. Let's properly analyze what began as a casual observation. In this study researchers noticed that when they looked closely at the 'calories in/calories out' balance sheets of unhealthful obese test-subjects, there were some glaring unexplained discrepancies. Despite reporting fewer food calories taken in than were expended, the overweight people whom they were testing continued to gain weight.

The perplexed team decided to film the subjects at their only possible food source, the refrigerator. There they discovered the answer to the magician's illusion. The test subjects were visiting the refrigerator at night! Of course, the subjects didn't log in those calories because they were essentially asleep when consuming them, hence the discrepancies were unaccounted for. Naturally, perverted FEAST messages were causing their behaviors. Day or night we are simply hard wired to survive. Our FEAST signals do not stop even when they are toxically corrupted. **We must take out the thorns!**

### Toxic brain on autopilot

**Dissociate acts** more often occur in the toxic brain. The disassociation is between our conscious behavior and our unconscious behavior. What may look like conscious behavior over which we have high degree of awareness and control can be void or reduced of conscious control. For example, talking in our sleep is very common and varies in complexity from a few undecipherable grunts to more revealing dialogue. The more complex dissociate behaviors are sleep walking, and sleep driving. Yes you read it right; this is not falling asleep while driving. This is getting up and then going through all the habitual movements to drive a vehicle while asleep.

Another example of behavior that disassociates the conscious from the unconscious is seen in **temporal lobe seizures**. Such a seizure does not include any convulsing. The brain malfunction is apparent, as the individual affected is going through the normal motions such as driving and ends-up at an unintended location, having no recall of how he got there. During the seizure he was driving on autopilot. The rest of his brain was functionally separated, not functionally connected or integrated as normal.

We don't have to have a seizure disorder to experience this disassociation. It happens to everybody. We may catch ourselves in a place, in a thought or space and say, "now, where was I?" The reason I bring up these examples is so you can see that there are no firm boundaries between the conscious and unconscious functions of the brain. Now, some of us have learned by various techniques to control more of what has been delegated to be automatic.

This control is especially useful when we consider emotionally driven, addictive behavior. I suggest that for many people, overeating is emotionally driven, as are all addictions. But the chemicals at the root of it are most often **toxic-thought chemicals**. This package of toxins is a direct derivation from the consumption of #2 Pie. People often seek food inappropriately for comfort because the 'warm and fuzzes' from #1 Pie are missing from their lives. The dissociate acts in overeating behaviors occur in that gray zone of connection between the emotional and easily addicted right prefrontal cortex and the unemotional, survival driven, hypothalamus and brain stem.

I thought Mel Gibson's classic line in the hilarious film *What Women Want* demonstrated the point perfectly. In this fanciful movie, upon losing the favor of his true love, Mel opens the refrigerator door and after a befuddled pause says, "What am I doing? She's not in the refrigerator!" Women won't find Prince Charming in the refrigerator either. This kind of automatic and clearly dissociate behavior is commonplace and often driven by a chemically-confused brain. It easily leads to overeating and food addictions. Do you look for love in the refrigerator, potato chip bag or box of candy? Think about it!

Aside from professor Wansink's 'mindless eating behaviors' and food addictions arising from the right prefrontal cortex, most of our calorie consumption is a result of signals coming from the brain stem and hypothalamus. We don't even have to 'think about it' in the conventional sense, any more than we would have to think about control of our pulse rate, blood pressure, body temperature and other brain stem and hypothalamic functions. The functions are so important that they are entrusted to these automatic control portions of the brain. Our design is perfect; our lives and circumstances are not.

**FEAST system disruption** arises when the signals get toxin-perverted at the transponder-like hypothalamus and brain stem, or somewhere in between. The hypothalamus is particularly vulnerable to the effects of toxins as its **blood- brain barrier (BBB)** -- tissues that protects neurons against chemical damage-- is weak. One function of the hypothalamus is to send and receive chemical messages to the adjacent pituitary or other distant sites. This function requires its protective barriers to be permeable to these relatively-large chemical FEAST messengers.

Similarly, the **nucleus solitarius** portion of the brain stem is also, by virtue of its transponder functions in sending and receiving FEAST messages, poorly protected by its weak BBB. BBB permeability renders these appetite-controlling parts of the brain vulnerable to toxins. In fact, a large portion of the disease-profile change we discuss in chapter one could be explained by toxic injuries to these and other critical, yet most toxin-vulnerable, parts of the brain. Confirmation of such mechanisms of injury might be demonstrated by comparing functional imaging studies as well as post mortem exams of these specific brain regions in morbidly obese vs. lean individuals who are otherwise matched for confounding features.

**Toxic brain atrophy Update 8/28 2009:** A U. of Pittsburgh study reported in *Pub Med* this month shows overweight and obese people have significantly lower brain volume than their normal weight counterparts. Principal investigator Paul M. Thompson PhD suggests such brain atrophy puts people at much greater risk for dementia, including Alzheimer's disease. This supports a main theme in this book. This book's message is clear -- the disease profile change that I describe in chapter one and name COED-S is negatively impacting our species by the toxic brain mechanism in general and by disruption of the brain-centered FEAST system most specifically. **Further update: The 12/16/2009** issue of *JAMA* highlights a study that shows that decreased levels of **leptin** (a FEAST satiety messenger) correlates to lower brain size and Alzheimer's disease. Blood leptin levels have been shown in prior animal studies to associate with hippocampus health. Remember this: the **hippocampus** is one key part of the brain typically damaged in Alzheimer's disease as well.

### **Subliminal injury is the unnecessary norm**

Other parts of the brain are similarly injured by toxins in an insidious manner. Again, we tend to discount these effects as minor because we don't yet completely understand the mechanisms of brain injury. These, now common, toxic brain states contribute to unnecessary loss of brain function. Often the NBC features of these types of injuries go unnoticed.

Even in more severe forms, we typically discount the phenomena as transient and of little consequence. That's a mistake! If the behavior manifestation is objectionable to others, we tend to justify such feelings with internal dialogues that defend our egos. Because of our typical outward focus, we're lucky if we can connect the dots between an aggressively argumentative mood and the fact that we might have had too much coffee that morning.

Ultimately, such insidious, incremental, ongoing and cumulative toxic brain injuries cause the brain to gradually shrink when brain cell death outpaces Neogenic repair. Its anatomical endpoint is **cerebral atrophy**. Such shrunken brains are now commonly reported in autopsies of older patients with varying degrees of associated dementia.

### **Understanding environmental illness and the subtle cerebral assault**

Subjectively, you may not even consider that certain toxins may be contributing to your 'out of character' NBC Broadcasts. This is especially true when those chemicals and energies are invisible ones you are not familiar with, or those that you would not take into your body if you knew of their toxicity. The vast majority of the cases of toxic brain are minor; they fly under the radar. Some NBC Broadcast elements are so mild that no acute presentations occur to flag them. Most often this is discounted by thinking "I'm just having a bad day." Their damaging effects, however, are cumulative over time.

**Validation updates 6/17/15:** Research in *PLoS one* showed that the **dietary trans fat consumption** correlated quantitatively with the degree of memory impairment in the 1018 healthy people studied. Trans fats were also linked to aggressive behaviors and depressed moods in prior analyses. **Update 7/18/18:** A report in *Molecular Psychiatry* shows that, among people diagnosed with psychiatric disorders, those with a history of eating dried meats cured with nitrates had increased odds of currently experiencing **mania**, a principal toxic brain-related behavioral feature of **bipolar disorder**.

Most of us are well aware of the acute toxic brain associated with the use of **alcohol** and illegal **street drugs**. In most of these cases people take the drugs to get 'high' and have expectations of the bizarre effects of those drugs on the brain. They deliberately imbibe, snort, huff, shoot-up or do whatever is needed to 'trip out,' by altering their consciousness. It's a completely different thing, however, when one gets unexpectedly 'tripped out' by overexposures to environmental toxins.

Most often such **acute severe toxic encephalopathy** incidents appear dramatic because they are unexpected and most often unexplained. Such classical chemical exposures are physiologically similar to incidents in which someone would slip a little PCP or LSD or a date rape drug into one's drink to play a malicious prank. The victim has an unwanted horrific experience. They would not know what happened unless someone in on the crime tells them or they're lucky enough to get help from knowledgeable people.

The worst of these acute toxic brain cases involve less sinister motives. They commonly reflect unpredictable harm from naive and accidental exposures to combinations of pharmaceutical drugs, airborne pollutants, pesticides, food chain-related toxins and other toxic chemicals and energies, as well as allergy-generated endogenous toxins, such as histamine. Unless such victims get prompt care by a compassionate doctor with a sound knowledge of **Environmental illness (EI)** they will commonly be misdiagnosed and mistreated.

Proper treatment of EI patients involves reducing their toxic exposures and augmenting their detox systems. Reducing exposures may require removal of affected patients from their homes or workplaces or both if these are the sources of ongoing toxic exposures. Desensitizing EI patients to common allergens helps lower their detox SINK levels. Identifying and eliminating problematic foods also reduces the release of allergy-generated toxins such as histamine. Giving **hyperbaric or highly concentrated oxygen** often preserves a patient's surviving brain cells which are crippled, yet remain endangered. The administration of suspected-deficient detox micronutrients is also a mainstay treatment of EI. Getting EI patients into reciprocating gait activities ASAP, in my mind, is a must!

## Psychiatric misdiagnoses

Along with 'psych drugs,' 'psych labels' are heavily promoted; thus, many patients with **EI-related toxic brain** are wrongly labeled with erroneous 'psych diagnoses from corrupt DSM diagnostic guides. Too, the behavioral part is quite often the most apparent aspect in many EI-related toxic brain ills. Naive diagnosticians will typically fail to link the environmental cause(s) of their toxic brains. Most often the focus of their examinations is narrowed to the more apparent behavior aspects of their patients' NBC broadcasts. The more subtle cognitive and neurological manifestations are simply overlooked. As a result, many patients with EI are made worse by failures to address the environmental causes. Many such patients are then sadly given 'psych drugs' which further confounds and delays or obviates proper treatment.

This misunderstanding is causing a significant segment of our population to be inappropriately treated with 'psych drugs.' This most commonly affects children and elders, as the blood-brain barrier is, by nature, weakest in these age groups. Their brains are, thus so, more vulnerable to environmental toxins.

## The ultimate causes of COED Syndrome are toxins, not the deficiency of mind drugs

Currently, mainstream medicine is unnaturally focused on drug interventions. Drugs and diagnostic labeling are presently heavily marketed and promoted, especially psychiatric ones. It doesn't make common sense that so many people are diagnostically considered as being deficient in SSRIs, ADD drugs, bipolar disorder drugs, conventional and atypical anti-psychotic drugs and the like! This misunderstanding has occurred because most doctors don't fully appreciate brain toxicity and its highly variable somatic expressions. Most ignore the healing potential of our Neogenic design and are won over by the lure of the pharmaceutical industry's illusion of health in lieu of 'thorn removal.' They take the easier path!

"Common sense is not so common." ~ Voltaire~

## Delirium is not so delightful

**Delirium**, most often seen post operatively in hospitals, is an excellent case in point. A degree of delirium occurs in up to one half of hospital patients and the mortality associated with severe forms can be as high as 50%. All things being equal, if you develop severe delirium as a hospitalized elder you are 10 times more likely not to leave the hospital alive! These poor results could greatly be improved by employing better prevention and intervention strategies. Unfortunately, misunderstanding doctors often savagely treat this common form of severely toxic brain with whatever is convenient to address the disruptive behavior of the affected patient. **They typically and tragically restrain the patient and give them anti-psychotic drugs.** \*\* I believe that this 'making them manageable' approach is 180 degrees off proper target.

Instead, we must aggressively correct the underlying causes by first asking, "What is making this person's brain sick?" Like jet lag, this toxic brain state is most often multi-factorial. Common causes include **sepsis** (a pathologic state in which toxins related to microbes overwhelm the detox system) as well as other decreased brain blood perfusion states, sleep deprivation, immobility, dehydration, hypoxia and medications. Delirium can be triggered by something as simple as an abnormal electrolyte imbalance, most often **iatrogenic** (physician caused). Infusion of fluids too low in sodium or a drug-induced low sodium state called **hyponatremia** can cause excess water to enter the cells from its surrounding interstitium. Most cells tolerate the extra swelling; however, the brain is enclosed in a rigid skull. The resultant increased pressure on the brain from this swelling will crush neurons, It manifests in a dangerous toxic brain state -- delirium.

Regardless of causes, urgent 'thorn removal' and detox for delirium is critical. 'Disorienting thorns' such as infections, fluid or electrolyte imbalances, vision and hearing impairment, unnecessary noise and other brain disrupters should be promptly remedied. These people need caring contact and encouragement. Many gradually reorient if we reinforce reality in a non-threatening manner. Using broad spectrum or blue lighting to encourage refreshment of the normal wake-sleep rhythm helps. If possible, we should also get these people walking ASAP to clear their brains of toxic chemicals such as anesthetics, narcotics and other pharmaceuticals which are often the genesis of their presentation. **Walking** helps bring everything back into optimal function. Fluids thus better propelled, through the channels of the lymphatic and cerebral spinal systems, can more efficiently resolve fluid and chemical imbalances.

**\*\* Sad Update 8/14/2015:** The approach in **red font** above is still a most-common expediency-driven treatment norm, despite the fact that the above advice I suggested in 2007, is now widely understood and accepted as true!



People in these types of compromised conditions don't need more drug-induced confusion from the conventionally used anti-psychotic drugs without addressing the 'thorns.' Such 'thorn removing' approaches are more time consuming for staff. Still, its long term mortality and morbidity outcomes would be worth it. Billions of brain cells that are clearly at risk in each such individual could be saved! The statistics show that those who did not clear their delirium within 2 weeks retained only 50% of their 'prior to hospitalization' level of functioning. [The pearl is: if an elder manifests sudden dramatic changes in his or her NBC broadcast, it should be diagnosed and treated as toxic brain until proven otherwise! If someone you love so suffers, ask your doctor to identify and remove the 'thorns' before prescribing more drug-induced confusion.](#)

### **Other commonly under-diagnosed, misdiagnosed and often mistreated forms of toxic brain**

It amazes me how we naively discount the impact of subtle brain injuries. Similarly, we are quick to misinterpret the NBC broadcast of those injuries. We accept erroneous explanations from pharmaceutical industry-inspired doctors that those so affected have some genetic or permanent improper wiring disorders of the brain. In short, we factitiously classify the causes as '**neurobiological**.' Vague, DSM-inspired and most often behaviorally-descriptive **labels** such as senility, depression, bipolar disorder, post-traumatic stress disorder, OCD, PMS, ADD, ADHD, and the like are affixed. Lastly, as per Big Pharma's-inspired protocols, we add to the confusion with 'psych drugs' which then mask the causational 'thorns.'

**Substance abuses** are common. When misdiagnosed, these cases are typically prolonged and complicated by overuse of 'psych drugs' to treat their behavioral issues. We err in excessively pushing drugs in lieu of motion and **#1 Pie**.

**Accumulated traumatic brain damage** is very common, insidious, and mostly neglected. We can become 'punch drunks' not just by boxing, playing NFL football or by serving tours in the Middle East wars. We must learn the causes of brain injuries and prevent them. **Update 3/15/2010:** Duke University studies showed that children ages 2-5 who had one fall serious enough to require medical care were 5.8 times as likely to meet DSM-IV criteria for depression than their cohorts.

Because the brain requires a constant supply of oxygen and glucose to survive, it can be damaged by many mechanisms. '**Cryptogenic strokes**' occur commonly, yet may only be appreciated on timely imaging studies. Injury often associates with sleep apnea, **hypercoagulability states** such as **sickle cell anemia**, and with episodes of **unrecognized heart arrhythmias** such as **atrial fibrillation**. Such arrhythmias can cause blood clots to form in the heart and travel to the brain to disrupt its perfusion. Also, an undetected arrhythmia can trigger a **cardiac arrest** (render the heart transiently inadequate in pumping blood to the brain), thus causing **subtle brain ischemia**. Recurrent severe episodes of either **hypoglycemia** (most often related to diabetes) or **hypoxia** (seen in sleep apnea or lung disorders) often causes insidious, yet cumulative, brain damage. [Failure to remedy such most-often tiny, yet ongoing, brain injuries often leads to dementia!](#)

**Sleep apnea** is a common disorder that puts 12 million Americans at risk for severe toxic brain. As the blood becomes oxygen-deficient in this disorder of ventilation or cardiac dysfunction, brain cells die unnecessarily. The most common risk groups are the obese and the elderly. If your loved one is manifesting inappropriate sleepiness, trouble concentrating, irritability, forgetfulness, mood or behavior changes they may be misdiagnosed. They may be told they have a depression disorder or Alzheimer's as brain function gradually worsens and the resultant NBC broadcast expresses itself. Drug treatment here may be catastrophic. A sleep apnea study is needed to correctly diagnose this increasingly common disorder. Appropriate therapy can then be used to address the real cause -- the 'oxygen deficiency thorn' called **hypoxia**.

**Sleep disordered breathing** puts snoring as well as obese children at special risk for toxic brain associated with hypoxic interludes. Children are more vulnerable to toxic brain. Their resultant NBC broadcasts manifest when their oxygen levels are lower than normal but higher than those established to diagnose adult sleep apnea. These kids were most often misdiagnosed as bipolar or ADHD and given drugs to cover up their toxic brain symptoms. Complete reversal of the cognitive and behavioral features often results by removal of the tonsils and adenoids that are obstructing their airways. This surgical procedure effectively removes the 'deficiency thorn' of hypoxia! **Validation Update 4/20/2015:** Hungarian research shows that this disorder, when neglected, not only impairs conscious learning, but also long-term memory.

**Polypharmacy induced 'mental decline'** is extremely common in contemporary medicine. In the typical scenario, an elder suffers a mild stroke, heart attack, pneumonia or other adverse events. Then the drugs start getting piled on. In a domino effect, more specialists are consulted and more drugs are prescribed. In doctor-speak, many of these drugs reach neurotoxic levels because some interact and may compete for the same detox enzymes. In your now-enlightened speak, their SINKs simply overflow. Most cases go unrecognized or are otherwise not properly addressed for complex reasons that relate to politics and pride. As a result quality of life for the patient often unnecessarily suffers. Considered individually, each drug seems safe and needed. In aggregate, the total drug package often leads to an **iatrogenic toxic brain**.

**Chemobrain** is a case in point that demonstrates misdiagnosis prevalence. We now well-know that it's symptoms were not due to merely a 'psychological stress reaction' from getting the 'bad news' of having cancer! It is a form of toxic brain. Huge numbers of brain cells are injured in the collateral damage of chemotherapy. How did we miss this? Radiation brain damage, such as in cancer treatments and other exposures manifests similarly; I coin it **radiation brain**.

## The magic trick exposed

After '**chemobrain**,' was first described, it was, for decades, erroneously believed that the associated depression and coincident brain malfunctions were merely emotional reactions to the bad news of having cancer. Then as per the drug industry-inspired protocols, we would add antidepressant drugs to the toxic brew. Chemobrain explains why, after stating chemotherapy, patients experience confusion, memory deficits, nausea and symptoms such as agitation and depression.

'Chemobrain' is the NBC broadcast of the type of toxic brain caused by chemicals used to kill cancer cells. It reflects the collateral damage to one's brain from these toxic chemicals. It's not a deficiency of an antidepressant drug! Despite this new knowledge, the overly-entrenched protocol of treating these people with antidepressants sadly, is still the norm.

Chemobrain also offers an example of heterogeneity. One of my breast cancer survivor friends is now in a support group. Group members are now aware that chemobrain explains why they experienced difficulty with focus, emotions, memory and balance during and after chemotherapy. The part I thought was great was when my friend related what the various group members' symptoms were. The only thing that was consistent was that everyone's symptoms were different! These wide differences result from the fact that, though each of our individual brains normally are wired similarly overall, **our microcircuitry** - that fine wiring between neurons - thankfully makes us each unique.

To best understand **toxic brain**, simply realize that, in the broadest sense, chemobrain is not limited to the injury inflicted onto the brain by those drugs used to kill cancer cells! In our now toxic world most of us are experiencing brain cell death and dysfunction related to a diversity of unnecessary neurotoxic environmental chemical, energy and microbial exposures.

**Confirmatory Updates 5/17/2010:** Children with higher exposures to organophosphate pesticides, as evidence by increased metabolites in their urine, were much more likely to be diagnosed as ADHD than children with lower levels, researchers report in the journal *Pediatric*. **Update 2/14/14:** An article in *Lancet Neurology* adds 6 more chemicals to a growing list that are implicated in causing **early childhood brain toxicity**. Fetal and early life exposures lead to lower IQ scores and such diagnoses as ADHD, autism and dyslexia. That brain-toxic list now includes lead, mercury, arsenic, PCBs, toluene, manganese, fluoride, DDT, chlorpyrifos, tetrachloroethylene (PERC) and polybromated diphenyl ethers. Added to the **causes of ADHD** mentioned on the bottom of p. 57 herein, one gets a better understanding of toxic brain. **Update 7/22/2018:** A USC study reported in JAMA showed that teenagers who most frequently used digital media, over the two year study period, were more than twice as likely to develop ADHD than those who used social media the least!

**Relevancy:** Children whose brains are damaged by toxins, may often become victimized again when they interface with a medical care system that is overly-influenced by Big Pharma's marketing of 'psych drugs,' in lieu of 'thorn removal!'

## Neogenesis to the rescue

Not only do brain cells and circuitry sustain damage from chemotherapy, but we now know that this type of injury is potentially repairable in time. In 1998 Fred Gage of the Salk Institute for Biological Studies and Peter Erickson, a Swedish researcher, discovered and announced that the human brain is capable of producing new cells throughout life.

In the December 2006 issue of *Cancer*, a Japanese team headed by Dr. Masatoshi Inagaki, using MRI imaging studies, pinpointed areas of the brain specifically affected with the chemobrain variety of toxic brain. The team demonstrated that the brains of patients undergoing chemotherapy quickly became dramatically smaller in specific areas, indicative of the death of and harm done to large numbers of neurons, and so reflecting gross brain shrinkage in those areas.

More importantly, in support of the healing concept of Neogenesis, Dr. Inagaki's team clearly showed that those areas of brain tissue volume losses were, for many affected patients, able to fill back in after a period of three years by follow-up neuro-imaging. This finding strongly supports the basic tenet of Neogenesis as it relates to the brain. By using the seven wellness strategies that I discuss in chapters 7 through 13, we can replace killed or damaged cells and their circuitry with the best new constructs possible.

A salient point is that when the function of the brain is altered by toxins, many other parts of the body are indirectly and adversely affected. This is because the brain automatically controls or influences many functions of the body. Control of such vital equilibrium functions such as breathing, heart rate, blood pressure, fluid and electrolyte balance, perception of pain and biological rhythms -- including sleep and FEAST system duties -- are highly brain-centered.

In COED-S, we are now seeing many disorders that could best be explained by toxic injury to the parts of the brain that control these various functions. In fact, the profile change that I call COED-S is predictable when you simply understand that the parts of the brain which are most vulnerable to toxins will be the less-protected brain stem, hypothalamus, and the unmyelinated nervous system. Furthermore, the age groups of those most affected are also predictable, as the blood-brain-barrier is relatively weak in the fetus, infant, child and elderly.

## THE GLOBAL ROAD MAP ANALOGY FOR BRAIN NEOGENESIS

Envision what a road map for the entire Earth would look like. As portrayed on a conventional road map, there are super freeways designed to carry the highest traffic loads. Lesser roadways carry less traffic. They appear as roadways of lower designation. Now include in that envisioned map even the smallest of pathways such as walking paths, and pathways traveled by small creatures. Lastly, add into your vision both third and fourth dimensions, wherein dynamically interacting pathways intricately traverse a globe in variable directions. **The brain is 'wired' like such an intricate 'global road map.'** In our analogy, the major freeways represent the permanent **macrocircuity**; we all have these big pathways in common. All of the tiny paths represent the more fragile and constantly changing microcircuity which is unique in each of us.

### Global road map traffic control

Instead of vehicles or creatures, **packets of energy** are 'the traffic' flowing through our globular brains. All pathways must be maintained for traffic to flow freely. Like freeway repairs, quality repair work is best done during times of low traffic flow. Thus, regular episodes of **sleep** are paramount. Similar to our highway system, the necessity of anticipated future traffic flow dictates our global highway construction projects. New constructs -- one's **microcircuity** -- is driven by one's unique experiences. The frequency of travels along any neurological pathway upgrades it and preserves its integrity. With each **'recall'** of a memory the pathways to that information are reinforced, making it easier for them to carry future 'traffic.'

### Traffic disruption

If a severe localized road blockage occurs in any brain pathway, such as in a head trauma or stroke, a detour for traffic flow must be set up promptly to avoid unnecessary traffic backup. The more backup, the more difficult it will be for the traffic to get between the two points on the brain's global road map wherein the blockage is. Time becomes essential in mitigating collateral damage and ultimately preserving the traffic flow of these packets of energies.

Let's consider, in analogy, that a stroke involves the major neurological pathway analogous to the interstate #10 freeway between Phoenix and Tucson, Arizona. There are no parallel large highways to handle normal energy flow-- 'the traffic.' To mitigate the backup and avoid major permanent damage, the traffic needs to be rerouted ASAP. For restoration of brain function to occur, the pathways need ongoing traffic flow, lest some functions become permanently lost. In this stroke analogy, the traffic must circle hundreds of miles farther around to go between Tucson and Phoenix. Other 'traffic' will find a shorter but less maintained path like a dirt road, even a burrow's path or a hidden illegal immigration trail!

We must use whatever is available ASAP. When we do, miraculous things happen with time. The burrow or immigration trail used to accept the additional energy flow gets larger with more use. These small paths eventually coalesce to become the superhighway from Phoenix to Tucson! Neuro-scientists now refer to this remodeling as **neuroplasticity**.

For this neuroplasticity/**Neogenic repair** to best happen, in our analogy, we must want to get to Tucson and make the effort to do so quickly and intensely. If a stroke or otherwise brain-injured patient is poorly motivated, or if comorbid conditions delay proper physical, occupational and speech therapies, losses of function commonly ensue. Especially when one is motion-restricted, discouraged patients may lose the focus, will and confidence needed to move forward. In lieu of **reciprocating gait activities** (the ideal Neogenic detox activity), **motion beds** may be helpful in recovery. Like cradling 'calms' a child, **motion bed 'cradling' of a brain-injured patient helps optimize detox and neuroplasticity.**

### Toxic brain and the bottom line

The collective somatic expressions from these ubiquitous toxic brain mechanisms account for much of the profound disease profile change that I term COED-S. In contrast to a **typical stroke** in which brain damage is easily imaged radiographically, toxic brain injuries are best visualized as diffuse 'potholes,' most often distributed more densely around particular areas of the brain. The specific nature and severity of any brain injury dictates the distribution and intensity of the 'traffic-flow disruption' as well as the NBC Broadcast projection of that disruption. Most of us living on this increasingly toxic planet are suffering from insidious, chronic and mild forms of toxic brain. This manifests, in our analogy, as 'potholes.' Such potholes reduce 'traffic flow' on many pathways in our brains.

Depending on degree of brain toxicity, an analogous six lane freeway may be open to only 5 or less lanes for 'traffic flow.' Depending on the severity, the brain's resultant global roadway's 'potholes' may be repairable quickly as in a hangover, take a week or so to clear in the cases of mild delirium or jet lag, take up to a year or more to 'resurface' in chemobrain, persist as with **Traumatic Brain Injury (TBI)** or unrelentingly worsen in neuro-degenerating forms such as **Alzheimer's**.

**Update 6/9/16:** Research reported in *online Lancet Neurology* shows that although soldiers with **blast TBI** often develop persistent neurological and psychiatric symptoms -- including **post-traumatic stress disorder (PTSD)**, headache, sleep disturbance, and memory problems -- few brain abnormalities show up on conventional neuroimaging. Despite this lack of imaging evidence those blast TBI-effected soldiers showed striking and remarkably similar post mortum brain pathology!

**Only when we recognize the brain's many vulnerabilities -- when we come to realize the brain is in charge of so much -- can we begin to comprehend the variability in the somatic expressions of its toxic sufferings!**

The thorns causing **toxic brain** are toxins we've take into our bodies from our environment and those produced from within. Deficiencies of any essential substrate like #1 Pie energies, glucose, oxygen, and micronutrients play very common roles. **Inactivity**, as in inadequate detox motions, is the most common dysfunction thorn. Again, there are 3 types of 'thorns.'

Aside from the continuous metabolic generation of toxic acids and free radicals, common **endogenous neurotoxins** include the metabolic derivatives of #2 Pie energies such as anger, bitterness, remorse and fear. These **toxic thoughts** metabolically spin out **toxic-thought chemicals** such as inflammatory cytokines and the derivatives of destructive imbalances of neurotransmitters.

Exclusive intake of **#1 Pie** prevents construction of such deadly toxins by removing their '**#2 Pie thorns.**' **Supporting Update 2/24/15:** A study published in the *European Heart Journal* showed that acute, intense **anger** episodes were associated with a 9.5-fold higher risk of triggering a heart attack within two hours when compared to those displaying **calmness**.



There are hundreds of environmental chemicals that are harmful to the brain. Most of these neurotoxins have inadequate labeling and minimal restrictions. Most have had inadequate testing for, and many do not include adequate recognition of, neurotoxicity. Common environment-derived **exogenous neurotoxins** include energy production-derived toxins, vehicle exhaust and other outdoor air pollution toxins, indoor air pollution toxins such as formaldehyde, mold and other microbe-derived toxins, alcohol, recreational drugs, prescription and over the counter drugs, pesticides, herbicides, allergens, cigarette smoke, fragrances and toxins from the food chain. These toxins typically present as confusing mixtures thereof.

### What can we do to make our world safe from neurotoxic environmental chemicals?

The EPA, FDA, USDA and other institutions already in place need to be adequately empowered and freed of politics so as to properly address this momentous challenge. They are slowly moving in the right direction; however, you can't afford to wait for them. You must learn to protect yourself and those you love now. **Continue reading this book to discover how.** To close the gap, these agencies need to retool and use new thinking. Future testing might be expedited by exposing neurons developed in the laboratory, from a variety of **pluripotent stem cells**, to those chemicals and energy-emitting technologies that are either currently in use, yet still suspect, or newly-emerging ones awaiting approval.

It also could be of merit to examine the brains of individuals so clearly affected with these new disease epidemics in both imaging studies and post mortem pathology studies. Perhaps a significant pattern would shed light to their genesis. Many parts and systems of the brain are already suspect in many cases. Such studies might add to our understanding of the intricacies of brain function and offer insights into the ongoing environmental health challenges.

COED-S has developed as a result of too little forethought in our increased exposures to chemicals and energies. Inactivity and rapidly changing norms, expectations and stressors in our modern world also play a part. Unless we understand the influences of our increasingly toxic environment, frequently expressing themselves through toxic brain mechanisms, we will not be able to implement effective strategies to minimize that impact as individuals and as a society.

"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom."

~Isaac Asimov~

Whether you know it or not, you are a participant engaging in this contemporary chemical and energy crossfire. Often, by no fault of your own, you are being shot in your brain with billions of tiny chemical and energy bullets each second. The questions become: can the resultant tiny holes in your neurological system be repaired? Can the potholes in your brain's global road map be resurfaced? If so, how is this best done? In the next chapter we will begin to answer these queries affirmatively by introducing you to **the miracle of your Neogenic design**.



# III. THE TOOLS FOR SURVIVING THE COED SYNDROME CHALLENGE

## Chapter 5 REJUVENATING WITH NEOGENESIS

You are not of unreal design, nor are you subject to the fulfillment of hedonistic wishes such as in *The Picture of Dorian Gray*. In this 1890's Oscar Wilde fantasy novel, the protagonist Dorian Gray wishes that a painting of himself would age but that he would not. His wish is granted, which leads to a life of callous disregard for himself and others. The twisted plot has a horrible fate for Dorian as the ultimate punishment for accepting and taking advantage of this unnatural gift.

Neogenesis is your natural and virtuous path to good health, longevity, wisdom, harmony and peace. It's the richest and most direct path. It emphasizes that changes need to be made now without procrastination or fear. There are no shortcuts to good health; you cannot buy good health in a bottle or receive it by a wish. It is a gift that comes with your creation and can be strategically augmented in seven dynamic arenas that we will examine in chapters seven through thirteen.

"I will give thanks to Thee, for I am fearfully and wonderfully made;  
Wonderful are Thy works,  
and my soul knows it very well." **Psalm 139:14**

This book does not contain phony magical maps that direct you, the reader, to some mythical fountain of youth. Its intent is to introduce the true caregivers of our world to **Neogenesis**. Neogenesis is the most powerful opportunity for positive change you could possibly dream of. Change is not just possible by virtue of your Neogenic design -- change is inevitable.

Your body is in a constantly changing state of growth, maintenance and repair. You exist as an aggregate of cells in a dynamic equilibrium. That aggregate is in a constant ongoing state of change as the old cells are replaced with new ones. Up to 50 billion of your cells die each day in that healthy change. Choices you make now influence what you become later. You have no destiny other than those limited by your genetics and circumstances and as directed by your choices.

**Neogenesis** is your body's magnificent, highly complex, intrinsic mechanism for change. If you appreciate its brilliance, and optimally harness it, you will see its power. Neogenesis is your design's rejuvenation opportunity to change physically, mentally and spiritually for the better. Neogenesis, this innate tool --this profound gift -- allows you to better grow healthy and strong, to better learn and to better heal naturally. The 'better' qualifiers above relate ultimately to **better choices**.

### **Neogenesis –the growth, learning, changing and healing method of our design**

In a simplistic physical sense, we exist merely as bags of chemicals organized in exquisite designs. Our designs are expressed in elaborate compilations of cells. The early growth phase of the human life cycle is characterized by a programmed proliferation and differentiation of these cells, all emanating from one single cell -- the fertilized egg at conception. This proliferation results from the doubling of cells -- a process called **mitosis**. During the mitosis process, one cell becomes two, the two become four, etc. DNA-directed doubling results in an aggregate being of trillions of cells.

The **first key** in understanding Neogenesis is to recognize that all cells weaken or lose function with time and by design will require replacement. The design feature that dictates this is called **apoptosis**. The concept of apoptosis has been referred to as 'programmed cell death.' Unintentional cell death is a bad thing. However, in our design, programmed cell death -- apoptosis -- is an essential element of this magnificent Neogenesis program. It allows for you to better reconstruct yourself in a dynamic ongoing **remodeling** process. Neogenesis encompasses both sides of the "cell death -- cell birth" equation and, in part, can be better thought of as genetically programmed cell replacement.

There are two distinct ways that cells can be replaced naturally; simple mitosis is the first way. The second way is a mechanism called **migration of stem cells**. Stem cells exist in a seed-like state. Stem cells are inactive reserve cells that have been produced from prior mitotic events and have not yet become functional. Some are committed to specific cell lines while others are **pluripotent** -- able to morph into many different cell types. Like reserve troops in combat, when needed, the stem cells are 'recruited' to become a part of the restructuring of any organ or tissue. The stem cell is directed to morph into a specific cell type after it has been chemically attracted to and travels to the final destination where it's most needed. This chemical attraction is called **recruitment** and the chemical-induced travel is called **migration**.

**Recruitment** and **migration** are directed through a complex chemical messaging system analogous to the way the military draft board works and our postal service directs mail. Like Uncle Sam your body will always need to recruit cells. Chemical messengers not only direct stem cells to 'migrate' or travel to specific locations needing reinforcements, they instruct the 'recruits' as to what specific kinds of cells to become.



## First class postal delivery of the 'draft notice'

When cells of an organ or tissue are damaged, abnormally stressed or simply expended, chemical cytokine signals are sent out that attracts circulating stem cells and causes them to migrate to the exact locations to fill the void of the cells that have passed on. Once they reach and implant into their needed place (now referred to as **homing**), stem cells morph into fresh replacement cells, fully equipped to function in the capacity of their predecessors. After homing is complete, the newly functioning cells are capable of proliferating by mitosis to add strength and function to the tissues they are a part of. Both replacement processes (mitosis and migration of stem cells) occur in the body at all times.

The **second key** is that Neogenesis continues in all cell lines throughout our lives. This feature allows us to grow and learn so that we can functionally adapt to changes in our environment. This is essential because our optimal function, survival and longevity potential require ongoing change. Cells of all tissue lines must be replaced as they lose integrity and function or they get in the way of ongoing dynamic constructs. They simply lose their usefulness or become impediments to the multi-cellular beings that we are becoming. Our design calls for the replaced cells to donate useful parts to their Neogenic progeny and simply self destruct. In their disintegration useful parts are efficiently recycled for the good of the aggregate being.

In the largest sense, all parts of our physical bodies are works in progress. Cells are constantly dying while others are being born. This dynamic Neogenesis program, deliberately insidious by design, allows for maintenance repair, growth and development (including new learning) -- while still permitting function. The entire process is not noticeable at any given moment in time; it is best appreciated as we grow from conception through childhood and then on to adulthood.

To appreciate the process, compare photos of yourself at various ages during this rapid growth phase; dramatic changes are clearly evident. Once your design's rapid growth is complete and you reach your adult size, the **matrix**, that structural containment within which cells and connective tissues are embedded together, limits your general appearance and form. The matrix then undergoes much slower changes. All Neogenic processes continue unending until your death.

**Neogenesis** is a complex and adaptable cellular renewal program inherent in human design. Jonas Frisen, PhD, a radioactive carbon-14 dating researcher, suggests that the average age of your body's cells, in aggregate, is about 8 years. Clearly, however, cells of many tissue lines are, by necessity, replaced much more frequently. This enormous yet subtle replacement occurs without missing a beat as your body parts continue to function. For example, if the tissue is a linear mechanical support-functioning tissue such as a muscle, bone or ligament, it can be thought of like a cable made of hundreds of strands. Some of the strands are being replaced at all times without any overall loss of integrity of the cable.

In fact, Neogenesis is so well-programmed, dynamic and adaptable that it allows for an increase or decrease in the thickness of strands that are needed to bear the cable's stress burden. If you gradually increase the burden as in a resistive (weight training) manner the involved muscle strands will, over time, get thicker to adapt to the anticipated ongoing increased burden. The dynamic nature of this Neogenic process allows you to remodel yourself within the limits of your matrix. **DNA programmed enzymes** allow this to occur automatically, given the proper activity stimulus.

In contrast, if you decrease your load bearing or resistance habits on a particular support tissue, that tissue will morph into a weaker unit to improve overall efficiency of your body energy expenditures. The design is one of conservation. So if you don't use your muscles they gradually atrophy. If you diminish your weight bearing, over time, your weight bearing bones will weaken towards **osteoporosis**.

**"Time is on my side." ~ 1964 song preformed by Rolling Stones**

The 'over time' aspect is important to emphasize as Neogenesis takes time. This makes '**tincture of time**' the important medicinal element in Neogenesis. The time it takes varies greatly among all the differing cell lines and is intricately related to need and function of the cell line. From their functional demands, cells are stressed to the point of literally 'wearing out.'

Skin tissue, for example, chiefly provides us with a barrier, keeping things from entering our body that would literally feed upon us. It has other functions too. It helps regulate temperature, sense the outside world, and interface with that world in innumerable ways. As with each tissue type, the skin's activities in aggregate determine the timing schedule for skin cells to be replaced. For skin cells, this **cell line replacement time** is generally accepted as occurring within 2 to 4 weeks.

The replacement time for cells lining the gut is also relatively short. These cells are a thin line of hard workers with a dirty job. The line has to be thin because these cells function to absorb and secrete food and waste chemicals between the outside (the gut lumen) and our 'insides.' Thinness necessitates rapid replacement to maintain high integrity of the gut lining. The workload involved is also one of many functions that determines how often a cell will need to be replaced. The stomach cells are replaced frequently, most likely due to the extremely hostile fluctuations in pH (acidity). Esophagus and upper and lower G-I cells last longer.

On the other end of the cellular longevity spectrum, after reaching maturity, structural cells are generally slow to replace. Structural bone cells last about 10 years; yet, cell production may be greatly influenced by fractures, metabolic needs, hormones and other cytokine signals. For example, acceleration of production allows for bone strengthening. Deceleration results in **osteoporosis**. Bone marrow-derived circulating cell replacement times similarly vary greatly, based on specific cell line purpose and necessity, with white blood cell line types lasting hours to weeks. Red cells last about 90 days.

### **You will change your mind—you have no other choice.**

In the recent past most biologists were convinced that nerve and brain tissue were exempt from the Neogenesis concept. They erroneously thought that, once injured, nerves could not repair themselves. A few decades ago it became apparent that nerves could regenerate. Then the scientific community retreated to the thinking that the brain was the only tissue that couldn't regenerate. Such erroneous thinking is held by some physicians to this day. Such thinking most likely reflects a bit of Big Pharma's powerful 'educational' influence on doctors. Such an unchanging brain concept supports Big Pharma's '**neurobiological**' basis for mental illnesses -- a marketing-generated concept that once a 'psych' diagnosis is made on a patient, their drugs are needed forever to normalize function in his permanently improperly-wired brain.

Working separately in 1998, both Fred Gage and Peter Ericksson discovered and announced that the human brain is capable of producing new cells throughout life. Dr. Masatoshi Inagaki's MRI imaging work on **chemobrain recovery** also supports the constantly changing brain concept of Neogenesis. **Update 10/19/2011:** In the 'old school' of neurobiological thinking, one's IQ was always considered to be stable across a life span. Now, new research published in *Nature* shows that not only did IQ rise or fall in the teenagers studied over a 4 year period, but those changes were correlated to brain material changes which were reflected in fMRI imaging! Verbal IQ changed with grey matter in a region that was activated by speech, whereas non-verbal IQ changed with grey matter changes in a region that was activated by finger movements.

In cases of severe brain injury repair could take many years, as evidenced by the case of **Terry Wallis**, who was in a coma following an auto accident. He progressed into a minimally conscious state that lasted nineteen years. He amazed the entire staff when he awoke in 2003. Using the latest research imaging tools, the neuroscientists showed that his brain had rewired in an unusual manner. It had grown around the area of massive scarred-up damage and had created new connections. Serial imaging studies done since have shown that new repair continues to occur and seems to parallel his clinical rehab progress. What further amazed the family is that they could easily tell that he still had the same spirited personality that he had before the brain injury! In reality, he had taken a repair nap that lasted almost 20 years.

This lengthy replacement time for most brain cells has to do with the efficiency of function under normal circumstances, as well as the complexity of the design features of the brain with all its dendrite and axon connections. Think of it in this way -- it would be easier to properly replace a broken tile from your floor than a chip off a Michelangelo painting. Also, the protective blood-brain barrier somewhat resists the entry of repair chemicals and the exit of refuse chemicals. The time it takes to replace damaged brain cells is highly variable depending on one's age, the part of the brain we're talking about, the complexity of the damage, and how quickly that damage is detected and properly addressed. **Update 12/15/11:** The ongoing recovery of severely brain-injured congresswoman 'Gabby' Giffords is an inspirational example of great-outcome potential rendered by excellent care.

### **Take good care of your your most precious gift -- your brain**

In cases of severe brain damage, the patient's outcome is truly in the hands of professional custodians. Their actions can make a huge difference in any specific outcome. Good nursing care, proper nutrition, motion beds, appropriate and well timed interventions and constant vigil are important factors in optimizing recovery. Unlike Gabby's, most brain damage is subtle and insidious but also cumulative. It is a direct result of our own poor custodial performance. Most of us just don't know what is involved. We take for granted the physical design gifts we have and make choices that lead us to ill health. We all have unnecessary brain and other tissue damage from injuries, but we can learn how to better care for ourselves.

It should be easy to see that Neogenesis is an aggregate of complex processes, each highly dependent upon chemical messengers, and that toxic chemicals disrupt these processes. As a corollary, it should be evident that augmentation of the SINK is paramount to any effective wellness strategy. Optimally applying the seven Neogenic wellness strategies discussed individually in chapters 7-13 allows us to make the best quality cell replacements in the shortest period of time. In all future discussion we will refer to these most excellent cell progeny constructs as **the good honey**.

Neogenesis dictates that the choices we make now have future consequences in health terms called **outcomes**, and that we bear responsibility for these outcomes. Neogenesis promises that you can make choices that will influence the quality of the newly formed cells. These volitional changes will significantly impact the quality and longevity of the multi-cellular being you evolve into -- your **Neogenic self**. The design itself allows you to upgrade or downgrade with no predetermined or destined outcome. Your choices greatly influence all outcomes. You are, in fact, malleable within the defined outer limits of your genetics. Give your body what it needs and it will make the **good honey**.

## THE BEEHIVE ANALOGY

To help you visualize how Neogenesis works in abstraction, I will describe it using the analogy of the beehive. In our analogy, the 'bees' are **enzymes (both anabolic and catabolic)** that make and continually 'remodel' our bodies!



The overall configuration of any bodily structure's matrix would be the beehive's honeycomb. The honey chambers represent the cells embedded in that honeycomb.

The matrix is a cellular framework that gives shape to any tissue or organ. The whole body structure of our design's matrix is primarily supported by a semi-rigid, highly-calcified frame – **the skeletal system**. Our matrix is a construct that is dynamic and alive --even our boney skeleton. Like most substances of our body our matrix consists primarily of water. Intertwined in these wet spaces are significant structural proteins. The protein weave of the matrix structures allows the overall honeycomb strength to resist distortion and to resume its overall shape after compression and stretching during ongoing remodeling and functioning.

**Plasticity proteins** allow each tissue's matrix to dynamically redesign, within the limits of the overall shape defined by one's genetics. Any redesign is directed to accommodate the tissue's changing needs over time. We have scores of different organs and even more distinct tissue types that may be part of, or separate from, any organ. Two proteins predominate in the matrix of structural support tissues: **collagen** is the more rigid and gives the tissue form by holding each cell in its place; **elastin** is more spring like and gives the matrix flexibility.

To demonstrate how we heal, I think it's good to use ligaments as an example, as they are commonly injured. Ligaments attach to bones to hold the bones in proper position to allow your skeleton to move in any functional action. They are usually injured when excessive stress is applied to these support tissues. Injuries to ligaments are referred to as **strains**. The most commonly strained ligaments are those that hold the bones of **weight bearing joints** (foot, ankle, knee, hip, spine) together. The severity of the strain dictates the amount of time needed to properly heal. Many factors, including our choices as they relate to chapters 7 through 13, dictate the quality of the Neogenic healing. In our beehive analogy I refer to the best quality of growth or healing repair as **the good honey** whether it pertains to the matrix or the contents of other cells embedded within it.

Think of the ligament as a linear object like a sophisticated cable comprised of hundreds of strands. The healthy cable is dynamically replacing the individual strands that give it strength as they wear. In a strain injury, the replacement program is dramatically accelerated by instructions provided by chemical cytokine messages. Strong, yet rigid, **collagen** protein strands are replaced quickly to reestablish integrity (typically 1-3 weeks); they hold things in approximation. Strength is important to prevent the two ends of the strain from completely separating or tearing apart.

This is a temporary construct because the more flexible **elastin** protein strands are Neogenically orchestrated to quickly follow. The cable's original, functional strength will not be completed until the right mix of both proteins is threaded back into it. The 'tincture of time' for complete restoration is typically 4-8 weeks, barring interruption or complete tissue tear. If our actions or unfavorable conditions interrupt the healing process we will receive a reminder in the form of pain. It's important not to mute this message, as we need to know when conditions or activities are interrupting the optimal healing process. If we ignore or mute pain messages the final constructs will be delayed and/or of compromised quality.

It is often impractical for linear tissues that completely tear apart to heal unless the two ends are held in approximation. This is the reason your doctor will 'reduce' a bone fracture. This brings the torn ends into closer approximation to cast or pin it in order to maintain positioning while the 'natural healing' of Neogenesis proceeds. Tissues, such as ligaments, that contain elastin tend to be taut. **Elastin** functions somewhat like a stretched rubber band, providing tissue stability and flexibility. Its constant contracting tension is called **tone**. This inherent tone will cause completely torn tissues such as tendons to roll up like a Venetian blind, separating the torn ends. Such tissues, when completely torn apart, may require surgery to approximate the torn-apart ends to best allow Neogenic healing that reestablishes tissue integrity and function.

For all tissues and organs of your body, the chambers in our beehive analogy represent the spaces for individual cells. When all the chambers are empty, that honeycomb, although weak, has a defined form. That form is actually strengthened and resists distortion as more of the chambers become filled. In any tissue's 'beehive' there will always be some empty chambers due to the recent disposal of useless cells. At all times some chambers are only partially filled while in the process of becoming fully functioning cells; others are partially empty while in the process of apoptotic destruction. This Neogenic process is dynamically orchestrated to allow for ongoing function of all tissues, organs or cell lines.

### Changing your 'mind' through Neogenesis

As in the global road map analogy of the preceding chapter, the large neurological pathways that all normal human brains have in common are the **macrocircuity**. This most superior design represents the standard 'brain wiring' for our species. Its DNA instructions call for a controlled, rapid and uniform embryologic emergence. Once developed, the macrocircuity is undergoing normal maintenance at all times. The more fluid **microcircuity** is where new constructions of pathways of lower designation are constantly being created as our mind interfaces with its experiences.

Brain growth spurts and major repairs are best done at times of low traffic flow. This is why the newborn, whose brain is growing most rapidly, sleeps so much. This is why sleep as well as meditation, yoga or prayer-induced brain states and other forms of **focused thought** are so powerfully therapeutic and essential for optimal repair of ongoing wear and tear. This is why in extremes of brain damage, traffic slows to a near halt in an ongoing brain repair state we call a **coma**.

**DO NOT DISTURB... BRAIN UNDER REPAIR**



Unimpeded, your Neogenic design will push toward a homeostatic balance allowing healthy growth and healing. Regardless of when they occur, repairs, including cell replacements, are programmed with continued function as the paramount consideration. During routine scheduled repairs, the energy traffic flow of the brain-- thinking and messaging-- is uninterrupted as it is diverted along other traffic lanes that travel to the same destinations. When unscheduled or localized damage occurs, as in cases of strokes or other severe brain injuries, brain function is greatly impeded. Even in such a dire event, Neogenesis will press forward towards healing. Best healing results when encouragement, proper support and the patient's 'will to heal' are part of the mix.

In your brain degraded cells are replaced by fresh ones on an ongoing basis. Further, as you experience life, think and form memories, existing neurons dynamically extend out more **axon** and **dendrite** connections into the matrix to join similar connections from other neurons. Such **neuroplastic 'learning processes'** enhance functional efficiency by integration. This Neogenic feature further dictates your dynamic identity - your singular, yet ever changing Neogenic self. Influenced by your choices, your brain's **microcircuity**, so created, becomes the dominant force in your internal universe.

## Age well -- AIM on target

Now let's go back to our beehive analogy thinking paradigm to visualize how important your choices are and why.

Your health outcomes, be they good or not-so-good, are highly influenced by the *choices* you make. Such choices influence the quality of the 'honey' as well as the fullness of our '**analogous honeycomb matrix.**' An excess of empty chambers allows for an unhealthy distortion of the matrix, as each full honeycomb-like 'chamber' offers support to the adjacent matrix to resist crushing. The most compelling and distressing signs of aging relate to this crushing effect on the matrix that gives form to any tissue. Chambers full of the healthy good honey render a plump grape appearance. Empty chambers reflect as the shriveled-up raisin appearance. Filling chambers with toxic honey tends to degrade support proteins within the matrix. Such resultant matrix distortions cause '**sags and bags,' wrinkles, dowager's humps, hernias** and other deformities -- typical signs reflective of tissue weakening associated with abuse, neglect and aging. A brain that is in a similar way poorly-maintained with aging will shrink into a degraded state called **cerebral atrophy.**

If you are mathematically inclined, I'll make Neogenesis simple for you to understand. If not, have no fear. Remember, math is just an understanding tool that renders quite complex things, such as Neogenesis, more simply understood.

For the best outcome in a fully grown adult, the numbers of competent cells needed to preserve the integrity and stability of tissues and give them a beautiful healthy, shiny, fully plump appearance, would be represented by the equation **A+I =M**. That is, cells that become lost by **A** (Apoptosis) and **I** (Injury/Inflammation) must be replaced by **M** (Mitosis/Migration of stem cells) in equal numbers to keep the aggregate 'matrix' stable, strong, efficient and plump appearing.

If healthy mitosis and migration of stem cell replacement (M) is outpaced by the loss of cells -- the combination of apoptosis (A) and unhealthy cell death due to injury and inflammation (I) -- our analogous beehive-like matrix loses integrity and becomes deformed and weakened. This degenerative equation is: **A+I >M**. The development of such **degenerative diseases** is the most common scenario in premature aging. Such degenerative tissues not only impede quality of life, but their associated complications also shorten longevity. I refer to this quite often avoidable scenario as '**aiming too low.**' As the 'analogous beehive matrix' prematurely ages in this degenerating fashion, the tissues it represents in our analogy thin, shrink, tear, improperly repair, erode, inflame, herniate, bulge and otherwise distort.

Common manifestations of this degenerative 'aiming too low' scenario that result in this weakened, shriveled-up raisin appearance are some you probably have or are familiar with such as:

<u>Condition</u>	<u>Tissue involved</u>
Degenerative arthritis	joint cartilage and ligaments
Diverticulosis	smooth muscle of colon
Hiatus hernia	muscle of diaphragm
Rotator cuff tears	tendons and musculature of shoulder
Mitral valve prolapse	connective tissue of mitral heart valve
Wrinkles	skin
<b>GERD</b>	musculature and other support tissue of the gastro-esophageal junction
Osteoporosis	bone
Emphysema	lung
Cardiomyopathy	heart
Varicose veins	veins
Cerebral atrophy	brain

To maximize tissue integrity and avoid premature aging, our tissues need ongoing healthy stimulation, nourishment, detoxification and protection against unnecessary injury. Healthy stimulation is synonymous with optimal messaging. **Messaging** is optimized by participating in physical and mental activities we are designed to do, such as thinking, walking, learning and performing activities. In chapter 2 we discussed the 3 groups of chemical messengers. An optimal balance of all messengers encourages the optimal Neogenic outcome -- **A+I=M**. If we have a deficiency of Neogenic messengers, such as thyroid or growth hormones, we **aim too low** and fall short. That Neogenic equation is **A+I>M**. Adversely, if we have an excess of such messengers we **aim too high** and similarly fall short. That equation is **A+I< M**.

### **Aiming too low**

**Gastro-esophageal-reflux-disorder (GERD)** exemplifies the 'aiming too low' Neogenic scenario as it pertains to the genesis of COED-S. The affected tissue is the **gastro-esophageal junction (GEJ)**. The GEJ's musculature normally functions to contract as the stomach fills with acid in response to food entering into it. GEJ contractions keep the acidic stomach contents from flowing backwards into the esophagus thus rendering the '**heartburn symptoms**' of GERD.



Endocrine disrupting chemicals (EDCs) corrupt the anabolic messages that render normal strength to the GEJ musculature, thus lessen its 'M' (growth value) in our Neogenic equation. EDCs also cause mid-belly weight gain, thereby abnormally stressing the GEJ's musculature. This increases our equation's 'I' (Injury) factor. The GEJ, thus so weakened and stretched out of functional shape, allows stomach acids to reflux back into the esophagus.

In analysis, the 'thorns' causing GERD typically include: **deficiencies** of saliva, anabolic messages and physical activity; **dysfunctions** – mid-belly weight gain and improper eating (as in meals that are too large and timed too close to sleeping) and **toxicities** – EDCs as well as many others including, ironically, some drugs conventionally used to treat GERD!

### ***Aiming too high***

On the flip side, body builders or athletes who take performance enhancing drugs may quickly see desired results, but likely will pay a price later. Such abusers are '**aiming too high**' and will also fall short of target in the **All Term --** - that most important segment of time that includes the entirety of one's life.

**Update 3/12/10: Bisphosphonates** work for osteoporosis by reducing apoptosis (the 'A' part of our equation.) By suppressing bone turnover these drugs initially reduce the risk for fractures. Researchers at Columbia and Cornell report that bisphosphonate use improved bone integrity early on, but gains were pushed back as treatment went beyond 4 years. After 4 years of inhibiting Neogenically-scheduled apoptosis, many patients' bone biopsies showed that 'old' cells of poor integrity accumulated. That resultant weakened bone associates with **pathologic femur fractures**. Such serious **aiming too high paybacks** similarly explain the risk of **necrosis of jawbone** seen in 'long term bisphosphonate users.'

**The optimal health outcome equation is  $A+I=M$ .** You can best reach and maintain this full potential by **aiming on target**. This is best done by avoiding 'thorns' causing unnecessary injuries (I) and by consistently committing to healthy choices.

### **Neogenic paths of opportunity**

This realization that the brain is, like all somatic tissues, in a dynamic state of Neogenic change lends tremendous potential to any wellness strategy. Because your brain is the command and control center for what you are dynamically becoming -- your **Neogenic self** -- filling the brain's beehive chambers with the good honey becomes paramount. Conversely, allowing contamination of your brain's 'honey' to continue will, through the brain-body connections, magnify damages. Hence, the brain is the Neogenic target of greatest concern.

Picture in your mind the way you want to function and look in 20 years. Visualize two scenarios. In the best planned scenario you are robust, mentally sharp, highly functional and content. In the preventable alternative case you are weak, mentally declined, handicapped and troubled. Your choices will determine the scenario which emerges over time.

Taking advantage of your design, in order to improve, calls for you to gain insight as to how you function physiologically and how you can adopt strategies that work to ensure better outcomes. It should be quite evident that the human condition resists change. Seriously harmful habits such as overeating, smoking, compulsive and other destructive behaviors are extremely difficult to modify. Ultimately, to change for the better, you must change the way you think. This allows for changes in the way you act. This logic puts everything into the ballpark of your choices.

**Neogenesis allows us to pursue longevity and quality of life along two pathways to optimal health outcomes.**

The first path is one of prevention, a path acknowledging that cells die in ways other than the apoptosis program. It emphasizes safe choices to avoid destructive matrix distortions or cell deaths by **injuries** or **unhealthy inflammations**. Neogenesis explains how our bodies deal with overt and occult toxin-rooted health hazards which impede development and healing. Its understanding also shows us how we can take advantage of the natural development and healing potential of our design dynamics such as our detox system. Good honey is diminished of toxins. Toxins are reduced when your SINK is optimally functioning. Good choices, discussed in chapters 7-13 herein, allow this to best happen!

The second parallel path is commitment, the 'taking charge' of your ongoing brain changes. Staying well-focused allows you to cognitively control the neuroplasticity aspect of Neogenesis. Commitment for change is paramount to its success. Understand that habits and addictions are the strong currents that dictate your Neogenic self. When you identify and eliminate unhealthy habits and addictions, you make good honey by consistently committing to better choices. With 'tincture of time' such better choices will bear awesome fruit. You can facilitate this strategy of discernment by employing the philosophically-based cognitive tool called SEEK. We'll discuss SEEK in chapter six.

Neogenesis offers you a preventive-medicine prescription for aging well. It involves making better choices in wellness arenas discussed in chapters seven to thirteen. It is a dynamic prescription that you need to continually rewrite using the SEEK tool as a guide. Notice that these chapter titles always imply change. We never reach a static state in knowledge. Happiness and good health results from an ongoing pursuit of truth and the subsequent application of its discernment.

The next question becomes when should you fill this prescription. As an example that makes the answer clear, let's assume we agree that the wearing of seat belts while driving results in the positive outcome of saving lives. You recognize that the choice to put your seat belt on is wise for your benefit and you normally wear it. Yet for some reason you suddenly find yourself stopped at stoplight and you notice that you've forgotten to put your seat belt on. As to what you should do with your seatbelt right now, what is your best internal dialogue answer?

- A) I'll leave it off for the remaining part of the trip because it hasn't been a problem so far.
- B) I'll just leave it off unless I see a patrol car and then I'll quickly put it on to avoid a citation.
- C) I'll leave it off until I see an accident coming up and then I'll quickly put it on to avoid injury.
- D) I'll start using it when I start the rest of my New Year's resolutions.
- E) I'll put it on now.

The best answer is E. The best time to stop a bad activity, habit or addiction and to start making better choices is now!

Most risky behavior addicts continue convincing themselves of the A answer. You'd be amazed at how many people choose the B, C, and D logic. They decide to quit smoking after they get lung cancer. They opted for lifestyle changes after their heart attacks. When they get the flu, they lament, "I feel so terrible; I'll remember to get a flu shot next time." Of course they don't. Men are absolutely the worst with this logic. We men typically go speeding through life thinking we're bulletproof. The most ignorant of us rationalize that all is predestined and we are powerless to change our fates.

The next question is whether this is a bitter pill to swallow. Just the thought of change evokes anxiety in us. We are quite like Pavlov's dogs. Prompt change is a whole lot easier than any alternative. Failure to make positive changes in our current neurotic and addiction-driven thinking and behaviors will result in unnecessary negative consequences. Look at anyone you know who has met life's challenges with unhealthy addictions. Look at the smoker, drug addict, alcoholic, or the motorcycle rider that won't wear a helmet. At a distance you wonder why they don't just stop their addictive behaviors. You think, "Surely they must see how they are encouraging bad outcomes. Wouldn't it be much easier to stop right now?"

It is easier now than at any other future time. When you know how addictions work, see how their consequences directly influence outcomes, and want to stop the addictive thinking you are empowered from the beginning. You can anticipate the withdrawal, and self-reinforce the better choices by appreciating progress. Various gimmicks such as journaling that exclusively focuses on unveiling addictions and on the addiction discarding gains, can be helpful. Will is essential!

**Update 5/24/2010:** Transportation Secretary Ray LaHood reported today that even though seat belt use is at a record high 84% in the U.S., 45 million Americans don't use theirs. About 7,000 people in the USA lose their lives unnecessarily each year because they don't buckle-up. We must also appreciate that in addition thousands more have sustained significant unnecessary brain injuries from this bad habit. We must continue to focus our individual and collective efforts to reduce the 'I' factors in the Neogenic A+I>M equation imbalances through education.

### **Path #1-- Prevention**

Much more can be achieved by preventing injuries and inflammations (the '**I**' **elements** of the A+I>M equation) than by after-the-fact interventions. Unnecessary injuries and inflammations are caused by deficiency, dysfunction or toxicity 'thorns' as discussed in chapter two. Since all 'thorns' exert their damage via our biochemistry, I'll focus on toxicity thorns.

'Toxicity thorns' can include elements of any of **the six energy forces** -- mechanical, electrical, radioactive, chemical, thermal or subtle. Once inside your body, all toxins, even derivatives of such destructive energy forces, can most simply be thought of as toxic chemicals. The quality of your eventual Neogenic honey depends on the chemical contents of that new honey, be they toxic or nurturing chemicals. Furthermore, as you decrease toxins you decrease inflammation, which in turn diminishes tissue degeneration. In today's toxic world, the paramount focus is on avoidance and elimination of toxins. It will be most rewarding if you start with the biggest package -- the toxic-thought package -- the #2 Pie.

### **Path #2-- Commitment -- making the 'good honey' by understanding and eliminating unhealthy addictions**

All learning and the behaviors resultant therefrom tend to be patterned. These patterns are chemically mediated and structurally reinforced in the brain's microcircuitry. In this sense, all such learned patterns, both beneficial and detrimental, can become addictive. Addiction is the emotionally motivated and culturally influenced learning that reflects the intense use of specific thoughts, behaviors or substances. Addiction has two classic and easily observable features: repetition and resistance to change. The latter feature manifests in notable **withdrawal symptoms.** The degree of addictiveness of anything is reflected by the severity of the withdrawal symptoms.

Beneficial addictions tend to be more challenging to learn, yet easier to live with, and they can reap rich rewards. Unhealthy addictions tend to be easy to learn, very challenging to live with, and commonly result in poor outcomes. Unhealthy addictions have their roots in a deficiency of loving energies from the #1 Pie. It is most often counter-productive to fill the voids created by the deficiency of loving energies with counterfeit energies.

## We are all addicts by nature

Humans are creatures of habit. The way our brains are designed to function encourages habitual or addictive behaviors. The design is not flawed. It is merely efficient. By relegating commonplace activities to habits and patterns, it frees the mind for more entertaining focus. The design works perfectly as long as you don't make unhealthy choices in habits and patterns to satisfy your emotional needs. If for example, in the seeking of joy you associate and reinforce patterns of behavior that involve alcohol, narcotics, overeating, or any risky behavior such as gambling or unsafe sex, the resultant addictions can be unhealthy. Once established, even occasional reinforcements of such patterns can harden addictions.

Although observed and described in behavioral terms, addictions can best be understood from the chemistry of the thinking that precedes its behavioral expressions. It is of lesser benefit to address behaviors seen in unhealthy addictions, for example, without understanding the neurochemistry and brain changes associated with their 'stinking thinking' genesis.

**Firstly**, addiction involves changes in one's brain neurochemistry. Neurons **up-regulate** by developing more receptors on their cell walls for those chemicals involved in the addiction. If you then cease filling these up-regulated receptors, the brain will feel uneasy and out of balance as it senses that something it's used to is missing. On a biochemical basis it works in a similar fashion as a physical addiction to a drug. Using a simple example, if one uses amphetamines repeatedly the brain neurons involved will up-regulate by developing more amphetamine receptors on their walls.

**Secondly**, the 'learning' of any addiction involves actual physical changes in the microcircuitry of one's brain. Likewise, the 'unlearning' of unhealthy addictions also requires Neogenic remodeling changes in the microcircuitry of one's brain. Reversing unwanted addictions first starts, as everything else does, with thoughts. Successful thoughts acknowledge the deleterious effects of the addiction and reflect the commitment to change by applying effective strategies over the necessary 'tincture of time.' Unlearning an addiction is a dynamic process that initially involves **down-regulating** -- that is reducing the number of cell wall receptors specific for the neuro-chemicals involved in the addiction. To down-regulate one must stop the thoughts involved in the unwanted addiction. To make durable '**healthy mind changes**' one must continually commit to healthier alternative choices that satisfy one's underlying emotional needs. Thusly built by himself, his new 'remodeled global highways' can transport the addict to a place of better physical and mental health.

## Substance abuse addictions

On a recent program on the subject of addiction, featured contributors were of the opinion that there is an inheritable proclivity towards drug and alcohol addiction. The issue of likely genetic vulnerability was suggested by Jain M. Palacio et al. reported in *Biological Psychiatry*. Their small study of 18 extended Columbian multigenerational families suggested that major genes underlie a broad behavioral phenotype that can manifest as a range of symptoms encompassing disruptive behaviors and substance abuse. I disagree with this theory. Although genetics can play a small part, I am of the opinion that substance abuse has less to do with genetics and more with circumstance and bad choices. For example, if your parents, peers, or significant others smoke you are much more likely to develop smoking addiction by choice.

We do quite often see people who appear to have 'addictive personalities'. Their negative self images reflect how they have learned to view themselves. Most people that have a resistance to substance addiction feel good about themselves and feel well connected with others of like mind. They can sample an addictive drug or behavior and may even get the 'buzz,' yet recognize that they don't like the experience enough to adopt the addiction.

One of my friends told me how he felt when he had to take prescribed pain medication due to a fractured wrist. He said, "the prescribed narcotic took the pain away, but I went away too." He missed himself because he liked himself. People with substance addictive personalities don't like themselves. The place they like to go on their substance 'trips' is as far as possible away from their negatively-biased view of themselves. For such addicts this place vaguely fills the critical 'emotional void' in a chemical fashion. Substance addictions most commonly have serious societal and personal costs.

All addictions involve neurotransmitters, receptors and the axons, dendrites and synapses that dynamically form one's microcircuitry. The chemical mediators are most often a mixture, but often one neuro-chemical predominates. Cocaine or Meth addiction is mostly about the dopamine system and the part of the brain that utilizes it as a neurotransmitter. Nicotine addictions involve both dopamine and opioid systems. Heroin and other pain relievers mostly affect the brain's primary inhibitory neurotransmitter -- **gamma-amino butyric acid (GABA)**, as well as the opioid system. Alcohol addiction involves the dopamine pleasure pathway as well as the serotonin, GABA, opioid, and glutamate systems.

Drug therapies have been designed to target **neurotransmitters** involved in unhealthy addictions. Several drugs have gained approval to ostensibly help addicted patients lose weight, quit smoking, or stop abusing alcohol or other common addictive substances. These drugs interfere with the 'feel good' neuro-chemical responses triggered from the use of alcohol, drugs, tobacco and foods. In doing so, perhaps these drugs block the pleasure centers all too well—as a group these drugs seem associated with the side effects of increased tendencies to depressive feelings and suicidal thoughts.

## Should doctors push drugs to treat substance addictions?

Drug intervention seems to me to be a rather dicey way to deal with many unhealthy addictions. We physicians would need to manipulate five different neurotransmitters with various drugs in the case of alcohol addiction to gain any 'mind control' of the addiction. Even if we were successful, what do we have? This doesn't 'cure' anything. We roll the dice with treatment drugs and claim victory when we have the patient hooked on our prescribed drugs. Worse, since they target the brain, such drugs will likely have subtle and confusing paybacks! **Update 4/1/15:** The FDA now warns that **Chantrix**, the #1 smoking cessation drug, in addition to prior-known paybacks of headache, insomnia and nightmares, causes an intolerance to alcohol. Symptoms include increased drunkenness, bad behavior, memory loss and seizures!

If one is entrapped by unhealthy addiction(s), it is impractical to start recovery until the addicting chemicals are removed from the body. This is a clinical process called **drug detoxing**. It's akin to removing the thorn. In severe cases, this is best done with competent support and supervision. The toxic brain associated with severe cases renders the addict vulnerable to many difficult and immediate challenges. As the brain is quickly deprived of the chemicals that it has up-regulated for, seizures and other dangerous responses may occur. These often are best managed, of course, with appropriate drugs.

## Kudos to AA

Severe and protracted addiction cases usually don't get fixed quickly because down-regulating works in concert with the Neogenic process. This takes 'tincture of time.' For example, it has been observed in long established programs such as **Alcoholics Anonymous (AA)** that at least 90 days of sobriety was essential for better outcomes. New AA members have for decades been advised to attend a meeting each day for the first 90 days. Neogenesis offers insight. There is only one way to down-regulate neurons from the 'up-regulated' chemical state that underlies their addiction -- by ceasing alcohol! After 90 days of sobriety such neurons become **Neogenically restructured**, naïve to the alcohol addiction. Such neurons, now normalized with respect to alcohol-induced cell receptors and neurotransmitters, no longer scream out for alcohol.

Their observation that 90 days of abstinence is critical to a successful outcome is based on millions of cases over the now 75-plus years of AA's existence. This 90-day idea was validated by recent imaging studies done through the National Institute on Drug Abuse. They confirm that 90 days is the approximate time it takes for the brain to normalize itself with respect to the 'up-regulated' receptors and neurotransmitters by abstaining from alcohol. This is Neogenesis at work. However, this is only the first step in the healing of the brain. Brain changes involved in any addiction are not limited to 'juicing-up' pleasure pathways. All learning involves neuroplastic changes in one's microcircuitry. Reversing the learning to be an alcoholic by Neogenic 'new learning' to be durably sober takes a lifetime of reinforced, disciplined commitment.

## Filling the emotional voids that fuel unhealthy drug addictions

No unhealthy addiction is ever 'cured.' Stabilized sobriety requires normalizing brain chemistry as well as learning healthier and more appropriate thinking and behaviors that better satisfy the emotional voids. The more appropriate filling of the addict's emotional voids involves the remodeling of the addict's microcircuitry into a healthier form.

Many successful rehab programs are religiously based and encourage filling one's emotional voids with a stronger relationship with God. Others encourage insights into and the overcoming of the impediments of self acceptance. Sometimes such acquisitions may seem to happen in sudden catharsis. After all, there's nothing that will get the attention of one's soul quicker than a near death or near life-destroying experience caused by one's poor choices. In reality, the self-love necessary for lasting progress evolves as everything else does in the Neogenic process -- gradually.

In the true sense it 'grows on you' as you 'change your mind' Neogenically. Fundamental to durable recovery is wanting to change, learning to forgive one's self, accepting one's self in a newly-learned and healthier reality, then caring enough about one's self to commit to better choices for one's life going forward. Successful addiction programs feature the sharing of #1 Pie energies with others in the sobriety support group. This more appropriately fills the addict's emotional voids.

Recently, nicotine addiction has been shown to involve a specific area of the brain, based on observations that stroke patients with acute damage to the **insula** suddenly and completely lose their cravings for nicotine. Not surprisingly, this part of the brain seems to be the interface where perceived physical reactions convert to anxious emotional feelings. A cigarette-addicted friend of mine asked me if it was possible to ablate the insula area of his brain. He was serious! Of course, even if such a desperate procedure could be safely done, it would result in much more devastation than a prefrontal lobotomy. The patient might rid himself of his addictions, but at the ultimate cost. He would likely be unable to properly experience such vital emotions as compassion, joy, love, fellowship and other healthy #1 pie energies because the insula is the 'cerebral pleasure tavern' where such nurturing energies can all hang out and drink the **dopamine** brew. Conversely, **all of us who are capable of feeling emotions are, thus so, vulnerable to addictions.**

## Addictive behavior is pervasive

Hello reader, my name is Jim and I confess that I'm an addict. I'm addicted to my morning coffee. As I awaken, I squint to fight the entry of daylight into my eyes. I stumble toward the kitchen where my time-percolated 'fix' was set-up the night before. Without stimulation, I am oblivious to anything beyond an arm's length in front of me. I ready my 'antidote for absence' like a clumsy robot. After 5 gulps and 3 minutes of staring into space my field of recognition expands to 20 feet where I can now see all my hummingbird friends at their feeder outside my kitchen window cheering me on. Sound familiar?

Addictive behavior is ubiquitous and involves subliminal chemical messaging and reinforcement. It is not limited to behaviors associated with narcotics and alcohol. Any behavior can become addictive. Specific food addictions are extremely common and often have a complex biochemical-reinforcement basis. Many foods contain chemicals termed **exorphins**. Their addictive effect on the brain works similarly to endorphins or opiates to make them so called '**comfort foods**'. They are found in such common foods as milk, coffee, tea and wheat. If you consume these foods regularly, expect withdrawal symptoms, if and when you stop. Headaches and feelings of abandonment are typical here.

'**Chocoholics**' not only have the ubiquitous and destructive **sugar addiction** reinforcement, but also have the neuro-chemical **PEA (phenyl ethyl amine)** at work. Made in the brain, as well as found in chocolate, PEA evokes the giddy feeling we associate with romantic love. It evokes exciting feelings. It's no wonder we view chocolate as a comfort food, one we've culturally associated with Valentine's Day. We tend to become addicted to relationships of infatuation based on PEA's effects. I call PEA the 'Huey Lewis drug', because it answers his song's request. In the pop song, *I Want a New Drug*, Huey Lewis dreams of a pill which would bring him the same wonderful feelings as his lover gives him, but without all the bad side effects of most drugs. It's a great song, but an impossible dream.

Contrary to the song's request, most drugs either keep you up at night or cause you to sleep the live long day, and many are capable of making you nervous. But think, if we could put love in a pill, a pill that made us feel like we feel when we're in love, or when we're sitting peacefully with a cat on our lap or running in the woods with our dog we'd line up to buy it. Clearly, love won't fit in a pill, but it is a huge part of the tasty, life-affirming #1 Pie and it's free. The sweet pieces of #1 Pie and a sane, focused effort to love and take care of ourselves far surpass the potency of any pill. By committing to #1Pie thinking, in lieu of harmful thinking, we outstrip the power of any medicine ever made.

## Diet soda pop addiction

Diet soda addiction is extremely common and of significant consequence.

I was a 'diet soda junkie' to the max. I fell into this trap, as most do, out of naiveté. I mistakenly reasoned that the absence of calories in the product would be a good choice for me as I felt I needed to lose weight to reduce the stress on my problematic back. I was erroneously taught that one should drink lots of fluids, even when not thirsty. I wrongly reasoned that the aspartame/caffeine drug combination in diet soda had to be safe as the product was FDA approved starting in 1983. As with most addicts, I started out slow. Reinforced by my false assumptions and screwed up logic and the chemistry of this addiction, my use rapidly escalated. Before I finally recognized it for what it was I was ten years into it, and consuming an average of 2 liters daily of what I now suspect to be a **subtle poison**.

How does this addiction work physiologically? After thoroughly researching and thinking about this issue, herein is my opinion pearl. Inside the body, the aspartame renders three metabolites. The three are phenylalanine, aspartic acid and methanol. With time the methanol further morphs via the 'aldehyde pathway' into **formaldehyde** and **chloral hydrate**. The key is that these last two mentioned metabolites, as well as methanol, are CNS depressants – and because it takes time for these metabolites to form, their effects are delayed in onset but prolonged in action.

Diet soda's CNS depressant affect makes one feel tired, but one won't associate one's tiredness with the product due to the onset delay. Instead one will associate the product with CNS stimulation because the manufacturers cleverly combine a second ingredient – **caffeine**. The direct brain stimulating action of the caffeine is relatively rapid in onset. Feeling this initial mental lift, the diet soda addict therefore makes the erroneous association that the overall product is an upper. However, the gross effect of the addiction causes feelings of chronic fatigue and mental dullness. Because caffeine's action is relatively short, the addict looks for symptomatic relief with the next diet soda and the addiction is so reinforced.



Over time one gets less relief as most people's bodies induce enzymes to detoxify the caffeine. The aldehyde pathway enzymes, on the other hand, do not induce so readily. Also, there are many other common pollution chemicals that are competing for the same aldehyde pathway enzymes. This further delays detox of the aspartame metabolites. At this point of the addiction one is building up toxic levels of these CNS depressants and risking a 'SINK spillover.' This addiction is not limited to diet soda pop: it can occur any time aspartame is combined with caffeine, such as using it in coffee or tea.

For decades drug companies have combined chemicals that have opposing **Central Nervous System (CNS)** effects. The classic case is the combining of **antihistamines**, which are 'CNS downers,' with **decongestants**, which are 'CNS uppers,' to cancel out the sedative effects of the antihistamines. A more contemporary example is the **alcohol-caffeine drinks** the FDA is fortunately cracking down on. The '**combining chemistry**' of such drinks renders a hyper-alert drunkenness! Combining drugs with opposing CNS effects is much like driving a car with one foot on the accelerator and the other on the brakes. The net effect is to travel at the speed you desire. In the meantime your engine and brakes are getting overly stressed and so will prematurely wear out. In this analogy the part of your body that is suffering undue wear is your brain.

By using diet soda in such an escalating addictive manner you likely will suffer two predominating symptoms. The first is **chronic tiredness and mental dullness** -- a form of toxic brain. People so affected are at risk of mood changes, including depression, irritability or rage. This relates to the conflicting CNS effects from the diverse metabolites involved. Even without caffeine, aspartame seems to me the perfect CNS toxin, in analysis. The initial aspartic acid metabolite works interchangeably with glutamate as the most predominating excitatory neurotransmitter in the brain. The second symptom is **pain**. Perception of pain occurs in the **NMDA system** of the brain. NMDA stands for N-Methyl-D-Aspartate. This is an excitatory system that utilizes aspartate and glutamate interchangeably as neurotransmitters. Taking either of these unnatural free amino acids in excess may lower one's threshold for pain. This is why **I advise people with frequent pain, fatigue, 'brain-fog' or mood fluctuations to avoid products such as MSG and aspartame.**

It's problematic that chemicals that release free amino acids, and thus so act like drugs, are increasingly included in products such as foods, sports concoctions and so called nutritional aids. Consumers of these products are convinced by the makers that they're simply getting the building blocks of protein. They don't realize they're taking in concentrated neurotransmitters that unnaturally impact the brain's messaging systems in confusing ways. Makers of such drugs as aspartame were allowed without proof to label products that contain them as 'diet foods.' Since they contain few calories, people assume illogically that the products will help them lose weight. Ironically, they associate strongly with **obesity and metabolic syndrome** risk. Users have double the likelihood for adult diabetes. All artificial sweeteners likely send bogus hunger messages to the FEAST system. Don't expect the FDA to protect you here. You are on your own!

There is, in fact, a whole alternative-medicine discipline out there now that speculates that isolated amino acids can be used therapeutically. Their premise is correct -- free amino acids can influence brain activity, just like other CNS-acting drugs. However, these presumptuous practitioners are likely to do more harm than good, while wasting your time and money. I view this discipline as **business as usual in disguise**. Neogenesis takes a different tack. It asserts that the brain will heal or right itself if one eliminates 'thorns' by making smarter choices that more naturally encourage healing.

Bottom line: If you want to lose weight or if you frequently feel mentally dull or have any type of pain, mood changes or headaches, eliminate aspartame and MSG as well as any products or supplement you take that contain aspartic acid or glutamic acid in free form. These are man-made CNS active chemicals, not natural foods. There are literally hundreds of products on the market that contain these man-made chemicals; many of them ironically claim to be 'health products.'

### Discarding unhealthy addictions

In testimony to the simple truth that you can teach this old dog a new trick, I was able to eliminate my diet soda addiction in the shortest possible time. I did not wean myself off. I took the Neogenic approach. I immediately applied the new knowledge I received. I used SEEK, the tool of empowerment discussed in the next chapter, to scan every label for MSG and aspartame. I forgave myself and the manufacturers and continued to take a healthy dose of the vital reciprocating gait daily, moving forward towards nurturing energies through better choices. Predictably, within 90 days, my chronic pain symptoms greatly diminished and I appreciated a sharper mental state.

### Toxic-thought addiction

We commonly see individuals addicted to negative thoughts and emotions. In extreme cases, it appears bizarre that they seem to obsess on thinking that reinforces the chemistry of feeling failure, hate, shame, anger, guilt, anguish and the like. Then they are quick to blame others for the way they feel. The biochemistry of their **toxic-thought addiction** results in increased cell receptors for the harmful endogenous chemicals that the addiction produces. Furthermore, the resultant microcircuitry so Neogenically created are pathways that lead us to isolation, despair and destruction. It is neither pleasant nor healthy to become or be around such an affected person. Importantly, we must realize that this unhealthy addictive process potentially exists in each of us as part of our human condition of free will.

At the deepest level of your thinking, if you do not **proactively** select #1Pie energies your default thoughts will be toxic. Doctor Amen in *Change Your Brain Change Your Life* cleverly refers to these as **ants** (automatic negative thoughts). Recognize 'ants' produce powerful toxins that will, if given life, poison your future honey.

On the other hand, if you truly want to appreciate major life-enhancing benefits you need to first understand and address these toxic thoughts! As I will echo and elaborate more on in chapter seven herein, a thought precedes everything you do and so colors it all in the process. **You simply cannot durably change your bad feelings and behaviors without changing your 'toxic thoughts' that give rise to them.**

## Modern addictions

Along with our modern world come modern addictions. Video game playing, television viewing, cell phoning, text messaging, I-pod listening and Internet surfing are a few examples. Take away the tools from these addicts and see how anxious the addicts get and how fast they try to get replacements. Similar addictions expand with cultural availability.

Excesses of even healthy behaviors can evolve into unhealthy addictions. Pathological excesses in exercising, dieting, hand washing, shopping and sex are reflections of the addictive thinking called **obsessions**. They are mediated by a variety of neurotransmitters, including serotonin. We are designed as the adventurous explorers of our universe. While playing out that role we will find many new, exciting and fun toys, as well as the allure of many addictions.

## Healthy addictions

Unhealthy addictions have predominantly negative consequences. Addictions, however, can be healthy. Healthy addictions have predominantly beneficial health consequences. Consider this accurately descriptive word—**workaholic**. Studies show that Americans are the second most productive people on earth. For the vast majority of us productive American people we have been or are addicted to our work. We may wish to deny this, but the social and emotional reinforcements, the repetition of patterned behavior, the withdrawal, and most importantly, the brain's chemistry and microcircuitry is similarly structured like any other addiction is. Taking your job away or trying to modify it in any major way will likely result in severe anxiety. Many people affected in an adverse way by ongoing changes in our economy understand what I'm taking about here -- having lost their jobs, they feel the serious symptoms of withdrawal.

Another good example of a healthy addiction is reasonable **exercise addiction**. Regular exercise has enormous health benefits. As an addiction it works as all addictions do. Aside from serotonin, the main chemical mediators are **endorphins**. These act in opioid receptors to produce euphoria. Opioid receptors are activated by narcotics which mimic the natural pain relieving opioid endorphins. With intense, regularly repeated exercise activity there is an up-regulation of the receptors for the secreted neurotransmitters associated with the natural 'high' of exercising. We feel good if we continue to satisfy the up-regulated needs by getting our daily 'exercise fix.' When we cease exercising for a few days we feel the withdrawal 'low' that encourages us to resume this healthy addiction.

The best example is '**organized worship addiction**.' Without casting judgement on this addiction, it's clear that these 'addicts' live significantly longer and have less-troubled lives, all other things being equal. Such benefits are nondiscriminatory for any belief system and generically utilize the same parts of the brain. Such inspirational pleasures involve the neurotransmitter serotonin among others. As in all addictions, satisfied emotional needs reinforce the behavior.

Organized social activities and hobbies are often healthy addiction examples. I've seen conversation addicts sharing their 'fix' with authentic smiles on their happy chatterbox faces while developing emotional attachments to each other. They exchange more than just words; they share subtle, healing, nurturing #1 Pie energies. Studies clearly show that sharing friendships and being socially engaging pays huge health and longevity benefits.

Observing the truly unlimited interests, activities and hobbies that people are drawn into and, by addiction, hold onto is amazing. Some are addicted to animal-oriented activities, gardening, golf, surfing, and you-name-it. The process is discernable as the behavior is a manifestation of the thinking that precedes it. The cultural influences and emotional reinforcements are evident, as are the anxiety-related symptoms of withdrawal. Healthy addictions can make life more meaningful. The key proviso though is that even healthy addictions must be tempered with balancing factors in one's life so as to avoid neglect of one's happiness and reasonable responsibilities.

At all times we have a cognitive choice in regards to our direction. We can choose thinking that leads to destructive addictions and bad outcomes. We can choose thinking that leads us to constructive addictions with good outcomes. The best advice anyone can give you is to flavor your choices with the #1 Pie as **the ultimate healthy addiction is to #1 Pie.**

## Investing in the only segment of time that matters -- the **All Term**

I see much interest out there in people preparing financially for their futures. Wise investors appreciate that by carefully investing funds now they achieve future security. Their funds gather interest and in time reap the rewards they plan for. If they fail to take this tack they fall short. Neogenesis works similarly but offers an even better payoff.

Neogenesis beckons you to accept good health now and keep it for the **All Term**. The **All Term** begins in the present moment in time, referred to as the **Now**, and continues for the rest of your life. In financial terms, the **All Term** is not a 'short term' temporary fix with a 'payday loan' payback like drugs often have. It's not a 'long term' strategy that impacts your health at some distant future date, like Mao-se-tung's 5 year plans that called for five years of economic suffering to achieve subsistence in old age. Neogenesis allows an **All Term** health investment strategy that starts rewarding you immediately. Such a strategy is like purchasing a USA insured, high interest bearing, bank account that enriches and rewards you in the Now and provides health reserves for your entire future.

### Your design gift of Neogenesis allows you to crush unhealthy addictions

To break the cycle of the toxic and addictive thinking that is the basis for unhealthy addictive behavior take advantage of your Neogenic replacement design. Any delay is counterproductive. Addictions are places of refuge from emotional pain. The method is direct. You face the truth, naked of excuses. Realistically, you visualize the positive potential of which you are capable. You love yourself enough to become that vision by selecting the affirmative choice offerings.

As you proceed with this book, make an insightful list of all your habits that hold your happiness and good health hostage. Examine the critical elements of your unhealthy addictions and begin the simple steps to withdrawal fearlessly. Once on the path to free yourself of unhealthy addictions you can incrementally **'restructure the self'** by making better choices.

Neogenesis assures that positive changes now will result in an improved mental, physical and spiritual state later. I refer to this as medicine called **'tincture of time.'** In the physiology of change there will always be anxiety. Anxiety expresses itself in confusion when you make choices that move you out of the dark places and into uncharted but certain pathways to healing. Without reinforcement anxiety passes.

Your Neogenic design gift will never abandon you. In your darkest hours **trust the process**. The **#1 Pie** element of **faith** can always trump your natural #2 Pie element of **fear**. Neogenesis promises that progeny cells and their connections will, by virtue of your present good choices, contain 'good honey' for your constantly restructuring Neogenic self when given the necessary 'tincture of time.'

**"Time Is A Healer"** ~a beautiful vocal by **Eva Cassidy**, lyrics by **Diane Scanlon & Greg Smith**~



The next chapter will introduce you to a philosophically based, yet practical, tool called **SEEK** that can help you make the best choices for **reconstructing the self**.

## Chapter 6

### Using SEEK to Make Better Choices in Your Life

Excellent health depends on making good choices. **SEEK** is a **vital tool** for choosing the best substrates for making 'good honey.' SEEK is also a quick checklist tool allowing you to rapidly locate, avoid and remove the 'thorns' causing ill health.

#### Seeking the whispering wave

Sandpipers are these cute birds that dart in and out at the edge of the ocean on the beach. They look like they're on stilts. Their wire-skinny legs seem to spring them into motion, attracting my attention like a child observing a new wind-up toy.

To appreciate the whispering wave you must observe these sandpipers as I did, at night. It's not only by sight they seem to seek their food, it is by sound. They dart away from the rumbling, churning waves, lest their fragile legs be broken by some fragmented sea shells tossed about in the opaque lather of the noisy waves.

With heads tilted seaward, they keenly listen for the soft whisper of the smooth expansive waves -- waves that wash away the sand to most gently expose the burrows of their tiny insect morsels. Then they dart in safely, their needle-like beaks working like an antique Singer sewing machine effectively and easily punching out their bites. I notice these shy creatures as I jog along the beach and take in the same energizing rhythm. They know who they are and seem to accept with kindness their purpose for design adaptation in harmony with all their universal connections.

In the sandpipers I have given you a very simple example of what should be your ultimate focus for making thoughtful decisions in your life -- this powerful solution-oriented tool I call **SEEK**. My acronym stands for **Safe, Effective, Easy, and Kind**. It is a swift philosophical checklist tool to be used in consideration of any option, decision or choice that presents itself. It can be quickly applied to any difficult decisions with which you are confronted in your life. The most monstrously perplexing questions simply become carved down to their elemental bones with this knife-like tool.

There's a reason why SEEK has 4 parts. If the entity in question is safe, but not effective, easy or kind, then maybe it's not worth it. If it's not safe or easy or kind, chances are it's not effective, either. If it's easy, but not safe or effective or kind, it's definitely not worth it. Lots of things that are easy are way down on the list of being worthwhile. If it is kind, however, then we need to go back, recheck the rest and be absolutely certain - because: Kindness is the most important aspect of all.

Our sandpiper friend knows who he is and how to SEEK his destiny.

#### But who are we and what purpose do we serve?

If we use the same methodology of observation, we can analyze our anatomical design. As we gain more knowledge of its shadow--the 'how does it work' part of our design called physiology-- we get some insight into our purpose. We are clearly made to be adventurous explorers of the universe. We are made to search for truths as we progress along the pathways of our lives. We don't slither along the ground like the vast majority of land creatures. We stand erect for the best observational perspective; our major sensors are placed high.

Think about yourself in a low-slung sports car traveling on a crowded and narrow two-lane road winding through the gorgeous Colorado Rocky Mountains. As the traffic starts to congest you find yourself behind a semi. You notice that the ten foot wide, 12 foot high, 40 foot long rig starts to block your view. You suddenly realize you are moving exactly like a snake and seeing the world from the snake's low perspective.

We are designed to appreciate life from John Denver's "Rocky Mountain High" view. We are designed to view life from the high position of the driver of the semi, to see the lovely view over the traffic ahead.

Everything about our design makes sense if we understand our unique purpose. Our legs and arms are built the way they are to take us where we choose to go to discover truth. We must recognize, without question, that it is our brain that empowers us to fulfill our supreme quest. We must understand its vulnerability and make its care our top priority. We cannot afford to be paralyzed in mindlessness somewhere on our course dead ahead.

Our life becomes a series of decisions, choices and more decisions. Given life and entrusted with this powerfully complex and magnificent brain, we are blessed with opportunity, yet potentially cursed with expectations. Our life is not imprinted with a simple sandpiper program. There are no fixed road maps, no guidelines for living. The most important application of Kindness is to forgive ourselves ahead of time for the mistakes that we will make.

As we realize we have use of this tool to free ourselves of the immobilization of indecision, we can put the decision behind us. Any time that we find ourselves stymied in confusion we can mentally pull SEEK out and apply it to the decision at the moment. This allows us to go forward with confidence and good conscience.

We can use this empowering tool to become better caretakers of ourselves and those in our charge. Like a searchlight SEEK changes the shades of gray darkness into simple clear vision to 'enlighten' ourselves regarding every pertinent choice in our life at this moment in time. It is important to understand that all our choices are relevant to this dynamic moment called '**The Now.**' The Now is the beginning of the **All Term**.

Using SEEK, our focus is on the construction of 'good honey' and doing the 'right thing' for its **All Term** production. Soon all fret and worry is attenuated with quick, prudent, and solid choices.

Unresolved choices and indecision are like clutter in our minds. **Clutter is an energy zapper.** Indecisions weaken us. They are, in fact, analogous to physical clutter in our living space. If things are not kept put away, if we keep going from one incomplete decision to another, they pile up and impede our progress. We find ourselves totally occupied with managing the clutter. Just as the nuts and bolts of unfinished physical projects get scattered and mixed with those of other projects in our living space, mental clutter makes us inefficient and impedes our forward motion. A simple washer or special screw can come up missing and the whole project doesn't work. Then, to compound the clutter, we tend to hold onto the rest of the now worthless parts. As the parts build up we become a manager of worthless parts with the build-up of unresolved decisions.

The SEEK tool functions like a practical flashlight illuminating our choices. I carry it on my fist as an imaginary tattoo. One letter is affixed over each of the knuckles. I merely point my fist to see if that optional choice I am considering contains all four of the critical elements. After I've used the tool enough I don't need to point. I remind myself it's not nice to point at other people even though they may be questionable choices for our lives as well.

If I'm teaching others to use this empowering tool I like to make the process more visible. When they 'get it' I like to 'seal the deal' with my special endearment gang sign for 'SEEKers.' Instead of a handshake, which is a great way to spread contagious germs, I prefer to have our knuckles meet gently. This gentle **knuckle-bump** tells me we are indeed bonded on the same 'truth SEEKing place.'

### **SAFE**

**(guided, protected, defended, trusted, buffered, cared for, watched over, secure, unthreatening, unharmed)**

'Safe' is the first part of SEEK and for good reason. If something is not safe, it won't do much good to find that the product or diversion or person is easy, effective or kind. An unsafe entity pretty much knocks most things coming up behind it out of the box. One is stalled at the starting gate. I guess you could say in this scenario, prudence most often wins the day. Something might be intriguing and attractive, but if it's not safe what's the point of moving toward it?

Making better choices is usually making safe choices. But how often, when we pluck a can of food from a grocery store shelf, when we choose fish from a market, when we buy a piece of furniture, purchase a toy or food for our pets - just some of the decisions that face us on a daily basis - do we consider how safe it is? Do we really give it that much thought? Don't we sort of assume that if the product made it to the store and is displayed for sale that it's safe? Don't we assume that this is the United States of America and someone's watching out for us? Don't we think, or hope at least, that whoever created the item we want did so with right consciousness?

Think again! Everybody doesn't care. Is it any surprise that in our greed-dominated world safety is not everyone's first concern? Our need to take individual responsibility should be quite evident. Sometimes, perilous products are manufactured simply because the people making them aren't aware of the danger. But, sometimes the makers know well in advance that what they've created isn't up to par. And they don't care. They don't care because making money on the product is more important than making a safe product most of the time.

This pervasive cavalier attitude extends to the manufacture of children's toys. In a perfect world, nobody would create a toy that could be harmful to a child. But, it's done every day. Greed often trumps safety issues. Big money too often rules the day. Here, we're talking about a 15 billion dollar a year toy industry. An innocent looking toy with a major American brand name made bright and happy appearing with brain cell-killing toxic lead, mercury, or cadmium paints in China, as many things are now, conceals the greed superficially.

Fortunately, somebody quite often is watching. Here's an unabashed plug for one such charitable, nonprofit organization -- **WATCH (World Against Toys Causing Harm, Inc.)** Since 1968, Edward M. Swartz has worked to educate the public about life threatening toys and other children's products including children's furniture, clothing and playground equipment. Find excellent, current info on all aspects of these issues at [www.toysafety.org/](http://www.toysafety.org/). Each year, this organization features a "10 Worst Toys List."



In the realm of food, safety is huge. Much food offered in the vast world marketplace is not safe. Often, unsafe ingredients are couched in terms that make them seem safe. 'High fructose corn syrup' is one. **High fructose corn syrup** is sugar and the corn in it is certain to be **Genetically Modified (GM)**. If you're trying to stay away from sugar and GM foods, eating food with corn syrup is not going to help you. Learn to read ingredient labels. Learn about common ingredients. If you don't understand them, ask. Call the 800 number on the food package or can. Ask someone to help you. Assume nothing. Remember: labels are no good if they're not understood. If you were trying to avoid problematic wheat gluten, for example, how would you know that wheat is the most prevalent grain in many soy sauces and commercial cornbreads unless you read and understand the labels? I know this only because I read labels. The FDA features a decent web site to check on food labeling and nutrition -- [www.cfsan.fda.gov/label.html](http://www.cfsan.fda.gov/label.html).

I have a friend who watches what she buys for her cat; she watches it like the proverbial hawk. Cats are like kids; they'll put just about anything in their mouths to suck on and even swallow. This is not good, as the digestive system of a cat doesn't do well with plastic. For that matter, our kids' bodies don't do well with plastic, either. Nonetheless, plastic is all over toys that end up in the mouths of our pets and kids. Plastic was not meant to be consumed by living, breathing beings, yet we seem to be consuming more of it all the time -- thanks to the predominance of plastic food containers.

That colorfully-packaged pet food lining the supermarket shelves is something to watch as well, something to investigate. Don't believe everything you read. People are paid a lot of money to write the copy on that bag of pet food and they're very good at it. Find out for yourself what's really in that bag! Research it and learn the truth. Your safety is everyone's responsibility, especially yours. Despite their frequent inaccuracies, take the time to read and understand labels.

Here's another context within which to think about safety: too much of a good thing -- too much food, too much alcohol, too much of anything, really is not safe. Too much sun can hurt us. We love our sun; it keeps our globe going round. However there's help out there for too much sun exposure -- shade, clothes that block the sun's harmful UV rays and nontoxic sunscreens. Be proactive instead of reactive. An online search for such solutions brings up a host of web sites offering help. For reliable info on nontoxic sunscreens and other chemical products check out: [www.ewg.org](http://www.ewg.org)

How about people? Is everybody safe? Listen to your intuition when you choose people to be part of your life. Our basic instincts yet survive. Those instincts tell us a lot about what's safe, if we listen. Alert today - alive tomorrow.

In sum: be smart, be safe. Be prepared; know what's going on. Believe nothing until you verify it. We live on a fabulous planet, but it's still a physical plane and as such it presents peril to the unwary. The SEEK tool is simple and effective. Using it, you'll never have to say, "But if I'd only known..."

### **EFFECTIVE**

**(capable, competent, efficient, productive, proficient, valuable, useful, functional, vital, powerful, workable)**

Isn't Effective something almost self-evident? To wit, will the shoes you choose be comfortable for walking or are they just about image? Does something effectively meet our needs or is it an illusion? Is it what we want in satisfaction of a clear and precise need? Such choices can be specific in time and goal orientation, but ultimately must focus on the **All Term** priority to be effective. It is effective as a choice if we have faith in the realization that with 'tincture of time' it is relevant to 'good honey' production. Loving energies are vitally effective. Place #1 Pie right on the top of the list of effective!

A nutritionist colleague told me a story worth noting. It was an anecdotal report of a 19-year-old boy who died after eating pancakes made with outdated mix. The contention was that toxic mold can form in outdated pancake mix and has caused many others to die or be sickened. The box cover dedicates most of the space to the strong, but counterfeit message that suggests #1 Pie purchase. We can almost smell the warm goodies from the cake, brownie and cookie mixes that similarly can sicken. We must SEEK deeper answers in the 'fine print.' This smaller-print message tells us of more than the visual illusion of all the warm and pleasant munchies; it warns us not to serve up toxins by failing to preserve the ingredients.

Preservation is a double-edged sword for almost all food products. Of course, the 'preservatives' we use to prevent the growth of germs are generally toxic to us, but to a lesser degree. There is nothing more effective than **freshness** not just in food choices but as it applies to all aspects of life.

Bottom line - we keep coming back to the bottom line, as always - all we can do is do the best we can. Look beyond the 'freshness' of the picture message on the cover. Read the directions. See who made the thing. Read about what's in the can or the package and determine if it resonates with you. Check the date and country of origin. Give some thought to price as regards value. Talk to yourself, see what you think. Once opened look at it carefully. Smell it. Feel it. Put the full force of SEEK to it. If it doesn't look right, smell right, feel right, the picture is a mere illusion.

**George Bernard Shaw** said something neat about this:

"The single biggest problem in communication is the illusion that has taken place."

And aren't we often drawn to a thing, or a person based on just that - illusion? We see what we want to see. It, the thing in question, is fetching in some way and we lose all sense of how it might fit into our lives. In answer to my pancake-loving nutritionist friend, I pointed out that it's amazing how much we take for granted. We assume that things are safe and effective because they come in pretty packages with the face of a friendly grandmother attached. We are lured in for the purchase. Our mind visualizes her cooking up something more inspiring than just the promise of hot pancakes. What we really want is not the flour or its renderings that offer minimal nutrition and turn toxic with age. We simply want the #1 Pie energies-- the love, comfort, and caring that is symbolic of the smiling face on the package.

Without learning to read the label on the warm and fuzzy box we emotionally and often erroneously link the product with #1 Pie. Emotion provides the most powerful and often deceptive linkage to our choices. We are emotionally driven creatures who hunger for loving energies. It is our foremost strength and our greatest weakness. It swings us from impulsive suckers of marketing lures to a buyer's remorse as we gather more worthless things and less of what we need.

Ask yourself: is it effective enough to last, to endure, will it fall apart, fade away? Is it a thing of the moment, or does it have legs? Will it do its job and do it right? Is it an **All Term** thing or a short-term flash in the pan? Is it a fad or an **All Term** fix?

## **EASY**

**(not burdensome, attainable, reasonable, sensible, convenient, comfortable, satisfying)**

**EASY** pertains to how convenient it is to incorporate a prospective choice into our lives. In financial terms, something is Easy if we can reasonably afford it and physically and mentally bear it as an **All Term** burden. Is it egalitarian--that is --can all my Earthly brothers and sisters afford it? Does it answer their needs? Is it simple? A simple change does not encumber. Something that is easy or simple does not require much maintenance or course-correction effort. How many of us have chosen Difficult over Easy; Image over pragmatism? Have we overloaded ourselves with the burdens of mortgage, credit card, or other debt when we should have known well ahead of time that it would be difficult-- not easy to live with?

Is something that is easy also worthwhile? We are conditioned in our society to think that easy equates with unworthiness; that only hard work pays off, that only extreme effort pays rewards. But does not any journey, as the old saying goes, begin with a single step? If we but start upon the trail, is there not a chance we'll reach the top of the mountain?

Easy has to do with the burden that we bear in fully ascending that mountain. Serious mountain climbers always have to put every choice of consideration on the scale to weigh it. How heavy will it become as we climb our mountain named destiny. Are the choices good shoes that fit us nicely and meet our fancy? If they are comfortable and lightweight, they become Easy for us to walk in along our realistically projected pathway. We don't choose shoes of heavy lead construction, lest they impede our travel and assent.

We start with baby steps, simple changes in our Easy 'strengthening by lightening up' scenarios or, if urgency is called for, we take whatever time is necessary to dramatically and in a major way reorganize our lives - always with priority to 'good honey.' It may just be Easier to commit the time to clean up our lives in a similar manner as we clean our living space than to continue to live in clutter.

We can choose to weigh ourselves down with conflict and confusion. We can gather all forms of junk materials and ideas that anchor ourselves to positions of management rather than movement. Movement is always more fun and takes us wherever we want to go. Management imprisons us in a fixed location in our mind that I call the 'junkyard.' In this unpleasant, stinky place we find the route of travel is a circle. We go around and around assessing, taking inventory and managing the junk inside this circle while choking on the smell.

The force of gravity magically disappears in Barrie's *Peter Pan*. In some of my warmest and most refreshing dreams, gravity was also absent. I could make incredible leaps and bounds. I could fly. Once awakened, gravity reappears. We live in a physical plane called reality. I would challenge even Michael Jordan to dunk a basketball that weighs 300 pounds. We simply can by choosing Difficult over Easy, overload ourselves with burdens. Most of these burdens relate to our neurotic drivers. It is all about image. We want to appear pleasing, flawless and even superhuman—and we want to get there fast. This neurotic dead weight is the heaviest reality burden. Janice Joplin's singing of Kris Kristofferson's words of truth ring strong as it pertains to this **emotional junk**: "Freedom is just another word for nothing left to lose."

Nurturing energies are weightless. When we fill our lives with #1 Pie we defy gravity -- we seem to fly. In this lightened state we move upon the Earth with less friction. It is a smoother ride. We travel farther with less effort.

Fear is the impediment to Easy. Note that fear is absent from the #1 Pie. Fearlessly we can experience inspiration in novelty and play without excuses. We have been given this gift of life and we are meant to Easily enjoy it. It was not intended for us to claim we earned our position of existence with difficulty and so remain hobbled. The next step up that

mountain may offer a more exciting view. We can't be afraid to take that lighter step with strength, good footing and wisdom for the climbing.

The thing is, anything gets Easier with practice and application. Choosing foods that are healthy and make us feel good becomes second nature over time as we experience the 'good honey' results of those choices. In time, we're not even tempted to choose what did not serve us well in the past. Perhaps our choice in clothes changes; we find cotton more comfortable than synthetics; as a result, we instinctively pick what feels good on our bodies. Our choices in people move forward in the same way; we find ourselves keeping company with those who bring us up, not down - with those whose attitude is positive and supportive. We no longer have time or make time for the negative, dark side of life.

But, we must start somewhere. If there is a hard part to Easy, it's simply getting started. Waiting for the 'right time' to begin, however, is an exercise in futility as there never really is a right time. The only time is now. We start where we stand, we work with the tools we have and as the days go on we find ourselves stronger, we find our senses to be more acute and we find that we have much more at our command than we ever could have believed. With each passing day tomorrow gets better. With each passing day every step we take is a stronger step. We know more of who we are and we know more of what we want, what works for us.

If past choices have not brought contentment or if old habits hold us back, it's time to reassess what changes are necessary to become who we really are, in our minds, on our best days, in our hearts. For as you know, anything we believe we can be, we can be. It is only our self-talk that holds us back. Movement is vital. Nothing trumps the misery from immobilization or surrender. Keep moving, keep investigating, keep on wondering and keep experimenting. In doing so, the concept of EASY becomes, well, infinitely easier. It's when we stop, when we are frozen that we are trapped. A wild wolf does not escape the hunter by sitting down in the snow.

So treat yourself to a new path. Treat yourself to beauty, to peace, and to happiness. See how it feels, and how it causes those around you to feel about you. Make it Easy on yourself! It is far more difficult to hang onto the old than to dive into the new. It takes a whole lot of energy to stay stuck. We humans were designed to move - mentally and physically. Our very cells are ready and capable of tremendous change. We only need to tell them what to do.

## ***KIND***

**(gentle, decent, loving, sympathetic, humane, fair, well-intentioned, generous, patient)**

Kind is a most often subtle but usually extremely relevant aspect of a choice that most people will initially discount. Its consideration is ultimately mankind's greatest potential triumph. "Kindness," as **Mother Teresa** so beautifully said, "is the only language that we **all** understand."

In all things we need to consider kindness. Kindness is much more complex and equally rewarding. This is why I will dedicate more time in its explanation to prove to you its importance. Keep in mind that everything, including the energies of kindness, turns into chemicals inside us. Our top prize of 'good honey' is a complex aggregate of energized chemicals. The chemistry of kindness is extremely nourishing.

In our world today, we enjoy almost unlimited choices. But are we making kind choices?

"I could not have slept tonight if I had left that helpless little creature to perish on the ground."

(Reply to friends who chided him for delaying them by stopping to return a fledgling to its nest.)

~**Abraham Lincoln**, Sixteenth President of the United States~

A few decades ago we purchased good old American food that we believed came from good old American farms, farms we figured would be a permanent part of the American landscape. Cows on those farms were assumed to be healthy and well-fed and their meat was considered just fine for family consumption; in fact, children were encouraged to 'eat their meat' and 'drink their milk' so they'd grow strong bones and bodies. We ate eggs from chickens we thought were happy enough, and corn flakes made from corn that couldn't have been anything but glorious and sweet if the visuals meant anything. Driving by corn fields in the Midwest we saw field after field of tall green stalks with ears of corn sticking out, their tassels blowing softly in the breeze.

"Farmers are the only indispensable people on the face of the Earth." ~

**Li Zhaoxing**, Ambassador, China~

What a serene picture it was: waving fields of grain, pretty stalks of corn, cows grazing contentedly, chickens scratching away in the barnyard. Alas, the green pastures and idyllic barnyard scenes of years passed, still portrayed in children's books, have been replaced by windowless metal sheds, wire cages, gestation crates, and other confinement systems in what is now known as **factory farming**.

Factory-farmed animals have no federal legal protection from horrific abuses that would be illegal if they were inflicted on dogs or cats. They endure neglect, mutilations and drug regimens that cause chronic pain and crippling, transport through all weather extremes and inhumane slaughter. Yet factory-farmed animals are no less sensitive, intelligent, or capable of feeling pain than are the dogs or cats that we cherish as companions.

The factory-farming system of modern agriculture strives to produce the most meat, milk and eggs as quickly and cheaply as possible - and in the smallest amount of space possible. Cows, calves, pigs, chickens, turkeys, ducks, geese, rabbits and other animals are kept in small cages or stalls where they are often unable to turn around. They are deprived of exercise so that all their energy goes toward producing flesh, eggs or milk for human consumption.

Motion restricted, these creatures generate more toxic-thought chemicals. Like us when their natural motion is impeded it renders them inefficient in detoxifying those endogenous toxins. Their SINKs fill quickly as they are fed drugs that fatten them faster. Because crowding creates an atmosphere that welcomes disease, animals in factory farms are fed and sprayed with huge amounts of pesticides and antibiotics. These toxins remain in the meat and are passed on to the people who consume them. This creates additional SINK challenges for those who eat the products.

This unkind industry simply could not continue to raise billions of animals per year in such extreme conditions without the drugs that allow the animals' bodies to survive conditions which would otherwise kill them. Both the World Health Organization and the American Medical Association have supported ending the use of antibiotics in this unwise manner. Both organizations' concern relates to the fact that this practice encourages resistant strains of germs that pose a challenge to us humans. It is a subtle scientific truth. Kindness flows steady and strong. Its power always circles back to us to give us strength. When we paint it into the relationships we have with all other feeling creatures it becomes powerfully nurturing. I claim this to be an even more subtle truth.

Unkindness and cruelty are subtle energies that act on all feeling creatures. In those living and feeling creatures, such energies induce toxic chemicals detrimental to those who consume them. The chemicals of fear, pain, and suffering are the same destructive batch that we humans produce when we experience those same emotions. These are killer chemicals. If, in feeling these toxic thoughts, would we expect our bodies to be enriched? Why then, would we assume that that same chemical cascade would not be a part of the meat we consume from tortured animals?

The destructive effect of this toxic-thought batch was clearly evident when surprised Army pathologists did autopsies on young men who died in combat in Vietnam. Their heart vessels manifested arteriosclerotic changes that were thought only to occur in the aged. It's no surprise to me, after all these soldiers were 'trained' to kill. That is what toxic-thought chemicals do to us! Many biochemists and scholars may scoff at my opinion that dispassion, fear, pain and suffering will contaminate your 'Neogenic honey,' making you grow old too quickly. At any given point in time we scholars of science proudly reason we know it all; then we find another piece of the puzzle called truth.

I'm embarrassed to say how many times the dogma of medicine I once preached has been proven later to be wrong. Doctors scoffed at the Jehovah's Witnesses' idea to risk death rather than take a blood transfusion. Nonsense and superstition we called it. Now, as we learn more about the terrible infections like HIV and hepatitis that transfusions have spread, their 'silly idea' appears valid. **Update 10/2012:** A study reported in *The Archives of Internal Medicine* shows that in the same heart surgery center from 1983 to 2011 all 233 Witnesses refused transfusions with their heart surgeries. Despite not receiving blood, on average, the Witnesses had fewer complications, shorter hospital stays and better one year survival rates than the 49986 matched patients who did receive transfusions related to their heart surgeries!

### **'Meat' unkindness head on**

How many of us consider how cows go from live creatures to chunks of meat displayed in grocery stores? The annihilation of millions of cows in a mechanical, thoughtless way seldom comes to mind. Nobody talks much about how these gentle giants feel, or if they feel anything at all. However, we now know that cows who can roam pastures and care for their young form life-long friendships with one another and have demonstrated the ability to be vain, hold grudges and play games. But cows raised for the meat and dairy industries are far removed from sun-drenched pastures and nursing calves. In our country alone, every year, more than 41 million cows suffer in death for the meat and dairy industries.

Cattle raised for beef may be born in one state, fattened in another and slaughtered in yet another. They are fed an unnatural diet of high-bulk grains and other fillers which can include expired dog and cat food, poultry feces and leftover restaurant food. They are castrated, their horns are ripped out and they have third-degree burns inflicted on them from branding - all without consideration for their pain. During transportation, cattle are crowded into metal trucks where they suffer from trampling, temperature extremes and lack of food, water, and veterinary care. At the slaughterhouse, they may be hoisted upside-down by their hind legs and dismembered while they are still conscious. The kill rate in a typical slaughterhouse is 400 animals per hour, and "the line is never stopped simply because an animal is still alive," according to a slaughterhouse worker.

Calves raised for veal are the male offspring of dairy cows. They're taken from their mothers within a few days of birth, and they are chained in stalls that have slatted floors and are only 2 feet wide and 6 feet long. Since their mothers' milk is used for human consumption, the calves are fed a milk substitute that is designed to help them gain at least 2 pounds a day. The diet is purposely low in iron so that the calves become anemic and their flesh stays pale and tender.

Our commonly held perceptions about cows are seriously inaccurate. We didn't know what we know now; but now we do know and we have no excuses for our unkind treatment of these emotional/feeling creatures.

"The worst sin towards our fellow creatures is not to hate them, but to be indifferent to them - that's the essence of humanity" **George Bernard Shaw**, Irish Playwright and Essayist

We also never considered that chickens might segue from a bucolic barnyard existence to being stuffed in cages where they can't even turn around. Millions of chickens have become miserable laying machines instead of personalities, but now we know about chickens. Chickens have marvelous personalities. They're inquisitive animals and in their natural surroundings, they form friendships and social hierarchies, recognize one another and develop pecking orders, love and care for their young, and enjoy full lives that include dust-bathing, making nests and roosting in trees. In factory farms, however, chickens are denied these activities and suffer because of it.

Laying hens live in battery cages stacked tier upon tier in huge warehouses. Confined seven or eight to a cage, they don't have enough room to turn around or spread even one wing. Conveyor belts bring in food and water and carry away eggs. Farmers often induce greater egg production through **forced molting**. Chickens are denied food and light for days, which leads to feather and weight loss. Male chicks experience an even more deplorable fate at the hatchery. Documented in a 2009 video by **Mercy For Animals** they are seen casually tossed off the conveyer belt and into a grinder while still alive.

To prevent stress-induced behaviors caused by extreme crowding—such as pecking their cage mates to death—hens are typically kept in semi-darkness and the ends of their sensitive beaks are cut off with hot blades. The wire mesh of the cages rubs their feathers and skin off and cripples their feet. Chickens can live for more than a decade, but laying hens in factory farms are exhausted and unable to produce as many eggs by the time they are 2 years old, so they are slaughtered. More than 100 million such **spent hens** die in slaughterhouses each year. Ninety-eight percent of the egg industry's hens are confined to cages in factory farms.

More than 9 billion broiler chickens are raised in sheds each year. Artificial lighting is manipulated to keep the birds eating as often as possible. To keep up with demand and to reduce production costs, genetic selection calls for big birds and fast growth (it now takes only 6 weeks to 'grow out' a chick to processing weight); this causes extremely painful joint and bone conditions. Investigations within this industry have revealed that birds were suffering from dehydration, respiratory diseases, bacterial infections, heart attacks, crippled legs and other serious ailments.

At the slaughterhouse, chickens are hung upside-down, their legs are forced into metal shackles, their throats are slit, and they are immersed in scalding hot de-feathering tanks. They are often conscious throughout the entire process. These chickens will never have a life. They won't know their parents. They won't make friends. They'll never take a dust bath. They'll never feel the sun on their feathers or breathe fresh air. They'll never even build a nest. They are treated unkindly, as if they didn't matter.

### The many disguises of unkindness

Back in those old idyllic days, we didn't think much about where our clothes came from, either. Or our shoes, our pots and pans, cabinets, bedspreads, you name it. So much of what made up the American home was made in our own country. Now, it's not that easy to find things made in the good old USA. The things we use and wear, that we surround ourselves with and drive, are made all over the world. We deal with a global economy; in some ways that's a good thing. But, in other ways, it's not such a good thing. Perhaps those who deal with us at a distance don't have to care about our welfare.

As individual human beings our deepest needs seem to be respect, love, kindness and all the #1 Pie energies. Yet, out of our need for social order, seeming naturally attached to pride-driven competition, greed emerges with enormous strength. We clearly see it in the ways even the most loving children play with each other. As societies advance and coalesce, we see a struggle between these social forces of kindness and greed. We try to reasonably harness greed and salvage the value of kindness through lagging and cumbersome 'justice systems.' Those systems endlessly inflate to become giant, but ineffective, surrogates for the simple 'golden rule.' Inequities and loopholes increase as we accelerate our social progress into an expanding accord. We most clearly see these growing pains in our #1 trading partner -- China.

It is hard for us Americans, who have grown litigiously armed with social consciousness, to understand why so many Chinese products so blatantly contain toxins. It is unkind to both the Chinese workers and the American consumers to be unnecessarily exposed to many of these toxic trade goods. Are the workers in Chinese factories and warehouses filled with mountainous piles of wood products loaded with **formaldehyde** -- a brain cell killing chemical -- leading a kind life?

Is it kind that workers in China toil with the known toxic **phosphogypsum** waste while making Chinese wallboard for export? Is it kind that these economically entrapped workers are bioaccumulating these toxins only to express themselves in uncertain future health miseries? Is it kind or fair to Chinese workers or American citizens that such poisonous building products are technically legal and make their way into homes in both our countries only to outgas and sicken us and our loved ones? Driven by unkindness, such toxic products seem to be popping up from everywhere, not just China.



In many countries workers are paid next to nothing to produce the goods for which we in turn pay little for. Is the pair of shoes for sale here for ten dollars, constructed in a third world country by a person being paid 25 cents an hour or less, a good deal? A 'good deal' for us perhaps, but did the person who made them get a good deal? Is the 12-year old working 12 hours a day producing trousers for sale in the U.S. for the bargain basement price of \$12 leading a kind life?

We cannot mandate kindness. So where can kindness begin? It can only start with being kind to ourselves, with making choices that make us happy and keep us healthy, and with being socially conscious of what we bring into our lives -- with selecting what is right, honorable, prudent and respectful. If we don't love ourselves enough to do that, how is it possible for us to be kind to other people, to animals, to the Earth?

We all know how we feel when we realize the impact of unkind words, actions, and deeds. We feel **SHAGGY** -- the Shame, Hurt, Angry, Guilty, Grief, and Yucky group of negative feelings. How many times have you suddenly felt this way as you realize that you have sent out this toxic energy of unkindness? You can feel the chemistry of Shaggy instantly. You know what Shaggy feels like. It is a feeling of emptiness and solitude, a dark and lonely place. Unkindness in words, actions and deeds disconnect you from the loving energies that brighten up your life. When their consequences are fully appreciated you want to do it over, but there are no such 'do it overs'-- there is just the resultant chemistry of regrets.

When you unkindly point your finger, in sending out this ugly energy, you ultimately realize that you have three fingers pointing back at you, delivering unto 'you' the biggest share of the internally toxic brew.

On the other hand, kind and healthy energies that you give to others in the same manner are reflected back to be placed in the same chemical beaker called 'you.' These subtle but powerful reflections induce a healing and nurturing mix of chemical reactions within this 'you' chemical beaker that soothes your soul.

Bottom line: if we expect from others what we are not able to offer ourselves, there will be no end to the unkindness suffered by ourselves and others. It is so easy to make excuses for unkindness. After all, if we cannot clearly see that we have been schooled in the unkindness of prejudice against so many other creatures, especially our fellow human beings, we will continue to see a simple tarantula killed purposely as it tries to cross a road. We will see snakes killed simply because they are snakes. We will see entire caves of bats and hives of bees - havens for creatures mightily responsible for pollinating the plants that become the food we eat - blown to extinction by firebombs simply because they are bats and bees, because some view them as unattractive and scary. We will imagine a need to be strong to meet the erroneously perceived threats of our annihilations from all 'different' people, ideas and things outside our comfortable invisible circle.

What about us -- *Homo sapiens*? What about the kindness or unkindness we show to each other? Sadly, some people are still crippled with a mistrust of 'other' people simply because they think differently, believe differently, look different, talk differently, wear different tattoos, live on the other block. They think, "What are they up to anyway? It can't be good!" In reality we are, after all, more alike than unlike. Everyone wants to be loved, cared about, esteemed - even those who may say they don't. We all want a warm place to lie down at night. We all want good food to eat. We want to be treated with respect and kindness, and yet we perpetrate atrocities upon each other century after century. We argue, demean and diminish - within families, within neighborhoods, within countries - and we wonder why the wars never stop.

We throw up smoke screens about word use in the media - unkind, thoughtless words, certainly, and they should not be spoken - but isn't the real misery initiated by our lack of compassion? What is more unkind, a thoughtless word or the savage, thoughtless treatment of our fellow human beings who die by the millions from poverty, hunger and slaughter?

As the open spaces of this planet continue to shrink and we discover the Hunkapi truth of our connections, we will realize that survival is no longer about strength in isolation, defense and self. It is all about the power in kindness to each other.

No man is an island, entire of itself;  
every man is a piece of the continent,  
a part of the main.  
If a clod be washed away by the sea,  
Europe is the less,  
as well as if a promontory were,  
as well as if a manor of thy friend's or of thine own were.

Any man's death diminishes me  
because I am involved in mankind;  
and therefore never send to know for whom the bell tolls; it  
tolls for thee. . . .

from *Meditation 17* by **John Donne**, 1624

**The Dalai Lama -- a kind man -- has some pertinent things to say about his religion:**

"My religion is very simple. My religion is kindness. This is my simple religion. There is no need for temples; no need for complicated philosophy. Our own brain, our own heart is our temple; the philosophy is kindness. Be kind whenever possible. It is always possible. If you can, help others; if you cannot do that, at least do not harm them. If you want others to be happy practice compassion. If you want to be happy practice compassion. Love and compassion are necessities, not luxuries. Without them humanity cannot survive. Today, more than ever before, life must be characterized by a sense of **Universal Responsibility**, not only nation to nation and human to human, but also human to other forms of life."

We live on a beautiful, complex, and very crowded planet where it now seems that an essential act of kindness is to stop feeding the pollution elephant! If we choose to be kind, our planet will persist, and it will thrive. If we, however, choose mindlessness and thoughtlessness - if we make poor choices in any and all areas of our daily lives -- if we choose unkindness over intelligent compassion, we are doomed to repeat our mistakes and our mistakes will take away what we need to survive, what we cherish. Choose kindness. Being kind feels good. Being kind does good. Being kind changes us and those around us for the better. Kindness begets consideration, understanding, compassion and love and as the musician **John Lennon** said before he was unkindly taken from the Earth, "Love is all there is."

There seems always so much pressure to be unkind yet so little to be gained by it all. Kindness is a gift. It's an opportunity. When someone rattles your cage, sets you off, it's your chance to help. When others are inconsiderate, or express anger or anxiety, it is an indication that they are in pain. Returning pain with pain accomplishes nothing, whereas kindness heals. As with all #1 Pie loving energies, kindness costs us nothing. **Truly, the best things in life are free.**



This book sends the message that COED Syndrome -- the disease profile change we are experiencing -- can best be accounted for by the aggregate of contemporary environmental 'thorns'. **'Thorns,'** the actual causes of ill health, come in three forms: **deficiency thorns**, **dysfunction thorns** such as impaired, disturbed, or excessive activities, and **toxicity thorns**. 'Toxicity thorns' come in three forms—chemicals, energies and microbes. Toxicity thorns either originate outside of us or form from within. Once inside of us, the aggregate of all toxins can best be understood in terms of their resultant chemistry. Now that you have this critical thorn-locating tool called SEEK to find them, don't forget to look deep inside of yourself first. **As Mohandas Gandhi said, "Be the change you want to see in the world."**

In the next seven chapters we will explore the seven **Life Dynamix** wellness and thorn removal arenas.

## IV. THE *LIFE DYNAMIX* LIFESTYLE

### Chapter 7

#### CRUISING TOWARD MENTAL MASTERY

“Be careful what you think because your thoughts run your life.” ~ Proverbs 4:23 ~

##### Removing the nasty thorn of *toxic thought*

**Stress** is a major cause of destruction and disease. The most powerful elements impacting your health come from within! They reflect contrasting subtle energy choices at your Soul's Food Diner. You can choose the package that I call **#1 Pie** -- nurturing energies that soothe your soul in 'the now' and induce the healthy chemicals needed for making 'good honey.' You can choose **#2 Pie** -- the toxic-thought package that poisons you in 'the now' and in your future Neogenic constructs. **You will always have a choice.**

“Only the wise man, only he whose thoughts are controlled and purified, makes the winds and the storms of the soul obey him.” ~James Allen (1864-1912) ~

*About 30,000 years ago a young cave-dwelling man, who we'll call Groag, stood in silence near the edge of a lush forest. The sun was shining through dense trees and a joyful breeze caressed his short, sturdy body. It was perfect day for hunting. A sharp wooden spear gripped in his mighty right arm, Groag moved forward through the underbrush, senses keen. He knew what he was looking for. He always knew what he wanted to happen. It was an instinctive thing with him. He may not have put a name to it, would have had no reason to do so, but he was good at forming powerful realities. Given his place and time on Earth, he needed to be good at that.*

*He'd been thinking about the red deer since two nights before when he and his wife, Uunga, feasted on the last of the wild cattle caught days before. He sat by the fire, with a feeling of emptiness in his belly. He worked out a plan in his mind to fill that emptiness in the only way he knew how. He saw his hunt in moving pictures. It was the season for red deer. Red deer were plentiful this time of year, but they were wily and his hunt bore consideration.*

*He reviewed the steps he would take, come morning. With red deer, ambush worked best. He would find a spot to hide and he would wait. Just how this would happen was quite clear to him. He saw himself spearing the deer, saw himself bringing it back to the cave and saw the smile on his wife's face as he entered their home with the deer on his back. Groag played those pictures over and over again in his mind.*

The concept of mental mastery has been around as long as we've been around. Thousands of years ago our *Homo sapiens*, classic-carnivore ancestors knew that most of the time they were going to bring home the meat. Had they any other vision, success would have been a long time coming; their attitude determined their survival. Women saw themselves finding fire wood, starting the fire, watching as the flames turned a deer into dinner. Visualization has been a part of our humanness forever. Attitude has always been everything.

“The greatest discovery of my generation is that man can alter his life simply by altering his attitude of mind.”  
~William James (1842–1910)~

##### What do you want to be when you 'grow up'?

You are indeed a vast compilation of cells and chemicals, all busy in the creation of who you are becoming. Can you control what happens with this assortment of cells and chemicals? Can you build upon what you have? Do you want to lose weight, be brighter, be stronger, be happier, live a longer and higher quality of life? You can! Neogenesis permits you to do all these things and much more! It allows you to 'grow' or change the Neogenic self within the limits of your potential.

The most important first step in making the positive changes needed to meet any reasonable goal that you have in life is to master your thinking. You must think to the exclusion of failure. Like Groag, seeking his red deer, you first need a plan -- a clear vision. Like Groag, you must focus your thinking toward each of the steps necessary to get all the 'deer' you desire.

##### What is 'mental mastery' anyway?

My definition is: the ability to encourage a nurturing chemical gestalt in one's brain regardless of external conditions. The brain's chemical **gestalt** -- that complex mix and configuration of chemicals so unified as a whole that its properties cannot be derived from a simple summation of its parts -- can be of all strengths of nurturing or toxicity, depending on the thoughts that generate it. Through brain/body connections our thoughts profoundly influence our well-being.

I commonly ask people, “What one thing could we do to best influence our health in a positive way?” Most say, exercise more, eat better or lose weight. Each of these things is important. However, the correct answer is -- **think better!**

Everything, everything, begins with a thought. A thought bespeaks an idea, and the idea comes to fruition by virtue of moving from one dimension to another, eventually manifesting into a chosen reality. The Wright brothers, for example, started with a thought and ended up with an airplane. On Thursday, December 17, 1903, their plane flew 120 feet for 12 seconds. Not much of a flight to be sure, but it was the first controlled, sustained flight in a heavier-than-air craft and the occurrence was one of the great moments of the century. The Wright brothers' airplane didn't just happen. Their airplane started with a thought – and that thought changed the world.

“Great men are they who see that spiritual is stronger than any material force,  
that thoughts rule the world.” ~**Ralph Waldo Emerson**~

Via cascades of complex chemistry, **nurturing thoughts** tend to render healthier outcomes, while **toxic thoughts** tend to harm the body. For example, you'd be unwise to foster angry or painful thoughts to encourage healthy weight loss. Such thoughts evoke excesses of cortisol, which in turn tend to increase food cravings, break down muscle, increase visceral fat and leave one feeling depressed. Such depressed feelings lead one to increase comfort food cravings, causing the 'physiological wheel' of unhealthy weight gain to spin out of control.

Such **toxic thought thinking** allows people to literally stress themselves to death. We doctors have been taught for decades that the classical risk factors for cardiovascular disease (the # 1 killer in humans) are smoking, hypertension, diabetes and high blood lipids. There is no question that these factors have a major association with the 'slow burn' process of corrosion of arteries. However, a 12/16/2008 Scottish study of over 6500 healthy patients followed for more than seven years showed that psychological distress increased the risk for **cardiovascular events** by more than 50%! Classical risk factors like hypertension, which increased the risk by 13%, were surprisingly less linked to these events.

**Update 12/13/2012:** A study in *Stroke online* followed 4120 older adults for several years. The elders who were the most severely stressed, dissatisfied with their lives or depressed, had a significantly increased risk of having **strokes** and about 3 times the risk of stroke death as compared with those with the least amount of psychological distress.

#### **THE PHYSIOLOGY OF FEAR -- The answer to Rodney King's profound question, “Why can't we all just get along?”**

What happens when you choose the #2 Pie? What are the net effects of that choice? Munching on the #2 Pie brings on toxic thoughts, and actual chemicals emanate from toxic thoughts. These chemicals are essential, but when you create them by addiction or in excess, they act to increase your body's toxic load. Some of those chemicals are excesses of free radicals, cortisol, epinephrine and insulin, as well as an unhealthy imbalance of neurotransmitters. Such a toxic brew is internally generated mostly by the ingredient of #2 Pie called **fear**. The teleological purpose of the chemicals comprising what we call 'fear' is one of quick response – the fight or flight response needed for survival.

Fear is the default setting for all creatures whose brains have an emotion-managing component called **the limbic system**. As with all creatures which have feelings, and so can bond, love and fear, our brains have a limbic system. So created, we're born 'wired' to fear; we must learn to trust! By this predisposition we can tend to inappropriately anticipate fear. We can start looking for anything that might be 'wrong' with a situation. We can focus on potential bad outcomes rather than focusing on the process of living. When we project things in this way we write our own negative, unfulfilling script. We set forth an addictive brain chemistry that puts us on the rocky path of self-fulfilling destructive prophecies.

Just by putting that dark thought out there – that 'invisible' thought – we put events into process that render a negative occurrence much more likely to happen. That sinister thought alone brings the fearful event into the realm of possibility. Too, the feared entity, of whatever sort, is then viewed as a huge thing encompassing all aspects of possible misery. Viewed in this way, life becomes overwhelming. Also, if something awful has in fact taken place in your life, if something or someone has hurt you in some way, why relive it? What is the point of going over and over it again inside your head? Was it not wretched enough the first time? Remember that thoughts can have powerful consequences!

**Update 7/7/14:** Research was reported today on 1500 Finish elders who were followed for 8-10 years after assessing their attitudes. Those with the highest degree of **cynical distrust**, at the study's onset, were found to have more than 3 times the likelihood of developing dementia than those within the least cynical group.

If you doubt the detrimental health impact of the chemistry of fear, consider the three-year University of California, Irvine, study reported in the January 2008 *Archives of General Psychiatry*. Professor Alison Holman linked the stress responses of individuals related to the 9/11/2001 attacks to a 53% increase in heart problems, high blood pressure and strokes. It should be no surprise that there is somatic destructive chemistry resultant from fear. **Update 5/16/16:** Women under **chronic stress** have muted levels of **klotho** – a key Neogenic hormone linked with longevity and improved cognition.

Fear has many names and wears many disguises, but is fundamentally a word describing the helpless state into which you descend when you cannot control what goes on in your own head. Discouragingly, that helplessness, that predisposition to bodily upsets and mental panic can, if left uninvestigated and unchecked, become a permanent state of being, an ongoing poisoning of your body.

Thoughts are currents, dynamic flowing patterns of energies just as real as air or water that ultimately manifest in Neogenic constructs. All toxic-thought ingredients of the # 2 Pie are subtle energies that, when selected, work similarly to fear by creating chemistry that ultimately poisons our future 'honey.' If your self-talk revolves around suffering and general negativity, if such topics comprise the major part of your thoughts and your discussions, then a corresponding dark current flow pattern will be reinforced. This will then draw in mental and physical manifestations of the very same level and down the rabbit hole you go -- into the maelstrom, around and around in a bristling foam of discontent.

Mental mastery involves the idea that we live in the Now, that happiness is to be enjoyed right now. Happiness, contentment, satisfaction are all here -- right in front of us. We are moving forward. We are not stuck in the past unless we choose to be stuck in the past. Each and every day, our 'invisible' thoughts come and go by the hundreds. Some are warm, loving thoughts; some are not so loving. Some are fleeting, ephemeral, but some get stuck on a loop so intense that they bury themselves in our bodies and in our psyche.

What, if any, bearing do our thoughts have on ourselves and others? They have a momentous bearing. Your thoughts are a powerful force. They determine your feelings. I've mentioned that thoughts evoke chemicals, that those chemicals can become toxic or therapeutic depending on the nature of the thoughts. Thus, since you can control your thoughts -- and because those resultant chemicals control how you feel -- you can control your feelings.

When you choose **#1 Pie**, the Pie with all the tasty ingredients, the one in which **faith** replaces fear, **gratitude** displaces anxiety, **caring** supersedes neglect, and **joy** leaves no room for anger, you garner the strength and energy necessary to respect yourself, forgive yourself and love yourself. You are able to share higher levels of thought, higher levels of being with those around you. You become progressively more conscious of what you think, of what you say to yourself.

Life can be a dance -- a delightful, amusing, colorful dance that lifts you mentally and physically and brings joy to you and to whomever you encounter. Why choose gloom, gloom and worry, worry and gloom? **Mark Twain** said, *"I have lived a long life and had many troubles, most of which never happened."* A negative focus never made a situation any better. Worry never made what you worry about less likely to happen, whereas seeing yourself winning puts that win in motion. I keep going back to choices. Choosing what you think is huge because that's where it all starts.

"I think the guys who are really controlling their emotions ... are going to win;  
the guy who is controlling his emotions is going to win!" -**Tiger Woods**, *MSNBC Interview*, June 17, 2001

Does anybody who loves golf doubt which 'guy' he was talking about? **Update 12/10/09** message to Tiger: Your words now are even more prophetic. Show us **'you Da Man fans'** that you're not just one of the best golfers ever. **Be the man!** **Update 9/23/18:** Today witnessed **'Da Man's Greatest Comeback Win,'** plus **'The Spectators' Spectacle of Appreciation.'**

We exist with some incontrovertible laws -- the laws of physics -- in this physical plane. There's really no getting around that. We cannot control all external forces. We can only control our internal responses to these forces. If we accept responsibility for our feelings, we have the opportunity to acknowledge and hold within us an enormous amount of power. What matters most is how you feel about yourself and your inner control of a much more exciting metaphysical plane.

Easy for you to say, you say. Anger flares up fast, like fire. Depression can cloud the mind in a nanosecond. Bitterness, envy, jealousy can overtake us like the under-bet underdog at the Derby. How do you prevent such powerful feelings from making a nest in your psyche, your stomach, your heart? What do you do when vile thoughts cross your mind, when you find yourself ruminating on the dark side of the moon?

As complicated, convoluted and confusing as your feelings may seem to be, they're there because you invited them. You can choose your feelings. Happiness is a state of being nourished by the **#1 Pie**. If, in this multiplex theater you call your mind, you find yourself in a horror movie called unhappiness, you have no obligation to hang on to the end just because you took the seat. You honor yourself by immediately walking out and into the film called **#1 Pie** that's always playing right next door. Your ticket is your gift of life. The ticket says you can choose any movie you want.

"There has been nothing more empowering than the realization that I don't have to think thoughts that bring me pain."  
**Jill Bolte Taylor, Ph.D.** From *My Stroke of Insight*

There are many techniques of transit out of dark thoughts and emotions. Perhaps the easiest is **focused breathing**. Many emotional and physical states of distress can be altered by controlling your breathing patterns. There is a close relationship between your emotions and your breathing. Intense emotional states precipitate changes in your breathing.

No angry person breathes calmly and deeply. Anger, distress and tension foster fast, shallow breathing and fast, shallow breathing does not transport the oxygen necessary for the body to be in a state of relaxation and peace. Most folks are not cognizant of the power of their breathing processes in influencing their brain's health. Remember, brain health is fundamentally linked to body health. Books abound on the subject of breathing. They are waiting for you to read them and become a Master Breather. Let me give you a quick course in my own rendition that follows. I call it **tripping in**.



## ***Tripping in -- a natural antidote for fear-driven anxiety***

Let me take you on a trip inside your mind. Your control of breathing, like many mundane but critical brain activities, is relegated to the lower part of your brain. If this part of your brain is healthy and its messages are clearly received and sent, you never have to think about breathing or many other lower brain functions. Now I not only want you to think about it, but I want you to focus on it as much as possible, to the exclusion of other thoughts.

Put yourself in undistracted and supine comfort in a pleasant meditative space outside in the shade – but in the full spectrum of daylight. An inside room brightened by full spectrum lighting will also do. Take total control of your breathing away from the automatic breathing-controlling lower brain. With your eyes closed and covered with a white towel, control both the depth and the timing of both inspiration and expiration. Let the breaths be as physiologically deep as possible by mentally counting in rhythm to full chest expansion. This count will usually be between 6 and 8. Then exhale to your limit while mentally counting at the same pace. The exhale count will usually be 8 to 10.

Breathe deeply and fully for a while at this comfortable pace and focus on the process and the counting. You want to make all of the hemoglobin in the red cells of your blood to become totally saturated with oxygen to feed your mastering mind. Relax your belly muscles as you breathe deeply; feel your breath in your belly and chest. (Relaxing and softening the belly muscles lets all the rest of your body's muscles relax so as not to shunt much of that oxygen fuel away from the higher thinking part of your brain). Now with your eyes still closed and covered, 'looking inward,' you can see how powerful your mind is in living color.

What you see is what appears to be a variable pattern of light resonance devoid of form. It is in reality a visual field of about 100 million pixels. Each pixel represents the glow of packets of tiny neurons of the retina of the eyes that are taking the picture of the hazy light coming through the covered opaque eyelids. These are called rods and cones. They are, in fact, part of your brain. You are now looking at what's happening inside your brain, much like looking into a mirror.

What you see is the resonance of that fragmented entry light as it travels at warp speed back and forth between the retinal neurons and the neurons of the visual cortex in the occipital lobes of your brain, there to be reassembled. In between these points of travel are connections from neurons involved in the higher thinking and creative parts of your brain. Their involvement into the loop of light energy traveling through the brain allows the highest part of your mind to create your own unique and harmonious visual internal reality, from that external reality light.

Scan the entire field -- focus on just one tiny pixel grouping and call its color with your will. By patiently permitting that color to magnify and enlarge, by welcoming it into your entire inward visual field, you will see who's truly in a powerful position of influence. Is this some illusion? Pick another color. Think only of that color. Find it with your scanning mind. Focus on it by its name, pull it out, magnify it, and urge that color to dominate the visual field. You can see that your 'internally-influenced color' strongly fights for position with the 'external reality light' that's continually entering into view. The external light provides pigments of every perceptible color for your creatively-suggested thoughts to gain expression.

If you believe you can do it, and you let yourself do it, you will be successful in this endeavor. After you have willingly, patiently, confidently and successfully done this, I'll ask you again: who is truly in charge of your life? Who's the only person who can paint your masterpiece?

Two things of value are apparent with this insightful endeavor that I call '**tripping in.**' Unlike '**tripping out**' where LSD, PCP, mushrooms or other drugs are in charge, you're not potentially sickened and you don't chase away your chosen reality. Secondly, you'll discover that this is a **bioenergetic intervention**. Unlike most drugs with inevitable paybacks, such self-directed therapies cost little and their payoffs come in the form of refreshing the brain, not discombobulating it.

The physics of our world as it interfaces with your internal reality present in a wide variation of energies. You experience the world with sight, sound, touch, smell and taste. The energy 'bending' by your higher power interpretation can and does occur in all sensed energies. Like these harmonious visual spectrum waveforms, resonations from other energy wavelengths are similarly processed as well and can be 'tuned in' to the exact frequencies that you wish to experience. You can and routinely do tone down, mute, amplify, tune things in and out and even add quality by your own projections. This ability puts calmness, serenity and peace squarely in the ballpark of your choices.

This interpretation/projection is the reflection of your choices at Soul's Food Diner, of what you see in the Rorschach test. Do you see butterfly inkblots or something not so pretty? By your choice of 'Pie' you can paint a radiantly-colorful beautiful day everyday or you can darken or discolor the light in your life.

Johnny Nash in his uplifting 1972 hit, *I Can See Clearly Now*, shows the point sharply. He moved the dark clouds that had blinded him out of the way to bring on a bright sun shiny day by his powerful choices. Who can't love that song?

These energy-bending, energy-filtering neurons that intensely 'color' your interpretation and its projection are anchored in emotion. When tuned in to nurturing energies of the **#1Pie**, they permit you to airbrush out the imperfections of all people, places and things in your life. The most important person is you. The most important place is your internal reality. The most important thing is the peace and joy within it.

I've always been intrigued by the differences in the way people can sense the same thing, interpret and process it, and finally express it. Louie Armstrong and Harry James could play the same notes on similar trumpets yet sound so distinctly different! We are all unique in perception, construct and expression of our thoughts. Our differences in the area of thinking are as singular as are our DNA and fingerprints. You can appreciate the process in comparing a Picasso to a Van Gogh. It is more than okay to be different. Your differences are the most precious aspects of your being.

In the deepest spiritual sense, we are a product of what we think. The introspective 'tripping in' experiences allows us to analyze the subjective way we see, hear and feel things -- the manner by which we can color 'our thinking' to construct our own unique reality. It shows us that we can, by our choices, take our minds to a higher place of shelter. James Allen speaks of this higher state of mind in the second quote given in this chapter. We could apply call that 'place' **serenity**.

In serenity you are disconnected emotionally from external validation. In this self-directed 'place' you find power to self-love. Self-love is not about external values or some random drug induced or influenced reality. It's about realizing that only you can give yourself permission to accept a reality that brings you feelings of joy, happiness and peace.

Without self-love you cast your emotions into the storm of an external world you can't control. You view yourself as a winner only if you meet some criteria in that external reality. Your feelings take a roller coaster ride along the same kind of course as the stock market or the moods of those you love. Have you ever noticed that the Dow Jones doesn't go up every day, despite your wishes? Neither do the moods of the ones you choose to love.

### **The mind is the ultimate transponder**

Your mind both transmits the signals you choose to generate and receives the ones you welcome. The dynamic design of your brain actually allows you to flood your visual field with pixel colors of your choice. 'Tripping in' demonstrates that you are in control of how you experience everything. Your will alone can direct you to see, hear, smell, touch and experience, in every way, your worldly exposures to energies of the two Pie choices. Wayne Dyer's famous quote speaks to the bottom line of happiness: *"If you change the way you look at things, the things you look at change."*

The big question now becomes: how do you want to feel? Not just beauty, indeed every perception is truly in the 'eye' of the beholder. Furthermore, every feeling, including love, is an outcome of those chosen perceptions.

Only you can choose the self-talk lyrics, tunes, tapes and other energies that enrich your body and soul. The simplest prescription to excellent health is: guide yourself toward nurturing energies of the **#1 Pie**. If circumstances confound and confuse and you start down the dark path of anger and resentment, well, stifle yourself. Stop yourself. Count to ten (or 20, or 60) before you give into what will hurt you. Do this enough and you'll find the time needed to take you back to your happiness movie keeps getting shorter.

Everyone knows the feeling of angry adrenalin running wild in the body. It feels lousy. Nobody ever honestly said to a friend, "Wow, I'm really angry and I feel great!" You can control the adrenalin pump -- and the more you do that, the more you know that you can control the adrenalin pump. It's like a muscle. The more you use it, the stronger it becomes. The key to anger management is to understand that you are in charge of the chemical fire. Neurotic ego-defending internal dialogue tapes feed the fire until it becomes a rage. You can cut through all the confusion if you understand that happy chemistry is much healthier than unhappy chemistry -- and that each and every reaction is within your control.

I don't need a multi-million dollar imaging tool to demonstrate the power of the mind over the body. I can use a simple blood pressure monitor to take a person's blood pressure before and after that person uses **dynamic-relaxation** techniques to transport himself to places of comfort in his memory. I can visualize many pictures of such places that I have stored in my own mental picture albums. I label them with specific names such as Joy, Gratitude and Love. These are gentle places in my mind, open for business at all times. If I'm tense, a brief visit to one can drop my B/P by 15 points and easily make me smile. Such 'brief visiting' is a powerful biofeedback technique. Sharing this can remind others that they are truly in control of all the somatic expressions of their minds.

The very night of this writing, I was called to see an elderly lady in a panic. She had a complex history with many recent serious issues, including high blood pressure. Her nose was bleeding. She had just gone through cauterizing under 'twilight-anesthetic' four days earlier for recurring nosebleeds. She was distraught as she struggled to check the bleeding and to keep breathing as she hacked up the clots. She was overwhelmed with fear and distress.

I could 'see' that, in her mind, she was hysterically playing a **sinister thinking tape**. It featured revisiting the emergency room, being sedated, nose-packing, making another unwanted stay in the hospital, arranging for the care of her dog, the this, the that and the "What am I going to do?" continuum of a sinister thinking tape. She was leading herself into panic.

Seeing her facial expressions of agony, hearing her "I can'ts" at every positive suggestion, I could see she felt powerless to change her visualized script. I finally got her comfortably seated and reassured her that her bleeding could be stopped, but that she must want that to happen. I put her B/P cuff on her arm and took a baseline reading of 207/86.

I then invited her to take control by visiting a place of peace and contentment in her memory. I asked her to describe all the individual features of her special place as I packed her nose. With ongoing reassurances, I invited her mind to 'stay' there. I continued to reinforce her power, in biofeedback, as I relayed her dropping B/P readings to her. As she allowed herself to breathe deeply and relax, the grimace smoothed out, her nose bleed stopped totally, and her last B/P was 123/59. In this process, she was enlightened as to how powerful she was when she would only give herself permission.

Most doctors would opine that it was a simple matter of lowering the B/P that stopped the bleeding. I believe it was much more than that in analysis. The B/P changes are simply reflections, as are the facial expressions of first agony, then relief. They reflect a change of mind associated by choosing to replace her **sinister thinking tape** with a **happy thinking tape**. We tend to forget that the mind influences all somatic expressions. The brain is so powerful that with all its vital force energies properly organized, the blood-clotting platelets become 'happier' and thus so able to function better.

I now view such a therapeutic intervention to be better when we as physicians take the time to empower others and allow them to retain as much control as possible in their own healing. In the past

I have been inclined to take the shortcut path of illusion, a less productive path that involved keeping me on a lifeline attached to them. This less effective and inefficient tack, predominant in medicine today is not the healthiest one for either party.

"Time and money spent in helping men to do more for themselves is far better than mere giving." ~Henry Ford~



**Toxic thought is a major thorn and requires urgent removal.**

Toxic thought emanates from the consumption of #2 Pie. It fuels any destructive emotional fire and somatically impedes Neogenesis, thus disallowing optimal health outcomes. Enhancing vital force power stops production of chemical messengers associated with toxic thought and activates healthy chemistry by simply focusing your mind onto the nurturing energies. The **#1 Pie** is the most powerful choice for healing. It's empowering to realize that your mind is in control of so many of your somatic expressions and that you can choose to be kind to yourself and in doing so assist healing. You can choose to be your own worst enemy or your own best friend.

"Managing our emotions increases intuition and clarity.

It helps us self regulate our brain chemicals and internal hormones.

It gives us natural highs, the real fountain of youth we've been searching for.

It enables us to drink from elixirs locked within our cells, just waiting for us to discover them."

– Doc Childre – <http://www.heartquotes.net/emotions.html>

# Seven Easy Steps to Becoming a Mental Master

## 1) Find your #1 Pie purpose in life and have a reasonable plan for its success

My simple advice for obtaining and maintaining excellent health and a more durable happiness is to find a purposeful path for your life and travel fearlessly in pursuit of that purpose. That path should offer satisfaction of your passions and best highlight your special talents and beliefs. **Update 3/3/2010:** Researchers from the Rush University Medical Center reported that elderly people with a strong sense of purpose in life are almost 2½ times less likely to develop Alzheimer's.

"We are given our own unique tools; it is up to us what we decide to build and how magnificent it will be." ~Steven Ferrel ~

## 2) SEEK joy in the 'Now'

The idea behind it and in front of it has universal application. Let me give you an example from my life. I enjoy playing in poker tournaments and I don't play to lose. But unless I'm fortunate and win the tournament, at some point I know I'm going to get eliminated or '**knocked out**' in poker jargon. Anyone who plays seriously knows his final elimination poker hand is, for the most part, out of his control, despite perfect play. He may perceive after hours or days of tournament play that his financial and emotional investment has come to naught. He got knocked out; so what? At that very knocked-out second in time, he has but two 'mind-set choices:'-- he can choose 'the #1 Pie mind-set' or 'the #2 Pie mind-set.'

After all, he's already knocked out of the tournament. It's over. In a nanosecond his being knocked out is part of the past and he has no control over the past. Not all of us play poker, but all of us experience losses in the broadest sense of the word. After those losses, whatever they may be, what we do have control over is how we feel and function in the 'Now,' and how we'll experience the resultant chemistry thereof. Choose to feel good and happy, indulge in the **#1 Pie**. The resultant chemistry of feeling happy is nourishment from your soul. Happiness will reflect into good health for your body. Happiness is solid ground from which to take the next step in your journey. Unhappiness is shaky ground, a slippery slope. The resultant complicated chemistry of unhappiness, most simply understood, poisons your Neogenic honey.

The # 2 Pie choices don't SEEK well. They'll always bog you down. If you don't take the situation in hand, if you give up and give in, you lose momentum and strength. All parts of you require constant reinforcement. You reinforce yourself with rewards that you get when you know you're in control of yourself and your feelings -- rewards of calmness and power. This turns on nurturing chemical cascades. Thoughts evoke such chemical cascades which can be toxic or therapeutic depending on what kind of thoughts you entertain. And, since you can control your thoughts and their resultant chemicals in turn control how you feel, you -- and only you -- are able to control your feelings.

**SHAGGY (Shame-Hurt-Anger-Guilt-Grief-Yucky) feelings** harm you. Hence, it's unwise to entertain the **SHAGGY-generating thinking** that gives them life and destructive power. The genesis of such thinking is from #2 Pie energies. It's wise to keep their damage to a minimum. Only pride and other such #2 Pie energies will keep you on the disastrous course chartered by such 'toxic thought.' The time to right your course is immediately. It does no good to procrastinate, defend your ego or rationalize. Savvy poker players call the observable expressions of such toxic thought '**going on tilt.**' As in poker, when adversities occur in all of life, and they will, 'winners' refocus onto **#1 Pie thinking** ASAP.

## 3) Always keep the 'appreciation doorway' open

**Appreciation** is the key that opens the doorway to good health and peace. In whatever direction you guide your thoughts, your feelings will follow. When toxic thoughts emerge, immediately change your focus. If the thought presents a real life challenge, focus on each step in the solution of that challenge rather than a feared outcome. Stop the negative tapes! Deliberately think of something wonderful. Start with the fact that you're now living in a great civilization. Know that you have freedoms and opportunities not enjoyed by people in other times and places. Visualize and focus on real pictures in your memories that you have labeled as Love, Joy and Happiness. Feel appreciative. Is there anyone who on any given day could not find something, one thing to appreciate? A ray of sunshine, a flower, a beloved pet, a hot bowl of soup, a beautiful memory -- even the fact that you have a mind that is capable of appreciation? That you can make that choice? That's worth appreciating.

## 4) Speak only helpful 'self-talk'

The mind loves to search for answers. If the question you ask yourself is derogatory, your mind will find answers that give it support. For example, your question, "*Why am I such a jerk in this relationship?*" will provide you with unhealthy answers such as, "*Because I'm nothing but a loser and I have always been a loser in every relationship.*" However, when you ask yourself the same question in a healthier manner, such as-- "*What steps can I begin to take to improve my relationship?*"- You will find answers that will serve you the **#1 Pie** energies of nourishment. The net effect diminishes any external guidance and empowers you to gain inner control.

## 5) Be slow to judge and quick to forgive

Hasten to move away from your negative **POO** (***P**rejudice in **O**pinions and **O**bservations*) or alternatively (***P**oint **O**f **O**bservation*). Each person on Earth could view the same thing, from our different POOs and conger up hundreds of distinctly differing impressions. This is especially true when the things that they are viewing are complicated concepts such as theologies, responsibilities, politics, taxes and the like. Such ideas are often difficult to agree upon.

Not wanting to be indifferent or appear naive, we are quick to inappropriately attach **#2 Pie** emotions to these things and render judgements based upon disrespect. Wanting to always be in control, we are quick to argue about even the simplest of things such as: Who's turn is it to choose the movie tonight? Then when needed, in defense of our negative POO, we send out hurtful messages of disrespect to one or more of our most beloved of those 7 billion souls!

My advice is to respect all there is. Never fail to observe the utility, beauty and love in everything that contains it. You will find it everywhere, in everything and in everyone, including yourself. Then you will never be alone in darkness or despair. Then all there is will come unto you.

## 6) Reciprocate

When the subliminal energy of an unresolved conflict manifests itself with anxiety, move your body in reciprocation ASAP. Flush those thought toxins out of your body with movement. Walk. Run. Jump up and down. Take a swim. Stretch. Do yoga. Do anything you enjoy doing, especially if it involves moving in reciprocation. Toxic thoughts need to be detoxified immediately. Left to the winds, even small hot-thoughts can spread to become a SINK-filling, SINK-spilling wildfire. Walking acts like a liquid plumber in your clogged-up detox SINK. Running acts like a plunger. After a half hour of moving, nothing ever, ever feels the same. Movement brings on a new perspective--always.

There are many effective ways for dealing with bad thoughts and bad feelings. We've talked about a few of them here. Find the ones that are most appealing and make them work for you. You are the one responsible for your feelings, period! Don't give your power away. There are so many resources, so many techniques available to help you create your own life, your own beautiful, positive, fulfilling life. Write a script that makes you happy. Whatever you can imagine, you can accomplish.

## 7) Move forward with courage and conviction

Someone I hold dear told me that she was advised by her 'shrink' to deal with her worry addiction by selecting only one location, for example a special chair, in which she should allow herself to worry in. I have heard this common advice for other stinking-thinking addictions as well, yet I believe it's about as effective as telling a 3-pack a day smoker to only smoke while sitting on the same chair. That smoker wouldn't smoke any less. If the smoking venue was only in that chair, the only thing that would improve is the smell in the rest of the house. It's much like saying it's OK to accept a little bit of lung cancer, only a tad of suicide, or just a small portion of a pregnancy.

My advice is zero compromise. Thoroughly cleanse your mind of all the toxic thinking related to putting anyone, including yourself, down and out. Give yourself no permission to snack on # 2 Pie energies. Their tastes may be alluring but they are guaranteed to sicken you and spoil your Neogenic honey. When you boldly make the **emotional commitment** to discard negative thoughts and life-draining addictions and SEEK only the #1 Pie, you empower yourself.

“Until one is committed, there is hesitancy, the chance to draw back, always ineffectiveness.

Concerning all acts of initiative (and creation) there is one elementary truth,  
the ignorance of which kills countless ideas and splendid plans:

That the moment one definitely commits oneself, then Providence moves too.

All sorts of things occur to help one that would never otherwise have occurred.

A whole stream of events issues from the decision,  
raising in one's favor all manner of unforeseen incidents and meetings and material assistance,  
which no man could have dreamed would have come his way.

I have learned a deep respect for one of Goethe's couplets:

Whatever you can do,  
Or dream you can, begin it.  
Boldness has genius,  
Power and magic in it.”

~W.H. Murray~ *The Scottish Himalayan Expedition*



## The 'feeling cascade' of the vital force energy system

This nebulous **vital force energy** that I refer to as the **14<sup>th</sup> system** has tremendous influence in empowering and coloring 'the mind.' The mind, this huge community of thinking and **feeling** neurons, is then intricately connected to and in control of the entire body. How important, then, would you think this tiny Pie selection is to your mental and physical health?

**#1Pie** nurtures social connections, hope and happiness, while **#2 Pie** disconnects us from others and leaves us **feeling** 'SHAGGY.' SHAGGY is an acronym that stands for Shame, Hurt, Anger, Guilt, Grief and Yucky.

**Update 9/27/16:** Studies abound showing that feeling happy is closely linked to one's good physical health. However, new research reported in the *New York Times* today and published in *Health Psychology* earlier suggests that one's physical health may also be strongly linked to the life satisfaction of one's spouse as well.

Let's use the Pie analogy that came to me in my dreams. As I mentioned in the dreams I saw two kinds of pies and was offered a slice from either one, or both. In reality, most choices are confusing and involve the mixed cobblers of both Pies. You cannot be perfect; you will always make mistakes. However, you can and must take charge of what's going on in your head. The most important single thing you can do to speed your pace towards mental mastery is to own the responsibility for all your choices and forgive yourself ahead of time for the #2 ingredients that you will inevitably consume. Anything short of this leads you into the transactional analysis '**blame game**' and other wastes of time. And unfortunately, when you blame others, those 'others' are usually the ones whom you love or care about the most. Too, in considering your choices, the worst choice of all the meal selections is paralysis, immobilization. You absolutely must move forward.



First and foremost, we are what we think. Second, brain health typically foreshadows body health.

When I entertained the idea of writing this self-help book, I had no doubt as to which of the dynamic elements impacting wellness was most important and why. I listed mental mastery as first with confidence. The hierarchy of importance for the remaining six elements that anchor an effective preventative medicine and wellness strategy could easily be argued.

The next chapter **SEEKs** to highlight a pragmatic way of thinking about **excellent nutrition**.

**By the way, Groag, our ancestral hunter, got his red deer that day. Uunga had a fire ready and waiting. It was a fine dinner that they shared, but then they thought it would be.**

## Chapter 8

# ACCELERATING TOWARD EXCELLENT NUTRITION

Foods can most simply be thought of as packages of chemicals that are used by our bodies to produce energy and building blocks for Neogenesis. For the most part, natural foods are need-fulfilling chemical packages that our species has adapted to over thousands of years. As a people, we seem to have been drawn away from the natural and nutritious foods of our heritage and toward those that offer the allure of being fast, convenient and faux tasty. The resultant perverted food consumption, relating to specific subtracted micronutrients, can present itself as a **‘thorn of deficiency.’**

Natural food constituents include toxic chemicals. Such natural plant toxins help the plant defend itself from their natural, typically microbial, threats. We and natural plants have had a long and healthy relationship. Over the eons of our mutual existence, our X-out function and other adaptations have, through changes encoded into our DNA, mitigated our threat from these natural food toxins. However, unnatural toxins are now added to our food at every level of its production. They dynamically enter our food chain as a result of man's limited insight and greed. The resultant perversions negatively impact Neogenesis; thus they become **‘thorns of toxicity.’**

*Horace heaved himself out of the La-Z-Boy and looked in the mirror. “Spineless wonder,” he said to his reflection. What a vision. Wilted french-fry arms, several chins, a pregnant sort of tummy, although of course that was impossible.*

*Horace peered down at his stomach and saw in the center of it a glowing 3-dimensional television with over-saturated color pictures of chattering lettuce, marching green beans, singing radishes and one unsettling visual of his own head atop a huge, orange airborne balloon with legs. As the balloon fell from the sky, the legs turned into noodles and the whole gimcrack piece of business slid past the entrance to the Empire State Building, glanced off a giant stalk of bright green broccoli and came to a stop in the middle of a purple concrete garden of grinning Brussels sprouts.*

*Then he woke up.*

Horace thought his eating style random, but not bad. Donuts at the office--but only two and they came from a fine old Czechoslovakian bakery. Chinese was his lunch -- sometimes with vegetables. If he found himself on Broadway at 4:30 and felt hungry, a robust kosher hot dog would carry him over until dinner, which happened after the evening news and a short dalliance with a video game. Normally he nuked dinner, some sort of frozen semi-balanced meal - meat, pasta and a soft dead vegetable on the side followed by a sweet. He favored chain-store pies although he noticed this last time that the pumpkin pie tasted more like pumpkin glue.

Sometime after 10:00, belly full, toe dipped in the world via the miracle of television, Horace tumbled into bed and struggled to sleep, often experiencing strange dreams like the one above. The next morning he pondered his latest dream and wondered if it might be a sign, a harbinger of things to come if he didn't change his ways. Clearly, he might consider taking care of himself as well as he took care of his cat.

The cat, Rupert, led a good life. He enjoyed multiple perches and condos, places to relax, spots to scratch and stretch. He dined well on high-grade chemical free food and sipped glass-bottled artesian water. He got plenty of affection and plenty of sleep and he exercised regularly, with yoga being his preferred discipline. He was a lean, healthy feline, sleek of coat and pleasant of disposition, who slept a great deal and never had bad dreams. Observing Rupert, it was clear to Horace that the cat was doing better than he was. But then, Rupert didn't have much opportunity to go wrong.

The story of Horace and his cat Rupert is a familiar one. Those of us who take better care of pets, our cars, houses and yards than we do ourselves, are numerous. Do we pour sugar in our gas tanks? Do we put the wrong-sized windows in our houses, pour grease on our lawns, turpentine on our flowers? Of course not! But we do, daily and routinely, ignore the basic needs of our bodies, subjecting them to ill-considered food lacking necessary nutrients and worse, to food containing harmful substances. We inflict malevolent energy from all quarters on our bodies. We endure hour upon hour of mindless television, violence-laden movies, shrieking video games and high-decibel music on top of the ‘normal’ cacophony of cars, trains, busses, airplanes and a vast array of earsplitting machines. We ingest complicated arrays of prescription medicine and dubious combinations of supplements. On top of all that, some of us drink too much alcohol and smoke too much tobacco and, in spite of noting the lousy effects from those pursuits, we persist. We swirl about in a veritable witch's cauldron of energetic contempt, and we wonder why we don't ‘feel good!’

A cat's selections are limited, whereas humans make countless nutritional choices every day based on emotional, spiritual and physical desires. The desires may be based on actual knowledge of what works best for the body- the ideal scenario- or they can be generated by impulse, a need for comfort, a wish to fill up an emotional hole, situations that may not have a body's best interests in mind. Also, upon occasion, the desire may just be a joyful urge to try something new, something a little sinful that for the moment speaks to the soul. Nothing's wrong with that. Life, as the old saying goes, is short; in any case it's what we do almost every day that makes or breaks us, that renders us healthy or not. Why is this true? Let me explain the **microbiome pearl!**

The **gut's microbiome** -- that aggregate of types, numbers and distribution of the microbes within the gut is part of an ecosystem. It interacts with food and will change (adapt) depending on the types of foods eaten most consistently. During the breakdown of our food, a healthy microbiome produces health-beneficial metabolic end-products. An unhealthy one produces more toxins. (See the bottom of p. 118. as an example.) Such microbiome changes can be noticed in 24 hours. When one consumes mostly unhealthy foods, such as red meats, consistently over a short period of time one will foster a thriving, yet poor health-producing, microbiome that best feeds on red meats. However, if one consumes red meat infrequently (once every couple of weeks), microbes that thrive on red meats won't have the necessary growth time to dominate over the good health-producing microbes. This later scenario produces less red meat-induced toxins.

That said, one best have a plan on what consistent dietary pattern will produce healthy outcomes. After all, a random approach to nutrition may or may not work for a while for Horace or anybody else; however, over the **All Term** - the span of a lifetime - a random pattern will fall short. Excellent, life-giving nutrition is part and parcel of Neogenesis, the celestial processes with which we are graced that align with smart choices which build and revive the human body, mind and soul.

**Now nutrition is science.** The vast world of nutrition is **a rapidly emerging science**. Working with it and with us requires attention and caring, a willingness to reevaluate and to learn.

“Precise knowledge of what happens to the food entering the organism must be the subject of ideal physiology, the physiology of the future.” ~**Ivan Pavlov**~

### The ‘not so secret’ contents of the fountain of youth

Many people are focused on the illusion that good health can be purchased in a bottle or obtained from some ideal combinations of edible mass. They exalt ‘super foods’ and ‘super products’ only to realize disappointment when the placebo effect runs out. Still captive to the illusion, they then refocus their attention to the latest rave in this edible mass. If you are concerned about the beauty of your exterior appearance, be aware of this simple truth: your external reflections are simply expressions of the quality of your Neogenic honey. The choices that you make relevant to mass, energies and time significantly determine the quality of your future Neogenic self in both its internal and external expressions.

In a nutshell, **excellent nutrition** includes the timely and appropriate intake of the following elements:

- #1 Pie subtle energies and the resultant healthy chemicals derived from #1 Pie thoughts and actions,
- clean water,
- clean air, and
- clean, natural or minimally-processed (whole) and properly-prepared healthy foods.

All these elements are ultimately utilized by the naturally-synchronized metabolic actions that occur within you.

Excellent nutrition provides the ideal building blocks for Neogenesis -- those nutrients that are needed for the manufacture of the ‘good honey’ in our beehive analogy. It involves a harmonious mix of mass, energy, and time. In this chapter we will focus primarily on the edible mass, but realize that the only ‘super food’ is #1 Pie. As for the fountain of youth, it is clearly the Neogenic design gift we already have. We simply need to take advantage of these blessings.

### Who can you trust?

The now-passé **USDA food-pyramid** led people to believe that the idea reflected what nutritionists viewed as a healthy dietary balance. Such meat and dairy-corrupted nutritional pyramids were politically influenced by organizations tied to certain food industries. The pyramid thinking paradigm seems cumbersome and extraneous in our modern toxic world. Throw it out. Instead of emphasizing what foods you need, your focus is best placed onto foods to avoid!

**Update July 2011:** The USDA finally succumbed -- they’ve now eliminated the pyramid from their web site. Kudos!

I like the USDA's current idea that nutritional advice, to be relevant, needs to be coupled with increases in one's activity. Another good message sent by the USDA's updated web site is that fruits, veggies, whole grains and other foods rich in a healthy variety of micronutrients are important. The impetus behind their ideas is that we as a people are consuming too many calories from **energy-dense** (calorie-dense) foods and too few from these essential **nutrient-dense** foods.

One element still missing from the USDA's message is: **Which foods are harmful to us and so should be avoided?** Using the USDA's ‘what to eat pyramid’ may have merit in institutional settings, assuming that those served consume only foods that are recommended and no others. Although the idea may work well for cats like Rupert, it has little utility for us people who live in a society where many of the meals we consume are from a diversity of sources. We don't go to lunch armed with a calorie counter, diary and a download from the nutritionist. In this now toxic world it is more practical to learn what foods to avoid, and then implement nutritional strategies based on that. The most important question then becomes:

**What specific food choices are unsafe?** Keeping toxins out of our ‘Neogenic honey’ is the best way to ensure safety!

Further, we are creatures of patterned habits and addictions. **Food addictions** can be identified, analyzed and changed with the power of knowledge. What seems most practical is to assess what you are actually eating, how it can be improved and why. If you can recognize specific food addictions, the time to address them is immediately. The way to address them is aggressively, with zero compromise. Treat them as if they were narcotic addictions. They work similarly, by up-regulation of your brain's synapses and neurotransmitters as well as reinforcing changes in its microcircuitry.

Lastly, if you are sickened when you ingest or come into contact with food-related chemicals, avoiding them is a must. **Multiple Chemical Sensitive (MCS)** individuals are sensitive to many chemicals even when exposed to levels that don't seem to bother most other people. MCS people can be thought of as having smaller than normal 'detox SINK' capacities. All toxins, including toxic food-chain chemicals, will exert more damage on this rapidly-growing MCS group.

## REMOVING THE THORN OF FOOD-CHAIN TOXICITY

Many subtle toxins have gained approved access into our food-chain. Most remain because of tenure, politics, confusion, ignorance and, of course, greed. Some commonly found food toxins are more proximately threatening than others, with high fructose corn syrup, advanced glycation end products and trans fats being among the worst.

Food toxins most commonly damage us through the immune system-mediated mechanism known as **inflammation**. Hence, toxic foods are most commonly termed **pro-inflammatory foods**. Established by University of South Carolina researchers, the **dietary inflammation index (DII)** lists certain foods and their abilities to impact inflammatory blood markers, such as **C-reactive protein**. Inflammation contributes to the development of COED syndrome, most cancers and a host of other illnesses and what you eat plays a significant role! To wit, a 2015 study found that women who consumed more pro-inflammatory foods, as rated by the DII, had a 20% increased risk of developing colorectal cancer.

### ***The 'remove food-toxins' game***

It's wise to use such an 'avoidance of food-related toxins strategy' while primarily consuming nutritionally healthy foods. To play this game well, place the most common toxic foods at the top of your list. Realize this is a numbers game. To win at this game take into your body the fewest number of toxic food molecules that's reasonable. If you really want the 'good honey' rewards, be aggressive in your play. Such a determined approach will quickly yield the best health results.

MCS sufferers will appreciate those results quickly. Others, who have not had such toxic challenges, may be more reluctant to change the way they eat. After all, food addictions are among the most common addictions. A gradual withdrawal from unhealthy food addictions and an ongoing effort to make healthier choices will pay health dividends in future Neogenic constructs. Either way, you can master this health-rewarding game for yourself and your family!

Learn the basics of this easy game. Start with my **underlined toxic alert headlines** which follow:

### **Lighten up your toxic load coming from the grocery basket**

Do not let your 'future honey' be poisoned by toxins that commonly lurk in the food-chain. Within reason, eliminate suspected toxic foods. **The following all-encompassing list of suspected food-chain toxins** includes: trans fats, red or processed meats, the products of **freedom-restricted** (a.k.a. 'caged') animals, **AGEs** (Advanced Glycation End products), **HCAs** (heterocyclic amines), **GM foods** (Genetically Modified Foods), soda pop, junk foods, MSG and other unnatural flavor enhancers, isolated amino acids, acrylamides, artificial sweeteners such as **HFCS** (High Fructose Corn Syrup), artificial coloring chemicals, toxic food preservatives, sulfites and chemicals that enter food from improper cooking, containment, transport, storage, processing, preservation and enhancement of appearance, taste, aroma or texture. Details of these specific toxins and where they most commonly exist in the food-chain will follow herein.

### **Food allergy -- Don't play the losing toxin-multiplication gambit**

Eliminating all food toxins is impractical. Your game-winning excellent-nutrition strategy must take relative numbers of toxic molecules into consideration. In this **numbers game**, it is most advantageous to eliminate foods to which you are allergic. This is critical because the more molecules you consume of those allergy-inducing foods, the much greater the number of toxic allergy-response molecules your immune system will endogenously produce. Such evoked cascades of **inflammatory** chemicals, such as histamine, fill your detox SINK quickly. For example, **histamine** uses the same SINK enzymes that detox common and ubiquitous pollution toxins. This common-enzyme-usage issue makes the capacity of your SINK smaller when allergy-response chemicals such as histamine are overly produced. If your detox SINK is not in a healthy, near empty or low level status, any additional toxins that compete for the same enzymes can more easily cause a 'spillover.' This most important pearl, if understood, will bring your game play to its highest level!

To begin the game, temporarily avoid foods that you suspect may be causing any of the unexplained symptoms you have. For example, about half of **migraine** sufferers recognize specific foods as their headache 'triggers.' Common migraine-triggering foods include aged cheeses, red wine, nuts, chocolate, hydrolyzed vegetable protein and processed meats. The chemicals commonly involved in these '**food-related reactions**' include tyramine and other amines, nitrites and sulfites.

Other common food-related signs and symptoms are: rashes, vomiting, bloating, belly pain, lip swelling, throat tightening, flatulence, nausea, diarrhea and weakness. **Food allergies, insensitivities and intolerances** can also contribute to 'toxic brain states.' The NBC Broadcasts of such brain states reflect in concentration, cognition, mood and behavioral changes such as: 'brain fog,' depression, agitation, hyperactivity and other subtle signs of brain malfunction.

After all, foods are simply chemical packages that your immune system may or may not recognize as friendly. Most often true food allergies occur when your immune system reacts to specific protein molecules. For example, about 200 people each year die from **peanut anaphylactic shock**, a severe allergy to peanuts. However, people allergic to peanuts will likely tolerate pure peanut oil because it does not contain molecules of peanut protein to which they are allergic to.

#### **Allergy-causing and other common food sensitivities include the following:**

- 1) **IGE mediated allergy** -- Although adverse reactions can be caused by proteins specific to almost any foods, the majority are caused by proteins associated with the '**big eight**.' The big eight are: cow's milk, eggs, soy, wheat, peanuts, tree nuts, crustacean seafood, and fish. Such IGE-mediated reactions, which can be severe, typically appear within minutes or hours of ingesting foods which contain proteins to which one is allergic.
- 2) **IGA mediated allergy** -- This group includes commercially processed foods which your immune system or microbiome may not like, but that you may crave out of addiction. This may be your favorite dessert or any particular food you most often consume. This more common, yet more subtle, immune response causes delayed food sensitivity symptoms. These reactions are typically vague and appear up to several days after ingestion, yet may be persistent. This renders them difficult to detect and so, many allergists do not consider such reactions as truly allergic. Regardless, if such symptoms are otherwise unexplained, eliminate foods that appear to be temporally-related to those symptoms.
- 3) **Gluten sensitivity** -- Gluten is a protein complex found in grains and their products that Americans typically eat, especially wheat. Gluten is in most sliced breads; its stickiness allows those breads to hold together. Without the 'gluten glue,' breads tend to crumble like real cornbread. Corn is a gluten-free grain, along with rice, amaranth, quinoa, millet, soy, potato, buckwheat, tapioca and others. **Non-celiac related gluten sensitivity (NCGS)**, presents with G-I symptoms typical of **Irritable Bowel Syndrome** (bloating, gas, and pain) and **toxic brain symptoms** such as neurological, behavioral, and cognitive dysfunction (**The NBC Broadcast**), fibromyalgia, and rashes. It's thought that **fructans** -- chemicals mostly present with gluten in foods -- likely account for such symptoms. Reflective of increased use of diagnostic testing, a growing percentage of people with gut complaints also are now found to have a true allergy to gluten -- **celiac disease**.
- 4) **Sensitivity to Genetically modified foods (GM foods)** -- GM food plants contain altered DNA. They are **chimeras** -- foods containing DNA from two or more distinct species. Some are engineered to cause the plant to produce pesticides and herbicides. These chemicals, which your gut and its microbiome may not be familiar with, may adversely affect your metabolism or become recognized as 'unfriendly.' In this sense they may have both direct toxicity and subtle intolerance potential. Many food scientists believe GM foods may evoke subtle immune-like responses in many people.

#### **Rotation diet to modulate food allergy, intolerance or sensitivity**

A **food diary** can help temporally link foods with symptoms, helping to identify specific foods that may be problematic. If food-related symptoms abate by eliminating those suggested by your food diary, those suspect foods can later be individually 'rotated' back into your diet. Allow enough time between each reintroduction to see if you have adverse effects, such as recurrence of the original symptoms. By rotating the suspected foods back into your diet singularly, you are able to determine which ones likely cause your symptoms. Thereafter, you can avoid the problematic ones.

#### **Help wipe out pollution by selecting locally-grown, fairly-traded organic foods**

It makes good sense to buy organically grown, **fair-traded** food products, especially from local growers. It's reasonable to assume that **locally-grown organic foods** arrive in the local market as a result of less transport-pollution put into your air than mass-produced, non-organic foods. Too, you are more likely to be getting fresher foods when buying locally-grown organic ones. Although there's debate about the nutritional advantage of organics, one paramount thing is certain: non-organic foods are much more likely to be contaminated with neuro-toxic herbicides and pesticides than organic ones.

**Fair-traded foods** are those typically grown and traded with ethical consideration and protection for food-production workers, small-scale farmers and our planet Earth. It's about Kindness! Learn more at <http://www.fairtradeusa.org>



### **Don't fence yourself in with unkindness**

Inhumanity is taken to the limits in the **freedom-restricted food industry**. Such 'caged' creatures are highly stressed. Stress weakens their immune systems, rendering them more susceptible to diseases. Antibiotics are then heavily used. Suspect feed and hormones are also used. The flesh and production of such animals contain or generate more toxins such as antibiotic-resistant superbugs, than their organic cohorts. This applies to fish, livestock, poultry, milk and eggs.

### **Don't let the plastic food containers fatten you up**

The plasticizers in plastic food containers and wraps and the linings of some cans and bottle caps are serious EDCs that encourage obesity and diabetes. As such they are major contributors to COED-S. The two groups of toxic chemicals in plastics are **phthalates** and **Bisphenol-A (BPA)**. Over the years we've seen a gradual transition from the inert and safe glass containment to the toxic plastics. In this same timeframe we have come to appreciate the profile change I speak of in chapter one. There is a likely connection; don't wait for it to be proven. **Update 6/2011:** The NIH added **styrene**, used in the making of Styrofoam food containers, to its 'probably carcinogenic' list. Styrene is also an EDC and neurotoxin.

Given the inertia of the plastic movement, it becomes more challenging to avoid these toxins. Aside from bringing your own nontoxic container to Starbuck's, select glass-contained products when possible and retain these containers for future food-storage use. Transfer fresh deli foods into glass containers ASAP. Also note that the lids of some glass containers may have a lining of a suspect plastic such as BPA, so don't store such products in an inverted position. Ask your deli person to use foil or waxed paper wrap in lieu of any kind of plastic, especially Styrofoam. Lastly, talk to the store's managers about your desire to avoid plastic containment of your family's food.

Food manufacturers are well aware of this toxic-containment concern. They want to 'keep a lid' on this issue as long as they can-- pun intended. On the positive side, when you see an alternative product made available in glass or other safe-containment, it is made in right consciousness. Keep in mind that such a kind manufacturer is much more likely to be considering the health of its customers in the production of their other products as well. It is greed, ignorance and inertia that propels this plastic food movement. Kindness will always trump greed in the end.

### **Avoid contributing to childhood obesity -- by knowing who the 'advisers with integrity' are**

Temporally, the childhood obesity and type 2 Diabetes epidemics run parallel with plastic food containment. Avoid plastic containers when possible. If you are bottle feeding your baby, use glass bottles only. Investigation and testing by the **Environmental Working Group (EWG)** show much higher levels of BPA in the canned liquid infant formula products than the powdered formulas. Significant amounts of **BPA**, which is now well known to be toxic, are detectable in the urine of 93% of all children over 6 years of age who were tested!

Support such nonprofit organizations as the **Environmental Working Group** ([www.ewg.org](http://www.ewg.org)). EWG is a well-organized, proactive group, without industry bias, made up of scientists concerned about the health of our planet and its occupants. In opposition, **The American Chemical Council (ACC)** is much like 'a wolf guarding the henhouse.' The ACC describes itself as an industry group 'adviser,' but functions more like a political lobby. It is made up predominantly of members who are supported by chemical companies, many of which make and sell plastics. The ACC's Phthalate Esters Panel has included representatives from BASF, Eastman Chemical, Exxon-Mobil Chemical, Ferro and Teknor Apex corporations.

### **Don't discourage your teenager's 'milky complexion'**

A Harvard study concludes that girls who consume two or more glasses of milk daily increase their risk for **acne** by 20%! Further work done by Loren Cordain, PhD and coworkers from Colorado State University in Fort Collins, shows acne also associates with highly processed and meat-centered diets and those diets that consist mostly of high glycemic-load foods. '**Skin break-outs**' often reflect inflammation that is triggered by specific food chemicals, by 'activating' immune cells in the gut that, once activated, travel to the skin.

### **Never mess with 'Mother Nature' unless you want brain damage and obesity**

**GM foods** have been heralded as a great invention. I think quite the opposite. It is naïve and pretentious to think that man is a better chemist than 'nature.' **GM soy** is typical. It was cleverly constructed to put chemicals into the plants that allow them to better tolerate the herbicide **Roundup**. Other GM foods also have pesticide-making genes sliced into their DNA. GM food products expose all life-forms to more brain-cell-killing herbicides and obesogenic EDCs. GM soy is seemingly ubiquitous in food products now. Their isoflavones are likely obesogenic EDCs that override many people's X-out function. Our obesity epidemic hits kids the hardest. Soy isoflavones, found in **soy-based baby foods**, are suspected contributors. **Update 2014:** After 38 years and billions of pounds of usage, 211 new species of weeds are now resistance to Roundup.

In addition, there is an enormous **cycle of unkindness** associated with GM soy. Huge portions of rain forest are being systematically stripped of a magnificent variety of flora and replaced with this soy. The prized fertile land is then intentionally contaminated with a herbicide that only the genetically engineered soy can tolerate. A major portion of the soy is then transported to freedom-restricted chicken farms as cheap foods for the chicks who suffer the cruelty of this cycle of unkindness. As a payback, the resultant **deforestation** not only destroys the vital habitat of countless living creatures, but ultimately causes an imbalance in Earth's atmosphere. It diminishes the oxygen that our species requires for durable existence and replaces it with toxic CO-2. Increased CO-2 levels cause global warming and now threaten all life-forms on our planet. To help stop this cycle, avoid all non-organic soy products, such as soy milk, tofu and yogurt.

**GM foods** may have lower levels of vital nutrients. My bigger concern is that foods are simply packages of chemicals. GM foods are not the packages to which our bodies are accustomed. Hence, their consumption may likely induce destructive inflammation. More than 90% of soy and 50% of corn in the USA is GM food and those percentages are growing. The debate surrounding the safety of genetically modified organisms has been raging for years and continues to do so. **Update 5/17/2016:** *The National Academies of Sciences* has opined favorably for GM foods after an extensive review of research studies regarding nutritional values and health outcomes. I'm impressed but remain unconvinced.

### **Don't get old, demented or dead before your time**

**AGEs (Advanced Glycation End products)** require special mention. AGEs are neuro-toxins, as well as suspected carcinogens. AGEs cause much of the damage to brains, eyes, kidneys and nerves seen in diabetics who poorly control their blood sugars. AGEs associate with red and processed meats and carb foods cooked at high temps. Such cooking facilitates the **Maillard effect**, wherein the food's proteins and carbs meld to form toxic AGEs. One such toxin is **acrylamide** -- a likely carcinogen generated in high-temp cooked foods such as fries, chips, toasts, croutons and others. Take home this 'prevent the formation of AGEs message' -- **Do not burn any part of the food!**

### **Avoid unnecessary bondage**

**Trans fats** deserve special attention. The consumption of trans fats, as opposed to natural dietary fats, increases one's risk for obesity, cardiovascular diseases, diabetes, Alzheimer's, some cancers, infertility, endometriosis, and gallstones.

Trans fats do exist in natural foods, but only in minuscule amounts except in ruminant animals and their food products, such as milk and meats. A ruminant has more than one stomach, such as the cow. The majority of trans fats in our food-chain are unnatural, they are produced primarily by manufacturers to prolong the shelf-life of food fats. In the typical case, they are made from plant-derived fats by a molecular bond-strengthening process known as **hydrogenation**. This makes fats resistant to rancid breakdown. Unfortunately, trans fat bonds are more difficult to break apart in your detox SINK too!

Our SINK's enzymes efficiently break down natural food molecules, as our bodies have learned to recognize them. On the other hand, it's likely that many of us will have difficulty in disassembling such man-made or man-altered food chemicals. When one's detox SINK cannot break molecules apart, they bioaccumulate. In such cases, the fat-soluble ones tend to conglomerate in our visceral fat. Such 'toxic globs of foreign fat' induce tissue-damaging inflammatory immune responses. To counter COED-S, we must reduce such sources of highly-toxic man-made chemicals like trans fats from our food-chain.  
**SPECIAL WARNING:** If you see the words "**partially hydrogenated**" on any food label, do not buy the product!

In 2003 the FDA mandated labeling of trans fats in packaged food products. That mandate has effectively reduced our population's exposure to this poison. There are still two 'loopholes' in this law that weakens its public health protection.

The first problem is: the FDA mandate still allows food packaging companies to claim 'zero trans fats' if their products contain 0.5 grams or less per serving. Have you ever noticed that the **'serving size'** of **packaged foods** seems unreasonably small? This is why. Manufacturers want to prevent their food products from going 'stale' by putting in as many trans fats as possible without mentioning the food's trans fat toxicity. I noticed that my favorite brand of 'zero trans fats' corn chips contains 8 ounces and is labeled as containing eight servings. One ounce per serving? Get real! Without knowing it, you would be getting up to 4 grams of one of the worst food toxins by eating this small bag of chips!

The second problem is: approximately one third of our nation's food consumption involves foods that don't fall under this mandate's purview. Trans fats predominate in **'fast foods.'** Tacos, French fries, pizza, doughnuts, cookies, pies and fried foods of all types predominantly contain trans fats. The obesity epidemic begs for transparency from the fast food industry. When consumers get such full-disclosure knowledge, their financial pressure can reduce trans fats in this venue. We must acquire this kind of nutritional knowledge in order to SEEK healthier food choices. **Update 2/10/12:** CDC researchers report that the amount of trans fats in the blood of white American adults has declined 58% since the 2003 FDA mandate started. We can make a difference with knowledge. **Update 11/2013:** The FDA proposes to remove trans fats from the list of **'generally regarded as safe'** food additives. Trans fat food additives will soon not be allowed in packaged foods. Kudos!

## Watch out for hidden agendas — it's what you don't know that can harm you

**Artificial food colorings** make food look pretty. They are derivatives of petroleum, which is clearly not a natural food!

**Excessive salt** (more than 1500- 2300 mg daily) contributes to heart and kidney disease and hypertension. Salt is added to food, often with little warning, to entice us to eat more. About 75% of our intake comes from processed and fast foods.

**Preservative chemicals** predominate in processed foods. **Sodium benzoate** and **sulfites** are simply potential allergens. Others such as **BHA (butylated hydroxyanisole)** and **propyl gallate** are likely carcinogens. Foods containing **sodium nitrates/nitrites**, when overcooked, form carcinogenic **nitrosamines**. High levels of **phosphates** increase our mortality, by increasing heart and parathyroid pathology risks in any of us who have impaired kidney function.

**Texture and appearance enhancers** such as **phosphates** (also increasingly used as preservatives) and **nanoparticles** (manmade food chemicals) are now added to a large number of processed foods such as cheese, sausage, beverages, ice creams, baby foods and bakery goods. Nanoparticles have received FDA approval despite inadequate testing.

**Excessive sugar** sweetens most of us into too many health problems to mention. If you have the 'sweet tooth' you are among the most common of us 'food junkies.' To break **this addiction** read labels. Sugar is cleverly couched in many terms. **High fructose corn syrup (HFCS)** is the most concerning one. More info on this food toxin follows below.

**Artificial sweeteners** disrupt the FEAST system and, like most 'drugs,' have paybacks. **Aspartame**, used to sweeten **diet sodas** and other products since 1983, may be a subtle toxin. A 10 year study completed in 2008 shows a strong correlation with the metabolic syndrome and diet soda. A more recent 10 year study shows that the daily drinking of diet soda associates with up to a 44% increase in heart attacks and strokes when compared with little or no drinking of it!

**Man-made flavor enhancers** such as **aspartame**, **MSG** and **HFCS** are a must to avoid. They all confuse the FEAST system with artificial messages. Both aspartame and MSG release free amino acids -- **glutamic acid and aspartic acid** which trigger the main excitatory neuro-synapses in the brain. Ever notice that right after you eat the Chinese food, hamburger, French fries or snacks which contain MSG, that you are not satisfied? How can you be satisfied when your brain has become overly excited by eating these? I see potential for weight gain by using these obesogenic suspects. Metabolites of MSG and aspartame also work interchangeably in the brain's **NMDA synapses**. NMDA synapses are involved in the perception of pain. It may not be a mere coincidence that the popular use of these food-chain chemicals parallel the epidemics of obesity and pain-related syndromes discussed in chapter one.

The vast majority of these flavor enhancers, which must rightly be considered drugs, as they impact our physiology in an unnatural manner, are well-entrenched in the under-regulated **fast food industry**. Fast food is a major food source for large segments of our population who are at greatest risk for COED-S. The problem is, fast foods generally don't require content labels to inform consumers of their ingredients. Their meals containing toxic preservatives, trans fats, flavor-enhancers and high salt content are served to mostly naïve fast food consumers, without adequate warning.

Other suspect flavor enhancers are on the horizon that may silently, but successfully, enter another huge portion of the food chain -- the **prepared food industry**. This portion of the food chain has been somewhat better influenced by FDA actions that mandate labeling. The problem is: a company, Senomyx, has discovered and licensed many of the key receptors that mediate taste in humans. Kraft Foods, Nestlé, Coca-Cola and Campbell Soup are supporting and working with Senomyx, which holds patents on unique flavor enhancers and taste modulators. Most of their chemicals do not have any flavor of their own, but instead work by activating or blocking receptors in the mouth that are responsible for taste. Now don't the actions of these flavor-enhancing food additives sound like obesity-potentiating drug effects to you?

**High Fructose Corn Syrup (HFCS)** is the unnatural chemical sweetener predominantly used in most processed junk foods and soft drinks in the USA since 1984. It's derived from GM corn and is highly suspect in contributing to COED-S. HFCS-contained **soda pop** is now a well-recognized health hazard. Harvard researchers, in a 2007 report in the journal *Circulation*, revealed a 44% increase likelihood of developing the metabolic syndrome with people who drink at least one can per day over those who drink less than one can per day. HFCS contains traces of **imidacloprid**, one of the neonicotinoid insecticides discussed on pages 35 and 152 herein, and other insecticides. Insecticides are brain cell killers. **It's not a stretch of logic to think that this concoction is causing COED-S to manifest via toxic brain mechanisms!**

Although **fructose** has the identical chemical formula as glucose, it structurally and metabolically differs from glucose. The brain prefers glucose as its FEAST system reacts poorly to fructose excesses. Too, fructose doesn't stimulate insulin secretion as strongly as glucose. Insulin is needed to drive sugar into brain cells. When one consumes excessive fructose, much of it is metabolized to fat and pathologically stored in his liver. Further, one's relatively energy-depleted brain directs the release of fewer FEAST satiety chemicals and more hunger ones. Such a toxic brain state compels one to overeat. Metabolically, this is the 'perfect storm' for inducing fatty liver, obesity, insulin resistance and then on into diabetes!

**Update 4/20/12:** A study in *Journal of Clinical Investigation* shows that, compared to glucose beverage drinkers, people who drink fructose-sweetened beverages manifest more central obesity, insulin insensitivity and 'bad blood lipid profiles.'

**Soda pop** is especially toxic. Besides being loaded with HFCS, it's typically packaged in phthalate-containing plastic bottles or BPA-lined cans. Both of these EDC plasticizers also confuse the FEAST system and, like HFCS itself, promote insulin resistance and inflammation. Also, the **phosphoric acid** in sodas causes calcium to be leached out of bone. **Update 2/2010:** A study reports that by drinking 2 or more sodas per week one is 80% more at risk for **pancreatic cancer**. I strongly suspect the culprit to be HFCS. HFCS comes primarily from GM corn exposed to the herbicide atrazine.

**Atrazine** -- a likely carcinogen is now used in 75% of American cornfields. Atrazine contamination of our drinking water is widespread. In tests on frogs, rats, birds and fish, atrazine has also been shown to be a powerful EDC. The EWG says, "It's so potent that male frogs exposed to even low levels can turn into female frogs that produce viable eggs!"

### Stop collecting junk

Minimize your consumption of **junk food** by considering the nutrient value of the remaining thousands of food choices. Eliminate as much as possible these relatively **empty calorie foods** such as sodas, candy, potato chips, French fries, pastries and most non-juice beverages. These **high glycemic index(GI)-rated foods** -- those that quickly convert to glucose -- don't just lack nutrients; they're **brain cell disrupters** by the inflammatory mechanism of reactive hypoglycemia. **Validation Update December 2017:** The **glycemic load**, which factors glycemic index times the serving size, has been found to be linked to **cerebral amyloid accumulation** -- a major degeneration feature of Alzheimer's disease.

**Update 2014:** Excess dietary sugar intake increases our risk for cardiovascular death, independently of other risk factors. In the USA those of us who consume 17-21% of our calories from sugar have almost 40% greater risk for cardiovascular death than those who consume less than 10%, according to a major analysis reported in *JAMA Internal Medicine*.

### Don't gas up at the grocery store

Avoid foods that seem to cause you **food intolerance symptoms** such as bloating, flatulence, abdominal cramping, pain or diarrhea. Intolerance is usually related to an one's relative deficiency in specific digestive enzymes. The most common poorly tolerated foods are dairy (**lactase deficiency**) and beans, peas and other complex carbohydrate foods (**alpha-galactosidase deficiency**). Food intolerance becomes more common as you age. It's best mitigated by the ingestion of commercially available digestive enzymes, such as lactase and Beano™ coincident with eating the problematic food.

### Don't dance to the tune of unkindness

Kudos goes to the Humane Society of the United States. In 2008, they secretly video recorded unkind events at a Chino, California, meat company. Weakened and sick cattle were being shoved, kicked and moved along to their slaughter with electric prods and forklifts. After seeing the video, the USDA ordered the largest recall of beef ever --143 million pounds. Of health importance is that such 'downed cattle' pose a high risk for contamination from deadly E. coli, salmonella and mad cow diseases. Kudos also to the company's CEO, Steve Mendell, who was prepared to defend his company's reputation in Congress with a written message. With tears in his eyes, he tore up the script after viewing the sad video. When all **Truth** is known and we realize our connections, kindness will triumph over greed!

The manner in which an animal is slaughtered is also similarly reflected in its meat's texture and taste. Inhumane slaughter results in needlessly tough meat. Folks who have intimate involvement with meat, from slaughter to consumption, will tell you that if you 'bleed the animal out' the meat will be more tender. This can be explained by the slaughter-related stress toxins released into the blood not being allowed to permeate the meat and thus toughening it. Jewish law requires animals be more kindly slaughtered in a prescribed manner known as **shechita**. The large neck vessels are cleanly and quickly severed causing quick and more humane death. The resultant kosher meat is of higher quality and nutrition because of this method of rapid death.

Islamic dietary laws require a similar procedure. It lessens suffering and dissemination of the toxins associated with typical brain-injuring slaughter. Humane slaughter greatly reduces the likelihood of **mad cow's disease**, because the infective agents, called **prions**, are primarily associated with the brain. Slow death, especially by trauma to the animal's head, much more likely will cause release and dissemination of the infective prions as well as the 'stressful-death toxins.' It is fascinating that much of this wisdom, shared by other diverse faiths as well, predates 'scientific knowledge.' I predict that future scientific findings will continue to 'connect the dots' to further validate the blessings derived from kindness.

**Cloned meat** is also currently problematic. The USDA has concluded that meat and milk from cloned goats, cows, and pigs is safe. Cloning is clearly unkind. Currently, cloned animals suffer from deformities and shortened life spans. In the future, when successful cloning is more the norm, we undoubtedly will see less biodiversity from this unnatural selection. Less biodiversity jeopardizes the resiliency of any species and threatens our food-chain in the **All Term**.

**Kindness** is huge in the selection of **certified organics**. When you select organic foods, not only are you being kind to yourself in terms of your Neogenic honey, it pays many less apparent dividends. Whenever anything is grown organically it promotes the unfairly stressed family farmers, protects and preserves the soils, diminishes pesticide pollution, protects the health of the farm workers, promotes biodiversity and avoids hidden environmental and health costs. **‘Organic’** refers to any product grown without man-made chemicals, not just fruits and vegetables. This includes dairy, meats, cotton and the products manufactured therefrom. Cloned meats and GM foods currently cannot be labeled as organic.

**Kindness** is a reflection of the subtle nurturing energies that comprise the #1 Pie. When you incorporate this #1 Pie into your life, be it in your food choices, interpersonal interactions and all other opportunities, you become fully nourished. A good example of unkindness is the ‘freedom-restricting’ of animals to enhance food-production profits. When any animal such as a chicken, cow, lamb or fish is unkindly treated by restricting its living space it becomes adversely stressed. When any living thing is adversely stressed, the biochemistry of that living thing will be adversely affected. Stress produces endogenous stress toxins often in excess of the amount that can be readily detoxified in the animal’s detox SINK. Prolonged stress further weakens the animal’s immune system, inviting in toxic microbes.

Unkindness has other complex but real carryovers into food products. A contemporary example is the relative deficiency of vitamin D-3 in factory farmed eggs. Eggs are a major source for vitamin D in the traditional American diet. Like humans, chickens rely on sunlight to help convert their endogenous vitamin D substrates to the active form of vitamin D (D-3). Because factory farming is done in sheds with artificial light, the chickens, so unkindly treated, produce eggs with much less vitamin D than ‘free-range’ ones. See the health-related importance of vitamin D on the top of p.127 herein.

**Motion and the chemistry of freedom** work to enhance all creatures that move. Motion is a critical factor in the animal’s ability to detoxify the endogenous stress toxins that increase with freedom-restriction. In addition, more exogenous toxins such as antibiotics are necessarily added merely to keep that tortured animal alive. The toxic overload from such unkindly stressed animals pass into the derived food products you are typically offered. Such toxins add to your total body load.

‘Caged’ salmon, for example, are an inferior nutritional match against wild salmon. Not only do they produce unhealthy stress chemicals endogenously, they are fed more toxic, unnatural food. All such caged fish, to some degree, must recycle their own toxic excrement. When I visualize the ‘caged’ fish trapped in a blocked-up toilet, I’ll pay extra for the free and happy one or simply pass on the unkindness of eating suspect fish at all.

By virtue of their cruel treatment and unnatural feeding, freedom-restricted animals also end up consuming many drugs such as antibiotics. I mentioned the mineral boosters with suspect levels of fluoride, lead and uranium in chapter two. Another feed additive, **Roxarsone**, is an arsenic drug fed to motion-restricted pigs and poultry to boost growth and keep the livestock feed sanitized. Apparently, little arsenic ends up in the animal’s meat but much ends up in the excrement spread on farmland as manure to cycle into the water table. **Arsenic** is a carcinogen and according to the **National Academies** (an unbiased organization of academia), much of our drinking water is now approaching carcinogenic levels. **Update 6/9/2011:** The primary maker of Roxarsone used in the USA has agreed to stop making it after the FDA found high levels in the livers of chickens whose feed contained it when compared with those chickens fed without it.

### **Don’t ‘meat’ yourself half way to good health and longevity**

From the perspective of feeding the world and preserving our planet, the eating of a vegetarian diet makes much more economic and conservation sense. Compared to plant-food production, meat production is highly inefficient and results in much more environmental pollution. However, the huge benefits of not eating meat relate to your health. Many health problems in the USA relate to our **highly-processed and red meat-centered diet** -- a diet overly-spiced with toxins. Processed, preserved and ‘cured’ meats contain high levels of **nitrites** and **nitrites**; these are linked to cancers, heart disease, diabetes and exacerbations of **COPD (Chronic Obstructive Pulmonary Disease)**.

People who rarely eat meat live significantly longer than those who do. Vegetarians also have much less risk for obesity, diabetes, heart disease, hypertension, stroke and kidney disease. They have less risk for colorectal, breast, lung and pancreatic cancers too. **Confirmations update 11/12/12:** Data from the Loma Linda Adventist Health Study-2 shows that vegans average almost 30 pounds lighter than meat eaters and live longer – 9.5 years for men and 6.1 years for women.

The higher rates of vascular diseases linked with the **carnivore diet** is likely due to changes that red meats induce in one’s **gut microbiome** (that aggregate of types, numbers and distribution of the microbes within the gut). These changes are adaptations induced by the high concentration of **carnitine** -- a non-essential amino acid primarily found in red meats. The carnivore’s ‘adapted gut microbiome’ is better able to break down that carnitine into **trimethylamine (TMA)**. The TMA so produced is then further metabolized by the liver into the artery-damaging toxin ---- **trimethylamine-N-oxide (TMAO)**. A high blood level of TMAO is a strong predictor of heart attacks and strokes! **Update 4/2016:** A mice study reported in *Journal of Functional Foods* suggests that a compound found in garlic - **allicin** - helps lessen TMAO formation.



## GET YOUR MASTER'S DEGREE IN **NONTOXIC FOOD PREPARATION**

### Firstly, understand that **vigilance is cheap**

Know that any strategy to eliminate suspected toxic food has to be dynamic. Our food chain is now challenged in a rapidly progressive manner. Food deemed safe and healthy a decade ago, such as many species of large fish, are now becoming dangerously contaminated. Genetically modified food crops are spreading quickly despite safety concerns. Food allergies and intolerances are now increasingly recognized as significant causes of symptoms in individuals.

### Secondly, don't juice down your I-Q

**Juicing** is a popular form of raw eating. Its major advantage is that it directs the juicer to plant foods and away from meats. Let's face it, the over-consumption of meats is generally not healthy. Another plus is that juicing makes most of the plant nutrients more bioavailable. The strongest disadvantage about juicing is the opposite side of the same coin as it pertains to the bioavailability of the plant sugars. Most plant juices pack a **high glycemic load** -- that is they contain carbs that release their sugars into one's blood stream quickly. Much of that sugar is **fructose**. Fructose, glucose and galactose all have identical chemical formulas (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>). However, because they differ in arrangements of their atoms, they behave differently in your metabolism. **Update 10/15/2012:** Research confirms that your brain won't function at its best by using excessive amounts of fructose. This is especially true for people having inadequate Omega-3 intake. Omega-3s appear to help protect brain functionality during such high fructose challenges.

Gulping too much of any sugary juice too quickly can induce a **reactive hypoglycemia** -- a brain damaging state in which your brain cells are transiently starved of vital energies, thus causing you to feel sleepy and 'rummy.' This is like riding your bicycle without any brakes. In this case, your brain is able to 'pedal' faster for a bit, but it's much more likely to 'crash!' Such **'brain crashes'** can be avoided by diluting juices with water, consuming them more slowly, and limiting all foods that render a high glycemic load.

**Whole food** consumption, by contrast, involves eating natural foods which have been processed or changed as little as is reasonable. **Fiber** -- that indigestible carbohydrate in the whole plant -- slows the release of its associated plant sugars. Importantly too, if you're trying to lose weight, even though juices have similar sugar and calorie content, juices do not send the same high quality satiety signals to the brain as do their whole plant food derivatives. **Update 10/2013:** The analysis of 2 large (102,278 men and woman) and lengthy (over 20 years) USA studies concluded: Greater consumption of most whole fruits, particularly blueberries, grapes, and apples, is significantly associated with a lower risk of type 2 diabetes, whereas greater consumption of only juices of those fruits are associated with a higher risk."

### Thirdly, enroll in 'Cooking 101'

Aside from making it more palatable, the **most important** reason to cook food is to kill microbial pathogens. More than 48 million people -- one in six Americans -- are sickened each year and over 3000 die of **foodborne illness (FI)**. Microbes are assumed to be significantly present in most foods. Never eat meats raw, especially poultry. **Salmonella** alone sickens a reported 40,000 people in the U.S. each year and kills about 600. Actual cases, most of which are caused by less virulent strains, are likely 25 times as high. Most cases are associated with undercooked eggs, beef or chicken, as well as inadequately washed leafy greens. To avoid FI, also wash your hands, utensils and all foods properly before eating.

Dry grains, nuts and seeds have dormant enzymes and a protective coat to help resist degradation. They could, in the past, be safely eaten raw. We now live in a world with rapidly changing microorganism challenges. The chemical defenses that plants have against bad microbes don't always offer the same protection now. Antibacterial-resistant 'super bugs' are rapidly finding their way to most places on the planet. Credit mankind's overuse of antibiotics for this snafu.

Foods deemed safe before are not always safe now. A good example is raw almonds. An almond's seed-coat packaging is excellent; the inherent enzymes are dormant thus don't weaken the package, yet recent serious salmonella outbreaks have been traced to raw almonds as well as peanuts. Huge product recalls have resulted. Many thinly protected fruits such as tomatoes, strawberries or other berries are particularly vulnerable if traumatized in handling. Any break in the protective natural coating of any fruit allows microbes to enter into the less-protected part of the fruit.

After thorough washing, most fresh fruit is safe to consume raw, especially when it's designed to contain its freshness for a good length of time. Consider a citrus fruit or melon as likely safe. Encased by **nature's containment**, the orange, grapefruit and melon all have thick exterior coats. Under their microbe-repelling coats is positioned a high concentration of antioxidants, in the **pith**. After all, this design has a most important purpose -- to carry the seeds for the plant's progeny. This special packaging protects against two potential plant enemies: microorganisms and oxygen. Both foes could, without the protective packaging, degrade the fruit and subterfuge that intended purpose.

Similarly, other botanical fruits including tomato, avocado, bell pepper, cucumber, olives, zucchini and others which are conventionally eaten in fresh salads, are loaded with antioxidants. Their natural packaging resists microbe contamination. After washing well, these foods are acceptable for raw eating as their packaging (coating) and chemistry (antioxidants) helps them resist most microbial contamination and oxidization.

Even more weakly-coated vegetables such as lettuce, onions, cauliflower, broccoli and sprouts which would normally be put into a salad are fine to eat raw, but only after diligent washing to remove the 'dirt' and microbes. For example, many people have recently become ill and some have died from contaminated spinach-related foodborne illnesses.

**Update 6/28/2018:** The CDC reports today that the recent ***E. coli 0157:H7 outbreak*** linked to romaine lettuce grown in Yuma Arizona has abated. The CDC determined the source to be an irrigation canal. The outbreak killed 5 people and hospitalized 96; of which 27 developed severe kidney failure. E.coli 0157:H7 transmission is via the fecal-oral route. Most E.coli 0157 outbreaks involve farm animal feces contaminating raw leaf green vegetables, undercooked meat or raw milk.

Taste is a part of FEAST signaling which you should also heed. Degraded or infected foods generally don't pass ***smell and taste*** tests. Nothing should ever trump your sight, taste and smell assessment of food. These tests, however, do not apply to man-made chemicals. Many synthetic chemicals taste good. These synthetics were not around when our metabolism was molded over time and so now send counterfeit messages! Avoid artificial sweeteners or flavorings, as they send FEAST messages of confusion and add to the toxic load in your SINK.

**Confirmation Update 5/2014:** In a study of obese non-diabetics published in *Diabetes Care*, ***sucralose*** (Splenda in U.S.) was found to overly-increase blood glucose and insulin and slow the clearance of insulin from the blood when subjects were glucose-challenged. These are features of ***increased insulin resistance*** – a precursor to diabetes type 2.

After inspection to eliminate spoilage, wash foods well to remove chemicals and microbes. Avoid cross contamination from other more likely degraded foods, especially meats. Avoid using wood cutting boards, as the cut grooves provide excellent growing niches for germs. When buying new cutlery, go with stainless steel.

Generally, because of their protective packaging and their composition, fresh fruits contain very few microbes. The pithy part of ***citrus and melons*** is also especially high in antioxidants and fiber as well. After cutting into wedges, eat some pieces of either of these fruits raw before each meal. Make it a point to include some pith in your bite. In addition, both citrus and melons primarily contain carbohydrates. When being chewed, such high carbohydrate-containing foods greatly stimulate saliva. By including pith in your bite, you will also notice a natural inclination to chew the pith well.

***Chewing*** helps pulverize food and further stimulates saliva, making the food easier to digest. Starting off a meal with fruit also helps stimulates copious amounts of saliva. This rightly prepares the food bolus for its journey in the digestive tract. That bolus then has the proper pH and mix of saliva-related chemicals. ***Saliva*** contains digestive enzymes, upper G-I tissue protective chemicals, immune system boosters and natural pathogen-killing chemicals. Without the protection of an adequate amount of saliva, the health of your teeth and other oral tissues are unnecessarily put at risk.

With adequate saliva, the food bolus has the perfect slippery mix of carbs, enzymes, fiber and antioxidants at the proper pH to augment the digestive process. A short trip through the esophagus and stomach finds that food bolus at the beginning of the small bowel, called the ***duodenum***. This is the critical site where most food undergoes final preparation for digestion. Digestive ducts empty into the duodenum, delivering ***bile and pancreatic digestive juices***. This rich mix of healthy chemicals and enzymes meets and mixes with the bolus of food as it is being propelled through the gut.

### **Forthly, sign up for 'Cooking 102'**

The **second key reason** to cook food is to more fully release its nutrients. Cooking often allows for enhanced digestion with less energy expenditure. Cooking often increases bioavailability of nutrients, as they are commonly 'bound' in raw food. When consumed raw, you may not totally release nutrients from their ***binders***; cooking often can more-completely release them. After all, when alive, the plant worked hard to preferentially gather these nutrients for its own agenda. It wants to hold onto them and will, even when removed from its lifeline. Binders include ***phytates*** (found in legumes, nuts, seeds and whole grains such as wheat and soy) and ***oxalates*** (found in spinach, rhubarb and other plants). The acids of these chemical act as ***chelators*** that bind with niacin and many healthy minerals, thereby preventing their digestion. Cooking degrades binders and releases such bound nutrients making them more ***bioavailable***. Binders present in one food can also diminish the absorption of micronutrients present in other food items that are part of your meal.

Foods soften up with cooking as their cell walls degrade by heat. A properly steamed veggie should not have the same snappy rigidity as the raw vegetable. If it does, its nutrients may not be as bioavailable. But, it's important to avoid the overcooking of many veggies, as excessive heat may destroy nutrients. To wit, broccoli should not be overcooked as excessive heat precludes the activation of its cancer-fighting and diabetes-mitigating phytonutrient -- ***sulforaphane***.

**Soaking** foods such as grains and beans shorten the cook time necessary to weaken their cellular constraint (their walls and other tissues) -- thus releasing nutrients. Soaking seed grains also activates inherent enzymes and causes **sprouting**. In the **sprouting** process, the seed in the grain begins its metamorphosis into a plant. In doing so, the sprout bursts through the protective constraints of the seed coat making its vitamins, minerals, and other nutrients more bioavailable.

As food is cooked its degraded binders and weakened cell wall constraint release the plant's micronutrients into the broth. If the broth is water, some water soluble nutrients, including vitamins, will be leached into the broth. The broth then becomes a nutrient-rich, healthy part of the meal for eating.

Too, cooking at appropriate temperatures may induce helpful changes in some food chemicals. **Lycopene** is an intriguing example. It's found in tomatoes and other red veggies. It's touted as a prostate cancer preventative and immunity enhancer but only if it enters our digestive tract in a cooked state. Cooking tomatoes not only releases the binders and cellular constraint, but modifies the shape of its lycopene molecules making them more absorbable. Hence, expect pre-cooked products such as pasteurized tomato juice, pre-cooked tomato sauce, pasta sauce and salsa to have such 'heat-modified lycopene.' This best-absorbed lycopene will be found in less quantity in raw foods such as freshly made salsas. **Update 2012:** A Finnish study reports that men with the highest blood levels of lycopene have a 55% lower risk of stroke!

#### **Fifthly, don't cook excessive amounts of toxins into your food.**

Cooking any part of your food at very high temps causes **HEATOX (Heat-Generated Food Toxins)** to form. The higher the cooking temps and the longer that they are maintained, the greater are the number of molecules of HEATOX rendered. The take home message is: avoid overly-cooked foods! A good example is: choose your french fries 'very lightly done' rather than 'crispy.' Another good rule of thumb is: if the grill or cookware is hard to clean after cooking, because burnt food remnants are tightly stuck on, you've likely created lots of serious HEATOX in that food. So, trash the burnt parts. Remember, with toxins, it's always a numbers game. Your detox SINK can handle reasonable amounts of most naturally occurring toxins, including HEATOX, if you maintain good health and detox well with adequate exercise and sleep.

In addition to **AGEs** (see discussion on p. 115), the HEATOX of most concern are the **carcinogenic nitrosamines, HCAs (heterocyclic amines), PAHs (polycyclic aromatic hydrocarbons), and acrylamides.** **Dry cooking methods** that use high temps, or unevenly distribute heat into food, generate HEATOX. Such methods include: microwaving, blow-torching, deep-frying, barbecuing, toasting, searing, grilling, braising and prolonged high temperature baking.

By contrast, **slow cooking** produces only small amounts of such toxins. Common slow cooking methods include: stewing, boiling, poaching and steaming. Less HEATOX exposure translates to less risk for diabetes and cancer!

**Update 2008:** A Canadian study found that people who ate well-done red meat more than twice a week had a 57% increased risk of developing colon cancer than those that only ate their red meat cooked medium or rare.

**Update 2010:** A large U. Of Minnesota study shows that people who preferred their steaks well-done developed 60% more pancreatic cancer than those who preferred theirs cooked less than well-done.

**Update 9/6/16:** A study reported in *Diabetologia* shows that lowering cooking-related AGEs improves insulin resistance and inflammation. The randomly matched subjects were over age 50 and had at least 2 metabolic syndrome criteria.

HEATOX are diminished by using lower heat settings, adequate amounts of healthy cooking oils or other fluids, pan covers to retain moisture and frequent stirring to disperse heat. When higher cooking temps are called for, use refined rice or grape seed oils. These and other such **oils that have a high smoke point**, render less **smoke-related HEATOX**.

Both the food and the smoke from high temperature cooking contain significant amounts of HEATOX. For example, **cooking with an open wok**, which is typically done at high temperatures, is known to produce carcinogens in its fumes. To wit, there's a high rate of lung cancer in Asian women who do not smoke cigarettes, yet use open wok cooking. If you detect **cooking-generated smoke**, use the stove's fan to draw it out so that you don't inhale its associated toxins.

**Non-stick, chemically coated cookware** decays at high temps. Those decay chemicals migrate into the food as well as the nearby air. **Teflon™** and, likely, its similar chemical analogs kill birds and are proven seriously toxic to humans. Use only **nontoxic cookware (stainless steel or proper ceramics such as oven-safe glass.)** **Urgent Update 1/27/2019:** I urge you to visit [www.TheDevilWeKnow.com](http://www.TheDevilWeKnow.com) to learn of the criminal acts perpetrated by Dupont that endanger us all!

**Update 3/9/2013:** Even high heat decay from aluminum, iron and copper cookware is now suspected as being neurotoxic.

**Nontoxic cooking summation:** to avoid generating toxins in your foods, cook only in nontoxic cookware and use mostly lower cooking temps. Brought to a boil, food that is suspended in water and in motion as it is cooked won't exceed 212 F. Even in a sustained heat-generated **rolling boil**, food so cooked will not form significant amounts of HEATOX.

Aside from improving palatability, the two most important reasons for cooking food are to:

- 1) Safely kill all pathogenic microbes that your food may contain, such as bacteria and viruses.
- 2) Release more of your food's key nutrients by degrading the food's chemical binders and cellular constraints.

### Lastly, understand the benefits of eating only raw foods

Fruits, veggies, sprouts, nuts, seaweed and many other healthy natural foods can be safely consumed in their raw form. In addition to avoiding HEATOX, when you're '**eating raw**' you are consuming the least adulterated food. Many healthy food chemicals are destroyed by the heat in cooking. **Inherent enzymes** are destroyed with cooking at above 117 F. Inherent enzymes aid in the digestion of the foods which contain them. Once 'picked' or otherwise removed from the plant's lifeline, these enzymes begin to break the foods down. The normal **transit time** (the time it takes a food bolus to complete its journey through the gut) rarely affords enough time for inherent enzymes alone to complete this break down. So, to complete the process, **digestive enzymes** are produced by one's digestive organs and moved into the G-I tract where they augment and accelerate **digestion** -- that process of making nutrient food chemicals more **bioavailable**.

Aside from being devoid of HEATOX, raw foods are loaded with inherent enzymes. This is a major benefit of '**eating raw**' -- an eating strategy that avoids cooked food. However, if the enzymes are active, the length of time the food will stay fresh is limited once it is removed from its lifeline. Refrigeration will slow inherent enzyme activity and thus the degradation of the food. Freezing will halt or greatly impede their activity. Many raw foods such as grain, seeds, and nuts contain inherent enzymes in a dormant state. These enzymes can be activated by soaking such foods in water. Once activated, the enzymes will begin to degrade the food and sprouting will often occur along with the prospects of spoilage.

The decision as to whether or not it's better to eat a particular food raw or cooked comes down to the question of the food's freshness. Fresh is the opposite of degraded. It is generally not safe to eat excessively-degraded food raw. **Degradation** means that the food has lost some of the chemical integrity that protects it from contamination by toxic microbes. The degree of degradation is best detected by smell or sight. The likelihood that a food will degrade depends on the integrity of its natural packaging and the state (active or dormant) of its inherent enzymes. Even a temporary '**eating raw diet**' can help relieve brain toxicity. This works like **fasting** does as both provide relief periods during which fewer toxins enter your detox SINK. Such 'brain cleaning diets' help one make better 'All Term choices,' including healthier eating ones. To best digest raw foods, **chew them well** (this helps break them down) and **eat them with healthy fats** such as olive or other plant oils, avocados or nuts (this enhances the absorption of their fat-soluble micronutrients).

### **REMOVING THE NUTRITIONAL DEFICIENCY THORNS**

In our blessed country we are given an abundance of opportunity. You would think, then, that there would be few who would be lacking food nutrients basic for good health. Think again. Think about a bit of isolated hard core poverty and its shadow -- **food deprivation**. Think more about depression, alcoholism and drug addiction and their companion-- **personal neglect**. Think mostly about naivety and its fellow traveler -- **malnutrition**. **Update 3/16/19:** In the United States today, it's estimated that as many as one third of certain population groups have significant nutritional deficiencies.

"Let food be your medicine" ~**Hippocrates** ~

'Nature' undoubtedly has supreme intellect in the 'manufacture' of health-protecting chemicals. Plants contain chemicals that are of benefit, especially in prevention, for a wide variety of unhealthy metabolic processes, symptoms and illnesses. Unlike man-made pharmaceuticals, our physiology is used to these natural chemicals. We see many studies that tout health benefits of a variety of healthy chemicals found in specific plant foods. To wit, studies show **polyphenols** in teas help preserve the flexibility of blood vessels and reduce visceral fat -- factors making **hypertension** easier to control. A study from Tufts University, showed that three cups daily of hibiscus tea significantly lowered the systolic blood pressure of hypertensive patients. **Update 7/20/2012:** Green tea is abundant in **epigallocatechin gallate (EGCG)**. A study out of Poland shows that EGCG improves almost all facets of the dreaded metabolic syndrome, not just hypertension.

You don't have to spend big bucks to get only extra-special products, made from secretly-blessed fruit, picked only by virgins, on some remote island, that comes only from a rare tree that grows only dangerously close to some volcano! If you are interested in prevention and healing, simply look for whole, fresh, colorful -- including natural shades of white -- plant renderings that have traditionally been used for food by peoples of your roots. **Don't be a 'super food' sucker!**

Instead, put a premium on sanitary, fresh, organic and minimally processed or whole food choices, if you can afford them. Be sure to include a healthy balance and variety of fruits, vegetables and the least perverted juices and oils therefrom. Include on that list nutritious grains, legumes, seeds, beans, sprouts, nuts, mushroom, seafood and the least perverted of products derived from them. Plants should provide most of the food elements for your Neogenic 'good honey' production. **This is your engine's highest grade fuel!**

**Be aware that anything is toxic when taken in excess.** When you gorge yourself with even great food--when you take even good supplements in excess-- you overdose. Think how your car's engine would be stressed while running not with plain gas but just the highly touted fuel additives alone! Get the picture? I see melting pistons and heavy exhaust smoke!



## Eat less, consume the Neogenic healing stuff and control your 'metabolic smoke and ashes.'

Anti-aging studies performed on a variety of species, humans included, show that by restricting the amount of food a subject ingests, that subject will live longer. Humans so calorie-restricted also have much less heart disease, diabetes, cancer and other aging signs. This is because all foods processed through our metabolism produce toxic byproducts. In the burning of our fuel we call food, the resultant toxins in the 'ashes,' for the most part, are **free radicals** and **acids**. High protein diets render more acidic metabolic ashes. From such a simplistic view, meat-centered diets can easily be too high in protein. Extremely high protein diets associate with poor health outcomes that quite often are toxic-brain related.

**Supporting Update 6/12/2010:** Studies done by Sam Gandy, MD, at Mount Sinai School of Medicine, and Anthony Rosenzweig, MD, of Harvard strongly suggest that although **high protein- low carb diets** cause weight loss, the price these dieters pay is huge – greatly increased arteriosclerosis and rapid brain shrinkage! Plant-centered diets have better ratios of the 3 major groups of food chemicals that we need the most of. These groups are referred to as **macronutrients**. Macro means large. The 3 groups we need and consume (in the largest quantity) are: proteins, carbohydrates and fats.

## Micronutrients -- the little things in food that make a big difference

### Flavonoid antioxidants

These food chemicals work by **absorbing 'free radicals,'** a process essential to slow down tissue damage and aging. They thusly reduce injury and inflammation -- the 'I' in our **Neogenic A+I=M aging equation** (see page83). Studies suggest that these chemicals found in plant foods help prevent cancers, diabetes, and neurological and cardiovascular diseases. Deep colors and tart taste are indicators of high levels of **flavonoid antioxidants**, but they exist in all of the plant parts we eat. The same antioxidants that are protective to plants help us when we consume them in natural food.

To understand antioxidants, consider the humble tree and compare one of our common threats, **ultraviolet light (UV)**. When UV strikes live tissue it causes tissue molecules to lose electrons. These molecules, then designated as '**free radicals**,' are unstable and start a chain reaction of 'electron theft.' This undermines the tissue of which those then-weakened molecules are a part of. Antioxidants, by sacrificing their electrons to the free radicals, are thought to prevent damage to the DNA and other tissue components. The structure of antioxidants allows them to become 'electron donors.' If your skin is exposed to excess UV it will become prematurely wrinkled, develop weakness, and possibly even cancer, when it contains too few antioxidants. Skin cancers develop by UV-induced damage to the DNA of skin cells. Limit your exposures to UV and eat lots of antioxidant-rich foods to lower your risk of wrinkling and skin cancers.

Plants have UV-vulnerable DNA too! How do they live in the sun, yet not get cancer? The answer: **the colors of nature**. Plant colors, including shades of whites, commonly come from their many antioxidants which help protect their DNA.

Plants constantly produce natural protective antioxidants. The **brown** pigments in the trunks and stems of trees are **oligomeric proanthocyanidins (OPCs)** and other **red/brown** antioxidants. A tree's **green** leaves contain **chlorophyll** and **carotenoids**. Chlorophyll serves the additional purpose of harnessing the energy from sunlight -- **photosynthesis**. Chlorophyll is very cold sensitive. As fall temperatures drop, **green** chlorophyll in leaf is replaced with **deep blues** (OPCs and others), **reds** (OPCs or carotenoids), and **yellows** (carotenoids) or **browns** (OPCs and others). Many of these colored chemicals are antioxidants that absorb free radicals generated by UV. In trees these also block transmission of dangerous UV in a similar way as the chemical **melanin** works to protect your skin. Your skin produces melanin as you increase your UV exposure, causing you to **tan**. Tanning is always skin-protective but **UV overexposures** never are!

The **Oxygen Radical Absorbance Capacity (ORAC) rating** is merely an attempt to quantify the antioxidant potential of any food. Don't judge the value of your favorite plant-derived foods poorly just because they may appear low on this rating scale. This would be analogous to a man selecting his wife based solely on bra size. The value of both the prospective wife and the foods, in this case, must be reasonably evaluated as a whole package. Most plant-derived foods have good antioxidant value; and variety makes for more enjoyment with less likelihood of any specific micronutrient deficiency. Selecting foods based on the deepest roots of one's cultural heritage seems wise to me. To wit, the antioxidants called **catechins** in brewed green teas have a long heritage for the majority of people on this planet. They SEEK well.

All plant-derived foods contain various antioxidants and other **phytonutrients**. These plant chemicals work best when incorporated in **the whole food package**. This helps protect us from UV-induced cancer and 'weathering' of the skin as well as other degenerative processes in most tissues. A 2009 study in *Family Practice News* reported that for each portion of fruits and veggies eaten daily, one marker of blood vessel function improved by 6.2%. Eating more than 5 portions daily reduces your risk of a stroke by 26%! Such healthy effects of plant-derived food come from complex processes involving an orchestration of a variety of natural food compounds working in synergy. In this regard, supplements that contain the commercially-extracted phytonutrients are poor substitutes for the whole food package.



In prevention, foods that are good for the retina are **foods that are likely good for your brain.**

Don't want MS, Alzheimer's, Parkinson's or other neuro-degenerative disorders as you age? If your answer is, "no," consider studies that relate to the **retina** -- that brain-related tissue of one's eyes that is most easily observed with an ophthalmoscope. **Retinal degeneration and brain atrophy likely have common 'thorns.'** **Supporting update 8/10/16:** A large study from the U.K. found a link between retinal nerve thinning and subsequent cognitive decline.

**Age-related macular degeneration (AMD)**, a neuro-degenerative disease affecting neurons that make up the retina, is the leading cause of age-related vision loss. Results of **The Age-Related Eye Disease Studies (AREDS)** suggest that AMD-related vision loss is more likely if one has a deficiency of **retina-protective nutritional factors**.

Studies show one's risk of AMD (**and likely other neuro-degenerative disorders**) is lessened by adequate intake of these nutrients: DHA, EPA, lutein, zeaxanthin, zinc, copper, folate, and vitamins B-6, B-12, C, D-3 and E. I opine this is best done by consuming these healthy foods: sea creature-derived foods (for D-3, DHA, EPA and iodine); minimally-refined grains (B-6, zinc); nuts (B-2, B-6, E); citrus fruits (C); bell peppers and cruciferous or dark leafy veggies (lutein, zeaxanthin, copper, B-2, B-6 and folate); and other **flavonoid-rich foods** such as green teas, grapes and berries. **Update 6/4/2018:** French research shows that people who consumed a **Mediterranean diet** (a diet centered around the above-named nutrients, as well as others) manifested 39% less advanced AMD than their peers on other random diets!

To further protect your brain and reduce the risk for AMD, Alzheimer's and other degenerative brain disorders avoid red and processed meats as well as junk foods (highly-refined carbs). Junk foods induce hypoglycemic distress in neurons. **Update 4/1/2009:** The red meat and AMD link is again confirmed in a report in the *American Journal of Epidemiology*. **More updates:** A Tufts U. study confirms that **high glycemic index foods** (junk foods) are quantitatively tied to AMD. The more junk carbs eaten -- the more AMD was seen. Too, trans fats, alcohol and tobacco smoking are 'no brainers.' Lastly, excessive U-V light exposures specifically damage the retina; so, use eye protection when appropriate.

### **Healthy fiber in foods**

Dietary fiber is the indigestible portion of plant-derived carbohydrates. Fiber encourages proper **transit time** (the time it typically takes a bolus of food to pass through your entire gut). It also facilitates detoxification by binding toxins for stool elimination, helps mitigate adversity associated with diverticulosis, constipation and hemorrhoids and helps prevent unhealthy insulin responses. It acts as a **prebiotic** (food for 'friendly' gut microbes). Fiber is an integral part of legumes, nuts, grains, fruits and veggies and is a major contributor to good health. High fiber foods prevent cancers (especially colon cancers), prevent the spread of other existing cancers, promote a more favorable lipid profile and support your immune system. Conversely, inadequate fiber is unhealthy in many ways.

**Update 9/25/16:** Low fiber diets generally render a less-healthy microbiome. Several recent studies link an unhealthy microbiome with **childhood obesity and diabetes**. One's microbiome is influenced early on with maternal exposures. This may account in part for the better health outcomes in breast-fed and otherwise well-nurtured children over poorly-fed and neglected ones. Later detrimental environmental influences on a one's microbiome, such as low fiber or otherwise poor diets, many medications (especially inappropriately-prescribed antibiotics) and systemic diseases, also associate with both early markers for and progression to obesity and diabetes.

**Lignans mitigate insulin resistance and cancers and also reduce 'bad blood fats' and hypertension.**

Lignans are **prebiotics** -- healthy food for the **probiotics** (those gut microbes that live in a symbiotic relationship with us). **Plant-derived lignans** are chiefly found in whole grains. Our **probiotic flora** (our guts 'good germs') converts these into **mammalian lignans**, which are known to lessen the risk for cancer and heart disease. The best source is flax seeds, (not the flax oil). Thirty grams (roughly 2 tablespoons) daily of ground flaxseed significantly slows the progression of prostate and breast cancers. A similar dose lowers total and LDL cholesterol levels, especially in postmenopausal women. Grind the flax seeds just before adding them to cooked but cooled porridge, oatmeal, stews or soups daily. The freshly-ground powder can also be added to smoothies, salads or even other hot recipes once cooled, as excessive heat degrades lignans, making them less effective. **Update 4/3/2013:** One tablespoon of flaxseed intake daily decreased glucose and insulin and improved insulin sensitivity in overweight or obese individuals with pre-diabetes. It's important to note that two tablespoons of flax seed daily did not have the same effect in reducing **insulin resistance** in this study! Insulin resistance leads to diabetes and likely to Alzheimer's too! Anyone with signs of dementia should begin taking this dosage ASAP!

### **Seeds**

Other seeds, such as **chia**, have a wealth of micronutrients too. These come in a protection package called the **seed coat**. The seed coat protects them and ensures their freshness. This natural packaging impedes oxygen degradation as well as microbial contamination of the embryonic plant inside. It's best not to degrade that packaging until just before you're ready to eat the seeds. Like chewing, grinding the seeds makes their nutrients more bioavailable.

## **‘Go nuts’ -- to improve cognition and lower your cholesterol, osteoporosis, heart disease and diabetes risks**

Eating 2 ounces daily of any type of nuts reduces inflammation and heart disease risk and improves cognition and blood lipids. Known also to help with diabetes control, nuts are a good source of minerals which act as cofactors for detox enzymes. Detox failures are highly suspected in the genesis of many facets of COED-S. Nuts are rich in phosphorous, potassium and magnesium -- some of the key elements needed to maintain bone strength and avoid osteoporosis. Go for a variety. To wit, Brazil nuts are an especially good nut source of magnesium and selenium.

### **Try non-gluten grains**

Most commonly found in wheat products, **gluten** is a group of pro-inflammatory proteins that many people are allergic to. There's also evidence that other chemicals, such as **fructans**, commonly found in foods containing gluten may explain the symptoms of **‘gluten sensitivity.’** If you are having unexplained ‘toxic brain’ or gut-related symptoms, avoid foods which contain gluten for a few weeks to see if your symptoms abate. If they do abate, avoid such foods whenever reasonable. Consumers are getting savvy about gluten; hence, **non-gluten grains** have become more popular in food markets.

You can find such grains in bulk at most healthy food stores. They work great in cooked porridges, stews, soups, gluten-free pasta or muffins, crumb breads, gluten-free crackers, and many other recipes. The seed grain **quinoa** is my favorite gluten-free grain. High in lysine, this seed grain contains a healthy mix of essential amino acids supportive of Neogenesis. Other highly nutritious, **gluten-free grains** include rice, corn, amaranth, millet, buckwheat and many others. **Update 10/4/2018:** A new Danish study reported in BMJ found that the more gluten a woman consumes during pregnancy, the more likely it is her child will be diagnosed with type 1 diabetes. The selection of the least-refined of non-gluten grains and the avoidance of foods with ‘added sugar’ are especially wise nutritional choices during pregnancy!

### **SEEK the ‘complex carbs’ -- avoid excesses of sugar and the high sugar load-rendering carbs**

The **complex carbohydrates** in the least-refined versions of whole grains render their sugars slowly into one's blood stream -- the ideal scenario. Conversely, a large and rapid consumption of sugars or starchy or highly-refined grains which quickly break down into sugars in the gut present a **high glycemic load** to one's pancreas-- an unhealthy scenario.

Starchy grain products include waxy potato or corn starch as well as other highly-processed grain products. The rapid absorption of sugars from such high glycemic-loaded products can cause one's pancreas to secrete an excess of insulin. Such an unhealthy insulin response causes a **hypoglycemic brain state** which, in turn, induces overeating and, when habitually repeated, insulin resistance. Although the genesis of diabetes type two is multifaceted, this scenario can be a contributor to central obesity and diabetes type 2 -- anchors of COED-S!

Glucose is the preferred energy food the brain needs for optimal function. The brain is a constant glucose glutton. Low blood sugar-- termed **hypoglycemia** -- fails to fulfill its voracious appetite. In such a toxic brain state one feels weak and mentally confused as his brain cells starve for glucose. Additionally, blood sugar levels that are chronically too high, such as often seen in diabetes, cause the endogenous formation of highly toxic **Advanced Glycation End products (AGEs)**. AGEs can destroy nerve, retina and kidney cells and may even be a factor in Alzheimer's.

Your brain needs glucose at just the proper blood concentration to function at its best. If the blood glucose level is either too high or too low, brain function is impaired. Mostly seen in diabetics, severe hypoglycemia impairs the function of the retinal neurons, resulting in visual impairments. Similarly, studies show that the retinal damage of age-related macular degeneration is linked to the reactive hypoglycemic episodes commonly induced by high-glycemic-load dietary choices. These facts convince me that the overeating of high glycemic-load foods can similarly damage other parts of one's brain.

### **Healthy enzymes**

Raw foods contain all of the **inherent enzymes** necessary to break down the food chemicals contained therein. Essentially, these enzymes can return the food to its dusty origins, given enough time. Inherent enzymes always help maximize digestion of the foods that contain them. In a nutraceutical sense, most natural food enzymes produce a healthy anti-inflammatory effect. **Bromelain** from pineapples and **papain** from papaya have been highly touted by many nutritionists and are approved for limited medicinal use. Cooking temps above 117F. damage food enzyme functionality.

### **Omega-3 polyunsaturated fatty acids (PUFAs such as DHA and EPA) are heart and brain-friendly**

Omega-3 fats improve one's cognition, stabilize your mood, optimize internal healthy body messaging and help strengthen protective membranes while reducing harmful inflammation. Omega-3 deficiencies may manifest in subtle brain or heart malfunctions. With consideration of minimizing contaminants while maximizing DHA and EPA content, the best sources of the Omega-3s are wild salmon, trout, anchovy, sardines and, for vegetarians, algae-derived products.

## Wise-up about supplementation

**Toxic contamination of supplements** is a major concern. (Thoroughly read page 194 to gain critical insight on this topic). A large analysis of dozens of studies worldwide, reported in the *Journal of the American Medical Association* (JAMA), shows no longevity benefit from supplementation with vitamins A, E, and C and selenium and beta carotene. In fact, when the Denmark researchers led by the Cochrane Hepato-Biliary Group at Copenhagen University Hospital threw out the weakest studies, they found an increase in risk of death for those taking these vitamins and antioxidants in supplements. It's the issue of too much fuel additives burning up your engine, my friend!

For the vast majority of us, the glory is in the whole synergistic food package. When these individual food chemicals are extracted, processed and, as often occurs, put into toxic containment as supplements, they are of questionable value. Besides delivering you a concentrated dose of toxins, it works sort of like this: A bicycle is composed of many different parts. When the parts are together correctly, you can get on one and have a fine ride. When you have a bunch of similar bicycle parts that are not attached to the other parts, they just form unnecessary piles of parts that get in your way!

Some individuals do, by virtue of their unique genetics or circumstances, poor diet, lack of exercise or other poor choices, develop specific deficiencies. Some such deficiencies may be brought to light with metabolic testing. It's always best to address the cause and 'take out the thorn' by making better dietary choices. However, specific supplementation occasionally may be a more practical way. Prior to the toxic degradation of our environment, most people who ate a plant-centered diet and got enough healthy sun-exposure, sleep and activity needed no supplementation. Now it's not certain that one's typical diet and sun exposures alone will adequately provide optimal Neogenic food-derived substrates.

**So, the following are special circumstances in which supplementing may now be wise:**

Anyone who does not eat meat or fish should ensure adequate intake of vitamins D-3, K2 and B-12 as well as Omega-3s. These optimize health of one's skeletal and neurological systems. People who don't eat fish, don't get much sun exposure, and/or are dark-skinned need 400 to 2000 IU of D-3 daily (thin-skinned elders generally need the higher doses).

Any woman who is anticipating an impending **pregnancy** should also take folic acid and B-12. This regimen should be continued while pregnant and nursing. This reduces the risk of diabetes and obesity as well as neurological or heart defects in their babies. I also advise them to take cod liver oil for extra vitamin D-3 and Omega-3s for their baby's optimal skeletal and neurological development, as well as probiotics to lessen their babies risk for developing allergies. **Validation update 7/5/2018:** A review of 2 studies reported in this month's *Jama Psychiatry* shows that children whose mothers ate foods fortified with folic acid during pregnancy had: 1) improved brain development on MRIs and, 2) when reaching adulthood, reduced risk of psychosis as compared with cohorts without such increased fetal folic acid exposures.

DHA (900 mg/day), curcumin (1500 mg/day), creatine (no more than 4-5 grams/day), resveratrol (400 - 2000 mg/day), melatonin, B-12, D-3 (1000 IU/day) and flaxseed (1 tbsp/day) may help delay the onset or progression of **Alzheimer's**. One tbsp of **flax seeds** daily also lessens one's risk of **type 2 diabetes**. Anyone with **depression, flu, asthma**, or **chronic obstructive pulmonary disease (COPD)** should consider taking up to 2000 mg of **N-acetylcysteine (NAC)** daily. People with **depression** commonly see improvement with supplemental **L-methylfolate**, B-12 and Omega-3s.

We're now seeing many **neurological conditions** associated with B-12 deficiencies. Overt B-12 deficiency most often presents with easily recognized anemia. However, **sub clinical B-12 deficiency**, which can cause dementia, is very common now and flies under the radar in most cases. This subtle B-12 deficiency can cause the brain to show shrinkage on imaging studies! B-12 plays an important role in nerve and brain health. The most at-risk people for B-12 deficiency are the elderly (absorption often decreases with age) and people who don't eat meat or seafood. Also at risk are people who suffer from dementia, brain-affected congenital and autoimmune disorders and **blood perfusion illnesses** such as: strokes, TIAs and heart arrhythmias that render either recurrent micro-emboli or severe hypotensive episodes.

**B-12 testing** is advised for anyone over 50, anyone who has had gastric bypass surgery, drinks alcohol heavily, has Sjogren's or any neurological disorders such as Parkinson's or MS, is on **metformin** for diabetes or on stomach acid-reducing drugs for GERD or does not eat meat. I see little downside for anyone in these categories who wishes to skip the testing and take reasonable doses of injectable, sublingual or orally-absorbed B-12 in its **methylcobalamin** form.

With aging, our natural endogenously produced **CoQ-10** levels decline. Supplemental CoQ-10 may be advised to protect those tissues which have the highest metabolic activity, such as the brain, nerves, heart, liver, pancreas and kidneys. CoQ-10 may benefit people who notice a **diminished exercise tolerance**. CoQ-10 supplementation may also have merit in reducing serious potential side effects of taking any '**statin drugs**.' 'Statins' suppress our body's production of both the so-called 'bad' cholesterol as well as our vital CoQ-10. This is because the same statin-targeted enzymes produce both. One critical proviso though—if you are on an anticoagulant, such as Coumadin or warfarin, don't supplement with CoQ-10 or vitamin K without getting your doctor's approval. Either one may decrease the effectiveness of these blood thinners.

## You don't need to dive to get my vitamin D 'pearls.'

Research shows that the active form of vitamin D (D-3) is protective against breast, ovarian, colon and other cancers. It also helps prevent diabetes, macular degeneration, allergies, asthma and auto-immune disorders such as psoriasis and **multiple sclerosis (MS)**. Low D-3 levels increase one's risk for Alzheimer's, dementia, Parkinson's, depression, ADHD and bone-weakening diseases. Low D-3 blood levels warrant dietary changes and/or supplementation. Good dietary sources of vitamin D-3 include D-3-fortified foods, egg yolks (**free range only please**) and oily fish. For most people, a can of sardines provides 100% of daily need. One tablespoonful of cod liver oil will more than cover 100%. However, there's another way - from sunlight. You can't overdose on vitamin D-3 when sunlight is used to make it. Adequate sunlight converts plant-derived precursors in our skin's fat (D-2), to the optimal amount of D-3 that we need to protect against many types of cancers, diabetes, and diseases of the brain, heart, lung, neurological and immune systems.

**What dose should you use?** The '**sensible dose of sun exposure**' depends on many variables -- your age, your skin's thickness and color, the time of day, the weather, the season and where on our planet you are. If you are under 60, fair skinned and live between 30 degrees north and 30 degrees south of the equator, only a few minutes a day at midday on an average sunny day is needed. This dose generates adequate amounts of vitamin D-3 from sunlight alone. If one has chronic kidney disease, dark skin, skin thinned from aging or gets little sun exposure, supplementation may be warranted. Optimal supplement doses range from 400 to more than 2000 IU daily, with thin-skinned elders needing the highest doses. Like other fat soluble micronutrients, vitamin D is best absorbed when taken with meals containing healthy oils.

**Warm up your buns and other places the sun ordinarily doesn't shine!** When you sunbathe, expose primarily those areas normally covered by clothes and cover those already overexposed areas. This avoids skin damage and skin cancers. **Update 8/2010:** Recent international research suggests that UV exposures in small doses to fatty areas that don't ordinarily 'see the sun,' such as a women's vulva, are protective against melanomas in those areas. **Caution:** **excessive exposures to UV light in any form cause skin cancers**, and **excessive heat worsens MS symptoms**.

**My calcium 'pearl' -- avoid potentially 'deadly' calcium supplements -- get calcium safely from real food instead!**

For decades we docs were 'taught' to push calcium pills to counter patient's fears of **osteopenia**. We were dead wrong! Calcium supplements cause sudden high blood levels of calcium. We now know such surges can increase blood clotting and deposition of calcium into artery-clogging plaques which accelerates **atherosclerosis** -- the cause of most heart attacks and strokes. Dietary calcium, instead, releases slowly, and so avoids destructive surges in calcium blood levels.

**Update 7/30/2010:** Research involving over 8000 patients was reported in the *British Medical Journal (BMJ)* today. It found that taking calcium supplements raised the likelihood of having a heart attack by about 30% over the placebo group. Previous studies have found no similar heart attack risk by increasing calcium intake by dietary changes only.

**Update 2/2013:** A large prospective NIH study from the USA concurred that calcium supplements significantly increase cardiovascular and cerebrovascular mortality in men. It showed no similar overall increase risk in women.

**Update 2/13/2013:** A *BMJ*-reported Swedish study followed 61,433 women for an average of 19 years. The principle author concluded, "Women with the highest intake of calcium (>1400 mg/day) and who used supplement tablets had an all-cause risk for death 2.5 times higher than women who had similar total intakes but were not taking a supplement!"

**So, my advice is:** Men should get 1000 mg of calcium daily from foods only. Women should first try to get 1200 mg daily from dietary sources. Anyone falling short should slowly sip on calcium-enriched juices to gradually make up the deficit. It's no longer prudent to advise patients to take blood-surging, tissue-degrading calcium supplements!

**Update 10/15/18:** Based on 2017 research done by Gerry Kurt Schwalfenberg and posted in the *Journal of Nutrition and Metabolism* (Article ID 6254836), I also now advise adults at risk for osteoporosis to take about 100 mcg of **vitamin K2** daily with a fat-included meal to safely preserve bone strength. K2 also helps to prevent blood vessel wall calcifications.

Bone maladies such as **osteoporosis** are a risk for anyone, especially women, deficient in dietary calcium. Dietary calcium is released slowly and in moderation, while supplements cause unhealthy blood level surges. To counter this atherosclerosis threat, I recommend good **dietary sources of calcium**. These include calcium-fortified, plant-derived organic juices, cereals and milks - such as rice, soy, hemp, nut and low fat yogurt. Other good calcium sources are: ground chia seeds, sardines, dried figs, prunes, almonds, molasses, cooked beans, kale, broccoli, spinach, and greens.

**Confirmation Update 7/11/18:** Findings published today in the UK reveal that a **Mediterranean diet**, one typically rich in fruits, greens and other vegetables, nuts, unrefined grains, olive oil, and fish significantly improved **hip osteoporosis** (bone loss that commonly predisposes to hip fracture) within just 12 months.

Many factors interfere with **calcium absorption**. I mentioned acid-blocking drugs such as PPIs as one. Elders commonly have some degree of **atrophic gastritis** which lessens calcium absorption too. Additional things that interfere with calcium metabolism and/or cause the bones to prematurely weaken are: inactivity, sodas, smoking and toxic excesses of alcohol, coffee, table salt, sugar and thyroid hormones. Abuse of stimulant drugs and deficiencies of growth and sex hormones and dietary magnesium also contribute to the current 'epidemic' of osteoporosis. Notice that the above list of **causes of premature bone weakening** includes dysfunction and toxicity, as well as deficiency 'thorns.'



**As our world has turned critically toxic, some special fats have become ‘essential for optimal health.’**

All fats are not ‘created’ equally. Long chain saturated fats, found in commonly-sold meats, and trans fats are clearly toxic. Others, namely **linoleic acid**, **arachidonic acid**, and **alpha-linolenic acid** have long been recognized as being essential. From dietary sources of only these **3 essential oils** we were thought to be able to make enough of the **key Omega-3s** -- **DHA** and **EPA** and the Omega-6 -- **GLA**. However, we cannot hold on to past assumptions and wisdom. We now live in a toxic world where unchecked toxic pollution and contamination predominate and adversely impact our physiology.

In a nutshell, a diversity of toxins associated with pollution, tobacco smoke, stress, toxic-thought and other challenging contemporary sources work in concert to impede the metabolic enzyme **D6D (delta-6 desaturase)**. Adequate levels of D6D are needed for us to make optimal amounts of many healthy fats -- most notably DHA, EPA and GLA.

DHA, EPA, and GLA are essential in the building of many of your body’s healthy fat constructs, including many of your body’s messaging chemicals such as the anti-inflammatory **eicosanoids**. A healthy balance of eicosanoids helps prevent and mitigate many inflammatory-related diseases that account for much of COED-S.

Besides lowering risk of inflammation, cardiovascular diseases and heart arrhythmias, adequate dietary consumption of Omega-3s reduce unhealthy blood levels of triglycerides. Great sources of DHA and EPA are sea-derived foods and their purified oils. High levels of GLA are in seeds or oils from borage, black currant or hemp, and in Spirulina.

**Brain health requires adequate Omega-3 intake!** Omega-3s are building blocks for nerve/brain cell membranes. Neurons of your brain, retina and nervous system, as well as your heart muscle cells, require adequate Omega-3s for optimal function and protection. Low intake of DHA is associated with age-related neuro-degenerative diseases including Alzheimer’s, ALS and AMD, as well as bipolar disorder, ADHD and depression. **Update 8/17/16:** In USC’s **Aging Brain Study**, healthy elders with high blood DHA levels had fewer beta-amyloid plaques and better brain volume retention.

**Omega-3s are most critical to 3 groups--the young, the elderly and pregnant or nursing women.**

For **the young**, research on healthy four-year-olds found that higher blood levels of DHA correlated with higher scores on cognitive testing. Breast milk is naturally high in Omega-3s; this may explain the cognitive benefits of breast feeding in many studies. The *Perinatal Lipid Nutrition Group* advises that pregnant and nursing women should now consume at least 200 mg of DHA daily to ensure adequate DHA in their milks. A half teaspoonful of cod liver oil daily easily covers this.

For **the elderly**, exciting work done by Nicholas Bazan at LSU shows that in human neural cell cultures, DHA reduces the brain’s accumulation of **beta-amyloid**, a hallmark finding seen in Alzheimer’s. **Update 1/22/2014:** Research in *Neurology*, of 1111 women over an 8 year period, confirms that individuals with high levels of Omega-3s retained significantly more brain volume in their hippocampus areas than those with low levels. Hippocampus shrinkage is typical in Alzheimer’s! Healthy elders not wanting Alzheimer’s, AMD, ALS or other age-related neuro-degenerative disease should consume **adequate amounts of Omega-3s** -- 2 teaspoons daily of oils from non-toxic fish or an equivalent vegetarian source.

For **pregnant and nursing women**, *The National Healthy Mothers, Healthy Babies Coalition*, a nonprofit group of 150 top scientists, advises women in this group to eat at least 12 ounces of fish per week to ensure optimal brain development for their babies. They think that cognitive disabilities now more commonly seen in kids may be linked to dietary deficiencies of DHA. However, I advise anyone, especially pregnant and nursing women, to limit themselves to no more than 16 ounces of fish weekly. Also, select only the types of fish with the least contamination. Make up any shortfall with **cod liver oil** (contains substantial amounts of vitamins A & D as well as DHA and EPA). It may sound like an oxymoron, but until these COED-S epidemics are well-understood, I’ll be pushing healthy fish oils hard but soft selling many types of fish!

**Healthy fish oils** must be properly purified to remove toxic heavy metals, PCBs, pesticides and allergy-inducing proteins. Buy only those purified fish oils that are **nitrogen sealed** (minimizing exposures to oxygen) into darkened glass bottles. Avoid **any supplements packaged in gelatin capsules**. After opening, food oils, especially fish oils, should be refrigerated. If **fish allergy** is suspected in a nursing child or its mom, mom should refrain from all fish. In such cases, fish oil consumption by Mothers is safe and highly advised. The optimal dose for such a ‘woman with fetus package’ is one gram of DHA daily. This is equivalent to Mom taking only 2 teaspoons of cod liver oil daily.

Fish are now an excellent safety-concern example of the bioaccumulation of toxins in the tissues of animals. Much of the **ocean contaminants** are fat-soluble chemicals that are derived from petroleum and fossil-fuel usage. Fish meat is naturally high in fat content. The fatty tissues of fish act like a sponge in soaking up fat-soluble toxic chemicals, as well as the better-publicized neurotoxic heavy metals. In general, it’s the biggest predator fish, those which are at the top of the fish food-chain, that are the most contaminated. Shark, swordfish, king mackerel and tilefish contain the highest levels of mercury. Sardines, herring, trout, salmon and mussels are high Omega-3 sources that currently have little contamination. For up to date info on **fish toxicity** visit: [www.oceansalive.org/eat.cfm?subnav=healthalerts](http://www.oceansalive.org/eat.cfm?subnav=healthalerts).



## People with cardiovascular concerns or diabetics also benefit from adequate Omega-3s.

Omega-3s help prevent and ameliorate **all forms of cardiovascular disease** -- this includes ischemic and cardioembolic strokes, heart disease and peripheral vascular disease. According to WHO, every adult should consume at least 500 mg of Omega-3s daily for optimal prevention. Severely environmentally- compromised individuals, smokers and insulin- resistant diabetics may require more. For those with cardiovascular disease, one gram of Omega-3s daily (the equivalent of one teaspoon of cod liver oil) is advised. One tablespoon of cod liver oil daily improves markers of insulin resistance and provides additional anti-inflammatory, anti-**platelet agglutination** (clot formation) and triglyceride-lowering benefits.

For vegans or those concerned about the fish toxicity or allergy issues, Omega-3 supplementation from nontoxic marine algae sources is now widely available. One such product, Life's DHA™, is now being incorporated into many common food products. Expect Omega-3s to soon be added to all **commercial infant formulas** because of the now apparent D6D issue. D6D enzyme functionality can't be assumed adequate to meet the needs of a baby's rapidly growing brain.

## GLA (Gamma-Linolenic acid) -- the special Omega-6 PUFA which also 'cools off' inflammation

**Atopic illnesses**, such as **common allergy**, **asthma** and **atopic dermatitis**, are now epidemic in industrialized countries and overly-stressed societies. Because of the same suppressed D6D issue, anyone who manifests atopic illnesses or other inflammatory conditions should adequately consume food sources of the anti-inflammatory Omega-6 fat -- **GLA**. GLA is available in the seeds or oils of borage, evening primrose, black currant and hemp, as well as Spirulina.

## Probiotics help prevent and resolve disturbances of the healthy gut microbiome and the consequences thereof

The gut can be a hostile interface. Many factors disturb the symbiotic relationships we have with the trillions of friendly germs in the gut that are necessary to maintain gut integrity and optimal function. Emotional stress, antibiotic and other drug overuse, inactivity, microbial challenges and chemicals that confuse our immune responses are among the causes. The brain and gut have common embryologic origins; and so, gut inflammation commonly reflects in brain dysfunction. **Probiotic (fermented) foods** like yogurt, kefir, sauerkraut, kimchi, miso and others may help mitigate the **leaky gut**-related toxic brain manifestations and vague gut symptoms commonly referred to as **irritable bowel syndrome**.

**Update 11/15/12: Clostridium difficile--associated diarrhea (CDAD)** has emerged as one of the most challenging consequences of the overuse of antibiotics. A study in *Annals of Internal Medicine* involving 3800 patients showed that probiotic supplements, when used prophylactically with antibiotic treatments reduced the incidence of CDAD by 66%!

**Update 11/8/15:** Published UCLA research in journal *Cell Reports* suggests that treating a leaky gut promotes longevity. Using fruit flies, because of their extremely short life-span, researchers were able to determine that the proliferation of a toxic microbe (**Gamma-proteobacteria**) heralded the onset of leaky gut causing the flies to die within a week. By using antibiotics to reduce those toxic microbes, they were able to prolong the longevity of the flies by an average of 20 days! I've long said that a healthy gut helps protect brain functionality which, in turn, is vital to optimal health and longevity.

## Value subtle energies, 'REAL FOOD' and 'SLOW FOOD' to avoid 'STRESS EATING'

Let's talk about 'subtle energy' in our food -- 'subtle' being defined as discriminating, selective, sensitive, appreciative, distinguishing, nice, refined and difficult to measure objectively.

To begin with, one of the reasons we tend to overeat is because our food is consumed too quickly. For example, we eat 'fast food' very fast. It's almost as though because it's called fast food we feel compelled to consume it as quickly as we can. Sometimes it's not even chewed, depriving us of what little micronutrients are available in this typically artificially taste-augmented, rapid and vapid food. We get that food into us in such a speedy way that our body appetat hasn't time to register if we're full or not. So we eat too much, thinking we're still hungry. Even in our homes, we prepare food 'fast.' We have freezers full of frozen food -- 30 minutes in the oven, and microwavable food -- 12 minutes in the nuker!

**'REAL FOOD'** is unadulterated, grown in nature, harvested and prepared without adding toxins! We're been raising kids who don't have a clue where real food comes from. They think corn is birthed frozen in a bag and that beans are born in a can. Meals have become something to 'get over with' so they can move on to the next allegedly more important thing.

Too, a problem with our standard American diet is that it is deficient in subtle energies. That is, we eat it in isolation or with television as our sole dining companion, and we eat it very quickly. We do not taste nor do we savor this food; we cram it. We eat standing up as well, hanging over a counter; or we dine next to computers, reading and typing, typing and reading. Other than at holidays, gone are the days of a well presented table. The china is in a cabinet; the silver's in a drawer. The cloth napkins are dusty. Many of us can't remember the last time we said a prayer in appreciation. The thing is: healthy food energy best comes from **'SLOW FOOD'** That is, real food that is consumed with love and right consciousness.

Too, slow food is cooked slowly and carefully, presented beautifully, served with enthusiasm and consumed slowly with gratitude whilst enjoying the subtle energy delights of companionship, good conversation and good humor.

“A smiling face is half the meal” ~proverb~

When you have all of the above components of **#1 Pie** subtle energies included in your preparation and consumption of food, the total energy package is incredibly nurturing. Slow food is totally different, totally better. In this far more genteel scenario, our food is remembered to be a gift and our bodies and minds best absorb it as a blessing. **Update 3/2013:** ‘**Slow eating**’ packs a bonus for weight loss. It increases the FEAST satiety hormones **peptide YY** and **glucagon-like peptide-1** by 25-30 percent over their levels seen when consuming the same meals more rapidly.

### How to build a better brain with ‘food for thought’

It should be apparent by now that I am biased as to which organ of the body should be best fed and why. Your brain is the ‘queen bee’ of your Neogenic beehive. Failure to nourish her will have dire consequences. We’ve discussed herein the vital food nutrients now needed to meet our unique toxic-world challenges. In short review, this ‘essential list’ best includes the least-refined of fresh whole foods. A **brain-healthy diet** must adequately provide the now vital PUFAs, proteins, antioxidants, phytonutrients and high-fiber, complex carbs. Such nutrients will be made most bioavailable by including plant-derived **MUFAs (monounsaturated fatty acids)** -- oils such as olive, avocado, grapeseed or nut oils.

The **Mediterranean diet** is a brain-healthy diet. It best centers on the MUFA in olive oil -- **oleic acid**. It features green leafy and other veggies, fish, legumes, fruits (in particular berries and cooked tomatoes), nuts and herbs. [In its brain- healthiest versions](#), I include the least-processed of grains and **only fermented dairy products**, such as kefir and yogurt, as well as coffee, teas or grape juice as drinks. I **exclude** wine because [all types of alcohol are neuro-toxic and addictive](#). Optimal assimilation of nutrients requires proper cooking, when called for, and adequate chewing and consumption time.

**Validation Update 11/2015:** Researchers reported in *Neurology* an MRI study of 674 elders. Their **BVR (brain volume retention)** on MRI correlated well with patient-reported eating habits that most closely resembled a Mediterranean diet. Both higher fish intake and lower red meat intake also correlated with less brain atrophy in this study.

**Lastly, for the disclaimer!** Be aware that despite taking in all of the aforementioned ‘optimally edible mass’ in perfect amounts -- by following all the recipe advice in perfect preparation order and consumption timing -- you will not necessarily live longer; be more intelligent, more mentally stable or even a tiny bit happier.

After all, if it was simply about ‘stuff’ like PUFAs, salmon should be smart enough not to exhaust themselves by swimming upstream only to rot in the sun, or be eaten by some hungry bears. Do you know anyone who has caught a DHA-loaded fish and told you that the fish looked happy before getting gutted?

There must be something else of higher order that determines happiness. Perhaps, this is the enigmatic **14th system**. If so, **how can this system best be fed?**

My answer is: ➡

**Please remember this:**  
What you put in your body **matters**.  
What you feed your soul is **essential**.



## Chapter 9

# EXERCISING TOWARD OPTIMAL FITNESS

### Removing the inactivity thorn

Modern conveniences seem to save us a lot of time. If it weren't for these, we would have to spend all that time—well, being more physically and mentally active. Inactivity has become a major contemporary dysfunction and deficiency thorn. Our Neogenic design dictates that within the limits of our DNA-determined matrix, our form will follow our functional activity. Without any doubt, inactivity is reflected in a lack of fitness, a lower Neogenic state of existence.

Lack of activity destroys the good condition of every human being,  
while movement and methodical physical exercise save it and preserve it. ~ **Plato**~

Some of the best information I've received over the years – about exercise, nutrition, living life in general – has come from women I've known -- empathetic patients, relatives, friends, acquaintances and even friendly work-out buddies. I've also learned a lot from watching women in the media — in movies, and even on TV.

One story that stuck with me for years involved an actress who appeared one morning on a television 'early show.' The famous personality doing the interview was perfectly put together: every hair on her head cemented into place, the caterpillar eyelashes perfectly glued to artfully-shaded eyelids, the designer dress and Manolo Blahnik stiletto heels rendering her a vision to behold, particularly at that early hour.

The actress, on the other hand, had shown up in sweats and tennis shoes, a bandana holding back hair that hadn't seen a brush that day and no makeup – but her smile lit up the sound stage, her ebullient energy radiated right into my kitchen. Instead of discussing her latest film, which I'm sure is why she was there, she launched into a dialogue on Central American shade-grown coffee, about how that type of production would not only save the land but improve both the coffee and the lives of the co-op farmers who grew it.

She'd been up early, she explained – on the phone, on her computer and on a running trail and thus, she went on to say, there was no time to 'dress up.' Furthermore, she added, 'dressing up' had become less and less important to her as the years went by. She spent enough time already, she said, in movie studio makeup and costume departments; the last thing she wanted to do in real life was to spend precious hours arranging herself for the benefit of somebody else. She preferred – and this she relayed with fire in her eyes – to work on her insides, stating that if she did that, took care of her body, gave it what it needed, kept the oxygen coming in and the blood moving, the outside of her being would take care of itself. She spent time on her health, she said, because she believed that healthy was beautiful and that what came straight from her good health and her caring soul and her drop-dead honesty was what people were going to care about anyway. She was a dynamo, that actress. You just had to love her.

Running is the greatest metaphor for life, because you get out of it what you put into it. ~**Oprah Winfrey**~

I remember women in my life telling me what they used to do to make themselves presentable: sleeping on curlers, ironing every last wrinkle out of a dress that was going to be wrinkled the minute one sat down ... spending fortunes on cosmetics to cover unhappy skin, to rouge pale cheeks – when that skin and those cheeks would have glowed on their own had they borne the benefit of simple exercise. What, after all, is more attractive, a great paint job or the genuine energy that comes from a happy, well-cared-for body? Not that you can't have both. But in our society, the exterior seems to have become more important than the interior. From politics to fashion, we've bought into a dog and pony show and that, my friends, is a precarious way to live. Anything on the outside can change at the drop of a hat, whereas what we are, truly, is what we own by right. It can never be taken away.

You own your body and you own the brain that directs what happens to it. It's your responsibility to be nice to this complex machine with which you've been blessed. Exercise your body and it will love you for it. Ignore it, and you will regret it.

Physical fitness is not only one of the most important keys to a healthy body; it is the basis of dynamic and creative intellectual activity. ~ **John F. Kennedy**~

The list of reasons to make exercise a part of your routine is literally endless. You look better, feel better and function better. You're livelier, less stressed and able to deal with the inevitable challenges of life on planet Earth. You're a more positive influence upon your family, friends, children and pets. Your very presence says you're happy to be alive. Your body and mind are working and so is your life. The principle benefits of exercise are healthy **Neogenic adaptations**.

### **Neogenic Adaptations**

Physical adaptations can clearly be seen, for example, in body builders. They didn't get buff by inactivity. Within the limits of your genetics, your choices and their resultant activities determine **your form** through this **epigenetic process** which I appropriately name **Neogenesis**. You will morph, as change is integral to your Neogenic design. Whether you morph into a bag of jelly, a couch potato, or something more pleasant and functional will depend on those activity choices. You can choose to be inactive and adapt into a physical form that is unfit to meet future challenges. You can choose by your thoughts and actions to become fit. It's your choice.

More importantly, your focus and resultant physical activity therefrom will result in a parallel adaptation in **your function**. A minimal level of strength, flexibility, endurance and **neurological integration** is required to perform **activities of daily living** -- simple, but necessary acts such as getting dressed, getting out of bed, playing with your cat, walking your dog, or driving a car. We do these things 'automatically' --or so it seems, although we tend to take these activities for granted. That's a mistake; for if you do nothing in excess of what's needed to perform activities of daily living, you condition your body to a dangerously low level of functioning. Higher level functioning requires ongoing brain changes of adaptation.

Functional bodily changes begin with **neurological reintegration** (brain changes) which latter reflect in somatic changes. To wit, a 12/15/2009 article in the *L.A. Times* reported NIH research that found the rate of **myopia** (nearsightedness) increased by 60% in the U.S. population in the last 30 years. "**Doctors puzzled as myopia rates soar,**" the headline reads. Myopia is a condition that allows better close vision but sacrifices distant vision. Physical changes that create this optical state are increases in either the length of one's eye or the curvature of the cornea covering the front of one's eye.

The increase in myopia is a good example of **Neogenic adaptation**. **Our thoughts and their resultant activity expressions dictate how we change physically**. We now spend more of our 'formative time' focusing on near objects. The increased use of computers, hand held video devices, books and the like bring our focus nearer. This explains the myopia epidemic.

**Validation Update 7/20/15:** A recent analysis presented in *Ophthalmology* involving 62000 people showed 47% of 25 to 29 year olds had myopia, while only 27% of those who were 55 to 59 had it!

For both form and function, you must exercise to develop and maintain a body fit to support your reasonable ambitions. We render ourselves more likely to lose function if we fail to press forward in meeting novel challenges. Exercise allows your body to Neogenically adapt into a higher state of fitness. Such a **fit state** allows you to meet future challenges with physical changes and increased energy reserves, **in excess of daily needs**, in the following **4 areas of adaptations**:

### **1) Endurance (aerobic conditioning)**

This is the 'training effect' attributed to research done by Ken Cooper MD in the 1960s. The best reflection of improved endurance is an increase in **VO<sub>2</sub> max**. This objective measurement is the maximum capacity to transport and utilize oxygen to meet activity challenges. It reflects complex body adaptations involving the following: 1) strengthening (including remodeling) and more efficient messaging and performance of somatic, respiratory and cardiac musculature, 2) increase in red blood cells that carry oxygen and 3) Improved overall circulation, a result of Neogenically stimulated formation of new blood vessels and a more efficient distribution of blood to exercise-stressed tissues.

Along with this increase in VO<sub>2</sub> max, over 'tincture of time,' you will also appreciate a tendency towards a reduction in your unnecessary body fat as your aerobic conditioning proceeds. From a preventative health perspective, I view exercise benefits to be much like money put into a bank. I call them '**health reserves**.' Health reserves become the only currency you can spend for future unanticipated health challenges.

Maintaining such endurance reserves allow you better tolerate future health challenges. If you have a large pulmonary reserve, for example, you will survive pneumonia in better shape. A robust cardiovascular reserve will make a huge difference in your survival from an unexpected heart attack. Health reserves make the difference in mortality and morbidity outcomes for any unanticipated emergency surgery or injury. There are many ways you can find yourself being pushed down a slippery slope towards death. You can more easily resist that push when you're in good shape.

### **2) Functional support tissue strengthening**

**Support tissues** are musculo-skeletal tissues, like muscles, ligaments, tendons, bones and others allowing movement. Positive longevity benefit has long been recognized with the cardiovascular fitness garnered from aerobic conditioning. However, a 9-year study recently reported in the *British Medical Journal* shows a strong correlation between muscular strength and protection from **cardiovascular disease (CVD)** as well. According to the study's lead author, Jonatan R. Ruiz, PhD, men with low muscle strength had a 60% higher risk of CVD and higher 'all cause' and cancer mortality rates.

Neogenesis includes, but is not limited to, a dynamically adaptable process for strengthening or weakening of support tissues. **Resistance** (the degree of difficulty) of an activity or motion acts as the stimulant that directs strengthening to occur in support tissues. Without increasing the resistance there is no impetus for such support tissues to gain strength.

Strengthening includes both power and flexibility as length is a component of strength. For example, how fast could a major league baseball pitcher throw a ball if he just flicked it with his wrist? Not involving the windup or the rest of his arm's length, he couldn't even reach home plate. If we lengthened the fulcrum up to the elbow, he could toss it about as far as my 9-year-old grandson. When we make the shoulder the fulcrum we see little league potential. When we add into the force equation the length of his windup and the natural forward pitching motion, we understand why he is in the 'big's.' **In this power of motion equation, length translates to strength**. So, activities and actions that preserve and extend the range of motion of joints will increase the functional strength. Activities, actions and, most importantly, **injuries** that foreshorten musculature and/or restrict the **range of motion of joints** weaken one functionally.

**Resistive strengthening exercises**, can be augmented by 'weight lifting' with free weights or with the assistance of machines. Both have merit; and in both smooth and safe motions should be encouraged. **Weight machine exercises** are generally designed to isolate certain muscle groups while stabilizing joints that those muscles act upon. Machines allow people with spinal or other joint concerns to strengthen muscles, yet protect the specific joints or other support tissues of concern. Such equipment can also help equilibrate the resistance through the entire range of motion.

**Exercising with free weights** has the advantage and risk of passing the resistance from the primary muscle groups being stressed to the other smaller, stabilizing muscles and support tissues. This risk factor must be taken into account especially as it pertains to the spine. Free weight resistive exercises can be designed to simulate more natural activities and as such can train for higher levels of sports or work-encountered challenges.

It is wise to obtain competent advice from a professional trainer when starting your resistive program. One word of caution is needed: Remain 'responsibly in charge' of your workout. If at any time during the training you feel uncomfortable in the specific manner or intensity of a activity or the amount of weight that your trainer encourages you to work with, don't do it. No one knows your body better than you. One size, including form, does not fit all. Really good trainers know this.

Do not go where your body tells you not to; this is especially significant in terms of **ballistic motions**. These sudden motions include kicking, throwing, punching, jerking or receiving weight suddenly. These resistive activities can damage linear tissues, joints and intervertebral discs. Something I've seen quite often at health spas is naïve trainers having their clients catch a heavy medicine ball while the client is doing sit-ups on a slant board. It's an easy way to herniate a disc!

Safe and proper **abdominal muscle strengthening** activities including sit-ups should be done with the hips and knees well flexed and the feet free to allow for the large hip flexor muscles (**the iliopsoas**) to remain flaccid. The motion should be smooth to avoid back injuries. If the iliopsoas muscles are allowed to do the sit-up work they pull the spine into a vulnerable arch. This improper positioning raises the hydrostatic pressures in the lumbar vertebral discs and so makes them vulnerable to becoming herniated.

Variation in strengthening activities and motion helps balance the developing musculature. This balance will offer protection against job-related repetitive stress injuries such as tendonitis, thoracic outlet syndrome, carpal tunnel syndrome and others.

You compromise strength when you lose range of motion. Injuries to the joints and support tissue that reduce length are best prevented by listening to body messages of overuse. Parents, coaches and trainers involved with young 'athletes' and those beginning an exercise program have a fiduciary responsibility not to push their charges to the point of injury.

You must similarly temper your enthusiasm to gain strength with a realistic plan to start at a safe level and progress safely and deliberately. Always listen to your body messages and adjust accordingly; Neogenesis should not be unsafely rushed.

### Transfers are fundamental to your longevity

**Transfers** are movements from a chair, bed, toilet, or a lower position of any kind to a higher position. Consider the common scenario of, "I've fallen and can't get up." Variations of such events, when unanticipated, become common life-ending issues. It's a must to give yourself adequate strength reserves in the of the 'get up' muscles to allow you to meet inevitable future challenges. The **Quadriceps (Quads)** are the largest muscles in your body and the **Gluteus (Gluts)** are second largest. They work together as the primary 'get-up' muscles involved in transfers - The quads are those muscles on the front of the leg between the knee and groin. Gluts are the muscles in the butt. **Leg presses** -- resistive exercises that mimic the act of straightening out the leg against resistance, best functionally strengthen these 'get up' muscles.

### 3) Messaging

An amazing array of healthy chemical messengers is boosted with exercise. Growth hormone, testosterone, and others rev-up Neogenesis. As **support tissues** (bone, muscle, ligaments and tendons) are stressed in resistive exercises, those tissues send out **growth cytokines** -- chemical signals that call for the release, migration, and proliferation of stem cells. These processes cause those stressed tissues to remodel into constructs that accommodate greater stress challenges. Exercise amps up the healthy FEAST appetite-suppressing cytokine **PYY** and decreases the FEAST hunger-inducing cytokine **ghrelin**. It induces **endorphins** and a balance of neurotransmitters that relieve stress and pain. Exercise further induces the vasodilator **nitrous oxide (NO)**. NO supports normal blood pressures and penile erections. When contracting, muscles release **myokines** -- muscle-derived peptides that help decrease visceral fat mass and insulin resistance, two major inflammatory factors that drive COED-S. Furthermore, research suggests that one such myokine -- **irisin** -- not only helps modulate energy balance, but also supports the **length of telomeres** -- a prognosticator of longevity.

Exercise is not simply about building muscle, folks. Exercise supports the Neogenic maintenance and growth of the brain and nervous system. Exercise increases **brain-derived neurotrophic factor**, a protein that supports existing neurons and encourages growth of new ones. As it pertains to the brain, exercising enhances 'learning.' Improved messaging includes, but is not limited to, the concept of 'exercising the brain.' Such exercise enriches autonomic, motor, sensory, emotional and cognitive neurological pathways. Facilitating all neurological pathways improves emotional responses,



memory, cognition, coordination, rhythm, balance and proprioception by optimizing body-messaging functionality. Benefits in this subtle area allow us to stay sharper and function more youthfully. In this 'clarity of thinking effect,' exercise is the natural antidote for pain, depression, stress-induced symptoms and many other **mind boggling-related ills**.

Your future physical, mental, and emotional being -- **your Neogenic self** --- is, by Neogenesis, influenced toward your **focused image**. For example, the Eastern exercise discipline of ***tai chi*** has been shown to better improve cognitive function when compared with the traditional Western package which featured typical combinations of aerobic, endurance, flexibility and strengthening exercises. The study, done by University of Arizona's Dr. Ruth E. Taylor-Piliae, conversely showed that the Western exercises resulted in comparatively better flexibility. If you analyze the difference in focus of the two disciplines, you can appreciate the power offered by the remodeling opportunities of Neogenesis.

### **Stay off the slippery slope**

Quality messaging translates directly to quality of life. It is not just about feeling better in the **All Term**, although this is a certainty. Improved messaging through exercise allows you to enjoy life to your max. It also puts you at less risk in many real life situations. This can be clearly seen in the aged. If your balance is allowed to deteriorate with disuse, you will be at a much greater risk to fall. Furthermore, lack of exercise encourages weakened bones; so if you do fall you'll be more likely to break body parts. A common scenario is a fall causing a broken hip or other bones--hospitalization--immobility--pneumonia--complications--vegetative brain state-- unnecessary death. I call this and similar exercise-preventable scenarios as ***the slippery slope***. This risky place can be avoided by 'exercising the brain.'

In your 3-pound brain, these neurological pathways, collectively known as the **connectome**, are of ultra-fine living threads which intersect at roughly a 100 trillion synapses. Each neuron receives many entry connections (**dendrites**) and sprouts out egression strands (**axons**) of malleable 'wiring'. Training the brain and nervous system on a regular basis with memory, reasoning and physical activities that enhance neurological efficiency, calmness, timing, balance, agility and cognition is essential to the retention of the skills involved. This 'use it or lose it' exercise dictum truly applies here. If neurological pathways are allowed to deteriorate, it will reflect in dullness of physical, mental and emotional functions.

Studies in both mice and humans suggest that exercise causes new cells to grow and sprout new connections in areas of the brain affected by age-related memory loss. Early Alzheimer's is especially associated with the loss of neurons in the **hippocampus**, a critical area for the formation of new memories. Researchers at the U. of Kansas lead by Robyn Honea found that less hippocampus shrinkage was evident in fit early Alzheimer patients, as compared with their unfit cohorts. Exercise helps preserve overall brain volume in people with Alzheimer's disease. Neogenesis never stops working for you if you are willing to work with it. **Update 1/25/2010:** The *Archives of Internal Medicine* reports on two studies which strongly suggest that participating in a sustained exercise program decreases mental decline in older people. In contrast, the report showed that lack of activity was associated with significant cognitive impairment, clearly evident in just 2 years. Elements of both **endurance** and **support tissue strengthening** helped protect cognition in these participants.

**Update 2/17/2011:** Kirk I. Erickson and his colleagues divided 120 sedentary older adults with normal mental function into two groups for a *National Academy of Sciences* study. The first group walked 40 minutes 3 times per week. The second began disciplined stretching and toning exercises only. After one year, MRIs showed the first group increased their hippocampus volumes by over 2%. The second group increased them by about 1.4%. Coincidentally, **brain-derived neurotrophic factor**, that endogenous chemical associated with learning and memory, increased in both groups. This volume gain is roughly equal to reversing 1-2 years of hippocampus shrinkage normally associated with aging!

As you age, I strongly advise you to avoid unnecessarily surrendering to mental, emotional and physical challenges. Staying in the game will keep you sharp. Remember, everything starts with a thought. If you are thinking about keeping your body healthy, exercising the mind is a must.

My advice is to strike out! Seize the day! Do something you've never done simply because you've never done it. What unfulfilled dream do you hold in your heart? Do you watch folks parachuting from planes and wonder if you could do it? Does your soul long to dance after years of sitting on the sidelines? Have you read article after article about yoga, knowing that you'd benefit from practicing it, but it's still on the 'to do' list? Is your bicycle dusty, the tires flat? How about those walking shoes? Are they in a closet or on your feet? Who could you be, would you be, if you let yourself be that? Learning and participating in new physical activities such as dance, yoga and other novel sports is like drinking from the fountain of youth. As you explore your under-used neurological pathways, you are energized with new horizons.

### **4) Detoxification**

Movement of all fluids within your body is critical to detoxification and fundamental for the optimal Neogenic process. Motion which does not cause pain or inflammation is beneficial in this regard. Massage, vibration, passive motion and elevation of areas that accumulate swelling -- can be beneficial in movement of body fluids that assist the detoxification and healing processes. This concept of motion explains the benefits derived from such interventions from the simple rocking chair to complex motion beds. A dear friend with a severe pneumonia, associated with a coma, survived only because her treatment included such a motion bed.

Your body is designed to move. Any form of exercise that includes at least part of the **reciprocating gait** best facilitates detox-- the most efficient emptying of the SINK, in our SINK analogy. Such activities include: sports, walking, running, cross country skiing, biking, swimming, roller skating, hiking, group aerobics, dancing and others. In our SINK analogy, such activities more efficiently empty the SINK and so decrease inflammation and protect brain and nerve cells in 2 ways:

- 1) The resultant increased motion of the cerebrospinal fluid removes toxins and neurotransmitter imbalances, allowing the brain to transmit less toxic thinking. This cools the water from the SINK's faucet as fewer 'hot-thought toxins' pour in.
- 2) Such activities also stimulate the normal bowel activity necessary to eliminate toxins via the gut. All such motion-induced mechanisms, in our SINK analogy, can be thought of as improving the detox SINK's drainage. As the SINK empties, we see it then has a greater capacity to hold toxins without inflammatory spillover. The additional SINK reserve and the resultant decreased inflammation is why we see so many health benefits from exercise. Fitness, not surprisingly, correlates with a decrease in blood markers of inflammation, including fewer white blood cells.

A decade-long study, headed by Dr. Manami Inoue of Japan's National Cancer Center, reported in the 8/15/2008 edition of *American Journal of Epidemiology* that those who are physically active have significant lower incidence rates of cancers of the stomach, colon, liver and pancreas. This makes sense to me because these organs are all associated with the bowel; exercise facilitates **peristalsis**--the normal coordinated bowel motions needed to best eliminate gut toxins.

Another exciting Danish study was referenced in the 3/19/08 issue of *JAMA*. In this study, researchers selected healthy young adults who were without any bad habits or other risk factors for the metabolic syndrome and who exercised more than two hours per week. At baseline, all had careful measurements of the visceral fat, triglycerides, BMI and markers for diabetes and inflammation. The subjects were then paid to greatly diminish their daily steps while carefully maintaining the same diet. In a mere two weeks all those parameters had significantly moved towards the dreaded metabolic syndrome! These studies show the reciprocating gait's detox power and speed for **prevention**.

A 2004 Cleveland Clinic study demonstrates the detox power of the reciprocating gait in **intervention**. Amy M. Burleson, was able to demonstrate improvement in perception of pain, depression, anxiety and aerobic capacity in patients suffering from **chronic pain syndrome**, in a mere three weeks of moderately-paced treadmill walking for only 10 minutes a day.

Scores of excellent studies show benefits from exercise in both prevention and interventions associated with various diseases. Exercise has been shown to lower the risk of most major killers. In **prevention**, exercise lowers the risk of getting heart disease, diabetes, hypertension, high cholesterol, Alzheimer's, hearing loss and most deadly cancers. As an **intervention**, exercise has been shown to improve such diverse medical problems as Parkinson's disease, insomnia, depression, erectile dysfunction, osteoporosis, fibromyalgia, chronic fatigue, gulf war syndrome, heart disease, sleep apnea and most deadly cancers. The mechanisms at work here are improved messaging and detox function. **Exercise** is one of the two most pragmatic things you can do to optimize both internal messaging and brain detox! (The second is getting **regular and adequate sleep** as discussed in chapter eleven, page 160,)

## OTHER EXERCISE PEARLS

### Can exercise help you live longer?

Statistically, age and abuse failures of one organ -- the heart -- are the most common life limiting factors for humankind. There appear to be three independent variables that determine your heart's functional longevity. First is **maximum heart rate (MHR)**, the natural decline of which appears to be irreversible and not modifiable as we age. Age diminished MHR reduces the maximum volume of blood that a heart can pump. Second is heart muscle **ischemia** -- the corrosion of blood vessels that carry blood to the heart. The third is the structure and integrity of the heart muscle itself.

Much attention has been focused on prevention and amelioration of ischemia with lifestyle, dietary and attitude changes, as well as drug and surgical interventions. It's also clear that increased blood flow to one's heart allows one to live longer. However, a Mayo Clinic study reported in the 1/21/2009 *JAMA* concluded that **diastolic dysfunction**, an echocardiogram measure of the loss of integrity of heart musculature for any reason, was related to decreased exercise capacity independent of ischemia. Endurance training has been shown to improve the diastolic function of structurally damaged hearts. It's likely such exercise induced improvements in heart function work to improve damaged heart musculature through the Neogenic healing process of **reverse heart remodeling**.

Another bottom line parameter is suggested by a study published in the 1/28/2008 issue of *Archives of Internal Medicine*. It shows that exercise buffs have DNA which reflects less signs of aging than the DNA of their sedentary twins. It appears that frequent exercise seems to have the net effect of holding the strands of DNA together longer as reflected by longer telomeres in the twin that exercised more regularly. It is well known that these 'chromosome end-caps'--the **telomeres**--are normally long in our youth and tend to shorten with each cell division as we age.

## Exercise chases away bad addictions

The cell-replacement aspect of Neogenesis allows us to pursue longevity and quality of life by identifying and eliminating unhealthy choices and addictions. Exercise accelerates the Neogenic brain changes necessary to discard bad addictions. Resolving addictions to life-damaging drugs requires detoxification as the first step to allow the brain to heal. I highly recommend that any structured addiction program get such addicts into reciprocating gait activities ASAP. Of course, if someone is physically 'wasted,' he will require professional evaluation and appropriate assistance beforehand.

As long as an addict abates the addiction, continuation of such exercises speeds the 'down regulation' of his neuronal receptors involved. In such a scenario, ongoing detox exercise is needed to allow for optimal and durable repair of the brain damage associated with many substance abuse addictions. Neogenic cell replacement will undo the 'learning' of such addiction-driven behaviors as well. This tack allows the addict's brain to recover and learn new, healthier behaviors. Development of a healthy exercise addiction will improve long term outcomes for this increasingly common healthcare challenge.

A March 15, 2007 review published in the journal *Addiction*, looked at 12 studies on cigarette cravings and exercise. The study, headed by Adrian Taylor of the School of Sport and Health Sciences at Britain's University of Exeter, concluded that even as little as five minutes of brisk walking helped smokers break their nicotine habits. I love the quote Doctor Taylor gave to the *AP*. He stated, "If a drug revealed the same effects, it would immediately be marketed as a valuable aid to help people quit smoking or cut down." I have long believed exercise to be panacea-like; yet, unlike drugs tailored to treat addiction, appropriate exercise has little downside.

## Getting started

How do you start to include a regular dose of this great preventative medicine? The answer--plan ahead and prioritize it. Getting into a routine that fits your work schedule and other constraints is key #1; your exercise program must fit into your life. Tailor a program to meet your interests and limits and make it enjoyable. A great start is to gradually increase the number of steps you take in your life's daily routine. Use the stairs more and more--the elevator less and less. Key # 2 is: hook-up with like-minded workout buddies ASAP. This fosters fun, motivation, accountability and faster achievements.

## Combining adaptation elements---the more the better

Combining fun with function in reciprocating gait exercise activities is a great way to reinforce a healthy exercise addiction. **Team activities** such as soccer, basketball, group aerobics and many others include the combination of competitive fun with function. They involve more variation in movement and recruit more muscles acting in complex synergy. These activities refresh and reinforce more neurological pathways. Danish scientists have shown that soccer gets participants in better shape, reduces body fat quicker and more rapidly increases muscle mass, as compared with merely jogging. The 'others in the group' competition element seems to push participants forward more quickly.

**Structured and disciplined exercises** that combine various adaptation elements of exercise are especially beneficial. Yoga, Tai chi and Karate incorporate at least two of the four elements mentioned and require minimal equipment or space. As such, they are both time efficient and inexpensive and can make rapid 'deposits' into your 'health bank account.' The ability to **group exercise** with these or other disciplines usually adds to the experience. Whenever two or more people share harmonious energy in exercise it serves to excite and reinforce. Families and friends can gain healthy bonding as well as exercise benefits by exercising as a group. I think that, for most, the magic number is two, especially if the two are like-minded and share #1Pie. Having a compatible workout buddy pays big health dividends quickly.

## How much exercise is beneficial?

Based on analysis of many recent studies, the American College of Sports Medicine (ACSM) and the American Heart Association (AHA) updated their exercise recommendations in August 2007. The expert's consensus is that, at a minimum, all healthy adults 18 years or older should engage in moderate-intensity endurance activity for 30 minutes or more for 5 days per week or vigorous-intensity endurance activity for 20 minutes or more for 3 days per week. In addition, they advise every adult to engage in activity that maintains or improves muscular strength on at least 2 days per week. The joint ACSM/AHA panel also concluded: "A dose-response relationship has been observed between physical activity and health. Exceeding the minimum recommended amounts of physical activity may therefore further improve personal fitness, decrease the risk of developing chronic diseases and disabilities and help prevent unhealthy weight gain."

**Update 8/15/2011:** These guidelines still hold. In addition, a Taiwan study published online in *Lancet* today shows as little as 15 minutes of daily moderate-exertion exercise associates with a life expectancy benefit of 3 years. Other studies show that regular exercise can increase life expectancy by an average of 7 years when compared to a sedentary lifestyle. **Update 7/29/15:** For those who spend long periods of time sitting, a University of Utah study shows that getting up out of your chair for just 2 minutes every hour for light activity, like walking, is associated with a 33% reduction in mortality rate.

On the flip side of the question, how much is too much? There does appear to be an 'optimal dose' of exercise that may differ from one person to another. Exceeding that optimum seems to gain less and less as the dose is increased and it further increases overuse injuries. **Supporting Update 2/5/15:** As part of the Copenhagen City Heart Study published in the *Journal of the American College of Cardiology*, 1,098 healthy joggers and 3,950 healthy sedentary, yet otherwise well matched, individuals were prospectively followed beginning in 2001. The results -- 1 to 2.4 hour of jogging per week at a slow or moderate pace was associated with the lowest mortality. Surprisingly though, they found that **strenuous joggers** (those who jogged much faster or for much longer) had a mortality rate no better than the sedentary group!

Two additional caveats are: 1) **Extreme endurance athletes** run a greater risk for **atrial fibrillation**, a dangerous heart arrhythmia, as well as heart calcifications and scarring. People over 60 should exercise regularly, but should not push their limits in either duration or intensity in aerobic activities. 2) Exercise excesses associate too with the dangerously high blood pressure condition of pregnancy -- **preeclampsia**. I advise pregnant women to remain active and regularly exercise at a moderate intensity, but limit daily workouts to no more than 30 minutes. Those compelled to exercise more vigorously should closely monitor for rising blood pressure and fluid retention, as these are early signs of preeclampsia.

### Optimal periodicity of workouts

Certainly the muscle you exercise in an attempt to increase its size will, by Neogenesis, hypertrophy if the resistance to muscle contraction is gradually increased. Body builders will give you all kinds of theories as to how to time your workouts for best results. It is apparent that, in the process of building stronger support tissue constructs, existing ones are stressed. To avoid the weakening and breakdown of an entire structural unit a '**recovery time**' is necessary.

Performance is reflective of the necessity for this 'recovery time.' For example, this can be well demonstrated in the performance of baseball pitchers. No matter how good the pitcher may be his performances will be adversely affected if he does not rest after significant output efforts. Pitching coaches use this acquired wisdom to schedule rotations that allow each pitcher to rest for several days between each major outing; this keeps each pitcher sharp.

Listen to your body's stress-induced Neogenic messages. They will define the best periodicity for strengthening workouts. I'm in a 'maintain functionality mode' -- not so interested in building hulking muscles. My messages tell me to work my musculo-skeletal tissues with moderate resistance work-outs every two days. Thus so, I alternate upper body exercises done on odd days with lower body exercises done on even days. Do your reciprocating gait types of endurance/detox exercises, such as walking, every day because toxins are entering your SINK nonstop. Like the 'global highway' brain repairs described on page 76 herein, all tissue repairs/reconstructions proceed best at times of 'low traffic flow' (rest).



**Workout pains** are messages we need to listen to. When doing resistive exercises, don't mute such messages by overloading or overworking support tissues. **Muscle tears** heal poorly without surgery due to their contractive nature (**tone**). Because of its tone, when muscle tears, its ends foreshorten like a pleated stage curtain being draw open. The torn ends generally separate with such a gap that it makes Neogenic repair difficult unless the ends are sutured back together. **Sudden localized muscle pain** experienced with activity or exercise is a forewarning of such injuries.

When the pain volume goes up, you should interpret the warning signs as traffic signs that advise you to slow down, yield, stop, or change direction. You'd be ill-advised to drive your body with any less prudence than you would drive your car. I do not aspire to the '**no pain-no gain**' theory of exercise, especially for folks over 50 years of age. As we age, our tissues become more vulnerable to forces of physical stress involved in resistive adaptations. Such exercise-related stress injuries also heal much slower and with less integrity in the elderly.

Similarly, if you experience any unusual symptoms during vigorous exercise including excessive fatigue, dizziness, difficulty breathing, unusual pain or sudden profuse sweating, heed these signs and back off or stop. If symptoms persist, check with your physician, as these may be signs of serious cardiovascular or pulmonary dysfunction.

### Healthy weight loss exercise tips

No diet alone works to promote good health and weight loss in the **All Term**. The hypothalamus and brain stem are at the center of the FEAST system. Many people challenged with obesity are toxic in these key parts of the brain, which are more vulnerable to toxins by virtue of their functions. They direct many automatic bodily functions, and do so by sending and receiving relevant chemical messages. This necessitates more permeability of their protective barriers to allow quick entry and exit of chemical signals. This makes them, similarly, more vulnerable to exogenously-produced toxins.

If the satiety neurons or FEAST messengers are injured by such obesogenic toxins, the 'I'm full' message is abated by a louder 'eat more I'm starving' message. Repairing the brain should always come first. Exercise detoxifies the brain and improves healthy FEAST messaging. The brain can and will repair through Neogenesis; fix it first! Don't go for or expect rapid weight loss. Get in shape first. Simultaneously apply all of the seven wellness principles herein and durable weight loss and a better body shape will Neogenically result in 'tincture of time.'

For healthy weight loss, first detoxify. Reciprocate! Although more is better, even 15 minutes of vigorous walking 5 times weekly will have beneficial effects. This applies to all parameters of the metabolic syndrome including obesity, high blood pressure, diabetes and abnormal blood lipids. To maintain the benefit you must maintain a healthy detoxifying level. Use objective measures of time and intensity. A simple watch or inexpensive **pedometer** are helpful biofeedback tools. More elaborate, but totally optional, devices can measure your pulse and blood pressure in response to your endurance exercises. These encourage you to push your physiologic limits with more intense workouts, in a safer manner.

Muscle-strengthening helps you lose weight because muscles burn calories even when they appear to be at rest. By increasing your muscle mass you also lower your risk for diabetes. For weight loss and toning, train with resistive exercises which involve a balance of muscle groups, with special emphasis on large muscle groups. The largest are the 'quads' (front thigh) and the 'gluts' (butt). Work these groups especially hard to most easily trade fat for muscle.

Healthy weight loss is a slow process. Don't be deceived by the promises of quick fixes that compromise your health. Remember that 'tincture of time' is a key element in Neogenesis. Be patient and persistent!

### Where and when should you exercise

To best facilitate detoxification, aerobics are best done in an environment that is low in air pollution. During vigorous aerobic exercise we **ventilate** (exchange fresh air for stale air through the lungs with breathing) up to 20 times as much air as we do while at rest. Aerobics done in polluted air is simply counter-productive to the detoxification benefit of the aerobic activity. Clean air becomes a critical determinant as to whether you are removing from your body, through this increased ventilation, more toxins than you are taking in from a polluted air environment.

This was a concern for physicians associated with the 2008 U.S. Olympic team. China's air quality measurements in the months prior to the Beijing Olympics were 3 to 12 times the maximum deemed safe by the *World Health Organization*. David Martin, a respiratory expert working with U.S. marathoners, said this about Beijing's air: "It is like feeding an athlete poison." China used extreme measures to improve air quality immediately prior to its big games. China's heroic short-term efforts temporarily rendered greatly improved air quality; this demonstration offers hope for our planet's pollution problem!

At [airnow.gov/](http://airnow.gov/) you can check daily pollution levels in your area. The best aerobics venue is usually outdoors. Exercising in outdoor areas that are high in soot or diesel exhaust, however, is especially dangerous for individuals with heart and respiratory issues. Obviously, industrial areas and areas near major streets, freeways and other polluted spots contain air that is best avoided. Generally, early morning and late evening are best, with the proviso that air polluted by fireplace smoke is also best avoided. Similarly, if your gym smells of chemicals or doesn't have good air exchange, you are better off doing your aerobics elsewhere. **Adherence** to any exercise program is best when exercise is performed in one's own home. In chapter 10 you will find helpful info on how to make that most important venue -- your home --more nontoxic.

### Disability prevention tips

First and foremost, **avoid injury**. Before starting any serious exercise program, have your doctor clear you medically. Discuss all issues of concern and ensure that the correct exercise prescription is written. Consult with a competent personal trainer or exercise advisor. Discuss your physical limitations, goals and concerns. It is important that the exercises fit the needs of the individual. Learn how to safely use exercise equipment.

Incorporating strengthening exercises that use the quads and gluts as a unit will avoid future disabilities in transfers. Transfers are such activities as getting out of a chair, bed, and off the toilet. This becomes an important quality of life issue for the elderly or physically challenged. It's important to have reserves of strength in this investment team!



Stabilized exercises that smoothly increase the G (gravity) forces on **weight-bearing joints** (spine, hips, knees, ankles and feet) will mitigate **age-related osteoporosis**. Fractures from osteoporosis are a major lead-in to disability and death.

**Chondromalacia patella** is a common knee problem that most often occurs when girls in their teens or perimenopausal women start or intensify a fitness program. The knee is really two joints. The weight bearing joint is the **tibia-femur joint**; the second is the **femur-patellar joint**. The later joint is the problem here. The **patella** (knee cap) is shaped like an inverted pyramid, the tip of which slides along in a groove in the femur as the knee bends. The tip of the patella is subject to micro-fractures, and when so exercise-encouraged, sets up for an inflammatory reaction. Women are more vulnerable to this because their bones are generally softer and because their hips are wider. Wider hips create a 'bowstring force' on the patella if the **medial quad** (that portion of the quadriceps group that lies closest to the midline or inner thigh) is weak.

Chondromalacia patella can be mitigated by modifying your quad (leg extension) exercises. Instead of adding resistance deep in the bending, just use weight in the zero (full extension) to 45 degrees of flexion range. This attenuated range of motion workout of the quadriceps allows for strengthening of the medial 'quad' muscle without driving the tip of the patella so hard against the lateral side of the groove. Strengthening the medial quads counters the damaging 'bowstring forces.'

### Foot pain tips

One of the most common impediments to getting patients into a beneficial reciprocating gait program is foot pain. It may be experienced either prior to or when starting an exercise program. This is especially true to the one group that will benefit the most from such a program -- the diabetics. If you have diabetes, your significant other should inspect your feet frequently for suspicious skin changes. At each doctor visit, take off your shoes to allow a quick inspection of your feet.

To help preserve the **fat padding on the bottom of your feet** use well-fitted shock-absorbing footwear when doing high impact exercises. Loss of this protective fat sets off a chain of foot pathology. Properly fitting shoes and/or orthotic inserts can help prevent and mitigate foot injuries associated with such activities as hiking and jumping. **Generic arch supports** are inexpensive and are well-advised for people when they start a vigorous program in their later years. On the flip side, without Neogenic stimulation (mechanical stress) support tissues thin and becomes more vulnerable to strain; therefore, don't use such supports at times when your activities carry little risk of injury. Go barefoot whenever appropriate.

Selecting walking/running surfaces that cushion, such as grass or beach sand, lessen foot injury risk. Elders, diabetics and the obese also may need to use low impact machines, such as the elliptical type, to mitigate foot injury forces if their fat pads are thin or if higher impact activities cause discomfort. Such stress reduction measures and machines also diminish aggravation of existing disorders and injuries to **weight-bearing joints** (foot, ankle, knee, hip, vertebral).

Avoid **ugly and painful foot deformities** by not making a habit of wearing high heels or shoes that are too narrow. This is a common scenario. Fixing these deformities with surgical interventions is painful, healing is slow and rarely is full function restored. I've seen so many women who have essentially snookered themselves in later life with this bad habit.

### Disability rehabilitation tips

It is the **physically challenged** who are most vulnerable to COED-S. These folks have the most to gain from exercise. Yet, it is this same group that finds most difficulty getting into exercise programs. It's incumbent upon us to encourage and facilitate these people in such endeavors. Kindness can pay big dividends here. COED-S is a tax drainer that can be eased with exercise programs directed at those in greatest need.

The human body is mostly made up of fluids. Exercise enhances the diffusion of molecules within all bodily fluids. This enhancement of diffusion explains both **the prevention and the healing benefits of exercise**. All natural body motions augment diffusion-dependent processes. Exercise-enhanced motions speed the entry of nutrients and egress of toxins across membranes of all cells of your body. Joint cartilage and intervertebral discs contain no heart-propelled blood flowing through them. Such uniquely vulnerable tissues are, therefore, especially dependent upon adequate exercise for the optimal propulsion of molecules into and out of these tissues. Movement promotes both sustenance and healing here.

**Rehabilitation exercises** involve 2 types of motions. First, **passive motions** are caused by external forces such as gravity, someone else's efforts, such as a physical therapist's, or those of a machine. Passive motions serve 2 purposes. They facilitate diffusion and preserve the range of motion of joints. Passive motions are most often less stressful and are typically used early on in rehab. Second, **active motions** are motions initiated on an injured joint or tissue by contraction of musculature that moves it. The injured person's muscles actively move the healing tissues. Such active motions exerted on healing tissues must be guided by pain. Inordinate pain is commonly a message of Neogenic repair disruption.

Also, for rehab of injured joints, actions that **distract** (pull apart the joint) in a pumping motion are therapeutic in facilitating diffusion. Actions that **compress** (push together the joint) also increase diffusion, but must be brought in carefully as the load-bearing capacity of the repairing tissues allow. This is why the buoyancy of water is so often beneficial. Buoyancy allows you to reduce the joint's load, while still allowing for the vigorous pumping motions which facilitate Neogenic repairs. This principle makes **water aerobics** generally a good choice for the growing number of people who are challenged with **weight-bearing joint disabilities** such as arthritis or degenerative disk disease.

**Swimming** is the preferred aerobic exercise for people with weight-bearing joint challenges. The buoying effect of water minimizes vertical stresses on these weakened or inflamed joints, while allowing motion. Motion serves to enrich inflow of healing nutrients and outflow of toxins. **Joint Cartilage** (the surface material lining joints) as well as the intervertebral discs contain no blood vessels. They are commonly injured. For repair of such damaged tissues, healing substrates best come in and crumbling, damaged constructs and toxins are best removed through such diffusion-enhancing exercises.

In **low back pathology**, backstroke swimming is preferred over the conventional crawl stroke. The backstroke tightens up stomach muscles because the swimmer's neck naturally flexes to prevent snow-plowing of water over his face. This results in abdominal muscle tightening. Such belly-muscle strengthening improves support of the spine. The arch of the swimmer's lumbar curvature is also flattened in the backstroke. The flatter curvature diminishes pressure on the discs as well as the lumbar nerve roots. This eases pain typically related to conditions which cause these nerves to be 'pinched.'

For those with **chronic pulmonary disease** and **asthma**, swimming is generally a good aerobic exercise option, as the increased humidity of the air just above the water helps their breathing. Alternating types of swim strokes encourages more segments of the lung to fully open up and stay open. The conventional crawl swimming stroke has the advantage of increasing the back pressure in expiring air while underwater. This encourages more filling of the lung's tiny air exchange pockets called **alveoli**. The twisting motion of the trunk in swimming facilitates the opening of more alveoli. These factors also assist in '**pulmonary toiletry**' (the beneficial expulsion of bronchial mucous secretions).

For **cardiac rehab**, the latest study shows that **interval training** (varying the intensity during an aerobic workout) works better than exercising at a constant level. Reported in the American Heart Journal in 2009, the study was done by Dr. Trine T. Moholdt. It showed that interval-trained rehab patients significantly improved their VO<sub>2</sub> max and quality of life over their constant-level matched cohorts when all other parameters, such as time and distance, were similar.

**Let's encourage our children to 'take the steps' needed to make the entire family fit.**

"Obesity is clearly one of the most serious threats to our children's futures." ~ **Michelle Obama**~

**Update 2/9/2010:** Today our first lady launched her **Childhood Obesity Initiative**. This is a multi-faceted attack against childhood obesity and its health consequences. Kudos! One key element will need to focus on getting our children to exercise. The childhood obesity epidemic is a serious national issue. Inactivity is one of many 'thorny' parts of the childhood diabetes and obesity epidemics. This trend for inactivity begs for reversal. I encourage parents to teach their children about exercise by working out with them. Regular activities such as running with the dogs, walking, hiking, biking, jump roping, dancing, basketball, soccer, and the like can involve all family members at a pace to get their hearts romping. Don't just explain to your children the health benefits of exercise; teach by example! Mix it up with them and have fun.

A 2010 CDC survey found that only 17% of high school students are physically active. It found that most kids lack access, opportunity and encouragement to exercise. Kids nowadays don't even get the exercise associated with walking or riding their bikes to school. A study published in *August 2007 Journal of Preventative Medicine* found that less than half the 9 to 15 year-old students walked or rode their bike a mere 1 day per week to school in 2004. This is compared to 90% that did so in 1969. Walking and bike riding detoxify and help train the brain. It would take a child less than 15 minutes to walk a mile or ride his bike 3 miles. If done regularly, walking or riding one's bike to school would induce healthy alertness chemistry in that child's brain. Upon arrival to school, that child's naturally juiced-up brain would be more ready to focus and learn. That child would less likely be factitiously labeled **ADD or ADHD** and be placed on drugs -- drugs that induce similar but artificially juiced-up brain chemistry. I don't think it's a mere coincidence that the statistics for these disorders over the same 38 year timeframe show a clear inverse relationship to exercise/activity.

Exercise builds confidence in children. It strengthens more than just their physical bodies. Youngsters are especially attracted to '**exergaming**' equipment now featured in some spas. These are interactive games that encourage kids and adults alike to vigorously move their bodies while on simulated skates, snowboards, surfboards and the like in reaction to interactive programmed video projections. Again, this type of activity is a combination of having a great time 'training the brain,' while incorporating elements of all the four Neogenic adaptation drivers of exercise. It is a great replacement for their interactive predecessors that challenged the gamers with movements of their thumbs only. Once comfortably lured into the spa venue, youngsters get hooked into the entire gig and a healthy exercise addiction can more easily be born.

"We are involved in youth testing internationally. We want to try to prove without shadow of doubt the relationship between physical fitness and health, not just physical fitness and ability to perform." ~**Kenneth H. Cooper M.D.** ~

**Bottom-line: Physical inactivity is a serious deficiency and dysfunction thorn. Intelligent exercise can remove it.**

I hope that I've helped you appreciate the connection of the increasingly common inactivity/dysfunction thorn to **COED-S**. By reading the next chapter, I believe you will also appreciate my unique perspective about environmentally-related toxic chemical thorns and the high points of what you can do to avoid them. By applying and spreading its message of wellness, you will greatly lessen the risk for yourself and others you care about of becoming a COED-S victim.

## Chapter 10

# LEARNING ABOUT NONTOXIC LIVING

Most will agree we are living in the 'information age.' From a health and wellness standpoint it's imperative that you realize that you are living in the 'toxic age.' In this chapter we focus on the **chemical toxic thorns**.

"The first major challenge in treating chemical sensitivities is to change the emphasis from drug treatment to prevention. Avoidance is the key." ~  
**Doris J. Rapp MD** ~ environmental medicine expert ~ [www.drrapp.com](http://www.drrapp.com) ~

### IGNORANCE AND GREED ARE THE ENEMIES AND THEY ARE POWERFUL

What would our world be like without the things that do us in? Those 'things' are the ones we choose, along with the ones we probably wouldn't choose if we knew of their danger. I could write an essay on what the future might hold, but then this isn't a science fiction novel. I can go back in time, though, and talk about the world of our early ancestor acquaintances from the Mental Mastery chapter, Groag and Uunga.

Let's face it. In any era of human existence there was always something out there to get you, something that wished to do you in. Groag and Uunga battled Ice Age environments and scary creatures and bogs and mercy knows what else that wished to do them in. A harsh time it was, but simpler, even innocent, in its way. At any rate, they made the best of it.

What modern folks have done is to continue to find new and exemplary ways to share misery globally. Groag and Uunga couldn't even make such choices but we can, and do. We share the good and the beautiful, certainly - we're blessed from time out of mind with Earthly wonders. Yet, at this time in the world, we also share that which is making people very sick. Millions and millions of people are ill with an astonishing array of maladies generated from toxic overloads that have come hand in hand with over-zealous technology, expanding off the cuff of commerce and, of course, ongoing greed. On the one hand, on various levels, it's working. On the other hand, our humanity, our humanness as regards the Earth and each other, lags far behind. A whole lot of humanity isn't feeling very good.

Within the global grasp for business, money and power are the goals of those who short-change the consumer; indeed, often there are those who care so little about consumers that they annihilate them. If companies, fearfully driven by their stock prices, are producing energy and don't care that in the process they produce pollution toxins, you take in the fumes and add them to your body's stash of things that should not be there. If the energy of your day includes bad vibes from a #2 Pie eater's agenda, you may add them to your body. If you eat genetically-altered food or food full of pesticides and herbicides, you take that into your body. And when the body's had it, when the overload from pollution, food toxins and toxic energies cause your body to max out, you become a statistic. **Greed is the enemy and it is powerful!**

"You can have a sound economy and a good economy and also protect the environment at the same time." ~**Arnold Schwarzenegger** ~ 38th Governor of California~

Meanwhile, the polluters who didn't know or want to know about putting poisons in our air, the negative person with dark thoughts who loved passing them on and the grower who put the chemicals in your peaches for profit carry on, consciously and unconsciously. It's a circle. It goes round and round like a snake biting its tail and the epidemics get bigger and the pandemics become manifest and yet we ignore the signs. We even bury the signs so they can't be seen. In our ignorance, we support the toxic train that runs us over. **Ignorance is the enemy, and it is powerful!**

If we choose what is brought into our lives without consideration as to its actual value and its integrity (Is it Safe, Effective, Easy, Kind), we precipitate a chain of events, a trickle-down phenomenon that can and does effect every aspect of living; we pay dearly for that. But, if we SEEK for ourselves what renders our own lives nontoxic, we contribute to a nontoxic world, a world where we inspire our brothers and sisters to enjoy a happy and healthy existence. Every single positive choice or change will make a difference.

Bottom line, we're all part of this planet. It is one planet and we're on it together and we affect each other profoundly. We are connected, for better and for worse. Every choice we make affects everyone and everything else. Life isn't just our personal game, although some live like it is. Everyone is in the game.

"We have not inherited the Earth from our fathers. We are borrowing it from our children." ~**Native American saying echoed by Jack Webb and Johnny Carson**~

### Nontoxic living -- get control of your SINK's faucet

On a biochemical level, the **Life Dynamix wellness strategy** promotes normal physiology by the elimination of toxic exposures from both one's external environment and one's internal milieu. Chemical toxins that result from these exposures simply contaminate one's 'Neogenic honey.' Avoidance of toxins becomes paramount for optimal growth and healing to occur through the natural production of 'the good honey.'

## Toxins of our choice vs. Toxins not of our choice

In 1970 I joined the US Air Force, partly as a patriotic gesture but, primarily because I had mortgaged two years of my life to get through med school. After training as a flight surgeon and being assigned to a base, I was 'elected' to give the mandatory drug lecture to the base personnel. The venue was the base movie theater, the only place large enough to hold all those who were not yet so indoctrinated. The lecture's necessity was related to the fact that many service men came back from Vietnam with life-altering drug addictions that they did not have when they started their tours of duty.

The lecture was already scripted for me. I could have just read it, but the pretense of ad lib would give the lecture more credence and please the 'higher ups.' The script directed me to talk about the detriments of marijuana, cocaine, LSD and a couple other life-damaging drugs about which I knew very little. So, I conscientiously looked into the issue.

One of the government-sponsored studies, alluded to in the script, concluded that marijuana use was certain to result in birth defects because it caused up to 40% of the chromosomes to become 'deformed.' Feeling totally naïve in this area, I searched for more information. I found that the use of aspirin tested in similar circumstances showed a 60-80% of similar chromosome deformities. I believe this was the first time in probably five years of cramming material into my brain that I started to think for myself. I started to ask myself such rebellious questions as: Who am I? What is my purpose here? Who is pulling my strings? I became an instant skeptic! It was one thing to rote learn such a prolific amount of loosely connected 'facts' in my training to become a doctor. Now I was supposed to give sage advice to the masses and nothing seemed black and white. I took it seriously and studied the facts.

My plan became to simply state those facts as I honestly viewed them from the unbiased research I did in preparation. Knowing that I was about to deviate from the 'official' indoctrination line (the script), I was already intimidated when I meekly came on stage. After taking a deep breath to relax, I started coughing. At least half of the attendees were smoking cigarettes and the smoke was coming right up to my podium. I took a look at the less-than-interested audience. The truth hit me like a brick. I thanked God; with this insight I now had confidence. As a good soldier should do his duty, I seriously discussed all the nasty life-destroying drugs the base command wanted me talk about -- all the finer points.

Afterwards, I opened it up to discussion. I asked them to tell me what were the two drugs 'of their choice' that posed the most serious threat to their health. Which two were more of a threat than all others combined? Some brave souls in the audience stood up to shout combinations of the drugs that I'd just discussed. I had the group vote by a show of hands. After the poll was taken, I confidently told them the facts about smoking cigarettes and drinking alcohol. Neither was included in the 'official script.' All went silent and many heads dropped forward as I gave them my **'higher duty script.'**

**#1 Tobacco smoking** was, without doubt, the statistically proven worst health hazard an American could choose in 1971. Nothing has changed since, despite millions of premature deaths from heart attacks, strokes, lung and bladder cancer, emphysema and other tobacco smoking-caused maladies. Billions of dollars of punitive damage payments enriched a number of plaintiff lawyers, yet left family members' heartaches unhealed. Nothing has changed; cigarettes are still king of the killers. Tobacco products cause more premature death and disability than any other lifestyle choice we make.

**#2 Excessive Alcohol drinking** was, statistically, the #2 deadliest, truly freewill, choice anyone in my audience could reasonably make. Both toxins could easily be purchased at the base 'clubs' and PX at a discount; both were encouraged socially. After my lecture my superiors said nothing; they just looked grim. Needless to say, I was not asked to give further drug lectures to the troops. I have reason to believe the 'official canned script' prevailed thereafter. **Update 6/7/16:** the USA TODAY headlines read, "U.S Navy bans alcohol in Japan after crime spree." Are they finally getting my message?

### The Medicinal alcohol script

The current 'canned script' for doctor-to-patient advice is similarly-derived. It is: "one drink of alcohol a day for women and two drinks a day for men is advised to be healthy and live longer." This advice has been parroted so many times that it's almost 'scripture' now. Likely-flawed (\*see reference below) studies which support this advice do not compare alcohol with wellness strategies advised in this book. To wit, instead of small doses of alcohol, you can lower your LDL and blood pressure with a Mediterranean diet that substitutes a non-alcoholic drink for alcohol. In doing so, you will live longer and healthier, stay sober, lessen your risk for many cancers and, most importantly, prevent unnecessary damage to your brain by the most common neurotoxin we freely choose -- alcohol. \* <http://dx.doi.org/10.15288/jsad.2016.77.185>

Such now-sanctioned advice, when given by doctors, validates many who are already excessively drinking alcohol. Sardonicly, I ask, "When should we begin this intervention?" Like Diabetes type 2, we now commonly see lipid abnormalities in children 6 to 8 years old. Should we advise their parents to start dosing those kids with alcohol? We won't need much effort. Despite the youthful brain's increased vulnerability, we see an ongoing increased alcohol use in youngsters. The 2009 *Partnership for a Drug Free America* survey showed that, in high school students, a "yes" answer to the question "Did you drink alcohol in the last 30 days?" rose to 39%, a rise of 11% over the 2008 survey.

Alcohol is the # 1 brain-killing chemical that people, in aggregate, take into their bodies by choice. A study in the October 2008 issue of the *Archives of Neurology* by Carol Ann Paul, et al., confirms that **alcohol causes the brain to shrink.** The more alcohol one drinks, the faster one's brain will wither. Your brain is precious, as are the brains of your loved ones.

Children, especially, mimic their role models. What kind of message does your drinking send to them? Expand your focus to the 'big picture.' Like the greater-societal benefit from vaccinations, known as **heard immunity**, your decision not to imbibe may benefit many others. Do not buy into this overly promoted script. **Here are the facts:**

The brain typically does not develop full blood-brain barrier protection until one's mid 20's; that protection weakens after 65 years of age. A study of 6257 Australian twins published 9/19/2009 in *Alcoholism: Clinical & Experimental Research* suggests that early alcohol use correlates to later life development of alcohol dependence. It seems to cause changes in the developing brain that epigenetically increase the expression of alcohol-dependency-related genes. This likely explains the high alcoholism rates in the USSR, where youngsters typically are socially encouraged to imbibe. **Sad Update:** The 2013 *National Survey on Drug Use and Health* revealed that 14% of 12- to 20-year-olds, in the USA, were binge-drinkers.

Encouraging others to start drinking booze, or drinking alcohol oneself, must be weighed against the health and social implications. **Look for the facts.** The National Epidemiologic Survey on Alcohol and Related Conditions tells us that about 16 million individuals in the United States are alcohol dependent. Alcohol is also a carcinogen! *The 2014 World Cancer Report* links its consumption to increased incidence of cancers of the breast, mouth, throat, larynx, esophagus, rectum, liver and pancreas. A Japanese study reported in the July 10, 2008, issue of *Stroke*, relates the very common downside. It found that the habit of drinking 4 or more alcoholic beverages daily increases the risk of stroke death by 50% for men. For women that same habit doubles their risk for stroke death and quadruples their risk for coronary death.

**Discover the facts.** •A 2014 CDC report shows excessive drinking causes 1 in 10 deaths among working-age adults. The CDC also says that about 88,000 Americans die each year from alcohol-related causes. Alcohol is the #1 gateway drug to incarceration. It is the #1 substance involved in serious family and interpersonal violence, and a major cause of workplace accidents. Despite the heroic efforts of *Mothers Against Drunk Driving* and the improved safety features in vehicles, alcohol still causes auto accident deaths in huge numbers. Children tend to imitate their parents. According to the **International Institute for Alcohol Awareness** (the IIAA is a part of the NIH), 7293 drivers between the ages of 16 and 20 died in alcohol-related accidents in 2005. Check out the IIAA web site for many more alcohol-related facts.

If you think that red wine is an exception, **think** about this. Several studies show a link between alcohol and breast cancer. A Sept. 2007 report to the European Cancer Organization relates that a retrospective study of over 70,000 women showed that those who imbibed 1 to 2 drinks daily increased their risk for breast cancer by 10% over those who drank less than one glass per day. Women who drank more than 3 drinks per day increased their risk by 30%. Another study reported in the 3/4/2009 *Journal of the National Cancer Institute* looked at 1.3 million British women. Lead author Naomi Allen concluded that 5% of all cancers and 11% of all breast cancer is due to low to moderate alcohol consumption. Both studies showed equal cancer risk for all alcohol types--wine, beer and the hard stuff. **Make a better choice for yourself!**

**Update 11/1/2010:** *Lancet* released a study that compared the major abused drugs, in both degree of addictiveness and societal impact. Alcohol outranked them all! In excess, alcohol damages nearly all bodily systems, causes higher death rates, results in more incarcerations, destroys more families and claims more totally innocent victims. **Update 1/17/2012:** With respect to alcohol-related birth defects and growth deficiencies, a large study in *Alcoholism: Clinical & Experimental Research* confirms that the only safe amount of alcohol use by an expectant mother is none! **Deal with it now!**

Often touted evidence does indicate that very light drinking, done on a daily basis, significantly reduces the risk of coronary heart disease. Such evidence shows merit with small amounts of alcohol, from these narrowed perspectives, because of other common toxic **volatile organic chemicals (VOCs)**. Alcohol induces within our cells specific enzymes that accelerate the breakdown of these now ubiquitous and harmful pollution-related VOCs. **In very small amounts\*\*\*** alcohol is an antidote for many of the ubiquitous environmental toxins which adversely affect one's cardiovascular health.

**\*\*\*Validation update 4/12/18:** A *Lancet* study of almost 600,000 people internationally and published today shows **no health benefit with alcohol intake at any dose of more than one small drink daily for either a man or a woman!**

Our bodies, intimately familiar with the alcohol poison, have genetically adapted to meet its inherent toxic challenges. Alcohol has been a bad habit of humans for thousands of years. There is evidence of a wine industry along the banks of the Nile over 5000 years ago. Over this timeframe, our bodies have come to recognize its danger and have adapted metabolically to treat it as the threat it is. If not for the now unprecedented environmental pollution challenge, alcohol usage would reflect no health benefit. It makes much more sense that we direct our efforts to reduce chemical pollution in our environment rather than to exalt the alcohol evil. We must take out the thorns! We desperately need public awareness and laws to limit the manufacture and dissemination of these now-ubiquitous pollution-related toxins.

Of the hundreds of pollution-related VOCs which share our now 'overly congested' aldehyde detox pathways, the most common is **formaldehyde**. It is essentially everywhere. Billions of tons of this carcinogen and neurotoxin are produced and put into products each year. Much of that is released into our living spaces, and ultimately breathed into our bodies. Most products that are saturated with it are made in China. Chinese companies don't face the same liability for their products as do American producers. I've been told these Chinese wood products are even exempt from the need for a **Material Safety Data Sheet**. This is a 'favored trading partner' snafu that needs to be rectified for the good of both parties.



## Licensed to kill brain cells

In the summer of 2006, I escaped the heat of Phoenix to write this book. While I was gone, I had my 30-year-old kitchen cabinets refurnished with new surfaces, drawers and shelves. My wife told Neil, the licensed cabinet contractor with 18 years of experience, that I wanted only solid wood products and no toxic glues or formaldehyde materials. Upon returning, I knew immediately after walking into the kitchen that Neil blew it. My eyes started burning and a cough promptly followed. Each piece of material he used was saturated with formaldehyde -- that ubiquitous neurotoxic poison.

Apparently typical of the vast majority of contractors, builders, fabricators, installers and remodel workers, this cabinet fellow had 'no clue.' When I kindly tried to explain the importance of the toxicity issue to help his business '*go green*,' he wasn't even interested. Such a shame! **Ignorance is the enemy and apathy makes it more powerful.**

**My insight about formaldehyde** comes from my personal experience with this common toxin in 1979. At that time a 'housing boom' stressed many building supplies across the nation. Local suppliers ran out of conventional pink fiberglass insulation. In 1979 I bought a new home that, unbeknownst to me, was insulated with **urea formaldehyde (UF)**. Almost immediately, I became sickened with symptoms that included rashes, intractable cough and 'brain fog.' I remained ill until I removed the 'toxic insulation thorn.' I'm the guy in the mask in the sequenced 1979 insulation replacement photos below.



The **urea-formaldehyde foam** when first 'shot' into the spaces between the 2x4 studs solidified to form blocks which filled the entirety of the spaces. Notice below that similar to the way blocks of ice melt, releasing water vapor, the UF blocks have partly vaporized. The 'melting blocks' retract in all dimensions, leaving gaps, most noticeable at the top of each block. The released formaldehyde gas passes through the wallboard, concentrating in the air inside of the home. Just like melting blocks of ice, heat accelerates this out-gassing of formaldehyde from the blocks of UF insulation. By the way, it can get quite hot in Phoenix, Arizona, folks!



As you can see, in the insulation replacement picture to the right, when the builder selected a solid block exterior and the UF insulation, there was only one direction that the heat- vaporized toxic formaldehyde gas could go.

It went through the more porous wallboard, on into the home's living space -- rendering that space a toxic **'formaldehyde gas chamber.'**

This was a disastrous combination based on the power of ignorance.



**"After being struck in your brain with brain-damaging chemical 'bullets,' find out as much as you can about those bullets." ~Jim Ferrel M.D.~**

One of many chemical 'bullets' that hit my brain was **formaldehyde**, which is not only neurotoxic but also often acts as an **adjuvant** - a simple chemical that lowers one's threshold for, and/or increases, one's immune responses. It can also act as an **antigen** - a chemical that directly induces release of allergy-related toxins by one's immune system. If you suffer any allergy-related illness, like asthma, dermatitis or auto-immunity, **a formaldehyde avoidance strategy is a must!**

Testing later determined that my prior heavy exposures (in medical school anatomy while dissecting cadavers, then living in the above home for 6 very hot months in 1979) rendered me much more sensitive than most people to formaldehyde. Then already sensitized to formaldehyde, in March of 2001, I sustained a third prolonged and intense exposure to it at both my home and office during the same period of time. That toxicity culminated on 3/27/2001; I had a sudden heart arrhythmia-induced cardiac arrest that I now attribute to the intense exposures to this toxin and others, including Vioxx. The net effect was a subtle, yet serious, brain injury -- an **encephalopathy** -- a severe form of **toxic brain**.

Now let's pick up the story back in 2006. In order to protect my remaining brain cells, I sealed my kitchen off for about ten days, while Neil tried to make things right with the contract. He finally reported that, despite his best efforts, he could find no formaldehyde-free ¼ inch surfacing material in Phoenix. He could put real wood in the drawers and the shelves, but none of this common surfacing material was available that did not contain the toxic formaldehyde!

In disbelief, I tried for myself. A certified environment specialist friend of mine told me of a surfacing material available at Home Depot that was formaldehyde-free. I read labels and dug deep; my remaining brain cells are worth it. Not only did his recommended material have plenty of formaldehyde in it, no Home Depot stores in the entire Phoenix area had any appropriate surfacing board that did not contain formaldehyde. The friendly Home Depot manager who told me this added, "For us to buy a product without it would cost us \$3 more for a 4' x 8' sheet. This extra cost would have to be passed on to the customer, who would probably not know the difference." What a deal breaker! A typical kitchen would take about three sheets. A typical family would save \$10, at the expense of billions of their brain cells as the toxin out-gassed over the next five years following installation.

Undaunted, I called every wood supplier in the 'valley of the sun.' After at least a dozen calls, I finally found one that had the proper material without formaldehyde. The appearance of this material, by the way, put any of the Chinese-made junk to shame. This was solid wood, spiral cut off a real oak log. Nontoxic resins were used; it was made in the USA! Because I got it from a specialty shop, the stuff was expensive. My calculations showed that if Neil had started with this beautiful nontoxic material, it would have added about \$25 dollars to the total cost of his several-thousand-dollar resurfacing job.

### **Ignorance is an enemy, and it is powerful.**

Delighted I found relief; I looked up the company on the web and contacted a manager in their Oregon plant. The nice young man was on the same formaldehyde page with me. His company, Columbia Forest Products, had just made a tough, but righteous, decision. They would no longer put any of this carcinogen, mutagen and neurotoxin into any of their wood products. This wise and compassionate Oregon guy had just returned from a visit to China. He sadly told me of his concern for the workers there--no OSHA to protect them in their wood products plants and formaldehyde levels that were off the charts! To me, the saddest thing is: the vast majority of us keep buying the toxic Chinese junk.

It is ironic that, thanks to former president Richard Nixon, we are now China's #1 trading partner and world peace seems more secure because of it. We send them boatloads of killer cigarettes and alcohol. They send back mountains of toxic wood and building materials and volleys of counterfeit drugs, foods, toys and other products contaminated with toxins. These subtle chemical warfare-like trades are much less dramatic than a limited nuclear exchange, but almost as deadly. In fairness to China, they know and are concerned; we both have a common enemy. **Greed is our powerful foe!**

Formaldehyde has been known to be a serious respiratory irritant and neurotoxin since the 1960's. The formaldehyde toxic brain's NBC broadcast manifests itself in what is termed '**the trailer house syndrome**' because of its high concentration in the material used in mobile homes. The material is, basically, wood pieces and sawdust held together with formaldehyde glue. The formaldehyde out-gases to turn the interior of such mobile homes into subtle 'gas chambers.'

### **A toxic connection from hurricane Katrina**

True to the principles discussed in chapter two, the formaldehyde issue usually flies under the radar as a toxic VOC unless there is a large group of victims that allows for the 'cause and effect connection' to be realized. This was the case in a mass exposure that occurred in Morenci, Arizona, in the summer of 2007. This small copper mining community had a boom of new jobs as the worldwide demand for copper rose dramatically. Morenci had limited housing to accommodate the rapidly expanded work force. The mining company took advantage of the 'fire sale' of mobile homes that FEMA used for the victims of hurricane Katrina to house the new copper workers' families. Most of these trailer houses had been abandoned because the good people of New Orleans didn't appreciate being victimized a second time.

Following the laws of physics, formaldehyde out-gases faster with heat. Like the Big Easy, Morenci is hot in the summer. Not surprisingly, everyone in these families seemed sickened with the 'trailer house syndrome' toxicity. Only because they were all grouped together in the trailer parks, though, did they realize a connection. The reason is clear: Formaldehyde toxicity will demonstrate dissimilarities in respiratory, brain and skin symptoms. Importantly, the variation in an individual's sensitivity to formaldehyde and the fact that it is neurotoxic will make each individual's expression of the toxicity very confusing. This is a salient point pertinent to the disease-profile change described in chapter one. You will typically see a wide diversity of somatic expressions when any chemical damages people through the toxic brain mechanism. If you then look for this culprit in the body, forget it. This 'hit and run' chemical leaves no unique signature for its damage. I argue that toxic brain, discussed in chapter 4, is the most common mechanism leading us subtly into COED-S.

**Update 8/16/15:** In the past, such mass-poisonings involving formaldehyde were settled out of court, with 'hush-hush' terms to keep the public unaware. Since I wrote this section of this book in 2006, this toxicity has become more evident. Many states now have regulations to protect the public from formaldehyde. But, typical of this issue, CNN today aired a 60 Minutes story about **Lumber Liquidators**. They got caught selling Chinese-made flooring that released up to 30 times California's limit for such emissions! Bottom-line: they made 10% more by thumbing their noses at the law. **It's greed!**

**Update 2/23/16 -- the USA Today lead story headline reads:** "Elevated cancer risk found in laminate flooring." The article reveals that the CDC under-estimated the cancer risk of the laminate flooring by 300%! Their recalculation put the actual cancer risk at between 6 to 30 cases per 100,000 people exposed. This may sound small, but when you multiply it by the number of floor installs, it's huge. Further, it says nothing about the much more common, yet subtle, brain damage to those so exposed. Due to its ubiquity, formaldehyde adversely affects us all to varying (exposure-related) degrees.

Building materials containing formaldehyde have become the most predominant toxic material found in most homes. Toxic formaldehyde is in wood composition flooring, furniture, shelving, paneling and literally thousands of other applications. Its utility is in its ability to denature all proteins. Denature means that it bends the shape of the molecules. This allows a mulch of organic matter and formaldehyde to be formed into any shape. The most common shape is 'flat.'

Take a look around you now. Wherever you are, the majority of the flat things that you see, when they were newly made, contained formaldehyde. The pages of this book, the newspaper you just finished, the foundation of the furniture you are sitting on, the clothes you're wearing, the tissue you just blew your nose with, the toilet paper you used this morning were all made flat by this brain-killing chemical. The problem is: it does not remain in the material. It migrates into the media we desperately need to stay alive. It out-gases into the air. When you breathe the air it enters your brain directly via the nose. Once inside, it can bend or break many critical proteins which it happens upon, into dysfunctional shapes or pieces.

Although causes of neuro-degenerative disorders are multi-factorial, insidious damage caused by formaldehyde (CH<sub>2</sub>O) is my prime suspect in diseases such as Alzheimer's. It makes sense that as we age, our blood-brain barriers weaken and the less-protected brain parts are thus more exposed to substances, especially those potent, yet small molecule- sized ones, like CH<sub>2</sub>O, breathed in through the nose – a direct path to the amygdala, hippocampus, and many others! In Alzheimer's pathology we typically see globs of protein remnants such as **beta-amyloid** and **tau** inside of the neurons of those specific brain parts. Such obstructive debris is consistent with such an insidious protein-denaturing mechanism.

In addition to being one of the most prevalent man-made neurotoxins on the planet, formaldehyde is now known to be a mutagen and a carcinogen. This toxin is a subtle SINK challenge because it can distort every protein in the body, yet when you examine the bodily fluids in a living being, you won't detect it. Special enzymes detox the killer CH<sub>2</sub>O causing it to quickly 'disappear.' Another confounder is: people vary greatly in their quantity of these enzymes and their co-factors.



The fact that the damage happens so fast and the offender disappears in the process, leaving no chemical signature in the blood, is only one reason why formaldehyde is allowed to be ubiquitous, despite its toxicity potential. This relates to our difficulties in establishing cause and effects of environmental illnesses, discussed in chapter two. In the case of formaldehyde, to 'take out the toxicity thorn,' we need to substitute less toxic chemicals for its thousands of applications.

**Update 6/10/2011: The National Institute of Health (NIH)** finally confirmed today that formaldehyde causes cancer. It's now linked to tumors behind the nose and other cancers. Such **carcinogenic** effects depend on many factors, including one's genetics and the length and intensity of formaldehyde exposures. Formaldehyde is one of many suspects that likely cause lung cancer as well. Formaldehyde is heavily-impregnated into cigars and cigarettes. Smoking subjects all **respiratory tissues** (mouth, nose, pharynx and lungs) to carcinogens. Even if you don't smoke, I advise you to outgas your newspaper, which is similarly impregnated with formaldehyde as well as toxic inks, prior to reading it! Do this by removing any plastic wrapper and spread it apart to expose as much of it as reasonable to the outside air and sun. **Update 7/13/15:** After analyzing a database of 1.5 million people, Andrea Roberts and her Harvard colleagues published research in the *Journal of Neurology Neurosurgery & Psychiatry*. Their findings -- men who had jobs that likely exposed them to high formaldehyde levels were 3 times as likely to have died of **ALS (amyotrophic lateral sclerosis)**, than those with negligible exposures. **Update 5/9/16:** Supporting my thesis of environmental causes of toxic brain, research in *JAMA Neurology* now associates ALS with several other environmental toxins (pesticides, PCBs and flame retardants) as well.

### **Staying out of the harm's way of environmental toxins -- MCS is a scourge that you can avoid**

'Good honey' and its corollary -- good health -- is the opportunity of your Neogenic design. Lifestyle choices that diminish toxic intake from all environmental venues will help your body make 'good honey.'

Minimizing exposures to toxins and augmenting your detox system are the key elements of your successful nontoxic-living strategy. It's impossible to avoid all toxins in our modern world. You can, however, reduce the numbers of toxic molecules taken in or generated from within, and improve your SINK's efficiency in eliminating those you have 'on board.' Failure to proactively do so will put you at a greater risk of developing a host of COED-S illnesses, including the dreaded MCS.

There is heterogeneity in individual tolerances to specific chemical exposures. Again, the extreme group of chemically-intolerant people is the **Multiple Chemical Sensitivity (MCS)** group. MCS sufferers have weakness in, or have sustained injuries to, their detoxification systems. They can be thought of as having small SINK capacities in our SINK analogy.

MCS individuals represent the part of our populace who are on the leading edge of the bell-shaped intolerance curve that I mentioned in chapter two. As such, MCS people have been described as being like the 'canaries in the mineshaft.' Before the advent of toxic gas detectors, which are now used to protect miners, it has been said that miners would carry a caged bird with them into the mine shafts. Because the bird has a faster metabolism than the miners, it would be more sensitive to the effects of toxic gases. If the bird quit chirping, the miners knew it was time to exit, even though the miners seemed to be fine. The bird story may be a myth but MCS, sadly, is very real.

The incidence of MCS is rapidly growing as our population ages and our environment becomes more toxically polluted. Individuals with MCS can easily be sickened by fumes from personal fragrances, shaving or skin lotions, tobacco products, fireplaces, candles and hundreds of other things which out-gas toxic **volatile organic compounds (VOCs)**, such as formaldehyde. Their lives can be greatly disrupted as a result. **Mind-bending Update 8/4/2015:** A retrospective analysis reported in the *Journal of the American Board of Family Practice* shows that women with MCS have triple the risk of bearing an autistic child and are 2.3 times more likely that their children will manifest ADHD than those without MCS!

**Hypersmia**, an increased awareness of smells, is the *sine qua non* for MCS. If you can smell fragrances, cigarette smoke, candles and other volatile chemicals that others may take little notice of, and if those smells are associated with feelings such as sleepiness, headache, chest tightness, confusion or anxiety, you probably suffer from MCS to some degree. As such, proper treatment and toxin-avoidance strategies are a must. Many mainstream docs know very little about MCS. You can get help without being 'misabeled a nutcase' by seeing an **environmental medicine** specialist.

"The classic patient who has developed chemical sensitivity has been to over a dozen specialists, has no diagnosis, and is eventually referred to a psychiatrist." ~**Sherry A. Rodgers, MD, from her book *Tired or Toxic***~

The key to MCS is prevention. You can avoid developing MCS by reasonably minimizing exposures to toxins, so as not to exceed your **tolerable total body load** (the capacity of your detox SINK), and by augmenting your SINK's function by exercising regularly. However, once one develops MCS obviating symptoms is difficult, short of an ongoing intensive awareness and avoidance of toxins. Such an effective approach must consider toxic exposures from all venues.

We've addressed toxic-thought reduction in chapter 7 and the food toxins in chapter 8. I discuss toxic energies in the next chapter and toxic microbes in chapter 12. This chapter will focus on reduction of toxic chemicals exposures from air, water and transdermally-absorbed matter. I'll try not bore you with a lot of chemical names. There are literally too many specific toxic chemicals to cover. By providing you with an overview-understanding of the toxicity issue and its relevance to good health, I hope to inspire you to establish your own reasonable nontoxic living strategy.

## **EXOGENOUS TOXINS -- poisons entering into us from our external environment**

Of the chemicals that poison us, ones made inside of us are **endogenous**. Those made outside the body are **exogenous**. Exogenous toxins come in three forms: 1) toxic chemicals, 2) energies that, upon entry into us, generate toxic chemicals, and 3) toxic microbes, which are simply bags of well-organized toxic chemicals. We will deal with the last two categories in the next two chapters. First let's discuss exogenous toxic chemicals and how we become naively exposed to them.

Exogenous toxic chemicals enter your body from 4 media:

- 1- Air you breathe
- 2- Food you eat
- 3- Water you drink
- 4- Matter entering transdermally (through your skin)

These exogenous toxins enter your interior through 4 portals of entry:

- 1)-The gut
- 2)-The airway; this includes the nose, lungs and the channels between
- 3)-The skin
- 4)-The mucous membranes other than the gut

We've already discussed how toxins enter portal #1 -- **the gut**, as well as the relevance of the gut's X-out preparedness. We tend to discount the deleterious effects of chemical toxins that enter through the last three portals—the airway, the skin and mucous membranes other than the gut. The case below demonstrates the entry of toxins from the other portals.

### **The case of the auto body repair man who 'repaired' his own wrecked body**

In 1993 I took on Don B., a frustrated patient who had been told he was dying of alcohol-caused cirrhosis of the liver. He was essentially 'blown off' and called a liar by his earlier doctors when he told them he had stopped drinking booze long ago. The 1993 'before' photos of Don in a bathing suit are dramatic. This once buff-appearing auto body repair man had morphed into an extremely grotesque, apple-shaped weakling. His arms and legs thinned to half their original diameter, his buttocks shrank and his belly became enormous.

Not only frustrated and convinced of a misdiagnosis, Don was desperately ill and his business bills were mounting. He looked and felt whipped. What could he do?



**1993 Patient Don B. 'Before Photos'**

Image-wise, Don was frozen in the 'Rock and Roll' era. History revealed that his passion was hot cars and motorcycles. He pursued this hobby in his spare time at his body shop. On a 'thorn-seeking visit' to his shop, I expected to find some type of body repair material or paints which might be liver-toxic. Just as I was leaving I noticed a large barrel. It was grimy and the 10- year-old warning label was covered with grunge. When I wiped it clean, it gave us the answer loud and clear.



The carcinogen **trichloroethylene**, commonly used as a solvent, is, among other bad things, liver toxic. Don had his hands in that barrel, and his nose right over it, several times daily while cleaning auto parts. His hands were also frequently covered with paint or body repair material; trichloroethylene in that drum was commonly used to clean them.

Don's liver greatly improved after he 'removed the trichloroethylene thorn.' The 1995 'after photos' below show the balloon-belly gone and his muscular arms and legs returned. Also note the difference in facial expressions -- these are true reflections of the brain changes as well. 'Elvis' was back -- his 'self' was thoroughly reconstructed by Neogenesis.



**1995 Patient Don B. 'After Photos'**

By the way, Don gives credit exactly where credit is due. He says beautifully with a Latin-American accent, "I was healed by **Jesus** and jalapeños!" It is Neogenesis always, for your entire life-time-- a blessed gift. Paid in full, it costs you nothing.

**Portal #2 --the airway** offers the most direct and quickest route to the brain. If we want to anesthetize a patient, the quickest way is not by the gut or even intravenously, but it is by the airway. The X-out factor offers little resistance to the entry of toxins through this portal. **Chemicals entering through the nose can go directly to the brain.** I call the nose the **'brain hole'** because the **olfactory nerve** (the 'smell nerve' that resides there) is an unmyelinated 'nerve'. This means, like the retina of the eye, it is, in reality, an extension of the brain. The olfactory tract thus so becomes a short cut that allows airborne chemicals to circumvent the blood brain barrier and enter the brain directly. Druggies who want to get high instantly will use this portal to 'snort' or 'huff' their 'brain-changing drugs.'

At some point in the history of our species, there was a purpose for this direct and speedy messaging route. It certainly allowed us to locate a prospective mate by sensing **pheromones**. The speed of smell allowed our early ancestors a rapid alert to danger for survival purposes as well. In essence, as the chemical message emanating from some well-hidden but dangerous creature(s) entered one's nose, it went directly into one's 'old brain.' Once there, and before thinking about it, further relay messages were sent to the heart to increase the strength and rapidity of the heart's contractions. This caused a surge of blood to be pumped to the muscles of the legs. The legs then could utilize this blood surge to more quickly run to shelter as the danger was becoming recognized in the higher-functioning but slower-reacting, 'new brain.'

The salient point is that, regardless of teleological purpose, this portal is by necessity thinly protected from toxic chemicals. It affords a rapid and direct route for intoxication as well as a route for chemically alerting us to danger. Toxic VOCs can rapidly enter through these airway portals, unimpeded by the X-out function, to most directly toxically-damage one's brain.

**Air pollution---brain damage Update 9/18/18:** You may recall, in my discussion of the causes of autism on p. 36 herein, I mentioned air pollution as a highly-likely teratogenic cause of autism. Sadly, pollution causes many other brain disorders too. A huge (130,978 people) and protracted (started in 2005) British study published in **BMJ-Open** shows that **severe air pollution exposure increases one's risk of developing Alzheimer's and other old-age type dementias by a whopping 40%!** This study was specific for the common pollution chemicals -- nitrogen dioxide, fine particulate matter and ozone.

## Airborne toxins -- *volatile organic compounds (VOCs)*

Most man-made products that have a persistent smell are likely toxic. The 'new car' smell is such an indicator. The new car smell emanates from a mix of toxic VOCs that outgas from glues, paints, vinyl and plastics. Could the 'wear' and the new car smell itself both relate to the outgassing of the chemicals impregnated in the materials? Once they out-gas, where do they go? Of course they go into your car's interior air, the air that you are breathing. To avoid toxic chemicals, pay attention to smell. When you smell things it is the actual molecules of those things that have separated and become airborne to enter your 'brain hole.'

Unfortunately, many toxic airborne chemicals have no smell. Protect your home, work places and vehicles. Read the **MSDS (Material Safety Data Sheet)** before you buy or install anything new in your living spaces. This includes furniture, building materials, fragrances, cleansers and other chemicals. The MSDS details the well-known toxins in products; it doesn't inform us of others. **Memory foam beds** are a typical example. Though these may be comfy, some types have been known to out-gas many toxins. Some have out-gassed the carcinogens formaldehyde, **benzene** and **naphthalene**, as well as flame retardant EDCs and respiratory irritants such as **polyurethane**. Always be proactive. Search the Internet before purchases. Go to [epa.gov/iaq/voc.html](http://epa.gov/iaq/voc.html) Then put the full power of SEEK behind your decisions.

Indoor air pollution is generally worse than outdoor air pollution. On average, there are 2.5 times as many VOCs in indoor air as there is in outdoor air. This ratio varies greatly, and can be as high as 10 to 1 in some locations. The cleanest outdoor air is generally found in less densely-populated and non-industrial locations. The most **polluted outdoor air** is near freeways and industrial activities in the innards of big cities. **Indoor air pollution** can be greatly reduced by selecting nontoxic building materials, furnishings and cleaning chemicals for your living spaces.

**"Of chemicals commonly found in the home, 150 have been linked to allergies, birth defects, cancer and psychological abnormalities." ~Consumer Product Safety Commission~**

If given a choice in **floor covering**, avoid most carpeting and formaldehyde-containing composite woods and glues. Despite reduced VOCs in USA produced carpets since the mid 1990's, thanks to the actions of concerned environmental activists like Doris Rapp, MD, most carpeting still contains many VOCs. Further, they are difficult to clean and tend to absorb and retain much material that favors microbe and critter growth -- serious contributors to asthma. One company specializing in indoor air quality was able to reduce bacterial colony counts in a room up to 92% by simply replacing carpets and drapes with less toxic alternatives. Tile, lacquered cement and solid wood flooring laid by either floating or attachment with formaldehyde-free adhesives are much less toxic. In places where water damage is more likely, such as the kitchen and bathrooms, avoid not only carpeting but wood flooring as well.

If carpets are a must, I prefer Berber, as it eliminates the carpet padding. **Update May 2010: Carpet padding** is typically loaded with **flame retardants** that are now proven to retard more than just flames. A Columbia University study reported in *Environmental Health Perspectives* shows a direct correlation between newborn children's blood levels for carpet-related flame retardants and lower scores on later psychomotor and mental development testing (done at ages 1, 4 and 6).

In a reasonable way, try to minimize the use of pressed board, plywood, and other substitutes for real wood that contain formaldehyde. Formaldehyde is commonly found in indoor building materials, cabinetry and furniture. Existing formaldehyde materials, present in the home for many years, are much safer than new material; don't bother replacing them. The out-gassing of toxic VOCs from any material is high initially; it gradually decreases with time. It is rare that one can find and work with a contractor who thoroughly understands these toxicity issues. When in doubt, employ the services of an environment specialist. Your health is worth it.

VOCs are continually out-gassing from the existing materials in your living spaces. To mitigate the danger SEEK to flush out stale inside air and exchange it with healthier outside air on a regular basis, weather and conditions permitting. Use good judgment in this regard. For example, if you have pollen allergies, it would be unwise to simply open doors and windows and exchange air during high pollen count times. Likewise, it is impractical to do this in extremes of weather or if outside particulate counts are unusually high. Your regular air conditioning system filter will remove most particles that are large enough to get trapped; importantly, this includes most pollen. It is essential to change these cheap A/C filters frequently. Add-on or upgraded electronic air conditioner filters improve the removal of these particulates and pollens.

A regular home air exchange strategy SEEks far superior to most commonly available indoor household air purifiers. This most simply involves opening windows and doors that allow natural air currents to do the job. A well-placed fan will often make your plan more efficient. Indoor **HEPA filters** work well to filter out critters and large particulates that often contribute to allergies as well as larger microbes such as mold spores. When a member of the household has pulmonary disease, indoor HEPA filters can be helpful. However, the most common toxic VOC is formaldehyde; its molecular size is close to that of oxygen. How can you filter out formaldehyde without filtering out oxygen? For practical purposes, you can't.

Many so called 'air purifiers' use ozone-producing technology. Ozone is toxic to the lungs. According to the EPA, "Available scientific evidence shows that at concentrations that do not exceed public health standards, ozone has little potential to remove indoor air contaminants." When ozone 'air purification' units were tested, they removed much of the smell from new carpets, but in so doing actually changed those carpet chemicals into more toxic ones, such as aldehydes and increased the total VOCs. Filtering systems that generate ozone to zap germs are similarly not recommended.

Most importantly, if any household member or household guest smokes, insist that they do it outside. According to the *American Cancer Society*, a nonsmoker spouse of a smoker has a 30% greater risk of developing lung cancer than does someone married to a nonsmoker. **Passive tobacco smoke** is deadly. It has become increasingly understood that this addiction is not only harmful to the smoker, but innocent victims as well.

Stinky smells suggest toxic airborne chemicals are present and need addressing. The best thing to do is get rid of the 'thorny source.' The worst thing you can do is to use **cover up air fresheners** into your living spaces, be it your car, home or office. These phony cover-ups typically have flowers or nature scenes on the dispenser, and suggest the resultant smell to be healthy. Whether it comes out of a can, candle or light socket plug-in device, it most likely contains man-made toxic chemicals that end up in your detox SINK. Remember, the level of the SINK equates to your total body burden of toxins. The key to enjoying good health and longevity is to keep the level in your SINK low and never risk an overflow.

Most **fragrances** are similarly toxic. Many are designed as drugs; that is, they are designed to affect the physiology of others in a similar manner as pheromones are designed to affect sexual behavior. Have you noticed that the fragrance counters are strategically located in the center of department stores on the first floor? The traffic flow seems to direct all who enter from any direction to this central 'gassing area.' Do you think the emitted VOCs might influence the customer's mood and tendency to purchase unnecessarily? I think *Mindless Eating* author Brian Wansink Ph.D. should examine these neurotoxic 'hidden persuaders!' People who recognize that they have MCS and have insight into this issue will tell you they get sick when they enter department stores and tend to avoid them. When they must do so they will tell you they have to get off the designed traffic flow and circle far around the fragrance counter to avoid unpleasant symptoms.

When a friend's fragrance is bothering you, speak up. Do not doubt or ignore the healthy messages your body sends you. In the past it is clear that too many of us did too little too late in regard to the passive cigarette smoke issue. We were intimidated into accepting that we had no entitlement to our personal air. We may have to fight for it, but **yes we do!**

Fireplaces, incense and candles may create a romantic ambiance. Unfortunately, most put lots of unnecessary toxins into your indoor air. *Medpage Today* relates a study reported in the Oct. 2008 issue of *Cancer*. It shows incense users had up to an 80% increased risk of squamous cell respiratory-tract cancers over those who didn't use incense. This research was done by Jeppe T. Friberg, MD, PhD, of Statens Serum Institut in Copenhagen, Denmark, and colleagues.

Ever try running or vigorously exercising outside in a housing development where all the residences have fireplaces in use? Notice how you feel? The detox effect of running is negated by the inspiration of pollutants which emanate from these fireplaces. The EPA already understands this issue. Phoenix, Arizona, and probably most other major cities as well have 'no burn' days for fireplaces to try to keep the outdoor air compliant with EPA standards. Hopefully, similar air pollution restrictions will expand in the future as the health benefits of air quality control are more fully appreciated.

**Update 7/9/2018:** The latest analytic research, reported in *The Lancet Planetary Health*, suggests that **air pollution** is likely responsible for 3.2 million new cases of type 2 diabetes every year globally. The study's senior author, Dr. Ziyad Al-Aly of Washington University, says, "Risks exist at levels that are below what's now currently considered safe by the EPA in the USA and also by the World Health Organization." The tiniest form of particulate matter in air pollution, designated **PM 2.5**, is already well-known to associate with increased risk of heart disease, lung disease, kidney disease, and other non-communicable diseases. PM 2.5 alone contributed to about 4.2 million premature deaths in 2015!

**Mold remediation** after water damage to interior building material is vital. Many different species of mold are now well recognized sources of toxins and allergens. Their presence can be detected and eliminated by competent professionals. For **regular house cleaning** avoid unnecessary chemicals. Use the least toxic soaps with water, pastes of baking soda, and/or vinegar and lemon oil. Wood surfaces clean, hydrate well, and smell fresh with olive oil and a touch of lemon oil.

**Update 3/2013:** For other safe commercially-available cleaning options go to <http://www.ewg.org/guides/cleaners>

Choose **pest control measures** that are the least toxic to humans and pets whenever reasonable. **Commercial pesticides** have brain cell killing potential. Treat these especially dangerous chemicals as you would a loaded gun! If using them use proper skin and airway protection or contract with professionals to get the job done as safely as possible.

If your local health department sprays **pesticides**, get on their automated call list. Such programs alert you when such spraying is scheduled for you area. Once called, stay inside and close windows and doors to avoid exposure to the outside pesticide-laden air for 6 hours. The pesticides that are now in use supposedly degrade over about a 6 hour period.

To control these mosquito-vectored viruses, it's vital to prevent unchlorinated water from accumulating on your property. Mosquito larvae require such water to develop. If bitten by a mosquito at your home, the chances are great that it was birthed in standing water within 100 yards. Report abandoned **'green' swimming pools**. Your call to the vector control folks may help them deal with this health issue in least toxic ways, such as by using **mosquito larvae-eating fish**.

Pesticides are a likely factor in **colony collapse disorder (CCD)** in bees. They are neurotoxic and, like mosquitos, our bee friends have vulnerable brains too! **Update 1/2013:** *The European Food Safety Authority* finds that the latest generation of agricultural pesticides--**neonicotinoids**-- pose an unacceptable risk to bees. **Update 2012:** A study on neonatal rats reported in *Plos One* suggests that neonicotinoids may damage the early-developing human brain as well! **Update 9/10/15:** Out of concern for CCD, a federal appeals court blocked usage of one such neonicotinoid - **sulfoxaflor** -- which already had EPA approval. They ruled it had not been adequately studied before its 2013 EPA approval. Kudos!

### **Waterborne toxins**

Of course, the water going into city treatment plants is becoming more contaminated as environmental chemicals and nastier germs become more prominent on our planet. Safeguards are in place and the water department people generally do a decent job most of the time. Although serious problems can and do occur, it's now rare in this blessed American society that we hear of any major health problems associated with our water supply. Each city is held to high standards to provide us with tap water that is good enough to -- well, filter.

The major problem with most potable water on this planet now is that it contains EDCs and other toxic pollution chemicals. According to the *National Tap Water Database*, analysis of tap water tests from 1998 through 2003 detected 260 pollutants in our nation's drinking water. The data was from 39,751 water systems serving 231•million people in 42 states. **Update 2/2016: Flint Michigan's water crisis** is a contemporary worst case scenario. It shows how easily things can go so terribly wrong, adversely affect so many people and take too long to be acknowledged. Sadly, we'll likely never know the full extent of resultant lead-related brain damage to residents of Flint, especially to the growing brains of the children.

Aside from water purification, the most important reason why city water is relatively safe is because chlorine is added to it. Chlorine, at appropriate levels, kills germs and degrades other organic materials not already removed by purification. However, chlorine is irritating to the skin, eyes and lungs. Chlorine is necessary in all the pipes leading to our faucets and toilets, but for the shower you might consider removing it with a simple in-line filter. A caveat is: once chlorine is filtered out, the water coming out of the shower or bath doesn't retard the growth of microbes. Unchlorinated water, when combined with the organic debris washed off your body, will grow mold. So, make sure those drains are working well.

In the kitchen, chlorinated water should go to the dishwasher and the main faucet for cleaning of dishes, surfaces and food. For drinking or cooking water, use a home filtering system that removes both the chlorine and as much of the remaining contaminants as possible. Many commercial systems are available. Unless you are a plumber, hook up with a company that both sells and services these units. You don't need the aggravation or the toxic mold resulting from leaks.

Once exposed to the sunlight, chlorine will gradually breakdown, allowing mold and other microbes to become a very real threat for water in swimming pools, Jacuzzis or fountains. Standing water needs chlorination to avoid contamination. For swimming pools, consider a **salt water purification system**. These systems use electricity to generate chloride ions which sanitize the water and make it more buoyant, like salty ocean water. These systems are more expensive to install, but less expensive to maintain. Most users feel these systems are more refreshing and less harsh on the skin and eyes.

### **Water to go -- please put it in glass or other nontoxic containment**

Most people I see using bottled water buy it in, carry it in, and drink it from plastic containers. Go into any grocery store, even stores that focus on healthy food choices, and you will see mountains of such plastic-contained waters. Eight billion gallons of plastic-contained water each year are sold in the USA. This is sad as the plastic from these bottles recycles poorly and biodegrades very slowly. It ends up contaminating all water on our planet and the fish and other creatures therein. Phthalates, bisphenol-A (BPA) and, more recently, **bisphenol-S (BPS)** are the main plasticizer toxins in most plastic food containers. These **obesogens** ( EDC chemicals that make us obese) are major contributors to COED-S. The health issue lies in the fact that the plasticizers in plastic food containers migrate into the solutions or foods that are inside them. When we consume them, they interfere with our FEAST physiology by sending unhealthy, perverted messages. Their most common message is: "Eat more you are pregnant!" In response we do. Hence, obesity and COED-S emerge.

What were we thinking when we 'tooled up' to produce such a poorly-recyclable material now well-recognized to be a major polluter of our Earth (plastics) from a limited resource (oil) over an easily recycled, nontoxic, low-polluting material derived from an inexhaustible source? **Glass bottles** are recycled easily and nothing from the glass part of the container migrates into the solution. I explain to the doubters that if we were to perform any chemical experiment, it would be done using an inert glass beaker, not a plastic one. Instead of a plastic water bottle for use when away from home, hiking or just working out, I recommend stainless steel or glass bottles that do not contain **toxic bisphenols** -- BPA or BPS. **Update 5/11/2016:** Since first writing on this issue in 2005, more people are getting this 'toxic food containment' message. By public demand, many other less-toxic bottle choices are now widely available. Kudos! However, all plastic bottles are still suspect as they likely contain toxic plasticizers that have not yet been proven safe!

**"Mama, don't let your babies grow up to be cowboys" -- at least not fat and overly-feminized ones anyway**

Listen to the good vibes from Willie or Waylon as well as my advice. Use only glass baby bottles to feed your infants. Do not unnecessarily allow plastics in your child's mouth. The EDC **plasticizers** (BPA and phthalates) from plastics are showing up in kids at alarming levels. By sucking on plastics, these EDCs migrate into one's saliva. Because they are fat-soluble, they bioaccumulate in kid's fatty organs such as their brains, reproductive organs, breasts and visceral fat depots!



### Portals # 3 and 4—the skin and other mucous membranes

These are similarly discounted portals of entry for toxins that you need to more fully appreciate. The skin does provide a good protective barrier for most toxins and germs. For years the skin was considered an unreliable portal for the delivery of pharmaceutical drugs; we now know the opposite is true in many cases. Because the skin is diminished of apparent X-out functionality we can more predictably titer hormones and some other drugs through this route. Likewise, we are more vulnerable to transdermal entry of some toxins!

### Many toxins can enter through your skin and mucous membranes

Is lead in your lipstick? Does your shampoo clean your hair while it feminizes your male fetus? Are the phthalates in baby powder and MSG-laden skin lotions and shampoos disrupting the messaging systems of the innocent infant? Does the sunscreen you use to protect your skin from cancer-producing excesses of UV rays contain chemicals implicated in the genesis of other types of cancers and other illnesses? Sadly, the answer to the many questions above is – highly likely. Few people consider that the skin and mucous membranes do absorb serious toxicants. Few understand that skin cells lack the degree of X-out functionality of gut cells. Most such exposures are very difficult to associate cause and effects. To learn more about carcinogens, EDCs and reproductive toxins entering via this portal, visit [www.ewg.org](http://www.ewg.org)

**Cosmetics** most often also contain man-made chemicals designed to kill. The use of **formaldehyde-releasing agents** is the most common manner of preservation for cosmetics. These chemicals are in the formulary to assure that the product doesn't become contaminated by some, but not all, microbes. The formaldehyde released from these chemicals is a carcinogen and a neurotoxin and is an irritant to the skin of most people! Man's latest attempt to eliminate microbes in cosmetics and other products and applications are **nanotechnology-derived chemicals**. To understand their threat, visit the **Friends of the Earth** web site. This site is a gold mine for environmental knowledge and advocacy.

“After analyzing 2,983 chemicals used in personal care products, 884 were found to be toxic.”

~National Institute of Occupational Safety and Health~

The regular use of cosmetics adds up to several pounds of chemicals taken into one's body each year. Many unregulated toxic chemicals exist in cosmetics; yet the U.S. government doesn't require companies to do any pre market testing or safety studies of the chemicals they use in such products! For the nitty-gritty on the safest **personal care products** on the market visit the web site of the **Environmental Working Group (EWG)** -- they do test them! **Update 9/9/16:** The **EWG VERIFIED™** mark now appears on personal care products that meet EWG's strictest health standards. Kudos!

**Transdermal transfers** -- Ever notice that a newspaper turns color and the newsprint fades when the paper is left out in the sun? The chemicals that the newspaper contains outgas with heat. If you read it when your hands are moist, as when working out and reading the paper, these liver-toxic solvents will end up on your hands. In such a scenario, if you wipe your hands with a white towel, you will notice the towel becomes discolored as the solvents and newsprint chemicals transfer to the towel. Pay attention to this 'sign.' Understand that you need to get the chemicals off ASAP, as the longer they remain there, the more they absorb through the skin and into your body. Similarly, laser printers and any type of copy machines are potentially dangerous vectors for both transdermal and airborne entry of the toxic inks.

Using dampened newspaper is a very good way to clean windows and other things. The toxic solvents and sterilizer (formaldehyde) are already in it. They are both VERY BAD NEWS, so use adequate ventilation and gloves if you do this. Also, don't wrap food in newspaper; ink-related toxins will likely leach into that food!. After using any household chemicals such as cleaning agents, room deodorizers and sanitizers, wash your hands. Most of these chemicals are toxic regardless of the port of entry. Use protective clothing and gloves as well as a proper respiration filter when working with man-made **pesticides**. Pesticides are among the worst of the brain-damaging chemicals that you will likely encounter.

### Even a health spa can be a place to get unhealthy

Also, unfortunately, most spas typically have VOC-emitting mats, jogging surfaces, equipment and construction and furnishing materials designed with function, appearance and things other than clean air in mind. Despite all the health benefits of exercise, it must be emphasized that when aerobically exercising air quality is paramount.

It is paramount because we respire at about 20 times the volume of air during this form of exercise than at rest. When doing our aerobics outside, we take in only a fraction of the VOCs that we do when exercising indoors.

Outside, however, we have to deal with a full spectrum light that has been perverted by chemicals and made more deleterious in the process. Finding a shady path, sun blocking hats and clothing, nontoxic sun screens, and working out during early or late light helps meet this challenge.



Often the best compromise is to try to get the spa bigwigs to ventilate the spa with outside air. Sadly, those in charge will most often resist, opting for smell cover-ups. Sadly too, most turn to the use of more toxic chemicals to achieve the **sanitary illusion**. This illusion is: if we use more chemicals to kill germs and other critters in an environment, that environment will be healthier for the humans that live, or work out in this case, in that environment. The illusion discounts the following: 1) Those same toxic chemicals will be taken in by exposed humans; and 2) Once taken in, they will stress their detox SINKs, stimulate their immune systems in unhealthy ways and subtly damage their brains and other organs.

For the same reason, the health spa sauna can also become a 'gas chamber.' Saunas are typically poorly ventilated to conserve the heat. They are a good way to detoxify, but only if the people who use them understand that VOC-related materials they bring in out-gas and concentrate more heavily in the intense heat and restricted ventilation of the sauna.

Unfortunately, many naïve sauna users bring in out-gassing footwear and exercise mats. They come with newspapers and other formaldehyde and solvent-containing books or magazines to read. Fearing their odor, they come in with deodorants and fragrances. Fearing their hair will wilt, they put on suspect hair sprays. Heat accelerates out-gassing and enriches the air inside that tightly-closed space with VOCs from all these sources. Sadly, this changes what should be a detoxifying experience into an intoxicating one. It's ignorance, of course.

The spa I go to made a major blunder in rebuilding their sauna. They used the correct type of wood, but no space was left in the construct to allow for cleaning under the benches. Therefore, the border of a likely-toxic fungal colony can be seen creeping out from under the wooden benches that go all the way down to the tile. Their wood planks lie side by side. This inconveniently allows the sweat plus organic matter to drip down the spaces between the boards to feed the mostly hidden fungal colony that I'm certain is underneath, out of view. The carpenters who made it probably have no clue how mold-generated toxins adversely affect the sauna's users. **Again and again we find ignorance is a powerful foe!**

### **Do not allow your photographic memories to be burned up -- vigilance is the key to protect your brain**

Before the spa's sauna was rebuilt, I had a 'mind-altering experience.' Late one evening, I noticed a new janitor. He stood out because he looked to be about 12 years old. I asked about the regular janitor, Jose. A staff member said that Jose had found a better job at a local fast food place, so Jose's teenage son was doing the work until he could be replaced. I entered the sauna after my work out that particular night, and noticed that the floor was damp. I didn't think much of it, but after a few minutes in the sauna, I felt dizzy and weak. I decided to leave. When I reached my locker I felt like I was going to pass out. After lying down for a few minutes, I felt better and decided to get my gear out of my locker and go home. I tried to open the combination lock that I used daily for the prior three years. I couldn't remember a single number in the three-numbered combination! After a while, realizing that my car keys were locked inside the locker, I approached the front desk attendants and explained the situation as best I could. The staff members said I looked strange, cut my lock off, and suspiciously offered me a new one free.

After three days of recovery, despite intense trial, I still couldn't remember even one number in the old lock's combination! I eventually returned to the spa to try to determine what chemical Jose's son sprayed onto the sauna's floor that night. As is typical, I couldn't connect the dots, as the responsible chemicals and Jose's son had gone with the wind. The brain just doesn't malfunction without explanation. There are always finite reasons for its damages. Learn of them and be vigilant!

### **ENDOGENOUS TOXINS -- poisons made within us**

**Immune-response chemicals** are endogenous toxic-cytokine chemicals which our immune system produces. The most common of these toxic cytokines are ones associated with allergy, asthma, dermatitis and other inflammatory conditions. These are **histamine, leukotrienes and kinins**. Also included in this group are interleukins, tumor necrosis factor and others. Some are tissue damaging toxins. All contribute to your **body burden** -- the level of toxic chemicals in your body.

Unfortunately, in response to world-wide pollution increases, our immune systems have developed a high alert status of confusion. Such benign things as grass, trees, shrubs and other friendly flora or fauna are now misidentified as 'unfriendly.' By analogy, it works like this: Plants send out **pollens**, which are chemical love messages. The messages are meant only for other members of the sender's species. You intercept them. Your immune system's 'General' misinterprets them as a declaration of war. He sends out orders to drown all similar pollens with snot and kill them with cytokines. With allergy, you feel badly because your brain is battered by this destructive chemical warfare!

These allergy 'warfare chemicals' become primary players in the genesis of environmental illness because they can fill your detox SINK rapidly. We mentioned that **histamine** is detoxified in the same aldehyde pathway and competes with formaldehyde and many other VOCs for the critical, rate-limiting detox enzyme group--**aldehyde dehydrogenases**. Most severe episodes of environmental illnesses are preceded with allergy-like symptoms. Allergy-resultant brain toxicity explains the strong correlation between common allergy and such diverse environmentally-influenced disorders like chronic fatigue syndrome, depression, suicide, fibromyalgia and interstitial cystitis.

For example, according to the U.S. National Jewish Medical and Research Center, common allergies are recognized in 75% of CFS sufferers, compared to only 10-20% of the general population. For these reasons most environmental medicine docs treat CFS patients with either sublingual or injectable administered **allergy 'desensitization' techniques**. Such techniques begin with tiny doses of problematic allergens and then continue by gradually increasing the dosages. Such techniques help one's immune system disregard future exposures to those specific problematic antigens.

### Toxic-thought chemicals

Derived from our #2 Pie choices, these are the most common batch of devastating chemicals that exist. Constant expression of this toxic mix disconnects people and societies, wreaks havoc on lives and clobbers Neogenesis. Bad emotion-evoking SHAGGY thoughts translate into a toxic chemical cascade which interferes with chemical messages. All three groups of messengers (hormones, cytokines and neurotransmitters) are adversely affected. In addition, we can become addicted to these toxic-chemical packages just like we can become addicted to morphine. The good news is that we can control these toxins. Healthy control comes from habitually choosing **#1 PIE!!**



### We can make a difference and prevention is the answer

An exciting study reported in the 1/22/2009 edition of the *New England Journal of Medicine* and funded by the EPA and CDC shows that heroic **efforts to diminish air pollution** in the USA between 1978 and 2001 has directly resulted in Americans living an average of 4.8 months longer. These results were independent of other things that may affect life expectancy, such as smoking. Such changes that have brought about this dramatic benefit have been effectively resisted and delayed by industry and special interests during this period. We have just begun to scratch the surface of the health benefits of such ongoing EPA efforts that are spurred on by environmentally conscious individuals and groups. **Update 6/10/16:** Research from *online Lancet Neurology* shows that worldwide, **stroke** is almost entirely caused by: 1) **modifiable risk factors**, like smoking, poor diet, and physical inactivity, 2) **metabolic conditions**, such as obesity, diabetes and hypertension, with 3) **air pollution** unexpectedly contributing to 29.2 % of the total stroke burden!

The upshot from comprehensive **tobacco-control programs** is also evident. The reduced lung cancer stats for California, the leader in such public protection programs, runs double that of many other states. Also, according to an annual report published online in the *Journal of the National Cancer Institute*, the incidence and death rates for all fatal cancers combined have decreased significantly. This positive outcome, in analysis, reflects the efforts to decrease exposures to the specific toxins for which cause and effect is most apparent. The biggest influence is seen in lung cancer statistics; this associates with less smoking by men.

**Update May 2016:** According to the CDC, over the last 6 years, smoking rates have fallen by 27% which brings the decline in the previous five decades to 64%. In 1965 -- the first year that smoking prevalence data were collected -- 42.4% of adults in the U.S. smoked cigarettes. Close to one in four U.S. adults still smoked cigarettes in 1997, compared with roughly one in seven in 2015.

The dramatic reduction in usage of **hormone replacement therapies (HRT)**, known since 2002 to be breast cancer toxins, also appears to be bearing fruit. Breast cancer incidence rates in women have sharply improved coincident with diminished conventional HRT drug usage.

Lastly, death rates for colorectal cancer are down. More screening **optical colonoscopies** are being done, resulting in more removal of pre-cancerous polyps. For each 1% rise in colonoscopies, death rates from colon cancer drop 3%!

**Update 4/27/2010:** A large British study reported today that having only a single sigmoidoscopy done between ages 55 and 64 would reduce colon cancer deaths by 43%. Colorectal cancer is the third most common cause of cancer deaths.

## Destiny for mankind and our planet—the quintessential question

As our planet becomes  
more crowded and  
confused, will ongoing  
ignorance cause our  
species to become  
'cremated' in a global  
furnace fueled by  
greed?

We, and only we, can  
make a difference!



“What we have proven is that you can protect the environment, use it wisely, and grow the economy; and that there is no conflict between the two.” ~ **Bruce Babbitt** -- 47th United States Secretary of the Interior ~

### So much still unknown --- so little control

In only about 10% of the approximately 1500 new chemicals manufactured and put into products each year have any adequate toxicology studies been performed! We know these chemicals enter our bodies because they are detectable in significant concentrations upon **body burden testing**. We are not certain as to the route of entry and the consequences thereof. In light of the unknown etiologies of the epidemics talked about in chapter one, the current ill-advised, poorly-regulated and unabated chemical manufacturing and dissemination policy is unacceptable, to say the least.

The average person's **total body burden** -- a blood assessment of the totality of bio-accumulated toxins in a person's body at any given time -- is steadily increasing in our now unnaturally-polluted world. The damage resultant from this bio-accumulation might be more clearly understood if we looked for evidence in fatty tissues suspected of being affected. Such **pivotal fatty tissues** include the visceral fat, parts of the brain which direct the FEAST system (the hypothalamus and brain stem), and those impacted by brain-degenerating diseases (the brain's **white matter**).

**Confirmation update 5/19/15:** A USC study published in the *Annals of Neurology* used the brain MRIs of 1403 women, 71-89 years of age, to provide convincing evidence that **air pollution exposures** lead to losses of the fatty white matter of aging brains. Such white matter losses are typically seen in degenerating brain disorders such as Alzheimer's.

Such studies lend support to my premise that the COED-S-related epidemics are likely epigenetic adaptations of our species to an increasingly toxic world. In the obesity-related part, such adaptations begin with our chemically-confused FEAST systems trying to hold onto many of these toxic fat-soluble, man-made chemical pollutants such as trans fats, plasticizers, flame retardants, pesticides, herbicides and others, by creating more storage space. Visceral fat is the body's preferred storage space for such metabolically-challenging fats. These toxic fats cause central obesity and their bio-accumulation expresses itself in many of the adverse health consequences of COED-S. We will not appreciate the ultimate extent of that ongoing expression, unfortunately, until much more environmental damage is done to our species.

**Update 5/17/2010:** For doubters of man's contribution to **global warming**, today's news may help change your minds. The *National Oceanic and Atmospheric Administration* reported that January- April 2010 aggregate world temps were the highest in recorded history. Two days later the *National Academy of Sciences* released its most comprehensive, definitive report ever on climate change. In sharp contrast to its tentative past assessments, it calls for urgent actions to reduce chemical emissions in order to curb runaway **global warming**. The report can be seen at [nationalacademies.org](http://nationalacademies.org). **Update 8/17/16:** July 2016 just eclipsed the Earth's highest aggregate temperature for any month in recorded history!

“Our world faces a true planetary emergency.  
I know the phrase sounds shrill, and I know it's a challenge to the moral imagination.”  
~**Al Gore**~

## Chapter 11

# CHARGING ON INTO BIOENERGETICS

**Energy** is a double-edged sword in wellness. When deficient of energy, life, as we know it, cannot exist. When energy is toxic or in excess, life can easily be diminished or totally lost. **Bioenergetics** is a discipline that studies the flow and transformation of energy within and between living things and their environments. Also, it refers to the aggregate of non-drug therapeutic approaches incorporating practices and applications that can enhance self-awareness and well-being. This chapter discusses a wide spectrum of energies and how you best can use them to achieve optimal health.

Bioenergetics deals with how energy is supplied to and used by organisms, such as you and me, thus allowing them to function. Energy makes things happen and causes matter to move or change. We use energy in the moment and we conserve it for the future. Conserved energy and stored energy causes the powerful thrust of a horse as it speeds ahead in a race, transforms electricity into light and allows sound to burst forth through space. It also possesses, through our **'brain-body connections,'** the capability for our minds to move both conscious and instinctive thoughts forward.

"And what is a man without energy? Nothing - nothing at all." ~**Mark Twain**~

Energy is a vital component of even mundane life. Higher qualities of living such as joy, love, contentment, happiness and peace involve a diverse array of subtle energy-enhancing mechanisms such as gratitude, excitement, laughter and sleep.

"Energy is the power that drives every human being. It is not lost by exertion but maintained by it, for it is a faculty of the psyche." - **Germaine Greer**~

Energy physically exists in **five measurable forms** -- the five are: mechanical, electrical, radiant, chemical and heat. The body, as it interfaces with it's environment, acts as all living things do, receiving energy in all forms and converting it primarily into the chemical form so that we can manage it for our dynamic use. The body can then release it back to the environment in all its forms. We are uniquely blessed with many choices involving energies.

**Measurable energy** is typically appreciated in waveforms that move in space. A waveform represents the resonance of a physical action involving energy conversion. It can emanate from any source, be it two hands clapping or the interaction of subatomic particles. Thought energy is no different. It's not surprising that we symbolize an insight or idea as the 'turning on of a light bulb.' Energy forces generate both of these events. The light bulb electrically generates light; the brain chemo-electrically emanates thought.

**'Gangster Rap'** is a good illustration of a particular waveform and its impact on different people. Young people who find it inspirational consider each other to be on the same 'wave length.' They experience a common connection. Older people, however, who have already endured traumatic nerve deafness from Rock-era music, may find it monotonous, tiring or offensive. They generally prefer sweeter tunes with slower rhythms; they are out of sync with Gangster Rap. Know that I'm not judging this waveform. My point is that, not limited to music, what energies nourish some, poison others.

To wit, I recount my own experience with such a powerful energetic waveform, one that I'm sure you'll recognize:

As I pull alongside a bobbing low rider, driven by a hip young man with his hat on backwards and wearing a blinding array of jewelry, my eyes are drawn to his coolly modified old Lincoln. The Lincoln was clearly a labor of love. The paint shines, the hubcaps gleam, there's not a speck of dirt on the windshield. The Lincoln is quite a rodeo ride.

At first I don't hear the waveforms coming out his ancient but electronically current machine. I feel them. They bombard my car and every other vehicle in the immediate area. I see people rolling up their windows. My car vibrates. My entire body vibrates. The waveforms from the rap music initiate little ripples in the glass in my cup holder. The green tea inside the glass shakes and starts to slosh over the rim of the cup.

As I sit there vibrating, fingertips in ears, I consider the future hearing disabilities\*\* of the head-bobbing occupants inside the Lincoln sound box. I hope those folks live to be my age and can afford the hearing aids they'll need by then. I don't choose to judge these young people or analyze them. I don't want to not share their good energy. I just want the light to change so that I may proceed in peace and drink what's left of my green tea.

**\*\*Update 8/18/2010:** JAMA research reports today a 30% increase in hearing loss in US teens in 2005-2006 compared to teens tested in 1994 -1998. Another 2010 Australian study reported a 70% increase in hearing loss in kids associated with personal stereo devices such as headsets. The use of these devices has increased dramatically in children.

## THERAPEUTIC WAVEFORMS—SAMPLES OF MEASURABLE BIOENERGETIC TREATMENT MODALITIES

**Measurable energy treatment therapies** employ modalities that emit measurable energies. The simplest examples of therapies involving energy transfers are the use of heat, ice packs or the forces of gravity to reduce swelling and pain. The efficacy of most of such modalities lies in their abilities to enhance the movement of nutrients into and wastes out of cells. Such motions optimize detoxification, thereby diminishing unhealthy inflammation.

**Transcutaneous electrical nerve stimulation (TENS)** and chiropractic manipulation have historically proven benefit in helping our bodies heal. As new health challenges explode onto the scene, new bioenergetic modalities spring up to meet them. Let's discuss only a few. **Bronchial thermoplasty** improves severe asthma. **'Nerve re-builders'** emit tailor-made electric currents to stimulate nerves and muscles for treating **neuropathies**.

**Extracorporeal Shock Wave Therapy (ESWT)** uses externally-generated sound frequencies, the energies of which can be focused to target specific areas within the body. ESWT has been used in various healing applications. **Lithotripsy** – a ESWT procedure used to breakup kidney stones has been around for decades. More recently used ESWT modalities have helped stimulate healing in cases of bursitis, tendonitis, wounds, bone fractures, and peripheral neuropathies. Experiments have shown that ESWT induces Neogenic vascularization of treated tissues by stimulating the release of healing cytokines. Most recently ESWT is also being investigated as a treatment for erectile dysfunction.

**Far infrared (FIR) modalities** send heat deeply into tissue causing **vasodilatation** (dilation of the arterial blood vessels). This transiently enhances the blood flow into the tissue. The FIR process, by theory, helps 'nourish' said tissues with healing, Neogenic substrates. There are saunas to sit in, beds to lie in, platforms to stand on, leggings to get into and belts to put on. All acclaim the benefits of the FIR lengths of waveform energy. Once again, the utility of FIR modalities lies in promoting local tissue detox; this action decreases inflammation, relieves symptoms and encourages healing.

### SUBTLE ENERGIES --- the currency of mind-body medicine

*"The best and most beautiful things in the world cannot be seen or even touched –  
They must be felt with the heart." ~Helen Keller ~*

Measurable classical energies -- mechanical, electrical, radiant, chemical and thermal energies -- have minimal brain-specific healing potential when compared to the prospects of subtle energies. In fact, I view subtle energies as the most viable medicine on the planet! Visualize the application of these measurable energies as being similar to jump-starting a car. The car needs the additional external energy because the battery is weak. In assessing modern brain challenges, I see no dearth of energy -- no drained batteries. I see plenty of **brain energy** that is merely disorganized, confused and proceeding in conflicting or counterproductive directions.

Much energy is invisible to the eye. Yet, it is evident in the thoughts that travel from mind to mind, the amplification, diminishment or rearrangements of energetic forces within the body and the information the brain perceives through many of its 'special senses.' Sometimes we tend to dismiss the energies that we can't measure or 'see'-- but in reality those are the energies with the most profound effects on our lives. The **subtle energies employed in healing** -- and they are legion -- are not visible or easily measurable. These energies include imagery and meditation, yoga and acupuncture, laughter, and especially sleep. Love, affection and nurturing are other examples; we see their manifestations, but we do not see, nor can we measure these energies. We see what they become. Seen and unseen energies surround us as well as every single entity of any kind on our spinning globe. Bioenergetics - **energy** - is what makes 'our world' go around.

A simple example of 'therapeutic subtle energy' is the resultant internal chemistry one would appreciate by merely petting your cat or dog. Although mechanical energy is involved, most of the currency exchange in the transaction is subtle energy. You can feel the resultant chemistry thereof; this is powerful medicine. In fact, studies show that providing a lonely elder with such a pet significantly and positively impact the quality and longevity of that person's life. Pet lovers will affirm that if such an animal's brain has not been damaged and you bond with it, the pet will always share with you **unconditional love**, a powerful subtle energy. Someone getting a #1 Pie **therapeutic massage**, or compassionately done **chiropractic manipulation**, is similarly getting this combination of mechanical and healing subtle energy boosts.

As the East is invited to meet the mind-expanding West in the practice of mind/body medicine, we appreciate the value of acupuncture and other ancient traditions involving bioenergetics of a subtle nature. Biofeedback, meditation, guided imagery, therapeutic touch, breathing and meditation techniques, self-hypnosis, prayer, spiritual healing, acupuncture, acupressure, Reiki, qi gong, melodic intonation therapy (MIT), Eye Movement Desensitization and Reprocessing (EMDR), applied kinesiology as well as techniques allowing patient self-expression through words, drawings and movement are only some of the modalities that involve subtle energies. They embrace and address the bioenergy field intrinsic to the human body. Positive health results from these methods do not relate to any quantitative change in total brain directed energy, but rather a better reorganization and improved processing of that intrinsic bioenergy field.



Although subtle energies are not typically measurable in terms of waveform characteristics, their impact can clearly be seen. The June 11, 2007, issue of *Family Practice News* reported that patients with diabetic neuropathy improve more with Reiki than with 'usual care,' as measured with pain scores and walking distance. These bioenergy interventions are still very controversial to the mainstream. Doubters believe the positive impacts of such interventions are similar to the 'placebo effect' and attribute their benefits to the power of suggestion. I suggest back to them that 'power' is energy as it is utilized in healing. The body is of a sophisticated and complicated design with the brain fully in charge! Pun intended.

Let me demonstrate this for you. A study in the journal *Stroke* reported that severe stroke victims who used virtual reality games for one hour each day, five days a week for a month, improved in walking, climbing and standing as opposed to a control group that showed no such improvement without video game help. The lead author Sung H. You, of Hampton University also related that functional brain imaging studies done before and after the experiments clearly showed better reorganization of brain function after the video therapy. This demonstrates this application of both measurable energy and subtle energy in Neogenesis. The video waveform measurable in the visual spectrum is taken into the body via the retina where it is available for subtle use by the brain.

Subtle energy reorganization generates powerful yet internally-generated videos, so called **imagery visualization**, which similarly can be used to improve athletic performance in any sport. The athlete simply visualizes the action occurring with perfect technique as well as the result in simulation inside his mind and then imitates it with concentrated focus in body movements. The energy again goes both ways and reinforces neurological pathways in both directions, as repetition enhances the imagery. The quality of visualization is an important aspect of all such learning and functional performance, not just in athletics.

Imagery visualization represents no additional external energy input, but merely a reorganization of the existing internal energy field that stimulates and reinforces more productive neurological pathways. Neogenesis is at work here in the neuroplasticity and regeneration.

These **energy reorganization** healing benefits are easy to grasp if one understands Neogenesis. Visualize the Global Roadmap analogy for the brain and ask yourself, "How well would I function if much of the energy traffic along these roadways in my brain were going the wrong direction?" Instead of efficient traffic flow, the impediment of 'push' and 'pull' would leave you immobilized in brain lock. This can be seen clinically in the form of emotional conflicts which adversely affect your functional performance and ultimately generate negative feelings. Feelings are brain energy constructs.

Using the Global Roadmap analogy, imagine this concept of **dynamic energy flow**: on our planet's roadways we have over six billion people; at any given time many are in motion. Whether we are on foot or on vehicles, we have traffic rules to improve efficiency and avoid delays and accidents. We are constantly maintaining roadways and building new ones. Your brain works in a similarly dynamic fashion. By analogy, instead of six billion people, in your brain there are billions of packages of energy, a huge number of which are in motion at any given time. There is ongoing resurfacing of existing pathways as well as new paths continually being formed. It would be a chaotic and dysfunctional situation without open and efficient pathways, appropriate traffic rules and controls, ongoing reorganization and refreshment.

Use that same analogy to understand **energy storage**. How inefficient would it be to merely park our vehicles on the freeways? We have homes with garages to park our cars, and chairs and beds to park ourselves. Similarly, this storage function is vital to the dynamic reorganization of brain energies. In analogy, the brain cells in the hippocampus can be thought of as the parking attendant staff for the confluences of brain energies we call **memories**. Let me explain.

The new experiences from each day's activity will be integrated by the formation of memory. For example, you parasail in San Diego for the first time. The enjoyment excites you both physically and mentally. If the parasailing adventure is deemed important enough by the discriminating neurons of the **hippocampus** part of the brain, the idea and activity will result in fresh highway constructs to accommodate that experience. In short order your brain energy will be reorganized and new memories integrated in the **prefrontal cortex** (the brain site of emotional and cognitive learning). In the future you can access that experience through various associations. For example, it will be associated with San Diego, boating, the person with whom you had fun, the sun-kissed sea breeze blowing in your face and other things deemed relevant.

Such learning is a way that, in an accurate sense, truly changes your mind Neogenically. This entire process of integration and reorganization is a physical thing because the retention and sharing of this parasailing energy requires new pathways. New dendrites are born and pushed outward from the existing neurons involved as 'learning' occurs.

The reorganization is in the new connections being formed dynamically. Simultaneously, some pathways are upgraded by increased use, while others are downgraded by failure to refresh. So the brain, in the process of learning, is constantly changing in both the organization of energy and its physical connection constructs. Neurobiologists refer to these dynamics as **neuroplasticity**. Because this plasticity is volitionally controllable through one's focus, and since the mind is inevitably connected to the body in a position of powerful influence, the potential opportunities in healing are tremendous.

As an example of this concept, James S. Gordon M.D. and his colleagues showed that, by using teacher-administered bioenergetic techniques, they could durably improve symptoms of severe **post-traumatic stress syndrome** in children psychologically traumatized during the 1999 conflict in Kosovo. The specific '**changing the focus**' techniques that they used included: encouraging self-expression, biofeedback, meditation, guided imagery and structured breathing.

### **Airbrushing out injury**

This Neogenic principle offers tremendous therapeutic potential. For example, if what we learned is physically or emotionally painful, traumatic or harmful in any negative sense, we can, by our choices, will its memory to be reinforced or diminished by changing our focus. Such selective recall is the healthy norm, not the exception. The important point is that learning and the neuroplasticity will occur in the direction of focus. We choose the focus. We can focus on the negative aspects of all things in life and generate and reinforce Neogenic pathways leading to despair. We can, by our choices, alternatively focus on those #1 Pie energies that generate and strengthen pathways to healing, health and happiness.

These 'learning' phenomena occur with optimal efficiency when brain energy is managed **harmoniously**.

### **THERAPEUTIC REORGANIZATION -- the harmonious management of brain energy flow**

Like a physical highway system that needs constant cleaning, repair and expansions, the brain's energy pathways need ongoing 'clean-up,' reorganization and growth. This is best done by getting adequate sleep and relaxation. During sleep, catnaps, meditation and other forms of 'active relaxation' the 'energy traffic' traveling the cerebral highways is lessened. This allows for cleaning, building, reorganizations and repairs of the brain's roadways to occur faster and more efficiently.

**Update 10/8/13:** U. of Rochester researchers confirmed in *Science* that when asleep or inactive, brain cells shrink, thereby enlarging the interstitial spaces around them by about 60%. This allows for cerebrospinal fluids to circulate better, thus enhancing removal of toxins such as ***βamyloid*** and ***tau protein*** -- waste products associated with Alzheimer's. **Update**

**10/19/18:** Insomnia associates with Alzheimers by a 1.5-fold greater risk and depression by a 2.5-fold one!

**Sleep** is vital for optimal health and healing. The ideal amount needed varies. For example, a newborn needs lots of sleep (80% of which is **REM sleep** where **rapid eye movement** and dreams are most common) because, genetically-chartered highways are being constructed in its brain at an excited pace. Similarly, in individuals who suffer severe brain injuries we commonly see a profoundly deep sleep called a **coma**. A coma allows time for difficult, yet vital, repairs to be made and functionality to be restored. On average, healthy adults appear to need 7 to 9 hours of sleep a night to function optimally.

Adequate sleep is needed for optimizing many brain-influenced functions such as the control of one's weight, blood pressure, recognition of pain and immunity. To wit, a 2009 study showed that, when challenged by cold viruses, people who averaged 7 hours sleep a night were 3 times more likely to catch a cold than those getting 8 hours of sleep per night.

**Update 11/14/11:** A 10 year study of 12,350 women over 45 in *Arthritis & Rheumatism* shows a 5-fold higher risk of developing ***fibromyalgia*** in those who, at the study's onset, reported frequent sleep difficulty over ones with normal sleep.

By 'refreshing' the brain, and so improving its performance, sleep influences many bodily functions and even morphology. The brain is the control center of FEAST! Published studies show **inadequate sleep** is associated with childhood obesity as well as **central obesity** -- a hallmark of COED syndrome. Sleep of poor quality increases levels of **ghrelin**, a FEAST hunger messenger, while diminishing **leptin**, a FEAST satiety messenger.

Our brains are hard-wired to function best with a sleep rhythm that is in sync with our ultimate energy source -- sunlight. Many sleep studies show poor performance when our sleep is 'out of tune' with this **circadian rhythm** -- a tempo that involves timing, intensity and duration of both sleep and wake phases. To wit, night shift workers make more mistakes in almost every field studied. **Sleep disruption** is commonly seen in COED-S -- the profile change showcased in this book.

Studies show a link between primary sleep abnormalities and both cardiovascular and metabolic diseases, including obesity, hypertension, stroke, heart failure, cardiac arrhythmias, cancer and atherosclerosis. **Update 6/18/15:** A Russian study shows having a sleep disorder doubles the risk of heart attack and increases the risk of stroke by up to four times.

**Sleep deprivation** plays a role in activating the inflammatory cytokines interleukin-6, tumor necrosis factor and C-reactive protein -- cytokines that stoke inflammation-related diseases. This explains why **shift workers** have a 40% increased risk for cardiovascular disease. **Update 11/12:** A Danish study finds that night work increased the odds of getting **breast cancer** by 40%. **Update 7/24/14:** A multinational study found that shift workers were 9% more likely to develop diabetes.

Sleep disturbances such as **hypersomnia and insomnia** are common symptoms of a toxic brain. They appear in many of the DSM-V criteria for psychiatric ills. Common sleep disrupters include sleep-disrupting noise, light, alcohol, caffeine and nicotine as well as the following meds: antidepressants (especially SSRIs and tricyclics), corticosteroids, and statins. Many sleep problems are helped by **sleep hygiene interventions**. The basic elements of a sleep hygiene strategy are:

- 1) readying oneself mentally and physically for the sleep and awaking phase of the circadian rhythm
- 2) eliminating **sleep disrupters**, such as the above meds, overly stimulating pre-sleep activities like T-V viewing, distracting lights and noise
- 3) incorporating **white noise** -- a sleep-beneficial waveform such as that produced by a fan) and by
- 4) exercising regularly.

## TECHNIQUES THAT USE THERAPEUTIC REORGANIZATION TO OPTIMIZE BRAIN ENERGY FLOW

Guided imagery, self-hypnosis, biofeedback, meditation, yoga, cognitive behavioral therapy and other therapies incorporate dynamic energy reorganizations that have, like sleep, been shown to improve mental and physical performance. Let's briefly discuss a few of these.

### ***Self-hypnosis***

Much information exists on the Internet and in print about this powerful self-directed therapy. Effective in issues involving pain, anxiety and addictions, these easy-to-learn techniques SEEK well. When we do our own brainwashing, we can cleanse our precious Global Roadways of only those ideas that we define as 'trash' or mental clutter. Such techniques can give one the deepest emotional permission to move forward.

### ***Transcendental Meditation (TM)***

Many forms of meditation induce therapeutically reorganized brain states in which your heart rate, blood pressure and respiration are reduced. These slower rhythms are reflections of a more nurturing flow of mental energy. TM augments such flow by the enduring utterance of a low frequency sound such as 'Ah-mmmmmmmmmmm.' In a 5 year prospective NIH study showed TM reduced rates of heart attack, stroke and all-cause death by nearly half. **Update 11/15/18:** New research suggests TM is as good as other traditional therapies in relieving **military-veteran-related PTSD symptoms**.

### ***Cognitive behavioral therapy (CBT)***

CBT is a form of therapy that teaches people to more quickly recognize their thought patterns and alter them in ways that foster calmness when somatic expression of unwanted anxiety symptoms begin. CBT has a long and successful track record in treatment of depression and other mental issues, especially post traumatic-stress disorder. It has utility in any illness in which anxiety symptoms seem to fuel the somatic expressions such as in irritable bowel syndrome or tension headaches. As in all similar therapies, its success depends upon the will of the individual. Such bioenergetic therapies work only when the individual wants to get relief and is willing to commit to beneficial changes in his thinking.

### ***Eye Movement Desensitization and Reprocessing (EMDR)***

EMDR is a tool that has been used to successfully treat psychological stress in millions of patients. Most often employed in conventional psychotherapy, it takes advantage of the brain-body connections and neuroplasticity healing features inherent in Neogenesis. The process uses specific protocols and procedures to mimic the benefits of REM sleep. During REM sleep the brain is Neogenically enhancing its information processing-like systems. EMDR provides a goal-oriented or therapist-guided way to encourage more durable stress-relieving benefits.

### ***Melodic Intonation Therapy (MIT)***

MIT has been successfully used for decades to treat stroke victims with damage to **Broca's area** -- that portion of the brain which controls most speech functions. Broca's area functions seem to develop only on the dominant side of one's brain. If you are right handed, these functions would reside in the left temporal lobe of your brain. If you suffer damage to Broca's area you'd likely have difficulty in expressing your ideas in normal speech patterns. MIT takes advantage of the fact that **the rhythm of speech** resides in the opposite temporal lobe. By singing and simultaneously stimulating the right brain, by left hand finger tapping, MIT Neogenically 'reassigns' to the uninjured speech areas those functions originally handled by Broca's area. The neuroplastic healing theorized by MIT has now been documented with **Positron Emission Tomography (PET)** scans administered after MIT has been completed on patients. This explains why immediately following my 2001 left brain injury, alluded to in the preface, I spoke best only in an odd poetic-like style.

### ***Notched music therapy***

In the 5/13/2010 edition of *Daily Health News*, research from Germany tells how most cases of **Tinnitus** can be lessened. This older age-related 'ringing in the ears' handicap typically involves a narrow range of sound and affects about 12 million Americans. In this therapy, the exact frequencies of the 'ringing' are determined and electronically removed from a sufferer's favorite music. He then listens to that music 12 hours per week. The tinnitus typically subsides after 6 months.

All such bioenergetic interventions demonstrate the fantastic possibilities of knowing that the brain will Neogenically develop, grow and heal in the directions of energy focus and influence, and in doing so will allow the body to follow.

## **STATIC DISRUPTIONS -- avoid crashes, pileups and gridlock on your Global Highways**

In contrast to the nurturing pure tones and rhythms of well-organized brain energy flow, is the interference from the mixing of conflicting waveforms called **static**. TV channel surfing is a good brain-disorganizing example. It generates static in the brain that confuses, disrupts and diminishes Neogenic processes.

How do you feel when watching TV while someone is channel surfing? It is literally mind-boggling. Yet, you can do it to yourself with little notice. How often do you catch yourself late at night channel surfing and, in disgust, wonder where the last couple of wasted hours went? A pearl is: avoid or mitigate insomnia by watching less TV, especially before sleep!

In most common scenarios, you can figuratively drive yourself around in circles while you are in control of your mind's channel changer. That 'channel changer' directs the focus of your thinking. Ever notice that thoughts are continually flowing into your consciousness? They can flow like a gentle stream—clean, smooth and refreshing. Or, if you let them, they can pound your mind with a turbulent flow of mud-polluted water. The first step in exerting control of the flow of energy in your mind is to recognize that only you have control. You are the sole driver on your global highways and the lone traffic officer. Never surrender control of these vital duties. They are easy jobs that pay well. You want to be happy? Permit only #1 Pie energies to flow and nourish the Neogenic self. You have been given a precious brain — the supreme gift. Allow no speeding, no drunk or reckless driving, no road rage and no littering of your brain's pristine Global Roadmap. Zero tolerance allows no setbacks for Neogenesis.

## THE ENERGY SPECTRUM -- THE **VERY BEST** -- THE GOOD -- THE BAD -- THE UGLY -- THE UNDETERMINED

### FIRST -- THE **VERY BEST**

#### Soul's Food Dining — the power of #1 Pie

If you look closely at the menu choices at Soul's Food Diner, you will see that the ingredients contain no mass. Both menu choices consist only of **subtle energies**.

Subtle energies work like prescriptions presented to the most quintessential of compounding pharmacists — the brain. The brain then fills these orders with precision and to perfection. The brain then dispenses and delivers those resultant chemicals of greatest influence to the entire body.

If the prescription you choose is **#1 Pie**, its effects are, in all ways, far more nurturing than any pharmaceuticals ever made. They temper the Neogenic processes of growth, learning and healing.

**#1 Pie** is the panacea for mind/body medicine.



Honestly ask yourself this simple question: How empty would my life be without **#1 Pie** energies?

The **Truth** is: we are soulful creatures who are endlessly loved; we can best know this when we choose **#1 Pie**!

## THE GOOD -- **HARMONIC ENERGIES** -- “good, good, good vibrations” ~ lyrics from 1966 hit by **The Beach Boys**

**Focused appreciation: A practical doorway to #1 Pie** -- Subtle nurturing energies direct us to peace and harmony. Whoever came up with the idea that it is better to give than to receive must be referring to this energy package. The most salient point in this book is the power and empowerment of #1 Pie. If you start consuming and serving it, you will quickly see what I mean. As time and Neogenesis proceeds, you will feel better, look better, function better and be better welcomed and connected socially in places of real worth.

Imagine a doorway that opens to a world full of beauty and splendor, a doorway that is always available. There is such a doorway within your mind that is filled by this miracle of life and the ‘**key**’ to access its entrance is through appreciation.

"Happiness doesn't depend on who you are or what you have; it depends solely upon what you think."

~Dale Carnegie~

## Some 'keys' for opening *the 'appreciation doorway'* to a healthier emotional growth

**Prayer**—the majority of people on this planet access the appreciation doorway in this humble and simple manner. Start the prayer by listing things for which you are grateful; this allows you to focus and visualize things most precious. That focus makes those things for which you're praying more likely to manifest. Prayer renders peace and harmony within!

**The attitude of gratitude**--Your mind has amazing potential. What you 'see' in your mind is determined by where you guide it to look. The brain continuously grows new neural networks according to where the brain focuses its attention. Regardless of your age, these neuroplastic activities will take place, making it easier for you to be happy or unhappy depending on where you guide your thoughts. Focused thoughts of appreciation SEEK well and can be powerful egalitarian bioenergetic tools.

Research shows us that thoughts of appreciation play an important role in the happiness and health of an individual. Psychology professors Robert Emmons and Michael McCullough, authors of *The Psychology of Gratitude*, extensively researched three groups of volunteers. The members of the first group were counseled to focus on what was wrong in their lives, the second on what they were most grateful for and the third upon ordinary life events. As time passed the members of the group who focused on what they were most grateful for developed a higher quality of life; they were happier, had less sickness and were more active in beneficial ways, such as exercise, than members of the other groups.

**The teamwork technique** -- if you take a little time each day to help guide the focus of your children's minds to more nurturing thoughts, you will quickly see durable positive results. My son Steve first introduced his **appreciation doorway** concept to my then six-year-old grandson Max, who was having behavioral issues in school. Steve started appreciation mental exercises with Max to help restructure Max's attitude. One week later the teacher told my son that Max's behavior had dramatically improved. Bathing his mind in grateful energies is creating a brighter world for Max.

"Today is a bright new day, filled with wonderful possibilities. It is up to me to find them."

~~Max Bailey Ferrel starts each day with this self-reminder~~

Working as a team, my son starts the day asking Max what two new things he is thankful for at the moment. He then asks Max what color each is. Max's eyes light up when he describes the items in more detail. Max has the whole process down well and knows this exercise adds vibrancy and clarity by adding detail, color and brightness within his now positively focused mind. The whole process usually takes only a couple of minutes, but immediately after, Max is noticeably happier.

Working as a team, my son and Max perform this activity three times daily -- in the morning, when my son picks Max up from school and at night. These mental push-ups are helping Max steadily strengthen those pathways of the brain that access the #1 Pie. With this simple technique Max is coloring his life and becoming a master designer of beautiful mental images. His focus is now on appreciation. His teacher now emphatically says, "I wish I had a classroom full of Maxes!" Parents should take the time needed to open this doorway for their children because: In all cases, without lovingly-guided direction, any child's mind, by default, looks for what is wrong or unsafe with his world or himself.

The child-parent team approach sets the optimal stage for empowering the child. This format encourages the child's self-esteem. Filled with a positive self-identity, the child becomes less vulnerable to inevitable future adverse influences. This team approach not only makes parenting more fun, it allows both parties to grow stronger emotionally and spiritually.

It is becoming all too common for children like Max to be given a drug to change their behavior. Instead, I would prefer to see thought-directed seeds planted within the minds of our children that will sprout blessings for our future world with continued nurture. I am concerned that, by drugging so many of these children, we are interfering with the possibilities their individuality has to offer. Drugs used in this manner work by merely covering up, not removing, the thorns. In many cases, pharmaceutical drugs are counter-productive in learning. Their increasing use may partly explain the parallel worsening in the academic performances of our educational systems.

**Healthy verbal and other communications** -- A rich social life and having friends is protective against developing Alzheimer's disease. Elderly people with few friends are more than twice as likely to develop Alzheimer's disease as those with friends.

"A friend is one before whom I may think aloud." ~Ralph Waldo Emerson~

**Pleasant sounds** -- Does anyone doubt the healing properties of inspirational music or the voices of loved ones?

"Pop music is aspirin and the blues are vitamins" ~ Peter Tork -- former member of the Monkees ~

Research has demonstrated that the brain's 'feel good' chemistry can quickly be influenced by certain types of music. It is well known that certain types of music can emotionally influence our willingness to purchase items in stores. Most store managers are savvy in applying these waveforms to marketing.



Pleasant music has Neogenic healing potential as well. Better constructs are built when their 'honey' contains pleasant emotional ingredients and the constructs are directed towards the nurturing energy destinations we emotionally crave. I'm willing to wager the same effect would be seen if we attach pleasant sounds to the new neurological constructs. Many sophisticated expectant mothers have picked up on this and have given their developing fetuses musical 'good vibes' trans-abdominally. Every positive thing one can sense can be used in our Neogenic constructs starting from day one.

**Update 5/13/2010:** *USA Today* relates research done by Seth Pollak and others from the University of Wisconsin-Madison. They measured both 'fear' and 'happy' hormones induced in 7-12 year old girls stressed first by speaking and math solving before an audience, then again in response to hearing the soothing voices of their moms. The resultant marked contrast in hormone levels shows how the brain emotionally interfaces to all incoming energies, including sound. Brain generated chemical messages, be they positive or negative, are sent to the entire body to Neogenically influence such functions as learning, healing and loving. Make no mistake, the brain is in charge of everything -- pun intended.

**Lovely smells** — A March 2007 article in *Science* describes a study that demonstrates how aromas that we have emotionally attached to past pleasant memories can facilitate new memory formation, even while asleep. The subjects were exposed to pleasant flower aromas while playing memory games. Later, some of the subjects were exposed to the same pleasant aromas while asleep; the control group slept without the aromas. The next day those exposed to the aromas while asleep performed significantly better in recalling the objective data presented to both groups in the games.

This should come as no surprise. The construction of our global highways doesn't stop with sleep. Sleep's low traffic flow gives more time and opportunity for assimilation of new information. Assimilation involves 'unlearning' of conflicting data and steams of knowledge and the opening up of new channels of reorganization. This is physically reflected in the formation of new dendrites and their attachments to other neurons.

**Loving relationships** — Much of our intake of subtle energy, both good and bad, comes from the relationships we have with all soulful creatures -- people, pets and, most importantly, **Holy Spirits** included. Relationships, or the lack of them, powerfully influence our well-being and the quality of our Neogenic honey.

I call these special nurturing beings in my life the **cheerleaders**. Cheerleaders are the people, pets and other spirits with whom you feel most comfortable hanging out. On the deepest level Cheerleaders seem transparent. When they are with you, in the spiritual sense, you get a charged-up feeling like they have invisible cheerleading uniforms on with your initials on them. They seem to be rooting especially for you. Cheerleaders brighten up your life by sharing #1 Pie energies.

Even though some **marriages** are clearly toxic, over all people live longer, happier and healthier lives when they are married. Marriage lowers your risk of cancer, heart and lung diseases, mental illness and suicide. From my viewpoint as a primary care practitioner for many years, most of the credit for the successful marriage stats is due to the typical wife because she cares. She cares enough to encourage better lifestyle choices, feeds her man better and even makes sure he gets proper medical care, often despite his reluctance. Usually it is the woman in the family who is the **true caregiver**. She not only cares for the husband, she cares for her children, her grandchildren, her parents, her friends and her pets. Her love, this caring, makes a huge subtle energy impact on many. **Update 1/22/18:** A meta-analysis recently published in the *Journal of Neurology, Neurosurgery, and Psychiatry* confirms that being married lessens one's risk for **dementia**.

### **Healthy affection**

Genuine smiles are healthy.  
Authentic winks are exciting. Truly  
caring hugs are therapeutic.  
Desirable passionate kisses make us beam.  
Appropriate cuddling can be a safe portal to conflict resolution.  
Sharing personal fears with compassionate friends can often evaporate them.

"Love is an energy which exists of itself. It is its own value." --Thornton Wilder~

### **Letting joy out of its cage**

When we paint our vital force energy system with the subtle energy color of **joy**, the benefits can quickly be appreciated. Healing chemistry is set in motion instantly. We 'see' it in a spontaneous smile or unrestrained laughter. Joy is powerful and contagious. One's mood rockets up as stress falls aside. But does joy render any health benefits and are they durable? Studies alluded to in the 12/7/2009 Internet issue of *Bottom Line's Daily Health News* strongly suggests the answer is yes, of course. **Laughter** proactively incorporated into the lives of study participants lowered blood pressure and inflammatory markers, while impressively increasing HDL -- the 'good cholesterol.'

**Embodiment techniques** – Want to resolve a frustrated or gloomy mood and its adverse impact on your body and your social relationships ASAP? These self-directed therapies demonstrate that the body and the mind are so intertwined that ‘brain energy traffic’ flows in both directions! If we intentionally display emotional expressions of joy by laughing, smiling, dancing, singing or posturing, corresponding feelings quickly follow. Such techniques use **‘body-toward-mind flow’** to create **‘feel good chemistry’** by instantly reorganizing brain energies to positively influence our thoughts and feelings.

**Laughter Therapy** –You can use this when you’re around children or adults who are not afraid to let the child inside their minds play. You simply face off with other willing participants and start laughing with all the funny faces you can express. Maintain eye contact and continue the unrestrained laughter. Happy feelings from that heartfelt laugh will quickly evolve. You don’t even need another person, just look in the mirror and unleash your joy. In our deepest needs, we want to play and be happy in each moment, but we typically let adult role-playing get in the way. Experiencing the subtle energies of **humor** and **laughter** helps create nourishing chemicals for our construction of ‘the good honey.’

Studies show that **humor therapy** reduces agitation and gloom typically seen in dementia patients. Unlike problematic anti-psychotic drugs most commonly used for such symptoms, humor therapy has little downside. To best use humor therapeutically, first recognize when you become flustered. Step out of the ‘unhappiness scene’ emotionally, look at that ‘scene’ from that safe distance, then calmly ask yourself, “What is humorous about this situation?” Force yourself to outwardly express happiness and look at the funny part. The nurturing internal chemistry of happiness quickly ‘forms.’

I have no way to validate its message, but a TV ad by AIG features the cutest joyful infant interacting with an infectious laugh. At the end it says, “Laughter can add eight years to your life.” True or not, one thing is certain—nobody knows more about longevity than life insurance companies. BTW, another cute AIG ad claims **singing** adds 15 years. They may be exaggerating, but aren’t they on the right track? Don’t you prefer these kinds of ads over ones designed to sell drugs? For you women, here’s the secret of why men often sing in the shower: they expect something nice to happen -- soon!

Think that I’m just blowing smoke? Research from the University of Maryland Medical Center in Baltimore suggests that laughter and joyful music both have a cardiovascular benefit. It shows that listening to stressful music causes constriction of arteries. Joyful music produces vasodilatation of those same arteries. It is likely that the brain initiated, cytokine message-chain is quite complicated but very real. The final beneficial message-relay is delivered, most certainly, by the vasodilator **nitrous oxide**. Blood flow to all tissues, not just the heart, is vital to optimize all Neogenic processes.

Gregory Fricchione, M.D., director of the *Benson Henry Institute for Mind Body Medicine* touts related techniques such as positive body posturing and movement, smiling, dancing and self-hugging for short term mood enhancement. Studies show that self-hugging increases one’s level of **oxytocin** – the bonding hormone that new Mothers make during and after childbirth. He cautions that such short term fixes have limited effectiveness when one’s circumstances generate ongoing negative feelings. I agree. All Term benefits are best gained by applying the entirety of this book’s **Life Dynamix** strategy!

## THE BAD -- ‘STATIC (the opposite of harmonic) ENERGIES’ -- WAVEFORMS OF BRAIN DISRUPTION

**Excessive TV** -- Most women I know agree that watching three football games at one time is toxic. Hateful and other #2 Pie agendas are the dominant subliminal messages emanating from much of the contemporary TV news and programing. We can get trapped in the attention brain lock with this ‘junk food’ form of **toxic energy**. **Update 1/2010:** In *Circulation*, researchers found that for each hour of TV viewing reported for one’s average day, the risk of death from cardiovascular events increased by 18 percent. The study’s 8800 participants were followed an average of 6.6 years. **Update 11/2014:** *JAMA Internal Medicine* research found that TV viewing also causes an increase in ‘mindless eating.’ Further, more food was consumed with ‘high action’ (more fluctuations in sound and scenes) than with less brain- disrupting program content.

**Noise** is a disorganizing and often destructive waveform. Every place is getting noisier and thus more **‘mind-boggling.’** Electronically synthesized chaos is now the norm. Marketing-driven, most profit venues feature the subtle persuaders of screeching tunes. The brain goes into frenzy. We buy more, drink more, gamble more and eat more when the brain is so excitedly disrupted. It is typically easier to attack the drinks, food or gaming tables than to talk with your companions.

Israel has effectively employed a noise device called **The Scream** against Jewish Gaza strip settlers and sympathizers who resist evacuation. It renders people dizzy and sick via toxic brain. Barking dogs or any animals in pain will also stress most of us who care about animals. Likewise, my brain-bashing old alarm clock left me with an ‘alarming’ internal chemistry that I clearly could feel. The feeling was likely mediated by an instant cortisol and epinephrine ‘rush.’ If you don’t like such a feeling, get a less alarming one that awakens you more gently, because the stressor-induced chemistry is toxic. That instant mind jolt may explain why strokes and cardiac arrests occur most frequently during the awaking hours.

**Toxic thoughts from # 2 Pie** -- When you focus on negativity one negative thought often leads to another, like a maze without an exit. Such thinking leads to dark and SHAGGY places in your mind. This thinking reminds me of mud-bogging. When you get stuck there, the harder you rev your engine the deeper you get.

Imagine the chemistry of this toxic thought and its impact on Neogenic healing processes. The formula is simple: toxic thoughts convert to endogenous toxic chemicals that poison future Neogenic constructs. Toxic thoughts are powerful energies of our choosing that represent a serious impediment to good health and happiness.

Proving once again that the brain is connected to the body, a British study published in the October 8, 2007 edition of *Archives of Internal Medicine* showed that bad interpersonal relationships and heart disease are linked. The same research team lead by psychosocial epidemiologist Dr. Roberto De Vogli will now be trying to determine the exact mix of stress chemicals that mediate the inflammatory connection. Similar bad health linkage has been noted in individuals who are 'loners.' My advice is hang out with the cheerleaders and be one yourself. It's so easy to choose #1 Pie!

**Cross communications** --On the opposite side from 'cheerleaders,' in this subtle energy-filled arena called relationships, reside the '**energy vampires**.' These #2 Pie eaters seek constant cross communication with you. They seem to be from a planet called cruelty. If you allow them to insert their fangs, they insatiably squeeze and suck.

You can turn yourself into an energy vampire. You can poison the conversation with emotional toxic energies from the #2 Pie. You can choose to lead by domination and intimidation while carrying the banner of pride. You can be a psychological game player that simply stymies your growth and poisons your relationships. Of course you know that when I point a finger at 'you,' I'm pointing three back at myself. I'm guilty 4 times over in this paragraph alone!

**Harmful actions that follow toxic thought** -- The exact opposite elements of SEEK--Unsafe, Ineffective, Difficult, and Unkind-- emanate from toxic thoughts. These 'dark thinking' choices reflect the **four most common neurotic drivers**:

1) By '**trying hard**,' you script yourself to fail. 2) By trying to '**be perfect**,' you become paralyzed with your focus on fault. 3) By trying to '**be strong**,' you isolate yourself emotionally. 4) By trying to '**hurry up**,' you drive recklessly towards a fruitless imaginary destiny, leaving yourself and many of your significant others injured along the highways of your life.

## THE UGLY -- WAVEFORMS OF DESTRUCTION

**Excessive radiation**—throughout the waveform spectrum there are frequencies that will harm us with excessive exposures. For instance, excessive exposure to the ultraviolet components of sunlight causes most skin cancers.

The movie *The Conqueror* was filmed near St. George, Utah, in 1955. Starting in 1951 and extending into 1962, the US military detonated atomic bombs in Yucca Flats, Nevada. Much of the fallout was directed into the film shoot area of Snow Canyon. According to Cecil Adams, writing for the [www.straightdope.com](http://www.straightdope.com), 91 of the 220 workers on the film contracted cancer by the early 1980's. Of those, 46 had died of cancer, including John Wayne, Susan Hayward, Agnes Moorehead and director Dick Powell. Thirty years after the testing, over half of the St. George residents had contracted cancer.

I grew up in Winslow, Arizona, which is also downwind and in the cast of the toxic plume. Few people outside the area know that if you can prove you or an immediate family member lived there in the appropriate timeframe and died of a long list of cancers, the remaining family members are entitled to a \$50,000 family benefit. It is called the *Radiation Exposure Compensation Program*, better known as the **Downwind Project**. The government would not pay for this goof unless they knew in advance the dot-connecting truth: **nuclear fallout** is invisible and can kill years after exposure.

**Radon gas** is a similar and extremely common avoidable ionizing radiation risk. The EPA says that radon gas found in some homes is the second leading cause of lung cancers. They recommend testing and remediation of homes with a persistent radon level of 4 pCi/L or more. Radon test kits are commercially available.

**Great excesses of energy** in any length of waveform can harm you. Low frequency waves of great amplitude such as a tsunami pack enough power to smash you. High frequency waves such as X-rays can be 'focused' to kill targeted cells. Related radio frequency devices are approved to kill inoperative cancer cells. Your eyes receive light waves in the visual spectrum, so excesses of visible light will kill the neurons in the retinal of your eyes -- a good reason not to look at an arc welder, a laser or an atomic explosion without proper eyewear. Your ears receive waves of the auditory frequency; hence loud noise can injure your acoustic nerve cells. **Update 10/10/ 2009 about heat energy: A core body temp of over 107 F. kills human brain cells.** Remember James Ray? He was the 'spiritual warfare guru' who masterminded the sweat lodge fiasco in Sedona, AZ. For \$9695 each he proved to 68 of his followers that enough heat can kill human brain cells!

**Electro convulsive therapy (ECT)** --This bioenergetic intervention is used for severe depression and other diagnostic excuses at a rate of one million people each year. Psychiatrists who use ECT claim induced seizures cause the brain to work better by releasing neurotransmitters. I judge this intervention as one step down the cruelty ladder from prefrontal lobotomy. My limited experience is based on a summer externship done at a state mental hospital completed before the movie *One Flew Over the Cuckoo's Nest* came out. This movie seemed to help curtail some of the abuses in these institutions. Of course, the mentally ill are still a very vulnerable group of powerless people who need ongoing advocacy.

The current opinion popular with physicians who use ECT is that ECT does not cause brain injury. I disagree. The descriptive statement straight out of their disclosure form -- "... *usually after weeks or months associated memory difficulties and the ability to learn returns,*" seals the deal. Neogenesis occurs in all cell lines including the brain. If the ability to form memories and learn disappeared for months, there is only one possible explanation. That explanation is: the brain parts and mechanisms allowing memories to be recalled and formed and learning to take place have been destroyed or injured! After months, only Neogenesis can explain how an injured brain can recover. ECT treatment, in a nutshell, desperately rolls the dice and electrically kills or renders dysfunctional lots of brain tissue, hoping that the remaining parts recover a higher degree of functionality. Before this happens the patient may be more manageable, of course, because his brain is electrically injured. I would gamble with this modality only in extremely severe cases.

## THE UNDETERMINED

**Full spectrum light (sunlight)** is vital, yet, at the same time, is commonly toxic. The sun is the source of virtually all new energy arriving on this planet. Revered as 'God' by past cultures, we couldn't exist without it. The question is how much do we need? My answer is: Get only a healthy dose; don't worship it. Sunlight has become a serious threat during my lifetime. Man-made chemicals, particularly **chlorofluorocarbons**, have caused a serious weakness in the part of Earth's atmosphere which filters out harmful **ultraviolet (UV)** rays. Excesses of UV cause most skin cancers and aging of the skin as well as cataracts. Rates of typically non-fatal skin cancers have tripled since the early 1970s. More concerning too, in the last 20 years **malignant melanomas**, the often deadly form of skin cancer, have tripled in white individuals. **Tanning beds** and similar UV devices are particularly linked to melanomas and other skin cancers as well as cataracts.

**Sunlight** reinforces the natural circadian rhythm of our biological clocks. Further, regular doses received through the eyes mitigate **Seasonal Affective Disorders (SAD)**. The jury is still out as to the cause of SAD. I think SAD is multifactorial. That is, in addition to inadequate sunlight, folks in cold or inclement climates tend to stay inside. By so doing, they subject themselves to less freedom, less motion and to more indoors-related VOCs -- all factors that act in synergy to favor **toxic brain**. **Update 11/2015:** A study in *JAMA Psychiatry* showed that **lightbox therapy** -- a common treatment for SAD -- was also more effective in treating patients with major depressive disorder than Prozac was!

## Acquired electrical sensitivity syndrome

Are all those who complain about nearby power lines just plain nuts; or, are some of us more vulnerable to the toxicity of waveforms not yet understood? Is the increasing electrical pollution in our environment a subtle contributor to COED-S? A diversity of measurable and subtle energies powerfully influences biological systems. For years people have said I'm weird because I try to minimize the use of my cell and cordless phones and use their speaker modes whenever appropriate. By doing so, I avoid close and questionable energy encounters with the organ I most highly value -- my brain. If someone tells me that the nearby power lines, transmission towers or other environmental energy sources bother them, I empathize and acknowledge; I don't condemn or judge. We are all different in both our sensibilities and vulnerabilities.

Just because we cannot see, understand or measure something doesn't mean it is nonexistent and therefore not damaging to some of us. For example, it is now known that some animals seem able to sense impending earthquakes; they become highly agitated before the Richter scale starts to move. The elephants in Indonesia were running towards higher ground way before the 2004 tsunami hit! A similar tsunami in 1907 devastated only the 'civilized' tribes on an island near its epicenter. The 'uncivilized' tribes heeded the 'native signs' and quickly headed to the hills on the same island.

Quote me on this: **'Scientific knowledge' is a mere snapshot in time. We must always remain in pursuit of truth.**

There is little doubt of the proliferation of gadgetry powered by and emanating **extremely low frequency (ELF) radiation**. Machinery, cell phones, computers and other electronic tools and toys are everywhere. Sensory over-stimulation and ELF bombardment from many venues seems to be accelerating. The circumstance of electromagnetic pollution is irrefutable.

Even the most basic functions relevant to Neogenesis are influenced by electromagnetic forces. The body can conduct and absorb many of these modern waveforms. For example, I discovered that I could activate the gate that accesses my gated community at a greater distance by using my head as an antenna. I merely push the gate opener under my chin. Most of the **electrochemical activities** of the human body occur at low frequencies. Cardiac muscle beats at about 1.2 Hertz; muscles depolarize at about 4 Hertz. Healthy brain cells resonate in the ranges of 1.4 to 40 cycles per second, depending on the 'state' of brain functioning. Likewise, many biological events are initiated by or involve the conversion of chemical energies to low frequency electrical energies. These facts place the biology here.

The question is: does circumstance plus biology equal pathology? This evokes some of the most controversial questions in medicine today--questions like: Do cell phones increase risk for acoustic nerve, brain and salivary gland tumors? Does navy sonar cause whales to beach themselves? Do laptops decrease virility or contribute to premature cataracts? Has the proliferation of cell phone towers caused bees to disorient and contribute to colony collapse? Do our children's violent exposures from TV, music, video games and by being bullied contribute to increases in violent crimes committed by kids?

**Update May 2010:** The answers are found when we SEEK them. For example, Dartmouth researchers reported the effects of viewing R-rated movies on 2406 children in this month's issue of the *Journal of Studies on Alcohol and Drugs*. They found that those children who were allowed to view the R-rated films were much more likely to try alcohol. This is extremely troubling, as we know that kids who try alcohol early on are at the highest risk of becoming alcoholics later.

It should be self-evident that ELF's disrupt electrically-relayed biological messages in a similar way as EDCs disrupt biochemical messages. After all, our neurological systems rely heavily on chemo-electrical transmissions. Ask yourself this simple question: Does static noise disrupt my focus and thoughts, or interfere with my sleep? Much evidence suggests that ELF's influence those transmissions we generically call 'thinking' in both positive and negative ways; they express their influences in neurological, cognitive, behavioral and immune system responses. Unfortunately, greed will always drive the emergence of these profitable technologies and my contingency concealment principle will allow it to meet little resistance. Youngsters are at special risk here. So many become transfixed by **techno-gadgetry** such as video games or computers; and, in doing so, they seem to sacrifice real human interface and healthy physical activity.

### **Techno-gadgets -- are we controlling them or are they controlling us?**

In our technologically modern world we, as a society, are literally plugged in, juiced up and hooked on. **Techno-gadget addiction**, utilizes the same excitatory neurotransmission 'juices' as addictive chemical 'brain uppers' and appears to be spreading at a pace to keep up with the world's demand for caffeine. No wonder Starbucks offers free Wi-Fi!

### **Magnet technologies**

Perhaps my grandmother was right when she suggested that my sleep might be more refreshing if I would put the head of my bed facing north! We know that many molecules present in the body are, to some degree, magnetically influenced. **MRI (Magnetic Resonance Imaging)** takes advantage of the magnetic differences in tissues. Magnets are commonly used therapeutically to reduce the disruptive accumulation of fluid in tissues associated with repetitive stress injuries.

Magnetic stimulation to the brain - (**TMS) transcranial magnetic stimulation** is now FDA approved as a therapy to treat depression and migraine in adults. TMS has also shown recent promise in treating tinnitus and perceptual sequelae following strokes. When used early on, magnets may also be able to limit damage from both heart attacks and strokes. This 'clot busting' potential is based on work by Rongjia Tao and Ke 'Colin' Huang. They demonstrated an ability to reduce blood viscosity by 20-30 percent by subjecting it to a magnetic field of 1.3 Telsa (about the strength of an MRI).

Personally, I'd opt for prevention by taking grandma's much less expensive bed advice, with one proviso: before getting into my bed I'd get on my knees with head bowed for a few very special bio-energetic moments -- facing north perhaps.

### **Brain state technologies**

This biofeedback learning tool records a person's brain energy rhythms and displays them for the user to view in real-time. This allows the user to see his brain's energy activity much like looking at himself in the mirror. The bells and whistles of these types of gadgetry are impressive, but I view the critical elements for meeting user's goals to be their individual needs, wills, attitudes and opportunities. As for me, I'd rather hang out with my favorite cheerleaders than spend time and money in these expensive sessions; I'd expect to garner a much better 'brain state' in return.

### **Deep brain stimulation (DBS)**

A 2007 report in the journal *Nature* relates a story of a 38 year old man who had been in a minimally conscious state for years after he was robbed, beaten and left with severe brain injuries. Using computer guided navigation equipment, tiny stimulation electrodes were placed in the portion of his brain involved in attention, movement and other control functions. The doctors were able to awaken him to allow for rehabilitation to progress. There are an estimated 100,000 to 300,000 minimally conscious patients in the USA, most in costly long-term care facilities.

**Update 5/28/14:** Now solidly in the mainstream of neurosurgery, DBS procedures involve the implantation of electrodes into patients' brains to stimulate various areas of dysfunction. Among other things DBS is used to successfully treat essential and Parkinson's-related tremors and other dystonias, cluster headaches, chronic pain and Tourette syndrome. It also is being considered in epilepsy, depression and obsessive-compulsive disorder. In contrast to brain ablation treatments, DBS is promoted as being reversible and not damaging to the brain. Although I see potential for serious abuse of this technology, thus a need for regulation, it is an intriguing intervention. At least we are looking in the right direction -- one's brain -- for the root cause of these often somatically-expressed brain disorders.

**I hope this peek at the exciting field of bioenergetics 'charged you up.'** In the next chapter, I invite you to 'come clean' with my discussion of hygiene.



## Chapter 12

# TRAVELING THE HIGH ROAD TO HYGIENE

In the last two chapters we discussed environmental toxins in the forms of chemicals and energies. The third environmental toxic challenge is **microbes**. The operative word for this chapter is **prevention**.

“An ounce of prevention is worth a pound of cure.”  
~Ben Franklin~

The integrity of your **natural barriers** (see **Barrier function** at the top of page 48 herein) is integral to your well-being because microbes are a ubiquitous threat. The main barriers that deter microbial entry into your body are your skin, mucous membranes and gut linings as well as blood-brain barrier. As with all toxins that gain entry, microbes ultimately exert their influence with chemistry. Survival of any microbial challenge most often boils down to the question: Whose chemistry is stronger -- yours or those chemicals of the microbes that are attempting to invade your body? Your defensive chemistry is organized by your immune system; when healthy, it keeps your insides clean. **Hygienic ‘thorn removal’** is your most effective strategy against toxic germs. This is best done by keeping yourself clean inside and out.

Nine tenths of our sickness can be prevented by right thinking plus right hygiene -  
Nine tenths of it! - **Henry Miller**, *American author*

There's a whole lot in this book about choices and how the choices you make impact your life and the lives of others. The terrific thing is--we actually have choices. In this country, the United States, we enjoy access to thousands of hygienically-related products and conveniences. We literally have thousands of choices.

There are levels, of course, of hygiene and cleanliness, but for the most part, most of us prefer to be clean and feel healthy. We're lucky to live with dependable supplies of water, without which neither cleanliness nor even an approach to a good state of health would be possible. Way back when and for a long, long time, what we tend to now take for granted -- water running through sinks and showers, baths and hoses --- was simply not available. And because water was not available and cleanliness was not revered, all sorts of discouraging discomforts were endured.

People didn't smell very good, for one; dreadful examples abound. In the Middle Ages, a very dirty time in the world, a few towns might have had public baths doubling as brothels. You didn't take the kids. What a mess it was. There was no refrigeration nor sanitation. It was doubtful that anyone paid all that much attention, though, because everyone and everything stank.

Hygiene is two thirds of health. -  
**Lebanese proverb~**

Citizens of ancient Greece did a little better. They took outdoor showers in public fountains, ultimately moving up to indoor pools filled with cold water. Eventually the water was heated, and then some genius came up with the notion of steam rooms. Romans were next in the trend, but after their empire collapsed, those evil bathing pools, those temptingly degenerate water Meccas, fell under the wrath of devout Christians who thought it a sin that women and men bathed together. So, that was out.

For an extended time, even water was out. After the plague of the mid-fourteenth century, '**The Black Death**,' Europeans concluded that hot water could allow toxins to enter the skin and advised keeping said skin covered with dirt as protection. There were those few who washed their hands and faces, but body bathing wasn't favored. For the body, perfume was the ticket if you could afford it. The rich drenched themselves in perfume, thought they smelled just fine. The poor smelled like their usual blend of farm animals, food and sweat. Nobody gave much thought to malodorous chamber pots and the stench in the streets. New health epidemics appeared, such as smallpox and other plague versions. That's just the way it was. And then came the eighteenth century, during which time the citizenry opted to turn over a new leaf.

In the 1800's, water was back in. Baths were okay; soap was invented. Hand washing even became a topic. In 1840, a Hungarian doctor named Ignaz Semmelweis (1818-1865) asked his hospital staff to wash their hands before seeing patients. He reasoned that fewer incidents of childbed fever would present if sanitary conditions were improved. He died with this conviction in his heart and his theory only minimally accepted.

Finally, in 1860 when the French chemist Louis Pasteur discovered the illness-causing bacteria he christened **germs**, Semmelweis's hand washing concept began to take hold. Misery persisted; however, as few understood what washing the hands had to do with spreading germs. In 1918, lots and lots of germs were spread; the flu killed 50 million people.

Happily, decades later, a cleanliness consciousness of sorts surfaced. In 1946, the United States created the Communicable Disease Center - now known as the Centers for Disease Control and Prevention -- CDC for short. Connections between unsanitary conditions and diseases, though tenuous and incomplete, were out in the open. Technology moved apace and introduced some happy upgrades like city sewer systems, indoor bathrooms, deodorant and even more soap. Cars were invented and horses started staying home. Trucks followed along after cars and carried food around; the food was then put in refrigerators. The 40's initiated a healthier, better-smelling world.

And yet in this new century, in the year 2019, we still suffer from the results of poor hygiene. Safe sex, nail cleaning and hand washing, or should I say the lack thereof, are still responsible for a host of communicable infections. People's personal hygiene isn't always up to snuff. Personal hygiene is, well, personal - right? Not really. Not in the larger sense. It's not just a question of good smells and bad smells, after all. Excellent hygiene is almost right up there with oxygen. Without good hygiene we render ourselves sick and we make others sick. It's a bottom-line thing that bears attention.

"Hygiene will always remain the most important discovery in medical history."

~Dr. Oliver Wendell Holmes (1809-1894) ~

Nothing in the history of our civilization has had more of a positive impact on our health than **sanitation**. Good job, America! Clean, microbe-free water provision as well as proper sewage disposal is something we have come to take for granted in this country. Because we really haven't had to live with the constant infectious disease threats that ravage less-advanced countries, we've become complacent about **water purification** and sanitation. This is troubling! We must anticipate and stay on top of the new health challenges rendered by our aging infrastructure and global warming.

Of course, we have **immunizations** to help protect 'us' - when we use them; however, we greatly under-use them. Sadly, one reason is that many parents have lost confidence in vaccines, primarily because of misinformation that vaccine usage has contributed to an autism epidemic. That idea is false. (See pages 30 through 36 herein for details.)

Immunizations are a close second in the list of things that have had a positive historical health impact. I would hate to see what the disease profile would look like if Jonas Salk and his hard-working cohorts hadn't come up with their amazing discoveries. The vaccine programs work best when there is compliance. Vaccinations don't just afford protection for those who are vaccinated. As the number of vaccinated people increase, the spread of a contagious disease is impeded. The more people that are immune, through vaccination, the more likely it is that the bug's spread will stop when it gets to them. This phenomenon, called **herd immunity**, is a powerful preventative concept that will become more obvious as our world becomes more crowded and mobile. Any particular disease that can be controlled with vaccination may be minor to most but can be devastating to some members of our 'human herd.'

Still, even such things as vaccines have become controversial in our confusion to understand the disease profile change of chapter one. Controversy is mostly good because it keeps us thinking. I've thought about vaccines often, battling diseases as I did in the trenches of primary practice. For reasons that I cannot understand we seem to have difficulties lately in producing enough safe, quality vaccines. It does concern me that pharmaceutical companies seem to be more interested in producing another profitable erectile dysfunction drug than in getting the low-profit immunization thing done right. I'm not yelling, "Conspiracy!" I'm not implying stupidity, either. But don't we save a lot more money with prevention? Maybe the 'somebody in charge,' using Ben Franklin's calculations in reverse, figures that all that money plus 15 times more could better be used in drug interventions for the same diseases that could have been prevented with vaccines.

### **The hospital and doctor's office can be places to get unhealthy.**

Hospitals and doctors' offices are places where folks with a lot of toxic germs congregate. Yet coughing, sneezing, toys shared by sick kids and other vectors of contagion are not the only dangers in these 'high risk for infection' arenas.

I sometimes wonder if they teach the health benefits of simple **cleanliness** in grade school. My recently retired grade school principal buddy says that the old 'Health' class is no longer on the school curriculum. I know from personal experience that they don't even talk about such things in medical school. Ever watch a doctor go from sick patient to sick patient without even thinking about washing his hands? I'm guilty, of course. It is an ongoing struggle to develop habits of keeping our bodies clean to avoid the spread of the ubiquitous germs.

To maintain staff privileges at hospitals, physicians have to go through periodic CPR training, even though we may only need to use it once every few years. It's ironic that we don't have to go through periodic toilet training because, let's face it, we need to use it every day! The CPR training has minimal impact in the 'big picture' scheme of disease control, while the lack of training in **hand washing** is simply devastating.

Research by the American Society of Microbiology found that, while 95 percent of all men and women surveyed say they wash their hands after using a public restroom, only 67 percent of people actually do. **Update 6/23/13:** The CDC now says that people need to wash their hands vigorously for about 20 seconds to rid them of any type of dangerous bacteria. Most wash them only about 6 seconds. This perfunctory hand washing is most often ineffective.

It's not just us docs. Nurses, phlebotomists, visitors, technicians of all kinds come into contact with patients who have compromised immune systems; not many of them passed **Hand Washing 101**. Patients have tubes entering their bodies in all kinds of places that act as conduits for germ entry. Inside is living tissue, a great medium upon which to grow germs. But once inside, only the strong will survive. Fiercely used antibiotics eradicate all the weak germs, leaving only the mean and nasty ones to survive and reproduce. Like the strong salmon that survived their challenging upstream swim, these strains of microbes are 'forged' as tough as Ford pickups and their resultant DNA will dominate.

To kill the toughened germs, we often need to use several antibiotics to attempt to save many of the weakest patients who have the least to gain by it all. Looking at this situation over the last 40 years, it seems to me like an example of the classical lesson from the grade-school story about the guy who swallowed a horse to catch a fly.

Antibiotics are a great invention when used with common sense; they don't substitute well for such things as proper hand washing for the removal of toxic microbe 'thorns.' Everyone agrees that **antibiotic overuse** has gotten us into a dilemma. The whole news story can be summarized like this: **who** — we doctors, **what** — overly-prescribe antibiotics, **where** — everywhere, **when** — every day, **why** — fear, ignorance and laziness. Let's break that 'why' part down.

**Fear** is a terrible motivator. It seems that not prescribing an antibiotic is far more risky for a doctor than prescribing an inappropriate one. Heaven help the doctor if a trial lawyer can twist the retrospective facts to suggest that community standards calls for the use of an antibiotic and that such an error of omission caused the patient harm. In the antibiotic mistake arena, commission errors may cost the doctor the limits of their malpractice policy. Omission errors can cost them their future as well. This fear is a difficult thing for doctors to get around with a balance left on student loans, with their kids and grandchildren still in school and a mortgage to pay. **Update 6/28/2010:** the *Archives of Internal Medicine* reports a recent survey today that sadly shows 91% of doctors are still practicing defensive medicine.

**Ignorance** is simply no excuse for overusing or inappropriately prescribing antibiotics. Patients and doctors must become educated and stay educated. Antibiotics don't work on virus infections like colds. They don't help most sore throats and mislabeled 'bacterial' bronchitis, ear or sinus infections. We doctors need to stop playing the 'coding game' by mislabeling such things like a cold as a 'bacterial bronchitis' in order to appease our patients' desires for antibiotics. Sensitivities are changing rapidly as resistant bacterial strains emerge. We need to keep abreast of these changes and, when in doubt, do the right things before prescribing. The right things are to appropriately and objectively observe, test and/or culture.

**Laziness** is the worst — but now the most common — excuse for inappropriately prescribing antibiotics. We don't take the time to both define and remove the foreign body or other 'thorn' factors that are allowing the infection to defy one's natural healing. Nor do we bother with proper diagnostic tests and cultures before instituting antibiotic use. More significantly, we're too lazy often to challenge the patient's desire for the overly-exalted antibiotic and take the time to explain why they are best not used in certain situations. We also have become too lazy to fight the HMO's and other third parties that make doctors 'jump through hoops' to do the right thing. To survive, doctors take the path of least resistance to third-party pressures and patients' demands. That lax path inevitably leads to the inappropriate overly-prescribing of antibiotics.

In this era of '**time clock medicine**', in which, the primary care doc's reimbursement for services is already inadequate, any deviation from patient expectations is likely to garner a complaint to one of many third parties to the relationship. In response, doctors take that lazy path. In the clarity of the 'big picture' of antibiotic resistance, patient education, thorn-removing interventions, proper tests and cultures — although time consuming — are cheap compared to the consequences of being too lazy to use them. A vital solution is that rapid screening tests should be made available to primary care doctors and those doctors should be properly compensated for the time and effort needed for using them on the spot.

**Update 6/10/2010:** The FDA just approved a test that can detect MRSA colonization in less than 1 hour. If this test proves reliable, physicians and hospitals need prompt access to this testing to meet the current MRSA challenge. **MRSA** and similar antibiotic overuse-related infections cost U.S. taxpayers \$30 billion yearly, not including the associated sufferings!

It seems absurd for the doctor to see infected patients in-office, then be required to send the patients out to the HMO-contracted lab. Once there, they typically hang around in another crowd of sick patients for an hour and exchange germs. This current scenario not only encourages contagious spread and antibiotic resistance, but the fragmentation of care makes mistakes more likely to happen and treatment delays inevitable.

In hospitals, by promoting the **sanitary illusion**, we see and smell the overuse of bacteriostatic and germ killing chemicals. Most of the smelly chemicals used are unnatural VOCs; they are toxic to everyone who breathes them in. They add to the sick patient's already heavy total body burden of toxic chemicals and they retard Neogenesis. The problem is that hospitals operate on the same fear that doctors do. The administrators wouldn't dare initiate a study to compare outcomes using primarily nontoxic chemicals in a well thought out and disciplined plan vs. the illusion of killing every germ that possibly could be in every little crack and crevice with toxic chemicals — the current impossible plan.

The last time I was in the hospital, I noticed that the janitor's cart reminded me of a modern Apache military helicopter.

Instead of being heavily laden with multiple different weapon systems, it was loaded down with a dozen canisters containing different chemicals. I imagine that the modern hospital janitor is a true technician requiring special training in chemical warfare. Perhaps that person should also best be donning a HAZMAT suit. Regarding **good cleaning**: According to tests done at U.C. Davis, cleaning surfaces with **microfiber materials** reduces bacteria by 99% -- whereas conventional material use reduces 33% of the bacteria. Such cleaning materials are now widely available.

The latest attempts to control microbes involve the use of alcohol gels and foams. I withhold judgment here. Alcohol is neurotoxic. The gels, now in common usage, contain 62% ethyl alcohol -- that's 124-proof booze. Safe use around kids is a concern. I suppose as long as politicians don't impose the liquor tax on them or people don't figure out ways to abuse them, like 'huffers' abuse spray paint, perhaps they may work out. Alcohol is an effective germ killer, is biodegradable and is unlikely to encourage germs to mutate. **Caution**: Protect your brain -- avoid breathing the fumes from these sanitizers!

I favor the sanitation approach that simply involves soap, water and proper washing, all done minimizing use of non-toxic or poorly biodegradable toxic chemicals. **Bleach**, when used appropriately, is a cheap, excellent germ killer that easily biodegrades and does not encourage resistant bacterial strains. I recommend defining, then removing, the thorns with nontoxic house cleaning measures along with the least people-toxic products, traditional procedures and sterility techniques. This requires education of staff and visitors and all the rest of the hard work that goes into doing the job right.

How expensive would it be to provide all hospital visitors with an effective mask, provide convenient sinks for washing hands and have them view a 10 minute video on the importance of hygiene? It has been a huge mistake for us to become dependent on antibiotics and toxic chemicals in lieu of common sense and **prevention**!

### **Soap can scum up your 'detox SINK'**

The problem is not just limited to antibiotics and chemical germ killers used at in-patient and out-patient treatment venues. More than 75 percent of all liquid hand soaps and nearly 30 percent of bar soaps for sale nationally contain antibacterial agents. Over 2200 antibacterial soaps are on the market. Eli Perencevich, M.D., a researcher in infectious diseases in Boston says, "These mutated bacteria get smart to antibacterial agents."

The use of antibacterial soaps to prevent infections seems foolhardy; it encourages most microbes to develop resistance. All can irritate the skin. Many enter the body transdermally or via one's mucous membranes to increase one's SINK level. These toxic soap chemicals concentrate in most places on Earth. There they encourage development of **antibiotic resistant microbial strains** in our planet's water, adversely impacting all life forms which use it, including humans.

The first antibacterial soap product on the market in the 1950's was **hexachlorophene**. After decades of use, it was finally removed from the market as a suspected carcinogen. The most common one in use for the last forty years is **triclosan**. Another one commonly used is **triclocarban**. There is mounting evidence that germs mutate and acquire resistance to these. Further, triclosan is now known to be a thyroid EDC from recent tests on rats. Lastly, it is bioaccumulating in fish.

**Update 11/14/2012**: A Norwegian study shows that triclosan exposures increase the risk developing allergies for kids. It's likely that this relates to the fact that it disturbs one's normal gut flora. In an earlier (2001) Norwegian study, it was found that 85 per cent of triclosan exposures came from cosmetic products, of which 75 per cent were toothpaste. Norwegians have since acted to diminish triclosan exposures to their population. Sadly, there have been no similar efforts in the USA!

**Update 2/2014**: An FDA panel concluded that antibacterial soaps are no more effective in controlling the growth and spread of bacteria than just soap and water. In response to a suit by environmentalists, the FDA has given manufacturers until 2016 to prove their antibacterial products are safe and effective or remove the suspect antibacterials from them. **Final Ruling Update 9/2/16**: After years of assessment, the FDA gave the makers of products containing triclosan, triclocarban as well as 17 other suspect antibacterials one year to remove them from their products. Kudos!

Aside from antibacterials, soaps typically contain other toxins that absorb through your skin or mucous membranes -- tissues lacking much X-out functionality. When using any soap, rinse it off quickly to minimize absorption. If you still have an unpleasant odor after washing, you're likely 'toxic' to some degree and need to more intensely apply the detox strategies discussed throughout this book. Similarly, avoid toxic **personal care products and cosmetics**. To find the safest ones visit the web site of the **Environmental Working Group**. They unbiasedly test them and post findings yearly.

### **When I grow up I want to be a smiling stallion.**

The importance of **dental and oral hygiene** as a general health factor should not be underestimated. Horse traders and camel traders alike don't have to check the pedigrees of any intended pack animal. The first thing they do is simply look and smell in the mouth. Good animal traders know from extensive experience that there is a strong relationship between **the condition of the mouth, gums and teeth** of an animal and its strength, health, longevity and utility!

The same health reflections apply to human dental and oral hygiene. To wit, gingivitis is a risk factor for atherosclerosis. It's the slow-burn issue again, similar to the toxic visceral fat scenario. Inflammatory cytokines and microbes, the toxic embers of the slow burn, circulate to damage distant organs. Their genesis is most often food debris and tartar that develop plaque around gums. Food debris and tartar provide a good culture media for toxic microbe growth. The resultant pockets of infection elicit inflammatory responses. Once entrenched in the mouth, germs gain entry by being breathed into one's lungs or by working their way through diseased-weakened gums --a common condition termed **gingivitis**.

It's not surprising that there is a strong correlation with gingivitis and dental plaque and a host of systemic illnesses. The American Academy of Periodontology says people with **gingivitis** (inflammation of the gums) are twice as likely to have cardiovascular disease! Alzheimer's, pneumonia, strokes, diabetes, and deadly cancers also link. The cancer link is independent of other known risk factors, including smoking and diet. **Update 5/27/2010:** A study published online in *the British Medical Journal* today confirms that people who don't brush twice a day have an increased risk of heart disease.

**Update 1/23/2019:** Compelling research published online today in *Science Advances* strongly implicates gingivitis and, specifically, one associated microbe – ***P gingivalis*** – as playing a role in the genesis of Alzheimer's! This research has already spawned the development of an anti-microbial agent that appears to work well against *P gingivalis*. That drug, currently designated **COR388**, is in the 'efficacy pipeline,' having just completed phase1 clinical trials. This offers hope. However, my opinion remains that the cause of Alzheimer's is multifactorial and there will not be just one 'cure all.'

Besides poor oral hygiene and *P gingivalis*, factors that favor gingivitis are: smoking or using oral tobacco products, stress, poor nutrition, diabetes, the use of sugary treats and many medications. Many legal pharmaceuticals as well as illicit drugs disturb the normal physiology of your body in general, and your mouth specifically, to contribute to gingivitis. Regular flossing, brushing, and using tooth-picking devices are good ways to remove the thorns of dental plaque and gingivitis, as are regular professional dental evaluations and cleaning. I choose toothpastes with a minimum of unnatural chemicals such as fluoride. **Update 1/31/19:** The CDC reports today that that about 40% of children age 3 to 6 use more toothpaste than recommended. The problem is they swallow too much **fluoride**, resulting in **fluorosis** -- a condition that weakens and mottles developing teeth. Too, in excess, fluoride is a suspected neurotoxin and teratogen (see next page).

Any organic material left on the toothbrush after brushing makes a good culture media for nasty germ growth. After vigorous rinsing, I favor soaking oral cleaning appliances in 3% **hydrogen peroxide (H2O2)** before each use. This simple, inexpensive chemical SEEKS well. It can be safely used in all phases of oral hygiene such as brushing and gargling.

I'll point out that the reason one need not refrigerate honey for prevention of microbe growth and spoilage involves the preservative hydrogen peroxide. It is generated in the honey by the enzyme **peroxidase**, part of the queen bee's gift. She deposits this live enzyme that converts simple sugars of the honey into hydrogen peroxide but only when it is challenged by germs. **Update 6/30/2010:** *Science Daily* reports the finding of yet another antibacterial factor in honey which may lead to new antibiotic drugs called **defensin-1 protein**. Nature's sweetener -- **raw honey** -- can be applied to a nasty skin wound after proper debridement and that wound will likely remain infection-free to allow for healing.

Gingivitis is also a fine example of a nasty 'wound.' Proper care involves removal of all dead organic material including food and the loose rotting tissue. Removal is important, because if the tissue isn't alive and a part of us, it becomes 'food' for destructive germs. Such germs impede Neogenesis and allow 'slow burn' inflammation to continue. The result is not only bad breath, but inflammatory toxins associated with gingivitis travel to sicken other organs, likely, including the brain.

Gingivitis can be determined by the color of the gums. If this color is not a healthy pink, but instead an unhealthy and swollen red, you likely have gingivitis. If you attempt to resolve gingivitis on your own, vigorous brushing and cleaning may begin with some pain and bleeding. If so, gentle but thorough cleaning followed by rinses several times a day should help.

It took time for these plaque and '**gingivitis thorns**' to work their way in; it requires time and persistence to remove them. Frequent and thorough cleaning prevents plaque build-up -- the 'thorn' for gingivitis. To remove this thorn brush at least twice daily. After each meal remove any food debris by using throw-away dental picks or a **waterpik™**. Have your teeth cleaned at least three times yearly by a professional hygienist for best results. If you have **dental pain**, oral bleeding or gum swelling that doesn't clear up with such regular cleaning, see a dentist without further delay.

**Saliva** is also essential to prevent dental disease as it contains natural antibacterial and other cavity-preventing chemicals. Try sugar-free gum or mints or cinnamon toothpicks to stimulate adequate amounts of saliva if your mouth seems too dry. Also, if the spaces between teeth are too small to accommodate floss or a toothpick, those spaces might best be opened up by a dentist. Such narrow spaces trap organic debris that will fuel gingivitis-related inflammation.

If X-rays are recommended at your dental visits and you're convinced that they are justified, insist they be **digital X-rays**. Digital X-rays are more accurate and expose you to less radiation. Also insist that a neck shield is used when possible. Dental X-ray as well as mammogram over-usage are suspects in the increased rate of thyroid cancer in women.



**Update 4/10/2012:** As I've predicted, unneeded dental x-rays can cause other bad problems. A Yale study shows dental X-rays associate with **meningiomas** -- indolent tumors typically found on tissues covering the brain behind the mouth.

**Fluoride** is also a controversial dental issue. Most people believe that fluoride intake helps prevent dental cavities. The big question is, if so, what's the optimal dose? Fluoride has plus and minus potential in the sense that, like most things, some might be good but too much is toxic. Fluoride has a **low margin of safety**. This means there is a narrow gap between a nontoxic dose and an unhealthy or toxic dose. If the city adds fluoride to your water supply and it's in your toothpaste, and you get a super fluoride dose with each professional dental cleaning, you're likely well into the toxic range. For more helpful info on fluoride toxicity visit: <http://fluoridealert.org/>

Good dental health and excellent nutrition go hand in hand. To best extract all of the wonderful nutrients out of food, you must chew food well. To chew well you need good teeth or good replacements. Excellent nutrition provides all the substrates for Neogenic repair and maintenance of most oral tissues. There is no substitute for good dentistry, however, because dental caries represent permanent damage to teeth. Such damage will progress if not professionally repaired.

In the dental arena of toxicity, nothing trumps smoking, chewing tobacco, or illegal stimulant drug-use. Sticky sugar treats and methamphetamine are synergistic tooth-rotting choices that 'speed' you to bad dental health. Unsafe choices also include tooth-breaking contact sports and risky disciplines of exercise performed without protective mouthpieces.

### **Keeping your sinuses, middle ears and nose clean leaves nothing to sneeze at.**

The medical condition of **common allergy** is, well, extremely common. Pollution has caused allergy, asthma and even allergy-related dermatitis to greatly increase over the past 35 years. According to a drug ad for Claritin, there is a direct relationship between the increased atmospheric CO-2 levels from global warming and ragweed pollen production. They cite U.S. government studies that predict a proliferation of larger ragweed plants, longer flowering seasons and more pollen production by mid-century. I assume they want us to stock up on their drug. **I've got a better idea: let's start saving our planet from global warming immediately!** Ben Franklin's **prevention** wisdom applies here big-time.

Complications associated with allergy, such as sinus and ear pain are also common. Most often, these symptoms are over-treated with antibiotics. **Antibiotic overuse** occurs when all the 'snot' associated with allergy blocks up the various chambers and passageways in the head, sometimes causing serious infections. This often makes it difficult for even the most conscientious of doctors not to unnecessarily pull the antibiotic trigger. Allergy is the #1 reason for the overuse of antibiotics in humans (about two-thirds of antibiotic overuse is related to the unkind treatment of freedom-restricted animals used as food.) **Update 1/4/12:** The FDA is cracking down; they ordered farmers to limit the use of cephalosporins in livestock. **Cephalosporins** are a group of antibiotics used to treat many serious human infections. Kudos!

When you sneeze frequently, you may notice that, besides the runny nose, there's often a swelling that generally develops all over your face. It's most notable under and around your eyes with the '**dark circles.**' The darkening is caused by the compression of veins that run back to the circulation through allergy-swollen mucous membranes of your sinuses. If you have chronic allergies, you will likely get '**bags under the eyes**' as the recurring swelling stretches and weakens your skin. You may also notice tiny dilated veins on the face called **telangiectasia**. These signs are reflections of toxicity. The primary allergy-related toxins are histamine, leukotrienes and kinins. All are made by your body to protect it from perceived danger. **Kinins** are made by local tissue at any site of injury and cause rapid vasodilatation and swelling.

**Allergy isn't just a runny nose, it's an condition that significantly affects the brain** For example, there is strong link between feelings of depression and double the risk of suicide in people who suffer overt seasonal allergies as compared with those who don't suffer with allergy. Studies out of the United Kingdom also show a similar link between **asthma** and depression. Psychiatrist Tedor T. Postolache, author of the Denmark study that brought the allergy-depression link to light, suggests several inflammatory mechanisms involving cytokines that affect the brain.

I agree. Along with the CNS-depressing side effects of all drugs typically used for allergies, it's the 'stink from the SINK' allergy-related cytokines that sicken the brain. The main toxins that initiate the 'thorny' inflammatory response in allergy and asthma are **histamine and leukotrienes**. These endogenous '**vigilance cytokines**' are released from circulating **mast cells** in an allergy response to **antigens** (parts of plant, animal or other chemicals). These allergy-generated cytokines can significantly elevate our SINK levels quite rapidly. They clog up our SINKs quickly because they compete with most pollution VOCs for our limited aldehyde pathway detox enzymes.

**Antigens** are typically proteins associated with particles such as pollens that gain entry into your living spaces. Such entry can be reduced with air filtering as discussed in chapter ten. If you suffer from **allergies or asthma**, proper washing of clothes, bedding, throw rugs and the like also help reduce antigen exposures during your allergy seasons. It's best to use higher washing temperatures to remove antigens/pollens and to degrade them as well. An extra rinse will also help.

Some trees and other **flora** produce pollens that are toxic to many of us through the allergy mechanism. Tucson, Arizona, and other progressive communities have created moratoriums on the planting of trees that commonly offend. However, spring winds often blow strong, even over Tucson. Winds spread the pollens. To help allergy sufferers reduce exposure to pollen, use a strategy that involves closing the doors and windows and cleaning air ducts and changing air filters in the home frequently during high pollen times. You don't need a calendar. Your sneezing will tell you when it's the right time.

Antigens associated with **fauna** can also get your immune system's attention in a bad way. Even animals that you love can produce significant antigens that you may need to address through avoidance and/or desensitization. This often becomes a difficult question. Do I love my animal more than I love myself, my child or my significant other?

**Desensitization (DS)** is a non-drug approach to 'cool off' one's immune system's inflammatory responses to common harmless antigens which it misperceives as threatening. DS modulates one's immune system, making it more effective in addressing real threats. DS works by gradually increasing one's exposure to antigens. The exposures can be by injections or **sublingual** (under the tongue). DS reduces allergy-related toxins in one's detox SINK, thereby reducing total body burden and giving almost anyone better protection against any future detox challenges. Although, not without a potential downside, DS obviates or reduces the need to use **allergy drugs** which not only have side effects themselves, but also add to the one's total body burden.

**Serial dilution titration (SDT)** is my preferred form of allergy skin testing for desensitization. SDT finds the exact dilution of each antigen to which a patient has become allergic before constituting the serum. By employing such testing, there is much less likelihood of adverse reactions occurring during the desensitization process. Environmental medicine doctors routinely incorporate this method into their treatment regimens to increase the capacity of their patients' detox SINKs.

**Sublingual administration of the antigens** would make desensitization even more patient-palatable and would less likely result in a sudden severe reaction termed **anaphylaxis**. Large scale desensitization programs could also have a huge positive impact on the health of our citizenry in the near future. As the paybacks with drug interventions are more fully appreciated, the merit of this non-drug approach of 'cleaning up the immune system' should become quite evident. Honey or bee pollen can be used in a similar desensitizing manner to mitigate allergy. These work best if they are raw and locally-grown as varieties of each type contain uniquely local antigens which are altered with heat-processing.

**Mold** is of special allergy concern. Spores of mold are ubiquitous. Mold spores need three essential ingredients for their unwanted growth: dead organic matter, water and time. Dead organic matter includes what becomes of any once-living thing. That could be such diverse entities as a fruit, a fabric, building material, paper or the detritus from your own body washings. When dead organic matter and water combine, mold growth is inevitable. In your home it's key to keep all organic matter dry. If things do get wet, time becomes the essence in intervention. Immediate and thorough remediation is essential for any water damage in your home. Ongoing leaks and puddles need to be remedied quickly to avoid mold buildup. Mold buildup increases the likelihood of developing allergies as well as VOC toxicities in the home's occupants.

It is bad enough that many mold strains out-gas strong toxins. When you develop allergy to mold chemicals or any other antigens, future exposures to those antigens can fill your SINK rapidly with vigilance cytokines such as histamine. Remember, these 'vigilance cytokines' compete for the same detox enzymes as the toxic VOCs! The resultant **detox enzyme competition** with ongoing VOC exposures can threaten a SINK 'spill over.' The combination of having allergies and spending most of one's time working or living in buildings that have high VOC levels is like a 1-2 punch setup for a knockout! People so affected suffer **sick building syndrome**. They don't need scorn or 'crazy drugs.' They need compassionate removal of the thorns. This begins with building remediation, allergy desensitization and intense detox.

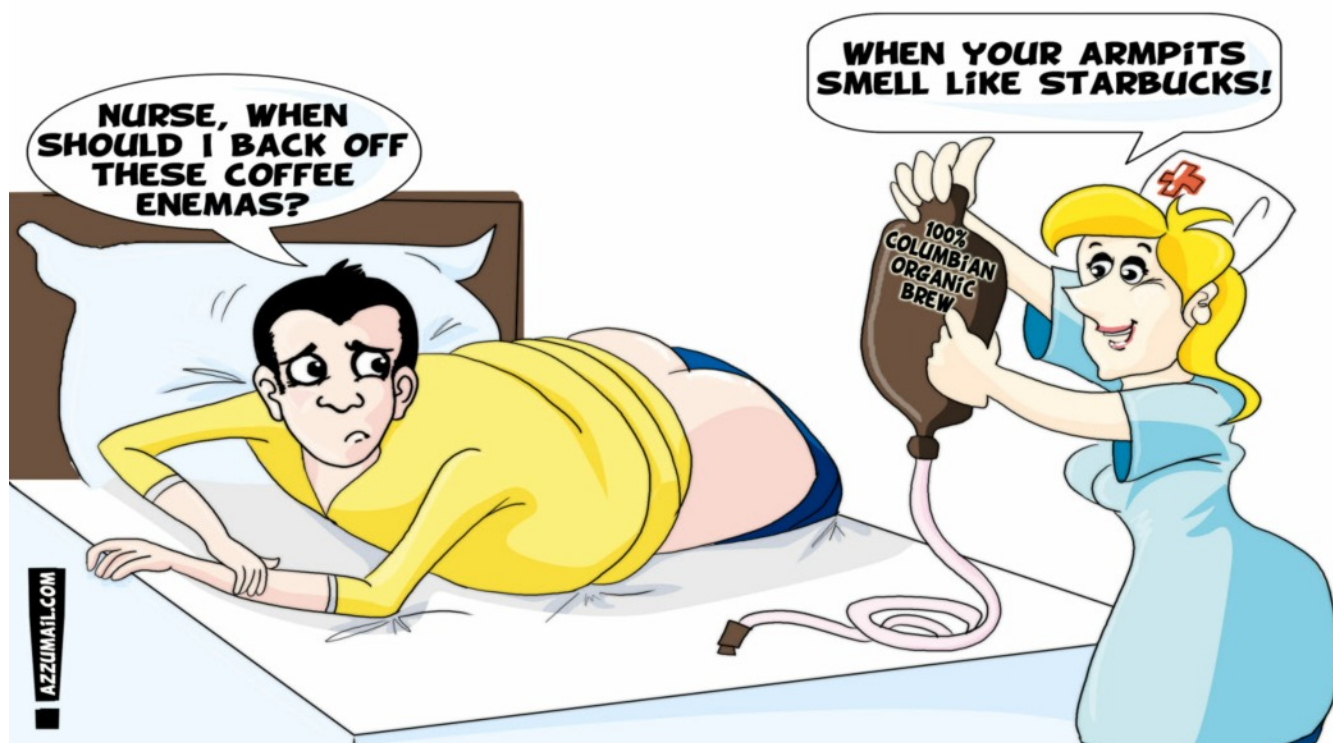
Once set in motion, any allergy response needs prompt intervention. You need to promptly 'remove the thorn' by creating a refuge from the pollen. First, shut all the doors and windows of your home and turn on the filtering system to remove the pollen already present inside. Reasonably maintain this mode until the threat from the high outdoor pollen counts abate.

Focus next on negating the effects of your body's already released cytokines. An ice-pack over your face for 20 minutes, while in a supine (lying on your back) position, will give quick relief. Most of these vigilant cytokine-releasing mast cells tend to collect around the front of the face. Ice has an anti-inflammatory effect by diminishing the histamine release from mast cells. Ice also speeds removal of toxic cytokines that have already been released into the local area. The ice-pack and the supine positioning prevents and reduces the cytokine-induced swelling which leads to skin stretching -- those so called 'bags under your eyes.' An easy trick, too, is to chill freshly-used tea bags and lay back with one placed over each eye in lieu of the ice bag. Lastly, do reciprocating gait activities within your pollen-free environment. Such activities like walking speed your SINK's detox of inflammatory cytokines. Repeat this non-drug technique every 2 hours as needed.

The ultimate lesson is learned when you realize that you can actually reprogram your brain not to overreact to antigens or inappropriately released cytokines with a form of mental mastery. Your internal dialogue does not give you permission to unnecessarily break out in an allergy rash, cough, sneeze or have a runny nose.

Stress typically worsens allergy disorders. Most people who have allergies or asthma and/or the parents of allergy or asthma-suffering kids are aware of this brain-body connection. You can avoid this seemingly 'automatic' sneeze or wheeze by merely warming yourself or by looking into a bright light. This supports my conclusion that 'dark and cold thoughts' are behind the disruption of many of our healthy brain-body messages.

**Do the dark and dingy places need cleaning?**



It is not uncommon for your gut's microbiome and function to become disrupted. Antibiotic overuse, poor food selection, prolonged positioning associated with traveling and other neglect of the gut can, through our gut-brain connections, manifest in toxic brain symptoms. Common toxic-brain symptoms such as lethargy, depression, vague belly discomfort and mental dullness best fall under the category called '**brain fog**.' Regular use of good probiotics, exercise, as well as periodic fasting with raw fruit and veggies, can often resolve these common feelings.

**Caution:** If belly discomfort is persistent, progressive or associated with localized tenderness, see a physician.

Many who turn to alternatives are aware that the gut can be a hostile body interface. They also know about the toxicity connection between the gut and the brain. Some keep a journal of their toxic-brain-related symptoms and use 'colon cleansing' when they deem it may help. Like me, they are not skeptical of claims that frequent coffee enemas might triple the life expectancy of pancreatic cancer patients. They're also not surprised that even mainstream docs finally accept the idea of **reflorastation** -- the implanting of 'healthy' germs into one's gut to treat parasitic infestations and/or other severe microbial infections that typically result from antibiotic overuse. I see merit in such interventions, including **fecal implants**, when they are clearly indicated, done without unnecessary trauma and the donor material is properly screened for toxins.

**Caution:** Improper colonics may be life threatening for some cases of severely inflamed bowels.

However, colonics when done on simply a routine maintenance basis and the theory behind them make no sense to me.

The **gut's microbiome** -- the types, numbers and distribution of the microbes within the gut-- naturally adapts, over time, to best address the types of foods it is presented with. When it's presented with a healthy diet, a healthy body promotes

the correct mix of chemicals and microbiome to foster a well-protected, well-functioning gut. Why disrupt your microbiome and the chemical milieu that is needed for optimal colon function? I see potential harm in such a strategy.

I much prefer a nontoxic living strategy that includes journaling to avoid inflammatory or problematic foods. Fiber in food is essential to a clean gut. In the **biotic** (life) business, **fiber** acts as a **prebiotic**, it feeds the **probiotics** -- health-promoting microbes in your gut. Fiber can also act like a sponge to preferentially soak up toxins and retain them in the gut lumen so they pass with the stool. The fiber in **psyllium** SEEKS well as such a **bulk stimulant** to keep toxic sludge moving along, especially as the colon weakens with age, dietary abuse or inadequate activity. Moreover, nothing substitutes well for good hygiene, regular physical activity and a vegetarian-centered, high fiber diet to keep your colon healthy and 'clean.'

## To douche or not to douche – that is the question

Similarly, excessive vaginal douching, especially when done with harsh chemicals, is also counter-productive to a healthy mucosa and its secretions. A healthy vaginal mucosa produces its own cleaning secretions that are far better than any chemicals man can make. If you have unpleasant odors, suspect an infection or retained foreign body, such as a tissue or menstrual pad, to be the cause. I can tell you from experience this is not uncommon. Likewise, cover-up feminine hygiene products such as soaps, powders and fragrances are SINK-clogging chemicals and often cause local irritation. Such irritation can weaken the natural mucous barriers, allowing disease-causing germs easier passage and safe harbor inside.

## Safe sex prevents *Sexually-Transmitted Diseases (STD's)*

**Cleanliness in this vaginal area is all about safe sex, which by the way is not getting any safer!**

Most of us are aware of the **potential-killer STDs** -- AIDS and hepatitis; but, are less aware of **life-diminishing STD's**. Less likely to be fatal STDs, like **Chlamydia, gonorrhea, and syphilis**, may present insidiously with few noticeable early signs or symptoms; yet, often can cause sterility or other serious complications. To counter them, we need adequate funding for preventative STD education and screening, as well as, effective treatment. Ben Franklin had it right here: **When we don't promptly address these epidemics proactively and properly it will be extremely costly later.**

**Sad Update 8/28/2018:** Gail Bolan, MD, director of the CDC division of STD prevention reports the three STDs mentioned above have reached all-time highs for the third year in a row. Experts suggest that the **opioid epidemic** and an associated '**sex for drugs**' cultural phenomena are factors in these epidemics. There were 2.3 million cases of Chlamydia, gonorrhea, and syphilis **reported** in the USA in 2017, with syphilis up 76% and gonorrhea up 67% since 2013. Rates for gonorrhea alone nearly doubled among men and increased one-fifth among women from 2013 to 2017.

**Update 6/21/2018:** Today a study in *Neuron* reports that brains of deceased Alzheimer's people had higher levels of herpes viruses than those deceased people without Alzheimer's. This is consistent with other prior studies that show a link between herpes viruses, especially **type 1 herpes** (oral herpes), and Alzheimer's! This opens up huge prevention possibilities because treatment drugs that are durably-effective for herpes viruses are inexpensive (about \$1 to \$3 per treatment of one's herpes 'out-break.')

**This could be a huge cost-saving and brain-saving prophylaxis for Alzheimer's!**

## Clean up your body with a clean mind

Toxic thoughts and the feelings that follow adversely impact Neogenesis.

Dark virile thoughts from #2 Pie origins are a constant threat. Entertaining them gives them life and power.

The happiest, healthiest, most productive individuals give little time to unclean thinking or the actions and consequences that follow.

Studies abound that clearly show that **stress impedes the immune system.**

**Your immune system is your body's supreme defense against microbial threats.**



Now, in over-all review, we have talked about the importance of the mind game, nutrition, exercise, nontoxic living, bioenergetics and hygiene as **relevant preventative health issues**. Now that your mind and body are all 'spiffed-up' from reading this chapter, you are ready to learn about the last, but certainly not the least, of the dynamic wellness strategies that we will discuss. Like all issues before it, remember that it is framed in the reality that at no time do we ever know it all. We gather information and form honest opinions which need to remain dynamically fluid in our search for **truth**.

**I will confess ahead of time that what I now believe and will tell you in the next chapter, I would not have imagined years ago. I was firmly entrapped in the predominant doctor-thinking paradigm that I now call the **religion of drugs**.**

**The next chapter is about avoiding such traps.**

## CHAPTER 13

### THINKING FOR YOURSELF TO AVOID THE TRAPS

Remember the *'think for yourself message'* from the story of the *Pied Piper of Hamelin*?

As the legend goes, in 1284 Hamelin, Germany, became overrun by rats. A piper dressed in enticing garb contracted with the city to lure rats away with enchanting music and drown them in a nearby river. Despite his success, the town fathers reneged on payment of the contract. So later, in anger, the piper returned to the city to similarly lure the children away. Like the rats, in single file one child followed the other, all to become trapped in a cave.

“A wise man should consider that health is the greatest of human blessings, and  
learn how by his own thought to derive benefit from his illnesses.”

~Hippocrates~

#### SUBSTANCE ABUSE TRAP

The illicit drug trap is now a horrendous plague. It is alluring and pervasive. It sucks anyone of free will away from glorious opportunity and into self-destruction in short order. Want good honey? This trap's a 'no brainer.' Pun clearly intended.

Let's be clear on this. Addictive **recreational drugs** such as **cocaine, heroin, methamphetamine** and others, greatly impede Neogenesis. It's true too of the skyrocketing misuse of **addictive pharmaceuticals** such as those killer **opioids**. My strong advice is to avoid abusing these drugs and avoid subjugating your healthy values while socializing with people who abuse them. These poisons are certain to harm you as will the toxic energy from this **'substance abuser group'** where enabling rules. Collectively, this is a huge and dangerous lot of misguided souls who help you poison your future honey. It's difficult to soar with the 'eagles' if you are always 'getting down' with this growing flock of trapped 'turkeys.'

#### THE 'RELIGION OF DRUGS' TRAP

We physicians are trained and proselytized to overestimate and unduly credit our roles in our patients' positive outcomes, healing processes or health influences. Likewise, we have blinded ourselves to the negative impact of our **'overzealous drug-prescribing rituals.'** We are schooled to discount Neogenesis and the prevention opportunities it affords us.

Over the years it has become quite apparent that our focus has been reduced and rigorously guided by forces I hope to unveil. We have come to foster the belief that good health can be obtained simply through pharmacotherapy to the extent that patients demand and physicians prescribe drugs excessively. A resultant healthcare system has emerged in which much pressure exists for all parties to conform to this belief. The belief system is so strongly distorted, tenacious and pervasive that I refer to this 'drug interventions only mindset' as the **'religion of drugs.'**

Let me state my opinion clearly. I'm not advising anyone on drugs that are prescribed fittingly by a competent physician to stop their drugs. There is nothing wrong with the appropriate use of pharmaceuticals. Drugs, when used wisely, improve quality of life, extend and save life. Further, most drug interventions are appropriate. For example, if an individual's blood pressure, sugar and cholesterol levels are not maintained within healthy ranges, that individual runs a significantly greater risk of death by strokes, heart attacks or other cardiovascular complications than if they are maintained in healthy ranges. These facts are well established in medical science.

What I am suggesting is that we must understand the dynamics of what is our out-of-balance healthcare system, in which drugs are, by expediency in most cases, inappropriately exalted, while prevention and natural healing are discounted.

**Update 5/14/14:** The CDC says that about half of all Americans reported taking one or more prescription drugs in the last 30 days and 10% of us reported taking 5 or more.

According to **'religion of drugs thinking,'** one third of all people in the USA over 18 years of age and more than half of folks over 60 have the criteria for **hypertension** (high blood pressure) that indicates a need for drug intervention. The criteria, by the way, have been pushed to lower and lower levels over the years based on drug industry-sponsored studies. For some, the simultaneous use of several drugs are now commonly advised to control their blood pressures adequately.

Why is it that hypertension, a disease that officially has no known cause in over 90% of its sufferers, often requires the gradual incorporation of several drugs to manage it? The explanation is: humans are of incredibly complex and interactive design. Blood pressure is merely a conveniently measurable reflection of a much more complex and dynamic process -- the efficient movement of blood through an intricate network of pathways. That process, **hemodynamics**, like FEAST, is vital to our optimal function. Numerous sensors and signals ensure a necessary delicate balance in this brain-centered process. In hypertensive patients, that balance is disrupted by mostly obscure pro-inflammatory thorns.

**Update 3/3/2010:** Aside from the long known deficiency thorn of Magnesium, U. of Colorado-Denver researchers report a strong link between the **added fructose** found in sugar and HFCS (not fructose consumed with fruit) and hypertension.



When we doctors reduce one signal with a drug, with time other signals only get louder. Simply stated, when we do not direct the treatment at thorn removal, we find ourselves shooting at a moving target in this unbalanced dynamic system. Doctors desperately tinker with several totally different controlling signals attempting to ensure 'proper management' (as per the protocol guidelines) directed at only the blood pressure reflection, not at the true 'thorns.'

This 'proper management' as per the protocol guidelines is very difficult. Seven out of ten treated hypertensive Americans are not in the target range of 140/90 to 120/80 mm Hg or below. Hypertension and the more common '**pre-hypertension**' (persistent readings between 120/80 and 150/80) reflect that significant physiologic disruptions are occurring. The thorns that cause these reflections put us at serious risk for heart attacks and strokes. Unfortunately, we concentrate our efforts at prescribing our exalted drugs directed at the reflection of the thorn-disrupted process. To more effectively impact the **All Term** we should also direct our focus toward 'removing the thorns.' We can safely and durably prevent and eliminate many 'thorny causes' of hypertension with better lifestyle and dietary choices as discussed in the preceding six chapters!

Further, if the financial beneficiaries (the high priests of this 'religion') have their way, most of us will be on **statin drugs** to lower so-called 'bad fats.' This, despite ample evidence that lifestyle and dietary strategies suggested herein, are just as effective in reducing the bad consequences of **hyperlipidemia**. Further, such non-drug measures have comparatively little downside. **Update 12/17/13:** There are about 17,000,000 'Brits' over 50 who are deemed at risk for vascular disease. Current guidelines would have most of them take statins to lower that risk. Researchers reported in the *BMJ* that if an apple a day would be added to their diets instead, it would save roughly the same number of cardiovascular deaths, without the adverse effects of statins. **Update 1/7/15:** A study published in the *Journal of the American Heart Association* shows that an avocado a day similarly lowers one's 'bad fats' risk. **Update 8/18/15:** A randomized controlled study shows that eating 10-12 almonds daily before breakfast improved HDL (good fat) by 12-16%, while lowering all of the 'bad fats!'

Similarly, **osteoporosis** now seems to be a common fear of most post-menopausal women. Most are quite confused about the issue of bone density. Is this threat real or is it a piece of COED-S propagated by the diagnostic imaging-related industry to diagnose it and Big Pharma to sell drugs to treat it? As I've watched this epidemic take center stage, three concerns become obvious: Firstly, the criteria for diagnosis have been 'pushed' in the direction of drug intervention. Secondly, all these drugs have potentially serious bone, G-I and cardiac side effects. Lastly, little effort been made to remove **the thorns of osteoporosis** -- nutritional deficiencies, environmental toxicities and inactivity dysfunctions.

For my final example, drugs used for **mental illnesses**, are the most overly-prescribed, or successfully marketed, depending on your view. We've seen a steady growth in the sales of psychotherapeutic drugs over the last four decades. SSRIs lead the way. It defies common sense that so many individuals are diagnosed as suffering from a deficiency of SSRIs! If we look carefully, we'll find the true 'deficiency thorns' for the symptoms relevant to many cases of these toxic brain presentations. My bet is that most are caused by or worsened by the deficiency of a complex set of subtle energies that I most simply call #1 Pie. Upon discovery of this simple truth, SSRIs may become as passé as prefrontal lobotomies. **Update 4/14/2015:** almost one quarter of middle-aged women in the USA are now taking antidepressant drugs!

**SSRIs** work by artificially boosting the 'feel good neurotransmissions' in one's brain. Simultaneously, other healthy balancing neurotransmissions tend to be muted. Their prolonged use, which is encouraged by this 'religion,' renders predictable results: Firstly, one may feel better and more detached from life's stressors. Secondly, one's brain synapses will up-regulate to compensate -- an addiction phenomenon. Thirdly, one may appreciate unpleasant side effects from the resultant brain dysfunction physically, mentally and socially. Lastly, one will be at greater risk for suicidal thinking. In a large study posted in April 2008, the SSRI group's sales leader-- Paxil -- was shown to be no more effective than placebo for acute moderate to severe depression. Its use was found to be worse than placebo in side effects and suicides.

The manifesto of this 'religion' appears to turn a blind eye to the actual causes of diseases -- the 'thorns' -- and so discount prevention. The idea that there is a drug answer to every perceived health challenge is a very powerful and sophisticated trap. The majority of third-party reimbursable healthcare is provided by practitioners who remain at least partially ensnared by this trap. An all too cozy relationship has been fostered between the medical community and the pharmaceutical industry. It begins early on in the 'educational' process of most physicians.

### **A successful 'religion of drugs' crusade**

Envision, if you will, the first profit-inspired traders coming to America and dealing with the Native Americans. By doing so, you will appreciate how the doctor/Big Pharma relationship begins. The naïve student doctors (the natives in this analogy) meet the sales-savvy drug company representatives (the traders) at drug-day events held at training hospitals. In a festive atmosphere, the natives are allowed to sample 'holy sacraments' (the drugs) and receive silly little trinkets in exchange for their attention. It is easy, in retrospect, to see how the students, so eager for learning, get confused about the 'knowledge' they receive from the savvy traders. After all, in the last several years, the student doctors have been overwhelmed with rote learning. Their mind sets, of committing to memory masses of data, make them easy '**religion of drugs**' converts to the 'spiritual guidance' which they will receive and be influenced by throughout their careers.

According to a survey reported in *JAMA* in 2005, an average third year medical student receives one gift or attends one drug company-sponsored activity a week. Some med schools like UC Davis have taken courageous steps to impede the drug industry 'traders.' Most med schools have not yet viewed their marketing policies as the insidious threat they are.

In preparation for this book, my attempt to discuss this issue with the Dean of my alma mater in 2006 was rejected. *IMS Health*, a pharmaceutical information company, reports drug companies spent \$27 billion on product promotion in 2004. Most of this money went to wooing physicians and 'other contacts' with food, samples, entertainment and 'educational events' at which Big Pharma-paid 'experts' pitched their drugs. Most physicians have come to recognize such gift taking as conflicts of interest to their doctor/patient relationships; yet most remain entangled in this trap.

**Confirmatory Update 3/17/16:** A *ProPublica Journalism in the Public Interest* analysis "has found for the first time that doctors who receive payments from the medical industry do indeed tend to prescribe drugs differently than their colleagues who don't. And the more money they receive, on average, the more brand-name medications they prescribe."

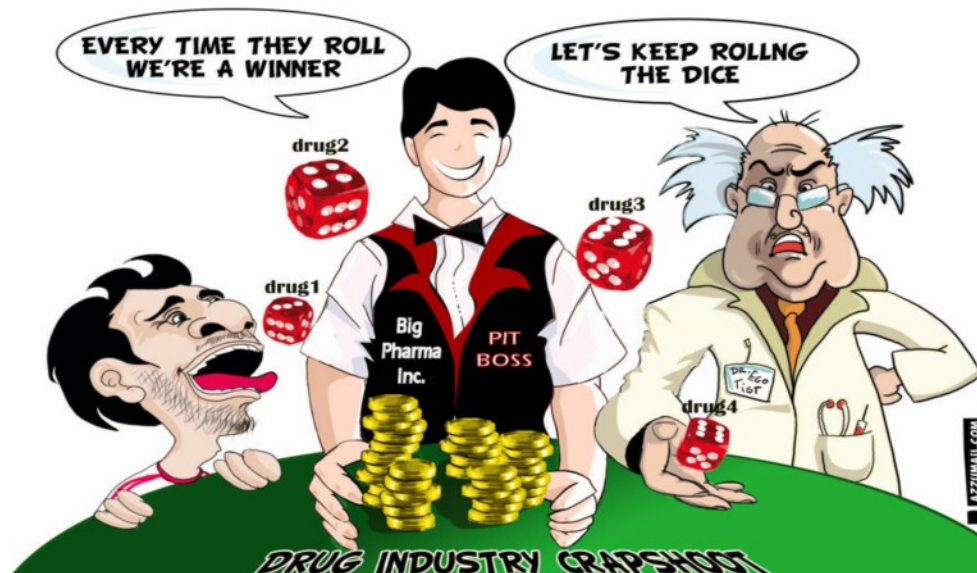
A doctor's prescribing habits are not easily changed. How do you explain to a patient who is on a dozen or more drugs, which have been prescribed by you or by other doctors you referred him to, that he appears to be overmedicated? Oops! How do you defend your sudden change in prescribing for the patient who comes in and argues that the antibiotic you've always given him has always knocked out his cold, sore throat, earache or sinus symptoms? Most doctors' egos and 'please me' neurotic drivers encourage them to stay their course with this 'religion.' It's now commonplace to see even children on several 'maintenance' drugs -- so called **polypharmacy**.

The most salient point is: Most conditions for which people ostensibly take most medications could have been prevented. We are beginning to hear 'lip service' but see little serious focus in this 'religion of drugs' on prevention. Effective offerings for prevention are meager. The third parties would like the public to believe prevention is a major part of the 'care' that is invariably part of their names. These insurance companies, however, are quick to increase your premiums if your blood pressure, blood glucose, cholesterol or weight becomes elevated. The little prevention now present is generally token. For example, the doctor/priests are encouraged to discuss smoking cessation with smokers during their visits. It is well established that **PCPs (primary care providers)** are underpaid in the current system that has emerged. PCPs can ill afford to incorporate effective prevention into their already strained workload. Studies of medical economics now clearly show that effective prevention cannot be cost-effectively incorporated into the currently 'standardized doctor visits.'

So, to appease the third parties and avoid wasting time, the doctor might mutter just these 4 words: "You should stop smoking." This allows the doctor to rubberstamp into the record, "smoking cessation discussed with the patient." If the 4 words are spoken too loudly, any 'confessional excuse' given by the patient will be tuned out by the wise doctor to avoid wasting time. The reality is that a patient-motivated Neogenic effort is needed to recover from this addiction. This token documentation game is one of many played in this corrupt faith. Too, effective prevention is best applied before the fact.

### Doctors have started to doubt their 'faith'

More and more physicians are resisting their 'priestly roles.' They question the **algorithms and protocols (A&Ps)** – the intervention guidelines that direct their 'ritualistic paths.' For example, the seemingly endless A&Ps might dictate that if certain symptoms arise, first try drug A. If drug A is ineffective alone, then add drug B. If the combination is intolerable, switch to drugs C, D, and E. These A&Ps encourage the doctors to continue trying more and more drugs on their patients. This often illogical and dicey approach is what I call **the pharmaceutical crap shoot**.



These A&Ps are like giant, elaborate treatment-decision trees designed to guide doctors in their interventions. The 'trees' have many 'branches,' all leading to zillions of little 'leaves' of tiny capsules and tablets. They are not natural 'vegetation;' they are 'trees' cleverly constructed by the pharmaceutical industry. These 'trees' are only occasionally 'pruned' into reasonable compliance by the overworked, understaffed and most often industry-influenced FDA gardening crews.

How is a typical 'branch' added to 'an A&P tree?' A drug can be developed with an idea, casual observation or by serendipity; it really doesn't matter. The pharmaceutical chemists can reach into their 'Lego sets' and put their atomic building blocks together in millions of ways. One critical element is that the chemical can't be naturally occurring, as that would render the chemical unable to be patented. Otherwise, wouldn't it be great to hold the patent on water?

The next important thing is that the drug, so created, has to do something. It really doesn't matter exactly what it does. It could kill certain germs or cells, interfere with chemical messengers, taste good or whatever. Sometimes the chemical is designed with the idea that it should do one thing and it fails. No problem; test it and see if it does something else. If not, set it aside for future testing or application. If it does something, press on with the research and development.

The next and most challenging task is to make sure it gets FDA approval. This step is about proving safety and utility. Such 'proof' takes lots of money, time and effort. Once it receives FDA approval, the race is on and the slick stuff starts.

Now here's where it gets kind of gamy. It is called **marketing**. The pharmaceutical barons defend their patent extensions and the high prices consumers pay for their drugs by bemoaning the high costs of research and development. A report from the *Pharmaceutical Research and Manufacturers of America* states that it takes up to 15 years and costs \$1.7 billion to get a drug from their lab and into our medicine cabinets. Of course, what this industry-based group doesn't tell you is that the costs of promoting and marketing these drugs are included in this price tag. This portion is huge! The companies have a very sophisticated system in place for this massive effort.

### Details of the 'rituals'

There is a concerted effort to inundate physicians with drug information. The first line of assault is the force called **drug detailers**. These pharmaceutical sales people are so named because they focus their effort on informing the physicians on the details of their products. Detailers inform doctors of the efficacy, safety and a number of other issues of importance regarding their products. Of course, like all sales people, they emphasize the positive at all times.

For example, Merck detailers were quick to tout **Vioxx** as a unique anti-inflammatory pain medicine. Vioxx was less likely, they said, to cause G-I side effects. Such G-I side effects are a concern for docs treating **osteoarthritis** -- the 'wear and tear' type of arthritis which is a common pain problem with the elderly. Merck detailers failed to mention that, in the FDA approval studies that demonstrated Vioxx safety and efficacy, elders with cardiac or stroke tendencies were excluded. In retrospect, we know that this exclusion created a tragic flaw in the design of the studies. This intentionally-excluded group represented the typical patients who were most likely to be prescribed Vioxx and so would manifest its deadly toxicity!

Compassionate doctors, in naiveté, jumped on the positive pitch and vaulted Vioxx to the top sales position. Little did we doctors know that over a five year period we would be killing thousands of our patients with this drug! Believe me, this Vioxx fiasco has shaken the faith of many physicians. After the fact, Merck did the right things. First they recalled the drug 'voluntarily.' Secondly, Merck put \$4.85 billion dollars into a fund to compensate victims. There are many Vioxx victims!

At the height of my busy practice it was not unusual for my staff to be pressured into booking a dozen detail visits a week, despite my orders to the contrary. It was always a struggle to limit these visits because the 'savvy traders' usually came bearing gifts. I think the same silly trinkets and other swooning techniques got them by the receptionists. High volume prescribers such as family physicians and other PCPs are the biggest targets. One survey reported that family docs averaged 16 meetings with industry representatives each month.

### Sample the sacrament

One of the reasons doctors give so generously of their time to the detail people is that they want to get drug samples to pass on to patients thus allowing them to ostensibly save money. The system appears to work well because many patients fit the **protocol need** to be placed on a certain type of drug, such as an anti-hypertensive drug; however, many individuals will have intolerable side effects with a specific drug of that general type. Sampling allows for an efficient way to see if that sampled drug provides the desired results without unwanted side effects. The protocol need however, as I will explain, is most often driven by Big Pharma. Also the entire sampling process actually ends up adding to the over-all costs of medications because only the more expensive patented drugs are sampled. This distorts the overall use toward expensive 'on patent' drugs and away from less expensive, yet most often similarly effective, generics.

## Covert operations

In addition, drug companies have adequate reserves budgeted to purchase information. Often the information they pursue and purchase is about the prescribing patterns of specific doctors. For example, it is currently legal for the pharmacies to collate and sell very specific information to the drug companies. This allows the companies to 'profile' the prescribing habits of any physician so as to enhance their marketing efforts. Recently a law was passed that allows each doctor to opt out of such **profiling**; however, this rarely occurs. Doctors are either unaware of such profiling or are just not ready to fill out what they perceive as another pile of senseless paperwork to elect for the opt-out. Regardless, drug companies are able to use this information about the individual doctor's prescribing habits to target their marketing efforts more precisely.

This intelligence gathering system is diverse and sophisticated, much like that of the CIA. My 'deep throat-like' source, who has worked 20+ years in pharmaceutical sales, tells me that Wal-Mart and Costco, who represent the big pharmacies, won't sell their information. This is not a problem, as their absence doesn't distort the profile. It's like the election results; with only 2% of the polls in, these sophisticated machines can declare a 'winning profile.' With this info they can make such decisions as: whom to wine and dine, invite to golf or buy the doctor's staff lunch. I remember my office got many stale doughnuts; they were left over, most likely, from drug company covert operation meetings. LOL!

**Update 7/7/17;** According to *Fierce Pharma*, via *MedpageToday*, the pharmaceutical industry handed out almost \$3 billion in 2016 in payments to doctors and other healthcare providers.

## 'Fake News' and Junk mail

Concomitant with the constant effort to 'detail' doctors in their offices is a barrage of marketing info pushed at doctors in every conceivable venue. I first noted the degradation of a prestigious journal -- ***The Journal of the American Medical Association (JAMA)*** about a decade ago. Long ago, I think JAMA was supported by subscription fees or by the dues package for members of the AMA. Now issues are sent free of charge and are supported by drug ads like most other doctor-directed magazines. Over the years the growing number of ad pages in that once most-respected periodical has sadly overtaken the number of pages of informative articles. **Update 5/3/2010:** One journal -- *The Archives of Internal Medicine* -- is reversing this trend. Although its May edition has exactly the same number of pages as JAMA, there is only 3 pages of ads. The rest is 'meat!' Kudos to **Rita Redberg**, as editor of the Archives, she makes a huge difference.

During this same time frame there has been an explosion of new physician-targeted magazines and web sites offering a mix of info, some with doctor-needed **Continuing Medical Education (CME)** credits. Others have topics of doctor interest such as financial and vacation information, all of which are top heavy with drug ads and articles that subtly push the 'religion of drugs' agenda. This massive 'missionary effort' incessantly gains strength. Over the last two decades there has been a noticeable increase in the sheer volume of junk mail that includes these now free journals, brochures, DVD's, questionnaires and other drug marketing materials that must be sorted through. Thirty years ago an average day's mail at the physician's office would fit into a shoe box; only 20% was 'junk.' Now it averages a banker's box and 90% is 'junk.'

## Please save some trees

These doctor indoctrination strategies, in support of this religion of drugs, are pervasive and sophisticated. Most recently, this is especially true in the psychiatric field. In an example of Big Pharma's sales agenda, I recall a few years ago that a new drug was approved for **bipolar disorder**. Shortly thereafter, in the typical mound of mostly junk mail that I received daily, I noticed a very fancy colorful brochure that announced that this bipolar problem was being very significantly under-diagnosed. It was essentially a **'fancy invitation'** to hear various psychiatric 'experts' discuss this disorder over a delicious free dinner scheduled around the country at upscale restaurants. It also included CME credits. Doctors need a certain number of these credits to retain licensure.

All things considered -- the lust to learn more, the credit for CME, free wining and dining at a great restaurant and convenient time options for attendance -- made this a very enticing meeting for most doctors. It didn't have much appeal to me because I had all the CME credits I needed and I am not into steak or booze. More importantly, I could see through the veil of sophistication that this was a marketing scheme for some drug. I didn't know what drug, but I was certain that it was about pushing some drug. Most physician education meetings like this are sponsored by a drug company that pays the tab and unfortunately passes it on to you -- the consumer. Thanks for breakfast.

I've attended many of these drug-oriented CME meetings and I know how they work. They are not entirely corrupt. Valuable information can be sifted out of most such meetings. Attendees must be aware of the marketing agenda and remain objectively skeptical in order to avoid buying into the illusions that are created. Many of us are such soft sells that it's best we just don't attend. I have to do the same thing with invitations that involve time-share sales. It all sounds so good to me I always want to buy two or three of them. Thanks for lunch.

Like time-share property 'meetings,' once you buy into the gig, you get on the 'easy to sell to list' and keep getting more invitations. Many doctors who attend such drug meetings do not appreciate their cleverly concealed marketing aspects. They truly believe all the data, information and theme presented by these dignified and well paid 'experts.' In any case, the meal tastes better when you're in denial of any agenda. I confess that, as my own guilt from being a part of this charade grew, the meals became nauseating. Thanks for dinner. I'm now overstuffed and I'm sick of it all!

As is now my tendency for such '**Fancy invitations,**' I threw the bipolar invite away. The same invite kept coming again and again. Again and again I kept throwing them away. I was not interested in attending, as I was already firmly convinced that bipolar disorder was being overly diagnosed, especially in kids and elders. So the basic premise of the meeting was clearly wrong in my mind. To wit, a recent study from Columbia University found there has been a nearly **forty-fold increase** in the number of kids diagnosed with bipolar disorder from 1994 to 2003. Something stinks here! Follow me closely and you'll find out what it is!

### The stacked deck

An old poker player named '**Pops**' Moore gave his son some sage advice:  
"Bud, respect everybody. Just cut the cards to get the fair deal."

Overdiagnosing and its resultant drug protocol matching tend to keep the patients/parishioners captive to this religion. How does this overdiagnosing come to be? It's quite simple. The first step is labeling — creating names for 'disorders.' The archetype for psychiatric labeling is currently the **DSM-V**. The DSMs were authored by panels historically made top-heavy with drug company-inspired 'experts.' They creatively define the disorders by suggesting the criteria for each. In other words, they descriptively label each 'disorder.' These labels are, in most cases, artificially contrived, too inclusive and, by design and intent, excessively encourage drug interventions. This is done by what I call '**stacking the deck.**'

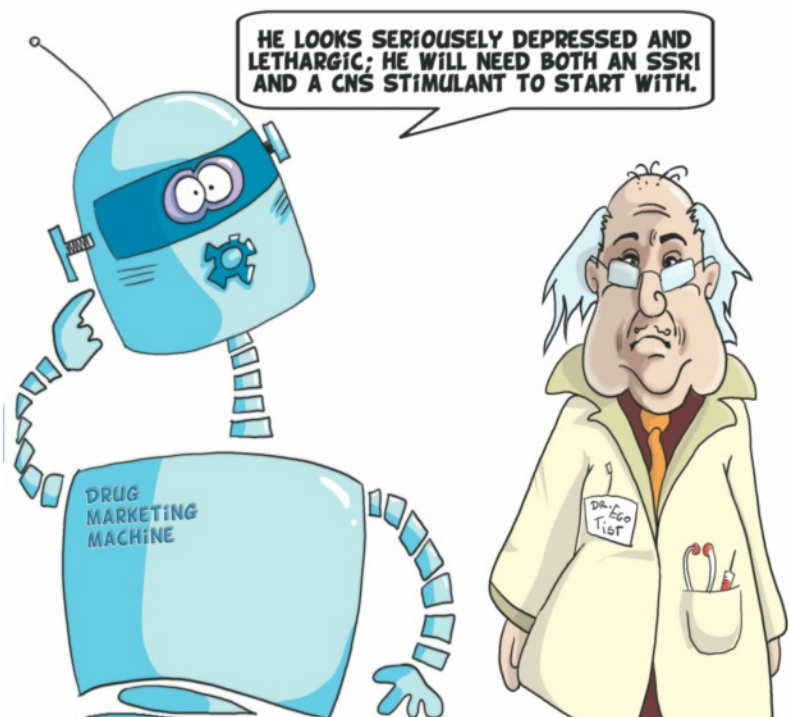
In the Nov. 3, 2006, journal *Psychotherapy and Psychosomatics*, an informative article entitled Financial Ties between DSM-IV Panel Members and the Pharmaceutical Industry concluded: "Our inquiry into the relationships between DSM panel members and the pharmaceutical industry demonstrates that there are strong financial ties between the industry and those who are responsible for developing and modifying the **diagnostic criteria** (labeling features) for mental illness. The connections are especially strong in those diagnostic areas where drugs are the first line of treatment for mental disorders. Full disclosure by DSM panel members of their financial relationships with for-profit entities that manufacture drugs used in the treatment of mental illness is recommended." Conflicts of interest in this religion are pervasive, folks.

This panel process defines both the diagnosis criteria and their relevant statistics. The incidence rate of any illness depends entirely on the stringency of the definition of that illness! Obviously, the broader the criteria, the greater are the number of candidates who 'qualify' for their drugs. The second step is establishing drug A&P treatment guides. A 2002 JAMA study showed that, of the 44 A&Ps they reviewed, 87% were authored by 'experts' who were tied to drug makers. Once defined, these Big Pharma-inspired labels are applied through 'doctor education' (the third step); thus the drug marketing loop is successfully closed. There's an effort now to use compliance with such guides as **performance indices** for physician reimbursement. This could strengthen the influence Big Pharma has on doctors!

**Update 2014:** The newest version of the **Diagnostic and Statistical Manual of Mental Disorders (The DSM-V)** was released in 2013. It is gathering much controversy.

**Allen Frances**, the DSM-IV panel's Chairperson, speaks for me in saying, "Everyday disappointments, sufferings and eccentricities are being redefined as psychiatric disorders, and that could lead to medication treatment. This is expanding the boundaries of psychiatry." DSM labeling 'guidelines' have huge abuse potential folks!

Historically, we've seen such labeling giving **too much control to too few**. Many were labeled 'abnormal' because their skin was too dark, their nose too big or their behaviors or thinking didn't agree with those in power. Do we want to live in a society controlled by 'drug programming robots?'





## Total conversion agenda -- a green light to push drugs

No one is spared as a marketing target. Kids are my special concern in this scenario. If we look at one apparent disorder currently classified as **ADD (Attention Deficit Disorder)**, we can appreciate how the description has broadened over the years to become more inclusive. In my tenure of practice the label has gone from Hyperactivity Disorder to Minimal Brain Dysfunction to ADHD (*Attention-Deficit/Hyperactivity Disorder*) and to ADD. Currently it doesn't make any difference if you call it ADHD or ADD: the same groups of drugs will empirically be administered using the DSM as a guide. The point is that with each change in DSM designation, the diagnosis becomes broadened to include a greater percentage of kids becoming candidates for drug therapy. For example, the child need not be 'hyper' to have vague 'attention' issues.

## The birth of a new psychiatric 'disease'

An ER doc recently blogged an insightful question: "Just reviewing - are we sure or not sure that ADD is a disorder? Is inattentiveness a disease or is it a symptom that can be found in several disorders? There's the rub - in psychiatry symptoms can be defined by the DSM as a disease entity, but is there any pathology to back this up as a distinct disease, or is it another case of defining a plane crash as 'altitude management disorder?' . . . highly accurate, but of little help."

The answer is that it is of tremendous help, especially to '**the financial bottom-line**' of a drug company trying to promote a drug for the 'disorder.' Let me demonstrate how this spurious and drug-industry inspired segment of the disease profile change from chapter one works. This may shock you. [I am confidently predicting that we are now about to experience a sudden worsening of the recently discovered epidemic of adult ADHD.](#) "How can I predict this worsening?" you might ask. Am I clairvoyant? No, it's very simple; the marketing elements are all in place as follows:

1. The FDA recently approved a strong drug we will refer to as **Drug X** for adult ADHD. Drug X is touted by its promoters as being the first and only once daily pro-drug stimulant to treat ADHD in adults.
2. More recently ([on 6/3/2008](#)) I received an e-mail web alert announcing this approval of Drug X. It came as a gross mailing from a free medical information web site directed to doctors. Such 'alerts' are subtle but certain marketing ploys to draw doctors in. As is typical, the notice included statistics. It said that adult ADHD is very common and **neurobiological**. This is a fallaciously-used word which suggests the disorder is a permanent dysfunction of one's brain for which there is no 'cure.' The e-mail further suggested that adult ADHD is best treated with drugs, and finally goes on to explain how their Drug X works.
3. The announcement also stated, "Within the first eight months since its introduction in the United States, Drug X has achieved over one million prescriptions!"
4. Strangely, in the text of the alert the stock symbol of the drug company was very prominently displayed. After I researched the stock, the dynamics seemed transparent to me. The company's top drug for ADHD will face competition from the generic market in 2009. I also discovered that the present CEO of the company is a marketing guru, having had success in similar challenges in the PPI (proton pump inhibitor) market for other drug companies. Do you remember that I said in chapter 2 that PPI drugs are grossly over-prescribed and that IMS reports that they held second position in 2007 USA drug sales? Why would these web site marketers put the company's stock symbol so blatantly on this 'doctor education' site? Are they trying to encourage doctor investment in their stock? If they succeeded in doing so, might that help their 'full-speed-ahead' marketing plan?
5. On the same day (6/3/2008) I also received another e-mail from a separate web site featuring an Internet course for doctors on '*The recognition and treatment of adult ADHD.*' The course offered two free hours of CME credits. What a coincidence! Do you suppose there might be some big bucks at work here pushing Drug X, folks?
6. It is well established that such subtle doctor-directed drug marketing works to sell drugs.
7. Like street drugs, brain stimulants are in great demand by the public, possibly to meet the epidemic symptoms of environmentally-induced toxic 'brain fog,' or simply to achieve short term cognitive enhancement at any cost.
8. No matter how you 'clean and dress up' adult ADHD drugs, they are unnaturally mind-altering, dangerous and seriously addicting. Once started on these types of drugs, the patient not only has addiction and abuse potential driving his continued need, it's apparent that he now has the sanction of this 'religion of drugs.'

**Confirmed Prediction Update 1/18/18:** The number of reproductive-age women in the USA who received prescription medications for ADHD jumped more than 300% from 2003 to 2015, according to data released today by the CDC.

**Further relevance of this study:** See discussion regarding **autism spectrum disorder** on page 36 herein!

**Seriousness of Issue Update:** A study published online in the 7/15/09 *American Journal of Psychiatry* shows that, although **sudden death in youngsters** is rare, CNS stimulants are associated with a 6- to 7 times increased risk for it!

ADHD symptoms are real and I suspect many people so affected may get quick short term relief from these kinds of drugs. Yet, I wonder how many doctors honestly believe that the new stated prevalence of this so called **neurobiological** (incurable) disease existed prior to the intense marketing of these types of addicting drugs for children? Personally, I think much of 'adult ADHD' was given birth in the medicine cabinet when environmentally brain-fogged Moms and Dads started sampling the sacraments prescribed for their 'ADHD labeled' kids!

## A quick lesson in economics

The forces in our economy dictate that the value of supply will rise to meet increased demand. Isn't there a tremendous incentive to increase the demand if you are in the supply business with approved and patented drug products?

Isn't there an incentive for drug companies to create an 'illness' out of a collage of symptoms and behaviors, then work to have it overdiagnosed, when they have a drug approved to treat it? To wit, if you are given a **bipolar disorder** diagnosis, you're likely to search the Internet for information about it. You are more likely than not to find a prominent web site which just happens to be sponsored by a drug company that manufactures a drug approved for treatment of bipolar disorder. Not atypical of such psych drugs, this drug's maker admits that the drug's mechanism of action is completely unknown.

Check out what it says the bipolar symptoms are. Take the questionnaire 'test' to see if you have the symptoms that qualify for their diagnosis. You might have to 'live in Stepford' not to qualify! On the web site you will see that the official diagnostic categories for the disorder have been expanded to total four. These four descriptions, in aggregate, seem as broad as to allow almost anyone in the USA with normal feelings to be included if they have 'significant' fluctuations in mood or engage in 'risky' behavior. There are few human beings with whom I hang around who wouldn't fit into one of these four inclusive categories. Their bottom line message is that the majority of us are likely candidates for their drug. This is what these CME meetings are all about too. These marketing efforts are designed to encourage doctors to be on the lookout for potential converts. They are everywhere and they need to be 'saved' with drugs!

Once converted, there is an orchestrated effort made for the parishioners to keep the faith. The misunderstanding that patients will require drugs forever once a diagnosis is made is part of this marketing agenda. That agenda promotes their neurobiological theory of inherited flawed mentation and behavioral tendencies -- a fallacious Third Reich type of idea that the genetics of such a patient is uniquely defective without a certain drug. In other words, the diagnosis is caused by a deficiency of that particular drug. Consider the following web site excerpts (black) and the thought dialogue (red) of a patient with common sense and insight who is seeking info on the bipolar diagnosis they've just been given:

- "Bipolar disorder is a lifelong medical condition." (I'm confused; why did I function fine for most of my life before the doctor told me I am bipolar? Are you trying to sell this neurobiologically predetermined behavior idea again?)
- "Don't be discouraged if you don't see results immediately." (Of course! You don't even know the mechanism of action of this medication that you claim is so vital to my health!)
- "Medications may not make people feel better right away. They often take time to work completely." (Could it be that, instead of the drug being responsible, my body is Neogenically healing itself during this time; and that the circumstances in my life that gave rise to these feelings and behaviors most likely will improve during this so called **lag period**?)
- "Sometimes a medication must be started at a lower dose and increased over time to be effective." (Wouldn't this be a good way to encourage addiction by gradually up-regulating the brain cell receptors upon which the drug acts?)
- "Medications can sometimes cause side effects. In that case, the healthcare provider may either reduce the dose or prescribe another medication." (Of course taking drugs has many possible, often subtle and serious, negative results. And look, I know now how you educated my doctor with your elaborate marketing programs. I have to question the diagnosis instead of playing your A&P game called **the pharmaceutical crap shoot!**)

## Preemptive answers

The web site goes on to provide slickly preplanned answers to questions that reasonably intelligent people who are diagnosed with bipolar disorder or dubious doctors treating such people might ask. They provide a chart of preemptive answers to questions the patient or doctor would reasonably ask about side effects or diagnosis uncertainty that might arise before or during treatment. These authoritative answers are overtly designed to convince the patients and their doctors to continue the drug. If one comes across such high-powered propaganda completely naïve, one is likely to believe he or she is bipolar, and as such need their drugs forever to obtain and retain good neurobiological health.

The preemptive answers do not acknowledge that patients or their doctors might want to stop the medication because their common sense tells them they may be misdiagnosed. It suggests to both religious parties that they should not listen to their brains and bodies, but subjugate those concerns to an artificial higher power! The net effect of all this powerfully-contrived propaganda certainly pressures any parishioners/patients who question the dogma of this faith.

Bipolar symptoms are real and many so-affected will improve with a variety of treatments, some with drugs, of course. Patients given the bipolar diagnosis will search the web for information. Nowhere on this bipolar information web site is it suggested that a misdiagnosis is quite possible or that the resultant inappropriately prescribed drug(s) may be doing more harm than good. It does not explain to patients or doctors that their diagnosis may be a result of Big Pharma's influences. It omits to reveal Big Pharma's role in defining the disorder by contributing to the DSM and its own promotional sources, including the web site itself.

**The truth is** that humans are complex, sensitive, emotional beings. We have individual characteristics. We will, as a normal course of experiencing unique exposures and emotionally charged life situations, react with symptoms and expressions reflective of a wide variety of normal feelings from agony to jubilation. Drug marketing encourages categorization and labeling of these symptoms and expressions, as well as the variations in our personalities, for its own agenda. These aggressive marketing strategies, by intent, push the drug intervention criteria bar as low as possible.

This Big Pharma-inspired idea that 'psych-labeled illnesses' are **neurobiological**, therefore permanent, can only be defended in the '**old school of thought**.' That thinking suggests that the brain is like a computer-- defined and limited by its hardware. Such an unsound, static machine could only originate as a mistakenly-wired 'lemon,' rendered defective by its genetic flaws. Neogenesis refutes this thinking. **The truth is** that the brain is constantly changing. That change and the brain's resultant functioning are highly influenced by individual environmental factors and circumstances. After properly 'removing the thorns,' we doctors can best intervene by helping our patients focus their ongoing changes in a positive way. Drugging everyone so factitiously labeled is not the answer.

Based upon what we now know about the brain and its neuroplastic nature, we also need to revisit this well entrenched artificial labeling aspect of psychiatry. It should now be apparent that, in many cases, such labels are nebulous and tentative at best. The typical process involving such tainted fixed labeling is often counterproductive to true healing. In psychiatry, drugs have seemed to supplant many other helpful approaches in dealing with most toxic brain issues. Furthermore, even in cases in which 'brain wiring problems' are more highly suggested, such as dyslexia and autism, therapies directing the Neogenic focus toward healing are proving fruitful in a more durable manner.

### Postal relief

A scary thing is that I continued to get similar invitations to these same ongoing bipolar meetings on a regular basis for well over a year. It became obvious to me they had not checked me off the indoctrinated doctors list because I had not registered or attended one of these bipolar meetings. I truly believe they must have such a CIA-like list. This marketing campaign allows them to leave no stone unturned, no doctor uneducated regarding patients' needs for their drugs.

Fortunately, some time ago I answered a practice questionnaire. This is one of many information gathering tools for the drug marketing machine. This came in the mail with a crisp five dollar bill. At the time it was the first money I had received relating to my practice of medicine in years, as I did only volunteer and pro bono work for many years prior. I decided to keep the five bucks and reply. I tersely informed the senders that I wrote very few prescriptions. Shortly thereafter, I noticed the bipolar meeting invitations as well as others stopped or diminished! I'm glad because 'my new profile' saves about one tree per year and I'm tired of recycling the expensive brochure paper.

Now, as a 'religion of drugs apostate,' I'm just going to have to practice what 'they' consider as 'bad medicine' without this special knowledge. Just to show you how confusing things are-- in March, 2007, the FDA announced that antidepressants don't work in the bipolar disorder which once was classified as a form of depression. 'They' say bipolar disorder now affects 5.7 million Americans. Of course 'they' rely on statistics 'highly influenced' by Big Pharma. **Update 1/10/2010:** A definitive review reported in *JAMA* shows antidepressant meds help the most severely depressed of patients, but they are no better than placebo for patients with mild to moderate depression -- the population that accounts for most of their use!

These are some major problems with Big Pharma's elaborate marketing system:

- 1) The resultant overdiagnosing leads to the inappropriate overuse of and, in many cases, **addiction** to their drugs.
- 2) It increases the frequency of drug-caused disorders, reactions and side effects.
- 3) It stigmatizes many of those with incorrect and often pejorative diagnoses, thereby burdening their futures.
- 4) It inflates the costs of drugs and the overall cost of medical care by encouraging unnecessary services and testing.
- 5) It masks and impedes discovery of the basic causes of symptoms and illnesses and so discourages their **prevention**.
- 6) It dissuades individuals from seeking **All Term-effective** non-drug symptom-relieving strategies and therapies.
- 7) It increases the chemical pollution of the planet and impacts all species overloading the detox SINKs of many.

"Half of the modern drugs could well be thrown out of the window,  
except that the birds might eat them."

~Martin Henry Fischer~

### New missionary strategy employed

I do see more and more doctors questioning their relationships with the drug companies. We physicians are becoming harder to convince that we need to 'keep the faith.' At the same time that doctors started to distance themselves, it became obvious that the powerfully funded marketing machine turned its attention to direct patient marketing.

Like televangelists, the **drug marketing missionaries** have set out to convert the world. Some years ago, we began seeing ads on TV for the erectile dysfunction drugs, the cholesterol lowering drugs, the sleeping medications and others.

Now it seems like drug ads are the most common category of all ads on TV. Drug ads cost the industry \$4.8 billion back in 2006; it's much more now. The savvy traders know that if the patients ask for it, the doctors will probably prescribe the drug rather than debate the patient about efficacy. The success of this strategy was demonstrated by a January 2008 survey reported by *USA TODAY*. The Kaiser Family Foundation and Harvard School of Public Health study found that drug ads prompt 1/3 of American patients to ask their doctor about a drug. Their doctors recommended some type of prescription to 82% of those who asked about the advertised drug.

At some point we will see these out-of-control TV campaigns for what they are. Hopefully some reasonable action will be taken to reel them in, like the old cigarette commercials were. Just in case nobody has noticed, this has become a serious problem. The U.N. affiliated International Narcotics Control Board, in its 2006 report, stated that **prescription drug abuse** has already outstripped traditional illegal drugs such as heroin, cocaine and Ecstasy in parts of Europe, Africa and South Asia. It is currently in #2 position, but rapidly gaining, in this country. We don't allow any of those illegal street drug dealers to advertise on TV. Why do we allow the High Priests of the pharmaceutical drug trade to do so?

On the flip side, we're now seeing more ads on TV that solicit class action litigants who have had various problems associated with pharmaceuticals. The ads solicit heart and stroke victims who used Vioxx, heart disease sufferers who used Permax, pulmonary hypertension victims who used Fen-phen and a rapidly growing list of others. The lawsuits and drug recalls are now coming fast and furious because the FDA has recently streamlined adverse drug reporting by doctors and patients. This now brings the serious problems relating to pharmaceutical drugs into focus. Truth be known, side effects, toxic reactions and interactions, idiosyncratic reactions and allergies to drugs have always been part of this religion's 'sacrament.' Most of these lawsuits have the common denominator of inadequately informed consent. In my humble opinion, the doctor/priests could never be informed enough to avoid parishioner injury from the excessive 'sacraments' (prescriptions) they give. They are now caught in the middle of the heavy crossfire of the litigant parties.

It saddens me to see this ineffective litigation not proven to impact public health and safety, despite huge judgments. Cigarette manufacturers have passed on similar litigation costs to their addicts. 'The Big Pharma High Priests' just demand greater tithing; as drugs, like cigarettes, become more expensive. Americans now spend more than \$216 billion each year on pharmaceutical drugs. As both the lawyers and marketers get richer, the public gets sicker. What will work is individual patient acquisition of knowledge, commitment and responsibility. The religion of drugs has to be unveiled. The first step is to demand transparency in the now greater than \$50 billion yearly marketing tab of Big Pharma!

**Update 3/24/2010:** After president Obama signed the *Affordable Care Act*, most of us disagree on various elements. However, consumer advocates applaud its '**sunshine provision**.' In a commentary posted in *JAMA* today, the head of the *National Institute of Mental Health*, Dr. Thomas Insel, opines that this provision will allow for the increased transparency necessary for consumers to understand the relationships and influences between Big Pharma and psychiatrists. In response to Dr. Insel's assessment, Allen Coukell, director of the nonprofit consumer health *Pew Prescription Project*, stated: "Transparency is the first step toward giving patients and the public the tools they need to evaluate those relationships." Kudos! **Update 10/9/14:** The first provision-required payment disclosures show that Big Pharma doled-out more than \$4.5 billion to at least 546,000 doctors and 1360 hospitals in the last 5 months of 2013!

### **'Big medicine beneficiaries' --who are they?**

The majority of the tithing of this religion goes to Big Pharma, doctors, hospitals and insurance companies, but many other healthcare entities such as **imaging and chemistry testing labs** are also big players. I'll demonstrate how this works by considering a class of drugs called '**statins**.' If your 'bad blood fats' are elevated, you are probably on a statin, as statins lower these fats and decrease mortality risk in those already having cardiovascular disease. Statins commonly damage one's liver and muscles, and may cause diabetes, cataracts and cognitive impairment! Baseline lab tests are required before going on statins. Once on the drug, the protocol advises that the patient take more tests to see if the drug is doing its job without excessive liver or muscle damage. Lab tests generate more income for the labs involved.

I've noticed that lab reports done 20 years ago reported 'normal' in a column on the right side of the report. Now the lab reports have changed the name of that column; they call it either 'reference interval' or 'reference range'. Something else is also evident and suspicious. The 'normal' numbers for cholesterol as well as other relevant chemistries have changed. In 1987, the high normal for **cholesterol** was up to 280 mg/dl. In 1992 the 'reference range' high was 240 mg/dl. In 2007 the 'reference interval' high was 199 mg/dl. The point is: I don't think docs would be as anxious to put patients on statins, nor do I think patients would be so easily convinced of their need, if they knew normal readings are up to 280. This moving target for 'normal cholesterol levels' seems deceptive. Everybody, including the labs, make out well on this.

**Update 12/12/12:** The FDA now says that such routine blood monitoring of statin users is a waste. Kudos!

What's the big thing happening here though? I strongly suspect a collaborative effort is being made to get us doctors all on the same 'statin prescribing page' and 'they' are succeeding according to an industry report out on 10/30/07. Data from Medco shows that use of these drugs jumped 68% for people 20 to 44 years of age over the prior six years.

There is a concerted effort by 'Big Pharma's high priests' to get more 'converts' on statins. They posit that statins will make us live longer and have fewer cardiovascular events. This conclusion is based on studies that show less risk of atherosclerosis when hyperlipidemia patients are treated with statins. One such Yale study posted in the 1/2009 edition of *Circulation* concluded that 11 million more Americans need to be on statins, raising the total to 44.7 million! These highly questionable Big Pharma studies compare matched groups either with or without the statins. They do not compare statins with the serious application of thorn removal strategies discussed in this book; nor, do they help us understand and address the actual causes of the diseases associated with hyperlipidemia ---'the thorns.'

Has anyone but me ever thought that these elevated fats merely represent an easily accessible reflection of a complex and dynamic system that is out of balance? Something like a clogged up SINK and a toxic brain? Big Medicine has erroneously labeled LDL, VLDL, and cholesterol as 'bad fats.' Not so! They all perform vital tasks in our exquisite design. Their concentration profiles may indeed predict bad outcomes. Such profiles are sometimes reflective of an individual's genetics. For most, such reflections of inflammation result from a deteriorating environment and poor lifestyle choices in the arenas we have discussed in this book, many of which are made out of naiveté. I accept that atherosclerosis and hyperlipidemia have 'common thorns.' I do not agree that highly-promoted drugs are always the best way to deal with them; prevention is! We are conditioned, by this 'faith,' to discount strategies that encourage better choices and instead go directly to the 'sacrament (drug) cure.' Of course, it is a cure that often cures nothing. By the way, in 2012 we spent \$31 billion on cholesterol lowering drugs. Better lifestyle choices could have saved most of that money!

**Update: January, 2008**, the long-awaited results of a huge study on **Vytorin** came out. Vytorin is a combination of two cholesterol lowering drugs with distinctly different mechanisms of action. You probably viewed the barrage of TV ads implying that Vytorin would be the 'super drug' to prevent atherosclerosis. This major study surprisingly showed Vytorin had no effect in slowing down or reducing the thickness of the artery clogging plaques. My prediction is that, despite this stunning finding, doctors will continue with **business as usual** in the prescribing of Vytorin and other statins, without starting to question the precepts of this deeply rooted faith. Sadly, they will not look for and remove the artery-hardening 'thorns' of deficiency, dysfunction and toxicity which promote atherosclerosis. We must take out the thorns!

**Update May 2015:** A large Finnish study published in *Diabetologia* suggests that statin use is associated with a 46% higher adjusted risk for diabetes occurrence.

### **Osteopenia -- another profitable 'invention of Big Medicine'**

**Osteopenia** is a quintessential example of how overdiagnosing benefits many of the 'Big Medicine players.' It is a highly questionable 'disorder' that is, by religion of drug logic, caused by a deficiency of calcium supplements and drugs called **bisphosphonates**. Scare tactics and misinformation, influencing both patients and doctors, have driven the sales of these expensive and dangerous drugs to shameful heights. It was 'conceived' when WHO 'experts' in 1992 arbitrarily choose a bone density of one standard deviation below average as its only criteria. The problem is: from 28 to 45 percent of all women scanned fall into this category, depending on the scanner used. This WHO 'logic' is equivalent to defining all 15 year old girls who are less than 5 foot 2 to be 'dangerously short' and implying a 'need to treat' with growth hormone.

The 'osteopenia invention' has spun out enormous profits. It has helped sell lots of scanners, necessitated a huge number of unnecessary scans and doctor services, and made big profits for 'Big Pharma' and the calcium supplement industry. (See page 127 for the deadly downside to calcium supplements and their relevance to this 'osteopenia invention'.)

**Prevention again trumps drugs update 1/20/15:** A British study published in *Osteoporosis International* shows that eating lots of fruit and vegetables improves bone health, as the potassium salts they contain reduce bone resorption.

**Sad Update: 5/28/2009:** A 'study' in the 5/19/2009 issue of the prestigious British Medical Journal suggests that those of us who are likely to be 'at risk' for coronary heart disease or stroke, such as all people over the age of 55, should be given high blood pressure medications, regardless of their blood pressure! The authors of this statistical 'study' are the same 'experts' who advocate the use of a **polypill** -- a drug containing a statin, three blood pressure-lowering drugs, folic acid and aspirin. Naturally, the lesser-evident downside of such intervention is not their focus. By the way, these 'experts' hold the patent on that polypill. How does that smell to you? To me, this outrageous absurdity, so granted such prestige, demonstrates at least 3 of my points: 1) Greed drives the A&Ps of modern medicine; 2) The statistics that form the foundations of the A&Ps can be 'selectively generated and interpreted' (bent) in any way to meet the greedy needs of the parties in power; 3) Free of greed, natural prevention has relatively little support.

**Happy Update 4/15/2010:** Rita Redberg, editor of the *Archives of Internal Medicine*, was 'troubled' by President Obama's recent medical exam. His state of health is not her concern; he's quite healthy and fit. Her concern is that **unnecessary, expensive and dangerous imaging studies** were done. She plans to voice her concerns about such widely used tests, procedures as well as drug ordering and prescribing, the merits of which are dubious and the risks commonly understated, in future issues of her journal under the title '**Less is More.**' Kudos! I would add a personal request of the president -- make us even more proud of you by setting a role model example -- please stop smoking. **Yes you can!**

**Celebratory Update November 2011:** Regarding President Obama and quitting smoking, **yes he did!**



## Secret codes for the religion — the *dealers of the stacked deck*

The physician reimbursement system is another driving factor in firstly overdiagnosing and then secondly overprescribing. In order to get paid by insurance companies, doctors need to generate two codes. The first is a diagnosis code and the second is a service code. In effect, a doctor can't be paid for his services without acceptable diagnoses. Once a diagnosis is made, be it correct or not, the A&Ps come into play and the patient receives drugs consistent with 'the ritual.'

### Code to the max -- The beginnings of '*the insurance coding games*'

Since the late 1970's, 'managed care' businesses were given more and more political power, ostensibly to control the costs of healthcare. Almost immediately, the coding games began. The managed care entities introduced the game best named -- 'find any excuse possible to disallow a hospital or doctor claim based on improper filing or coding.' As a result, these health insurance companies experienced windfall profits as they ratcheted down reimbursements, often to levels below those necessary for doctors and hospitals to render adequate services. This had a devastating effect on primary care solo practices; it caused a mass exodus. Many of the remaining solo practitioners joined other doctors to form groups. By banding together, they could then afford to hire management and billing specialists to ensure adequate pay for their services. The net effects include care delays across the board, greatly increased ER and specialist referral visits and ultimately an inefficient and financially-stressed healthcare system.

Successful doctor groups and some business-wise solo docs have countered the new economics by playing the game most appropriately named '**up-coding.**' Their billing specialists scan the records to make sure no diagnosis codes go unreported, even those unsubstantiated or tentative ones. Ultimately patients suffer because there are ongoing pressures on physicians to overly-prescribe drugs which are consistent with the protocols for these factitiously-contrived diagnoses. Can any logical person think that this self-serving system doesn't lead to overdiagnosing and then on to overprescribing?

### The costly payback of overdiagnosing

The prevalence of overdiagnosing occurs throughout the system. It most frequently occurs now in the psychiatric arena. Doctors rightly want payment for their work. To get paid, they need to label each patient and so generate a diagnosis code. Then, as per protocol and tradition, a drug is most frequently given to match that diagnosis code. This quite often encourages doctors to 'shoe horn in' anxious or otherwise distressed patients into existing diagnosis codes erroneously. Such a system favors treatment of patients as 'disorders' or diseases rather than individual human beings and ultimately results in unnecessary drug treatments as per the 'Big Pharma-influenced' treatment guides.

### Psychiatric casualties are mounting

We are making the same type of mistake now -- with **overdiagnosing of psychiatric illnesses** and the resultant overprescribing of psychiatric drugs -- that we made with antibiotics over the last 60 years. In the typical antibiotic scenario, the patient comes in with symptoms of a **viral upper respiratory infection (VURI)** yet, has a firm expectation of getting an antibiotic. Antibiotics don't help VURIs. We doctors commonly acquiesce to please the patient. We write for the antibiotic; then, to justify the A&P, we inappropriately mislabel the patient with a factitious **bacterial** infection.

Both of these overprescribing scenarios - antibiotics and 'psych drugs' - originate from similar fallacies of logic paradigms, marketing dynamics, fear and, of course, greed. We now must deal with the drug-resistant 'super bugs' as a direct payback from overprescribing antibiotics. We doctors are getting better with antibiotics because we can now more clearly appreciate the 'big picture' consequences. We remain egotistically imprudent with **toxic brain-inducing** 'psych drugs.'

Further, in the psychiatric arena, mislabeling often stigmatizes patients. This frequently makes their adjustments to life stressors, which most often are the root causal 'thorns' of their presentations, more difficult. Once a misdiagnosis is made, it tends to stick to the patient's medical records like glue. This is particularly damaging to a misdiagnosed patient who is:

- 1) Adjusting to situation-induced stresses and having feelings of insecurity or inadequacies at such times as any normal human would
- 2) Suffering from a brain injury or brain disruption from a myriad of poorly understood neurotoxic processes
- 3) Harmlessly expressing his own unique personality or interests
- 4) A misunderstood or otherwise disabled person
- 5) A culturally, socially, physically or mentally vulnerable adult
- 6) A child

This **child issue** is a significant line of abuse which is being crossed by overdiagnosing and over treating 'psych illnesses.' The number of American kids being treated with 'psych drugs' tripled from 1987 to 1996 and shows no signs of slowing. In a 2007 report, children in the USA hospitalized with **pediatric bipolar disorder** rose from 1.3 per 10,000 in 1996 to 7.3 per 10,000 in 2004. This trend continues.

Between 2002 and 2005 the use of ADHD drugs on kids rose 40% and continues to climb. **Update 11/11/10:** The CDC estimates that 9.5% of American kids are diagnosed with ADHD and about two-thirds of those are on 'psych medicines!' **Psychiatric Polypharmacy** -- the simultaneous use of at least 3 different 'psych drugs' per patient - is now commonplace. In a 2014 study of foster children in Ohio, there was a psychiatric polypharmacy rate of 27%!

Simultaneously, there is a growing concern that these medications cause teen suicidal thoughts. The blood brain barrier lacks full competency in kids, offering less protection against toxic brain side effects such as suicidal ideation. Thankfully, the FDA is now requiring their highest-rated warnings to doctors, called **'black box warnings,'** on many of these dangerous 'psych medicines' that are clearly being overused on kids.

Many of these 'psych-labeled children' have symptoms best explained by environmental illness. The environmental and circumstantial roots of their symptoms are most often discounted or ignored by this 'religion' and made worse with the now routinely-used 'psych drugs'. These 'psych drugs' may help muffle the symptoms and quickly make the child more manageable, but they don't address other healing issues. The real **'thorn issues'** of brain toxicity, self-perception, family and interpersonal relationships, feelings of insecurity, isolation and abandonment and other ways each child may negatively view the world are not 'quick fixed' with any drugs. More #1 Pie healing elements and non-drug approaches are most often needed, and that need is often masked with mind drug cover-up. We must first try to 'take out the thorns!'

The toxic brain symptoms of kids (their NBC broadcasts) are often reflections of their genetics that are aggravated by food, drug or other environmental sensitivities. **Update 2/5/11:** A study reported in *Lancet* today strongly supports a food trigger for the symptoms of ADHD and **'oppositional defiance'** (misbehaving). When placed on a **restricted elimination diet**, nearly two-thirds of these kids' diagnostic symptoms significantly improved. Going off the diets caused them to relapse.

At greatest risk of toxic brain are children whose parents are hooked on illicit drugs. Children of parents of the **'religion of drugs faith,'** though, are also at similar risk for this current systemic abuse. Their SSRI and otherwise 'psych-drug detached parents' are all about themselves; like illicit drug addicts, they have less time for quality parenting. They seek the 'quick drug fix' for their kids, too. These kids, by acting out their anxieties of social and emotional isolation, in reaction, will likely fall into the **'alphabet soup of psych labels,'** then be put on an SSRI, an ADHD drug, a bipolar drug, an oppositional defiance drug, an anti-psychotic drug and the like. Like any behavior, parental addictions tend to be mimicked by their children; thus so, this faith is propagated.



**Tom knows if one goes to a doctor seeking help for emotional or behavioral issues, he'll likely receive a questionable DSM-derived diagnosis, then be given drugs to match it.**

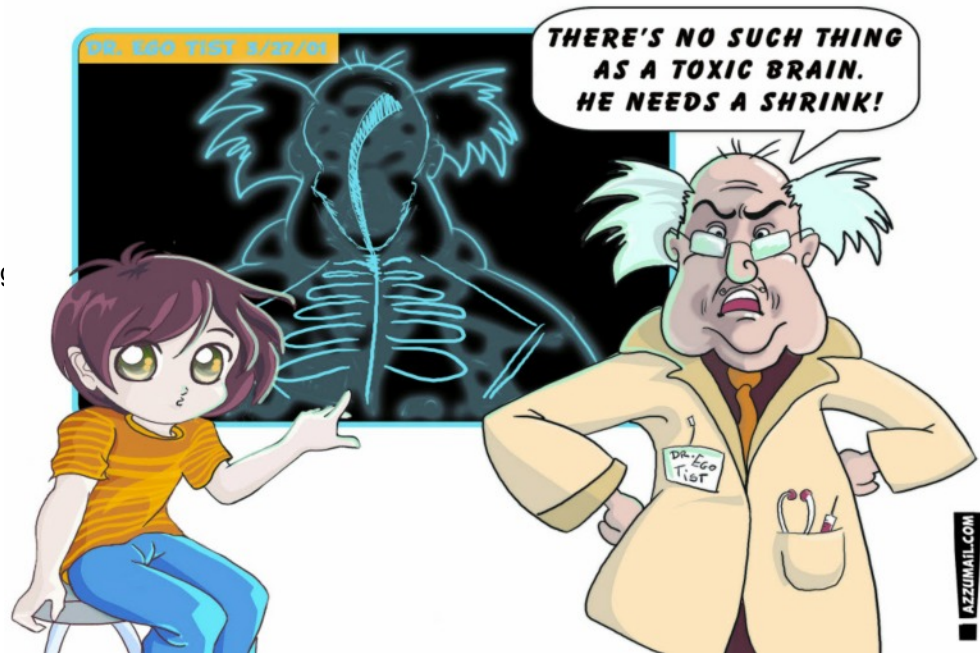
The mistake, as I view it, is that these patients, regardless of age or social status, don't always need drugs that reinforce their dependence on this 'religion.' Of course, drugs may make anyone, including a child, feel and demonstrate more easily manageable behavior in the short term. The salient point is: when used indiscriminately and excessively, drugs delay and dilute interventional benefits in the more important All Term. Validation **Update 12/8/15:** A meta-analysis reported in the *British Medical Journal* showed no difference in treatment effects of adults with major depression with antidepressant drugs as compared to cognitive behavioral therapy either alone or in combination with antidepressants!

We docs tend to underestimate patients' abilities to help themselves. Many treated with drugs more simply need social, vocational, emotional and professional support which allows and provides tools and techniques of empowerment to help them manage their own wellness based on non-drug options. Such non-drug options include individual or group therapy, family therapy, and the counseled use of the aforementioned seven natural healing strategies supportive of Neogenesis. A recent record analysis of almost 7 million children on antidepressants in the 2002 to 2006 time frame in the USA shows well over half had no other therapy! Sadly, this **'give them drugs only'** practice prevails.

## We doctors are a stubborn and egotistical lot

I certainly appreciate the value in most of the products that drug companies produce and sell and don't condemn all marketing strategies. The important point is: healthcare is a special market in which abuses can be especially damaging. Self-serving conflicts of interests result in the overselling of products and services.

Overdiagnosing leads to overprescribing and harms the public in many ways. Once a drug is started on any patient, true addiction, financial incentives, tradition, doctors' egos (**as in this cartoon**) and other forces of momentum tend to keep drugs as the major focus for both patients and doctors.



**But Doctor Ego Tist, in this imaging study your brain looks like an apple's stem**

## THE PHYSICIAN BURN-OUT AND TIME-CLOCK MEDICINE TRAPS

As a society, we've rocketed away from a bucolic mind-set of the past, which was ruled by the laws of nature. Seeds were planted and, with patient nurturing, our crops grew and were harvested at maturity. We've touched down and are now living in an 'instant gratification mind-set era' in which neither the doctor nor the patient have time for patience. Patient expectations often conflict with a key natural element of Neogenesis called 'tincture of time.' In this modern era, doctors struggle to meet unrealistic patient and other interested parties' expectations, often in return for inadequate reimbursement for their services. What has evolved from these conflicts are: 1) an epidemic of **physician burn-out** -- an often catastrophic career dissatisfaction and 2) what can best be described as --'time clock medicine.'

Somewhere in the left brain of many doctors, this internal clock has come to reside to meet the challenge. From the minute the doctor enters the exam room, this time clock starts ticking. At minute nine of the ten minute scheduled visit, the doctor's hand, which is neurologically connected to this 'clock' in his left brain, starts to move. Of course, the hand is always holding a pen. The pen is always on a prescription pad; the sacrament is about to be given. Then, like a missile about to be launched, the countdown begins. Of course, it goes ten, nine, eight, seven, six, five, four, three, two, one -- we have lift off of the sacrament from its prescription pad. You have been blessed and we are out of here!

As healthcare costs continue to skyrocket and more stressors are applied to the system, the time spent on a typical doctor visit necessarily shrinks. The visit becomes focused off Neogenesis and on to the renewal of drugs. The #1 problem with this trap is that it fosters **the religion of drugs** attitude of practicing medicine. For the doctor, it is much easier to meet the parishioners' expectations by giving to them the prescription that they request, rather than to care for them enough to seriously discuss non-drug preventative medicine alternatives. This latter tack, although more helpful in the **All Term**, is simply too time consuming. Studies show that, currently, docs can't apply Ben Franklin's prevention math to their patients because: employee salaries, rent and the rest of the doctor's overhead must be paid on time.

Time-clock medicine serves to keep both the doctor and patient trapped, because it creates more problems and the need for future visits. As the problems compound, the time constraints demand a more constricted focus with each visit. The point of efficient focus ultimately becomes the drugs.

**The predominance of 'time clock medicine,' its coding-system dynamics and the success of Big Medicine's marketing strategies account for that second driver of the disease profile change that I describe in chapter one.**

This is the spurious portion of COED-S that is simply reflective of the prevalence of overdiagnosing and overprescribing. **Religion of Drugs Update 8/2016:** U.S. consumers spent 11.7% more on prescription drugs in 2015, than they did a year earlier -- shelling out \$419.4 billion, according to an article in *HeathDay News*.

## THE DIET PILL TRAP -- enter this trap with high expectations and end up with a shattered mind or a broken heart

I have seen zero **All Term** health benefit with any diet drug that has ever been on the market. The so-called appetite suppressants work on the brain. Most are addicting, 'mind-altering' drugs that only complicate the underlying toxic brain issue. None help the brain heal. Their '**paybacks**,' in **All Term** damages, typically become appreciated only after they become extensively used. Pulmonary hypertension and heart valve damage with the once-fashionable Fen-phen is an excellent example of hidden serious paybacks of diet drugs. As of 2005, more than 50,000 alleged Fen-phen victims had filed suit against its makers, according to *American Lawyer* magazine. **Update 10/2010: Meridia** is the latest diet pill to bite the FDA recall bullet. Among its finally recognized paybacks is a 16% increase in heart attacks and strokes.

One **fat blocker** is approved as an over-the-counter diet drug. It reflects the typical 'religion of drugs' M/O. By interfering with fat digestion, it creates a malabsorption state for about 20% of the fat that a user eats. What message does this send to its obese users? It tells them it's OK to continue to make the poor lifestyle choices that got them too fat in the first place if they simply take this drug. Flatulence, diarrhea, and other side effects of the drug may limit overdosing by reasonable people. More-determined others will reason that if one pill reduces fat absorption by 20%, two will reduce by 40%, and three by 60%! Long term users of this drug likely reduce the bioavailability of the **fat soluble vitamins** (A, D, E, K) too.

On the positive side, vinegar is a natural fat blocker and increases feelings of **satiety** (the FEAST message of fullness or satisfaction). Research in mice shows that the acetic acid in vinegar helps control blood pressure and blood sugar, and it discourages the body from building unnecessary fat stores. Use two tablespoon before each meal to jumpstart your diet. Vinegar-rich foods include pickles, coleslaw and vinegar dressings. Peppers, both hot and sweet, are **thermogenic** (cause calories to be burned faster), thus associate with easier weight control. A daily cup of heat-processed salsa (it has both peppers and lycopene) works well. **Update 2/4/15:** A Taiwanese study shows that tomato juice alone, used similarly, will help trim your waistline. Their findings suggest that the **heat-modified lycopene** in such tomato products decreases fat inflammation and increases **adiponectin** – a satiety hormone that regulates insulin sensitivity. **Update Nov. 2010:** a Lund University study in *Nutrition Journal* shows that drinking green tea with meals also increases satiety feelings.

Lastly, making even moderate nontoxic changes to your environment can promote as much weight loss as even the best weight-loss drugs. When you render your brain less toxic, its FEAST system will function better in managing your weight.

## THE RADICAL WEIGHT LOSS DIET TRAPS

How many radical diets have you tried? At best do you lose some pounds initially only to have all that weight plus more come back? The only things certain about **all radical** weight loss diets alone are:

- 1) You're unlikely to achieve optimal health, lose weight and keep it off for the **All Term** with a radical diet alone.
- 2) As someone wise said to me re: use of weight loss diets alone, "Like a new and wrong romantic relationship, you'll always feel excited when you get involved with them, guilty when you start cheating, and shame when you admit your failure." The net effect is unhealthy stress.
- 3) "The second day of a diet is always easier than the first. By the second day you're off it." ~**Jackie Gleason**~

Before going on any 'diet plan,' consider the overall health benefits first. Make sure your weight loss expectations are reasonable and necessary. For example: If you expect to reach a fashion model weight that compromises your health, you plan is poor. In ideal amounts, subcutaneous fat is healthy. Excess visceral fat, reflective of central obesity, is not! Make visceral fat the main target of your plan. Value a tape measure, over a weight scale, to monitor healthy progress.

Also discuss your plan with your doctor. He may advise you to rule out hypothyroidism, type 2 diabetes, polycystic ovary syndrome and other common metabolic conditions that might hamper your plan. If weight loss is a reasonable agenda, exercise should always be part of his prescription. Ultimately you should consider only a healthy diet that you can **Easily** comply with for the **All Term**.

Healthy and durable weight change will occur naturally when you first detox your brain by implementing all the strategies discussed in this book. Expect a 'lag period' of little or no weight loss until your brain detoxifies, thus allowing healthier FEAST messages to be sent. Improvements in all such brain/body messaging gradually bring about the reconstruction of your most ideal Neogenic self. If you are clearly overweight, that Neogenic self will likely be lighter than you currently are.

## SUPPLEMENT TRAPS — snake oil or health in a bottle?

Let's face it -- more and more patients feel disenfranchised by mainstream medicine. They find less than expected benefit from drug and surgical interventions that are administered to most often correct their own neglect. They don't accept the truth -- **it is never too late for Neogenesis**. Still seeking 'health in a bottle,' they turn to a weakly regulated supplement market for the quick fix -- the easy way out of their health conundrums. In desperation, they buy into the often misleading health claims of the supplement hawkers. **Update 4/2015:** The CDC says more than half of Americans use supplements!



**Update from the May 2015 *Environmental Nutrition* newsletter:** A recent New York Attorney General's investigation found that only 21% of the herbal supplements they tested contained material from plants advertised on their labels!

It is an illusion to believe that, in supplements, you are getting exactly what the sellers say is in their expensive products with no unpleasant surprises. They are quite often contaminated with toxins. Contaminants can include: unauthorized and even dangerous unapproved drugs, trans fats, toxic metals, pesticides and processing by-products. Looking only at weight loss supplements in 2009, the FDA expanded from 28 to 69 its earlier warning about those which were tainted with such toxins. These FDA investigations are not routine; they were carried out only in response to complaints by the public.

**Update 10/17/15:** NBA star Lamar Odom almost died in a Nevada brothel by overdose of an 'ED herbal' likely laced with dangerous pharmaceutical contaminants. I'm not alone in crediting the prayers of millions for just another miracle!

It is also an illusion to believe that supplements are a reasonable substitute for the nutrients found in a healthy selection of natural whole foods. Nor can they adequately replace the #1 Pie-flavored choices discussed in the six preceding chapters. Many consumers buy into this 'health in a bottle' illusion. Probably more alternative healthcare money is wasted in this trap than any other. *CNN* said that in 2000 the amount was \$5.8 billion. In 2012, the amount was an estimated \$80 billion. In general, supplements, like pharmaceuticals, can play significant roles in wellness interventions. The problem is: both are greatly overused, while the making of better lifestyle choices for prevention is greatly underused.

Wishful thinking, placebo effects and meaningless testimonials constitute the main fuel that drives the supplement market. Supplement hawkers provide biologically-based theoretical knowledge of how their products work to support good health. They're not required to backup such theoretically-based suggestions of a product's efficacy with sound research or to warn consumers of potential adverse effects. In contrast to prescription drugs, which must pass extensive efficacy trials to ensure public safety, supplements don't have to. The FDA attempts to ensure that they contain what their labels reflect -- not much else. There is little routine testing done to ensure that the contents are safe and correctly labeled. Compliance or safety testing, when done, it is primarily in response to strong suspicion or complaints that the FDA receives.

Too often, consumers are lured in for the purchase with illusionary expectations and concerns, in a much narrowed vision for health, which disregards the overall impact of a particular supplement. For example, many food-derived products are promoted with names such as 'fat burners,' 'energy producers,' 'bone builders' and the like. Their names and other promotional materials suggest that they will have specific desirable health benefits. To avoid FDA involvement, however, such suggestions carefully fall short of formal claims that the products will render the specific suggested effects. The FDA does not evaluate the efficacy of these food-derived products unless enough consumers complain about problems.

Colored by suggestion, consumers who are convinced of a supplement's merit may search for illogical cues of success, as vague and unrelated as they might be. This so called **placebo effect** has been an effective part of treatments with supplements, nutraceuticals and pharmaceuticals for as long as they have been making them. The placebo effect is often a good thing, as much of the suffering in a 'disease' is fueled by it's fear-driven perceptions. Placebos, by rendering less fearful perceptions and positive expectations, in the view of the sufferer, are helpful. The downside is that placebos may mask a disorder that would better be treated otherwise or may do subtle harm to consumers in the **All Term**.

An good example of subtle harm, which has fooled us for decades, is the taking of unnecessary **calcium supplements**. Research, mentioned on page 127 herein, suggests that calcium from supplements, in contrast to dietary calcium, does relatively little good and likely accelerates the arteriosclerotic process and contributes to the formation of kidney stones.

What the hawkers don't tell you either is that the therapeutic chemicals that are in the supplements are adequately present in, much more safely contained in, and are of better use to us in a healthy **whole food package**. If we consume a diet that includes a reasonable balance of healthy natural foods, we can get an optimal amount of all the good things the supplements offer and many other synergistically beneficial nutrients, such as fiber. By eating healthy whole foods, we save money and we don't consume the unnatural chemicals that are commonly a part of supplement products.

**Most people who follow a healthy lifestyle and diet do not need supplements;** however, each of us is uniquely different, as are our diets, lifestyles and other circumstances. Therefore, our supplement needs may differ. If you're confused about this issue, ask a competent health care professional who has no financial conflict of interest to evaluate and advise you. Like a well-fitted shoe, one size does not fit all when it comes to a healthy supplement regimen.

In rare cases, supplements are essential. A former pediatric patient of mine is one of only a few patients in this country who have a specific genetic defect preventing them from manufacturing adequate levels of endogenous **CoQ-10**. As a result, he must take 2 grams of supplemental CoQ-10 daily to avoid mental retardation and death. His mother appreciates the astute neurologist who luckily read the Ivy League publication that described the disorder just before his consult.

Despite their often inaccuracy, I caution people to read food and supplement labels. For supplement users, overdosing on supplements is more common than under-dosing. Even though the promoters of these products claim they are 'natural' and thus convince people, they are rarely 'natural,' in the strictest scene, and so, have potential unnatural dangers.



## Some supplemental thought

It is amusing to me that, as curious beings, we find ourselves constantly trying to dissect natural things. We seem to be searching for some vital essence. We hope to extract illusive food secrets and use their understanding to our advantage by building some things even better. Then, after we are all finished, we see the pile of ruin and realize we could never make them any better than they were in the beginning. In the truthful end, we wish that we had never started tinkering with such **perfect creations**. Bottom line: the biologically beneficial chemicals in supplements are adequately present in a well-balanced whole food diet. In their natural food forms, they are not only much less expensive, but working in concert, they are truly effective, have fewer processing-related toxins and come in the much superior containment packages.

When selecting supplements, learn of and avoid suspected toxins from the products' processing, containment or additives. The **containment vehicle** is a safety-relevant issue. It may be one reason why we often see so little health benefit in most unbiased studies of supplements. [The toxicity of the ingredients of the containment vehicle, be it a gelatin capsule, the molding chemical or paint on a pill or the plasticizer in plastic bottles used for liquid supplements, may negate any benefits of the main ingredients.](#) To minimize the intake of potential toxins from supplements:

- 1) Avoid **brain excitotoxins** (free amino acids) by not taking minerals chelated with glutamate, aspartate and citrate, as well as products with the following terms on their ingredient labels: amino acids, 'hydrolyzed proteins' or 'protein.' **I avoid 'gelatin capsules.'** I view 'veggie caps' as safer containment vehicles.
- 2) Buy supplements in veggie cap, tablet, powder or liquid form. Whenever possible, avoid thickly coated tablets, as they are often painted with shellac to hold the molded powder together. The dyes used for coloring many tablets are typically petroleum derivatives; it's not a good idea to eat petroleum! Pill makers also often coat tablets with suspect chemicals to make them easier to swallow or to control how they dissolve. In the pharmaceutical arena, the makers of expensive and very profitable drugs often layer on their coating thickly and shape the pill so oddly that the patient can't use a pill splitter to break the pill in half accurately and, thereby, save money. By so unkindly doing this, I suspect that the pill makers may be also adding toxins to their products.
- 3) Choose liquids contained in glass over plastic bottles. I will consider plastic containers toxic until I'm proven wrong!
- 4) If buying on the Internet, order during times that avoid unnecessary heat exposure to the products in shipping. Once received, store supplements properly. Once opened, fish oils must be refrigerated.

**Supplement containment** might well explain the paradoxical results of many supplement studies. For example, smokers who took beta carotene supplements had an increase in cancers when compared to smokers who took no such supplements. At the time of the study, most beta carotene supplements were contained in gelatin capsules treated with yellow dye to give the characteristic carrot-orange color. I suspect both the gelatin and the artificial chemical dyes to be toxic. I suspect that the mix of carcinogens in cigarette smoke was made more potent by the toxins in the classic orange beta carotene capsules. They probably work as synergistic SINK-clogging chemicals, in our SINK (detox system) analogy.

In a similar vein, in a 2008 study from the *International Journal of Cancer*, researchers from the University of Texas M.D. Anderson Cancer Center reported that dietary intake of vitamin E in the alpha-tocopherol form was associated with consistent and independent reductions in lung cancer risk. However, a different four year proactive study published in the 2008 edition of *The American Journal of Respiratory and Critical Care Medicine* looked at multiple vitamins and vitamins C, E, and folic acid individually to see if their use in supplement form lowered one's risk of getting lung cancer. This University of Washington study's answer was a clear "No!" In fact, they found that taking high doses of vitamin E in supplement form for an extended time actually may increase lung cancer risk. Because vitamin E is oil, it is most often contained in gelatin caps in supplements. I suspect gelatin and/or toxins from the processing as being the culprits. Had the same study been done using vitamin E from glass containment, a different outcome likely would have resulted.

**Update: 7/3/09** -- Many studies have been done using **gelatin capsules** for both the control and the test groups. [Their design flaw](#) is: the gelatin capsules may invalidate any 'results.' [The authors of such studies don't take into account the neurotoxic potential of gelatin caps.](#) I view such studies as a huge waste of research funds leading only to confusion. It's analogous to having both the control and test groups smoke cigarettes while doing the study! **Update 11/3/2010:** As I predicted, *JAMA* featured such a study using gelatin caps for both its DHA test oil and the corn oil control. Its conclusion -- that DHA shows no benefit in slowing Alzheimer's progression -- is not consistent with studies that suggest DHA from naturally occurring food sources do. **2018 Update:** More 'prestigious studies' report that fish oil supplements offer no heart benefits; too bad they were done with gelatin caps! [See my comments on good fish oils on page 128 herein.](#)

Why would anyone choose expensive and suspect supplements over the natural phytonutrients found in healthy foods? Supplements are simply not a good substitute for ingesting healthy whole foods. Become better informed. Intelligently analyze and actively SEEK excellent whole food sources of vitamins, minerals, antioxidants and other micro-nutrients. Healthy plant foods contain natural toxins, too. The important difference is: your body is adapted to utilize these plant chemicals that our species has eaten for eons. Your 'adapted gut' performs this 'sorting out job' I call the **X-out function**. Unfortunately, your body will not be able to adapt as easily and safely to the rapid and ongoing proliferation of man-made toxicants, including supplement-related ones.

## ‘BOGUS SCIENCE’ AND LIMITED FOCUS TRAPS

Be aware that many nutraceutical peddlers of ‘health in a bottle’ try to associate their products with ‘scientific tests.’ They claim their ‘tests’ have relevance to your health. At first glance the technology may seem impressive to the lay consumer. On close exam, the fundamental flaw usually relates to the relevance of the test to any true health parameter. If the ‘test’ is not part of a traditional wellness assessment or is only associated with their products, it is of doubtful health relevance.

Also be aware that even conventional health measurements, such as assessments of performance, weight loss and lab results, when done from a short term perspective, are not as relevant as **All Term** outcomes. For example, it is less relevant that your lipid levels are reduced by a product if you suffer a severe consequence by taking it. Similarly, the fact that a product has proven to enhance performance is irrelevant when it increases our risk for premature death. Even pharmaceuticals can lead us into such traps. **Always consider the All Term outcomes of any new intervention!**

## THE #2 PIE THINKING TRAP -- a guarantee for unhappiness

‘*Stinking thinking*’ is a derivative from the consumption of #2 Pie energies. Sadly, it quite often rules the day for many. The vast majority of humanity has at one time or another been unnecessarily ensnared in this trap.

The brain connects with every tissue, thus brain activity (including thinking) will influence the health of all tissues. You’ve likely heard that, “Misery loves company.” #2 Pie-derived toxic thinking is not only addictive but it is contagious as well. Fortunately, most ‘wise company’ has no interest in loving misery back in return. Wise people know that the resultant chemistry of such toxic thoughts poison Neogenic honey, reflecting in weakened tissue constructs throughout the body. If you allow yourself to focus on elements of the #2 Pie, you will be the primary and unfortunate benefactor of that focus. The good news is that you (and you alone) can change that focus. It most simply involves choosing **#1 Pie**.



## Think for yourself and keep moving forward

You will likely find and step into many other common traps in your effort to achieve and maintain a better state of health. The thinking and behaviors of others that garner them negative outcomes are also common traps you’d be wise to avoid. You will often find in your journey through life the allure of many pied pipers in disguise. They would love to lead you into their traps. Why senselessly follow the misguided ‘child’ in front of you into a creepy old cave when **common sense** and your ‘**spiritual inner voice**’ tell you that something just doesn’t seem right?

Repeating the thinking and behaviors that have rendered you bad outcomes are pervasive traps. Neither must you hold your good health hostage by the bad choices you have made in the past. The worst trap of all is to condemn yourself for past diversions and failings, and by doing so impede your forward travel. After all, today you are a new and different you than in that past. **Through this inevitable on-going change, Neogenesis offers you exciting new freedom and promises a better reconstructed self when you consistently SEEK to make better choices.**

## Chapter 14

### WRAPPING IT UP WITH HONEYMOON HEALS

It is a blessing for me to know this particularly lovely family. As a group, they are a good representation of a American family living with today's challenges. The family and this story began when two baby boomer college students had a casual encounter and became star struck. The couple's love and subsequent marriage was at first doubted by at least one group of parents, but it was smiled on by the **highest of powers**. Their initial financial struggles and tests just strengthened their bonds.

Nearly three decades ago had to be the happiest time in their lives when they were blessed with their first baby --a lovely girl. Both the parents had good jobs, independence, supportive friends and great plans and expectations for their threesome future.

Despite life's inevitable hurdles, together they progressed and grew into a family of four with the addition of the second baby girl three years after their first gift. It did not take time for any of the doubting parents to praise their union. They, too, were benefactors of the entire four-pack. They hooked their emotional extension cords into the additional loving energies that not only dissolved their doubts but the separation-anxiety fears that likely caused them.

It was fun to watch these girls and their family members 'grow up.' Sibling rivalry and all the other Freudian concepts in entertaining action were featured with the entire cast, scene after scene. Such fun it was becoming part of the production, but at a safe distance. I could watch them cry and scream and throw hot #2 Pie all over one another at times. Then the #1 Pie would be served just in time, every time. One vivid and telling picture that burned clear in my mind was that of the amazing smiles on the faces of both exceptionally beautiful girls, then in their teens, each time they held and stared with a serene excitement into the face of their lovely baby niece. For this story, I will call it **a snapshot of truth**.



*This is such a snapshot of truth for me*

We each own a wealth of similar authentic and precious mental truth pictures of things such as Joy, Gratitude and Love. We store them gently in our minds. We cherish these images and can enter the appreciation doorway to withdraw them from our memory banks whenever we need to purchase some very personal peace.

As all happy stories go, challenges accompany. Hard times and old scars troubled every cast member. In maturation the first born made mostly good choices. The second became a rebel girl. Focusing her mind on misinterpreted jilt, she seemed to direct her feelings towards guilt. She went whirling around the All-American minefield called adolescence and stepped on quite a few 'bombs.' She naturally became the focus of the family. Ironically, their concern and attention seemed to reinforce this rebellious girl's 'stinking-thinking.'

Bad choices prevailed as she lead herself to a treacherous cliff, dragging all those emotionally attached behind her digging in their heels.

Reason prevailed as all the supporting cast members drew boundaries in the sand, safely back from the edge. Holding onto to the now 20 year old child only with loving prayer, they could just watch as her drug fractured ego, peer pressures and dark agendas drew her closer to destruction.

For the angry child in any of us, being knock-out gorgeous, wealthy, intelligent, talented, successful or very powerful can be a liability without wisdom and a good moral compass. The # 2 Pie games can end with pain for all the players, those on the sidelines and even a sinner like me who now tends to observe from the bleachers.

Prayers for 'rebel girl' brought an answer. As my earlier related **snapshot of truth** predicted, it came in the form of a fetus. Seeded from a confusing mixture of uncertain Pie energies, the cast members' faith was tested at first. Taking a very serious personal interest, I moved in for a better view of the action. I remained close by to witness truth, as it always does, prevail in triumph.

Following bonding and birth, **truth** manifested its strength. It easily overpowered the weight of past uncertainties, earlier bad choices and destructive addictions that had pulled this child-mother to near drowning in the sewage of #2 Pie.

Plugged into the loving energies of her own child, this now inspired beautiful mother started making choices that made more sense. The challenges never stopped, but now empowered she moved forward. As fate would have it, she met and found a soul who was quick to fall in love with the both-children package. It was a grand wedding.

As the then three-child package struggled to move forward, things were looking so good for about a year. Their momentum was appropriately augmented by all the original and the marriage-added cast members, and even the sideline rooters like me.

As this story continues, it will demonstrate how I view interventional health issues. There are three tiers in the pyramid of possible interventions. On the base of the pyramid lies the real cause of the problem. If this, quite often cerebral, level can be successfully addressed with prevention and so eliminated, the best ultimate outcomes will be achieved. It is akin to taking out the thorn. Most often, however, we can only speculate on and SEEK to eliminate that nebulous cause.

The second tier involves application of the seven wellness arenas by SEEKing better choices that hone the Neogenic self. Bringing all seven dynamic strategy tools into favorable play allows for the best healing in tincture of time.

Often there is just not enough time. Then and only then should one resort to the top of the pyramid, where pharmaceutical, surgical, radiation-related and other conventional interventions reside.

If my patient develops cancer, a serious infection or other such things, I go right to the top immediately. This does not preclude simultaneous intervention at the lower two tiers.

This story does not proceed with cancer or serious infection. It relates one of the many possible 'other such things.'

Now we return to the older sister. During the last five years while her younger sister was getting all the attention for her dramatics, the older sister was making better choices, for the most part. She fell in love in an instant, but cooked it slowly. She checked things out well for three years. Finally, the cautiously-wise lovebirds decided to have their own grand event. All was going great. Invitations, wedding and bridesmaids' dresses--everything was smooth, well planned and moving along in perfect rhythm.

Here's where 'Doctor Sigmund Freud' came back into the picture. In spirit only, he came with the now solo, high- flying younger sister to the couples' shower held for the older sister. The younger sister --the former child star --was apparently reluctant to play supporting actress in the upcoming scene of this family's grand play. She left her husband of one year behind in what seemed a transparent attempt to compete for the limelight again. The entire cast became quite concerned that she might be falling back into the #2 Pie- thinking abyss.

No one was more concerned than the upcoming scene's star-- her older sister. She was already stressed out by her decision to play the lead. So many doubts and questions came back to the surface. Would her three year love similarly fade on either side of the bindings that lay before her, yet untied? Would she be upstaged at the last minute in disruption of her entire precious scene? Would the sister she loved again go down in disgrace?

Damage control led older sister to me. She showed me how a non-infectious skin rash had blossomed in just a few days to involve the entire left ankle. It was a week before the wedding and panic was about to set in.

She's well aware that I focus on the bottom two interventional tiers. She excused herself for troubling me with "this silly rash." She didn't realize that I saw the whole picture; the rash was not silly. It represented the **red flag signaling** of the emotional fire of all the uncertainty in her mind.

Please, anyone who still believes your brain is not connected to your body, throw this book into the recycle bin!



Most of us socially-sensitive people have red flags. Her inflammatory dermatitis is one of many somatic reflections of toxic thoughts which include a form of fear called **worry**. Other common barometers of unresolved emotional conflicts are: irritable bowel syndrome, tension headaches, constipation, recurrent pain of any type, dizziness, cough, and some exacerbations of asthma. When their thoughts are toxic, kids most commonly 'act up,' inappropriately laugh, suck their thumbs and wet their beds. There are scores of such somatically-expressed red flags in 'emotional creatures' like us.

The insights we have are mostly about others. It's difficult to help make one a mental master with under any circumstance. Big sister was ready! Honed by her **faith**, her mind-mastering skills were already securely in place. My counseling to remind her to focus off of any imaginary dark outcomes, but instead onto only the process of **#1 Pie-living**, calmed her. Regardless of what little sister could do, big sister would now be the star and her scene would be a hit.

**The brain-body connections** are through chemical messengers. Second-tier interventions include addressing those messengers. Supplying the body with essential oils such as Omega 3's and Omega 6's allows our bodies to build the right balance of anti-inflammatory messengers. In this case, anti-inflammatory food choices like turmeric and ginger SEEK well. The enzyme bromelain in pineapples and the quercetin in apples are anti-inflammatory synergists and may be part of a good prescription for nutritional healing. They also work well as wedding hors d'oeuvres.

Normally I would focus on these lower two tiers. In this case I would, but only after I called in the emergency corticosteroid cream! After all, in one week she wouldn't want to wear her hiking boots with her wedding dress! The prescription read: Apply twice daily to the area of rash. Use until the cruise ship returns and the honeymoon heals.

Of course, the rash was quickly improved. The bride looked fabulous dancing in her high heels. No refill was ever needed.

The 'Freudian trash' never came to the magnificent event. The wonderfully supportive, thespian sister's package of, regretfully, now back to only two, did. That former 'wild child' was the maid of honor; her then two-year-old child, now loved by all, was the ring bearer and a hit of the extra-fun party. The newlyweds so strengthened by many #1 Pie choices are to this day a fantastic and happy team.

**Update 3/7/14:** big sister delivered her first **gift** - a healthy boy; younger sister is proudly celebrating 5.7 years of sobriety!

We all have stories and, like this one, these stories never end. It's fascinating -- no matter how dearly we would like to direct the scripts for other peoples' lives to fit them in with our own -- reality and truth direct everything.

Some things are certain in life. Your choices will often be veiled in confusion. In your search for the universal **Truth** you will wander. You will be drawn away from that **#1 Pie**. Moreover, you will always have your seat and the choices that offer **true hope** of Neogenic renewal at your Soul's Food Diner. When you realize that **you are always loved**, you can forgive yourself in advance and forever; then so reborn, permit yourself to move forward, toward the rest of your honeymoon life.





# Epilogue

7/14/2018 and beyond

This 'NEOGENESIS book project' began, like all things do—with a thought. For me that thought was exciting. I had just read and ruminated about the feature article in the 1/1/2003 edition of JAMA about how autism had become an epidemic. It was an 'AHA moment' of inspiration! All the fractured pieces of a much greater truth seemed to draw together - like a complex puzzle is solved in an instant. I felt compelled to share that vision. My attempt to share it has not been easy.

Shortly after spending frequent intermittent bits of approximately 4 years of my life researching the work, and after completing the first print in 2007, I increasingly recognized that (and I quote myself) **“Scientific knowledge’ is a mere snapshot in time. We must always remain in the pursuit of truth.”**

Fortunately, I didn't stop researching after first print. As new health science and challenges relevant to a rapidly evolving, greed-driven, toxic environment emerged, I realized that *NEOGENESIS* needed to become a **'dynamic work in progress.'** To keep pace with that emergence, I would need to incorporate some strategy and advise modifications within the text. Much like working on an artistic sculpture, I would remove some 'old clay,' add 'new clay,' then smooth - smooth – smooth -- while continually changing my perspective on all aspects of the work in order to keep it updated, relevant and honest.

Too, it's hard to retain clarity when one commonly sees conflicting conclusions from two or more novel studies that appear to be trying to answer similar inquiries. Bottom-line: there's lots of **bias** (even one's own), plenty of **'junk'**, and even some **corruption** that one must sort out in one's **'truth pursuit.'**

My work on *NEOGENESIS* has been far from easy! At times it's been drudgery, especially when one tries to **learn and promote the truth**, yet encounters many who are indifferent to it or remain in denial of it. **Not today though!**

**Today**, the **World Cancer Research Fund and the American Institute for Cancer Research (AICR)** jointly released their **“10 Recommendations on How to Prevent Cancer.”** If you want to avoid cancer, live longer and enjoy a durable state of excellent health, take a few minutes to get the quick and dirty on 'how to do it' @ the following link:  
<https://www.wcrf.org/dietandcancer/cancer-prevention-recommendations>

The AICR report is consistent with what I know to be true and have been 'preaching' for the last decade or more. Its information especially validates my uphill stand against 'mainstream medicine's peddling' of what I deem to be a bogus 'medicinal alcohol script.' I passionately counter that script's well-entrenched message at length on p. 142 herein.

**Additional Validation Update 4/4/2019:** A genetic study of 160,000 adults published today in *The Lancet* strongly refutes the **'medicinal alcohol script.'** This study debunks the script's idea that moderate drinking protects one from high blood pressure and stroke! In fact, it found just the opposite -- one to two drinks a day can increase the risk for hypertension and stroke! The Lancet study's findings were less clear on heart attack prevention.

The above study's authors suggest that prior studies justifying the 'medicinal alcohol script' were flawed! They failed to acknowledge that some of those labeled 'non-drinkers' more likely had 'other health issues' that increased their risk for hypertension and stroke versus those individuals labeled 'light drinkers.' This failure skewed the data resulting in erroneous conclusions. Logically, for example, if you have health issues that challenge your ability to drive, you are more likely to avoid alcohol all together in order to avoid risking your driving privileges. The bottom-line is that many people choose not to drink alcohol for good reasoning and personal insight. **To wit, personally, I choose to stop alcohol completely because, after my brain injury, I could clearly see that the injury impaired my function in so many areas and that any alcohol (as well as any other chemical exposures that were neurotoxic) added to my impairment!**

In conclusion, I will continue my independent pursuit of preventative health knowledge for you the reader. Thank you so much for any e-mail feedback comments to me that you wish at: [info@blissplanet.com](mailto:info@blissplanet.com)

## GLOSSARY

~Novel definitions, phrases, and acronyms found in this book that will empower the reader ~

**Addiction** -- the emotionally motivated and culturally patterned learning that reflects the intense use of specific thoughts, behaviors or substances.

**All Term** -- that segment of time that includes the 'Now' and the rest of your life going forward.

**Aiming on target** -- my rendering of the Neogenic math equation representing best health outcome scenarios---**A+I = M** -- cell death from **A** (Apoptosis) and **I** (Injury & Inflammation) is in sync with cell birth **M** (Mitosis and Migration of stem cells).

**Aiming too Low** -- health outcome scenarios in which cell birth is outpaced by cell death. This causes premature aging and weakening of tissues that shorten or compromises one's life. This math equation is **A+I > M**.

**Aiming too High** -- health outcome scenarios in which cell birth outpaces cell death. Such abnormally brisk cell growth occurs when cancer or excess exposures to anabolic agents compromise one's health. This math equation is **A+I < M**.

**COED-S** -- my acronym that stands for **C**onsequences **O**f **E**conomic **D**esires **S**yndrome—A dramatic disease profile change evident in humankind over about the last 30 years.

**Contingency concealment principle** -- The contingency of prior toxic exposures, without apparent toxicity recognition, accelerates such exposures by the concealment of their toxicity. I here in name and describe this idea.

**Drug** -- any chemical, either occurring naturally or manmade, that has unnatural physiological affects in a living thing.

**FEAST**-- is my acronym for **F**ood **E**nergy **A**cquisition, **S**torage, and **T**iming system. It typically causes obesity when lame.

**Good honey** -- is the most excellent Neogenic constructs possible.

**Life Dynamix** -- the tactical interplay of seven major factors relevant to wellness -- It draws from the fluid mixture of these elements: mental mastery, excellent nutrition, optimal fitness, nontoxic living, bioenergetics, hygiene, and trap avoidance.

**MCS** -- **M**ultiple **C**hemical **S**ensitivity — this clinical syndrome is expressed in a heightened awareness of and an increased destructive affect from contemporary man-made or man-influenced toxins.

**NBC broadcast** -- my descriptive term for the outwardly-observable categories of a **toxic brain** -- It includes changes in **N**eurological function, **B**ehavior expressions, and **C**ognitive abilities.

**Neogenesis** -- is the genetically-expressed programming designed for our dynamic regeneration, sustenance and change. It allows for all environmentally-influenced adaptive changes, including physical, mental and spiritual.

**POO** -- my acronym which implies that each of us may 'see' things differently than others do -- It stands for either **P**oint **O**f **O**bservation, or, **P**rejudice in **O**pinions & **O**bservations. Our **negative POO** compels us to judge other opinions unfairly.

**SEEK** -- my acronym for a checklist tool to help make superior choices -- It stands for **S**afe, **E**ffective, **E**asy and **K**ind.

**SINK** -- the abstractive analogy that I used to describe the dynamics of the human body's detoxification system

**Subtle energies** -- are energies that cannot be accurately measured, yet they have a powerful Neogenic influence on the health and happiness of humankind. Included, among others, are two critically contrasting groups that I designate:

**#1 Pie** -- loving and nurturing subtle energies

**#2 Pie** -- toxic subtle energies

**Tincture of time** -- the critical Neogenic time interval needed for producing of 'good honey'

**Toxic brain** -- my term for the neurological, behavioral and cognitive presentations of brain and neurological system injuries -- All such reflections are ultimately caused by the adulteration of the function of these tissues by toxins.

**Toxin** -- is any factor derived from a chemical, energy or microbial origin which, on production by or entry into a living organism, harms or threatens the health and well-being of that organism -- It is derived from the Greek word for 'arrow.'