

**Six Pillar Tips for Health Management:
A Model for Alternative and Complementary Medicine**

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Introduction:**Inception of the Six Pillar Model**

I'd like to take you on a journey along the road to better health and a more fulfilling life with Six Pillar Tips for Health Management. The Six Pillar Model is a plan for an alternative to the traditional American Medical Association model emphasizing conformity to an existing set of procedures accepted by members of the Association and complimentary in the sense of improving AMA procedures. For example, chlorella and spirulina, two forms of green algae, may protect the body from radiation associated with cancer treatment.

Six Pillar Tips is designed as a strategic model beginning with prevention and then identifying medical issues with the greatest flexibility in selection of prevention and treatment options. For example, we know that the pancreas secretes fewer enzymes as we age and that Alzheimer's Disease is caused by amyloid beta plaque and tau tangles, both proteins interrupting cognition perceptions. Deductively, if we were to increase protein digesting enzyme supplements, there is a chance those supplemental enzymes would digest amyloid beta plaque and tau tangles. Indeed, Garden of Life's Wobenzym-N is a protein digesting enzyme which taken before meals may enter the blood stream and digest these. I have taken Wobenzym-N for over five years, and found memory improvement and I am hopeful that those diagnosed with Alzheimer's would improve if they were to take Wobenzym-N.

Six Pillar Tips began in a rather strange way. My career path was one of 30 years of financial analysis plus ten years of college teaching in real estate and urban land economics. For much of my career, I was called upon to identify financial and legal issues and apply principles of accounting, business valuation, economics, finance, state and local law, and statistics to find supportable recommendations. When I retired in 2009, I began an indoor air quality consulting business and advertised in the Century City News of West Los Angeles. In 2011, they asked me to write a column about indoor air quality (IAQ). Because I had very strong interests in alternative and complimentary medicine to prevent and treat symptoms, I decided to expand the IAQ articles into Six Pillar Tips for Health Management (SPT). Just as buildings gain structural integrity from a series of vertical columns, so our health depends upon Six Pillars broadly defined.

Six Pillar Tips for Health Management

The Six Pillars are:

- 1. The Planning Horizon: Vision building, strategic planning, knowledge accretion, risk assessment, and self-discipline.**
- 2. Life style, exercise, and the circadian rhythm.**
- 3. Stress and relationship management.**
- 4. Reduction of environmental pollution.**
- 5. Symptom relief.**
- 6. Dietary management and food supplements.**

Pillar 1 provides a carefully crafted planning model to build a vision of what you wish to be and within a long planning horizon that sets broad strategic objectives to achieve your vision. One strategic objective I set in my early 20s was to remain physically active my entire life and indeed at 82 I exercise about two hours a day with bicycle riding, swimming, walking, hiking in the mountains around Las Vegas, and resistance training. It is very important to acquire knowledge continuously for new information and to improve your life style. Risk assessment (risk is defined as the expected variance in unpleasant outcomes) is crucial for health management because somethings like candy are enjoyable but they add to the risk of poor health and particularly cancer which ferments on sucrose. Self-discipline is important to select healthy alternatives and say “no” to life styles that erode our well-being. Recently, there have been many reports of sexual improprieties by leadrs in business and government that have destroyed careers and, thereby, undermine health.

When I designed Pillar 1, it was intended as a guide for health management planning, but it can be adapted to business and organizational planning at any level including the chief executive officer.

Life style in Pillar 2 refers to all of our activities, values, and thoughts—and our thoughts are the drive gear for our activities and relationships with others. Exercise is important because it drives oxygen into our cells and organs, thereby reducing the likelihood of cancer, and energizing our thoughts to improve our professional activities. Indeed, short and regular exercise periods during the workday (e.g., ten minute walks every 90 minutes) adds significantly to our total work effort. And exercise is an alternative to stimulants such as coffee, which becomes an addictive drug because of the need to overcome overnight withdrawal symptoms. Personal health also requires repetition of daily activities at about the same time—termed the “circadian rhythm”—and major violations of regularity may lead to illness.

Pillar 3, “Stress and Relationship Management,” is extraordinarily important for health because stress in and by itself can cause illnesses by placing improper physical forces on cells and organs which interferes with their nutritional operation. The best single way to reduce stress is to improve our relationships with others by helping them whenever possible, and not seeing their flaws; many flaws in others are not really flaws, but constitutionally protected differences of race, creed, religion, and culture.

Pillar 4, “Reduction of Environmental Pollution,” emphasizes improvements in indoor air quality and reduction of electromagnetic fields (EMFs). Perhaps the most important single indoor air quality rule is to clean air conditioning (A/C) coils with a coil cleaner and use and replace a good quality filter every 60 days during the summer. AC systems are designed to reduce humidity by extracting water from the air as it passes over the coils and the condensing water is a factory for bacteria particularly in high-humidity areas.

I have spent about 1,500 hours researching EMFs which include electric and magnetic fields, radio frequency field radiation (RFFR) from cell phone base stations, cell phones, Wi-Fi, and cordless phones, and dirty electricity. In January 2018, “United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)” was published in the *Indian Journal of Applied Research*. This article, reproduced in Appendix A, provides scientific evidence of 48 links between RFFR and adverse cellular changes, symptoms, or illnesses. The article proposes creation of a new federal agency to evaluate and inform the American people of potential harm from RFFRs, specific research and legislative proposals including posted notices in public buildings containing Wi-Fi of power density functions in $\mu\text{W}/\text{m}^2$. I recommend replacing Wi-Fi with hard wired routers, which has been discussed extensively in Europe. As part of my EMF information model, I conduct EMF home inspections in Las Vegas, NV.

Pillar 5, “Symptom Relief” offers a discussion of symptom relief alternatives for many illnesses. I have found that Bragg’s Apple Cider Vinegar cures gout, food supplements defeat cataracts, and earthing and Wobenzym-N defeat pain; with long-term pain relief, healing seems to come rather naturally. Six Pillars also discusses a fat-intensive diet to deprive cancer cells of sucrose, its principal source of nourishment.

Pillar 6, “Dietary Management,” offers a discussion of wise eating choices. This means emphasizing multi-colored, organic fruits and vegetables, Omega 3 fats, olive oil, wild fish, grass-fed meats, and reducing refined carbohydrates--“refined” means 2/3s of the nutrients have been removed. Fats encapsulate all cells and regulate the entry of nutrients and emission of waste products; thus, excellent fats (e.g., Omega 3s) are crucial for good health. Enzyme management is important to furnish metabolic, digestive, and systemic enzymes to control body functions, improve digestion, and to defeat the three harmful proteins: fibrin, amyloid β plaque, and tau tangles. I usually take a complete digest enzyme whenever I eat fats or proteins. Supplementation with Vitamin D and magnesium, perhaps the two most common nutritional deficiencies, is a wise choice along with other supplements including probiotics. I have discovered that Vitamin D supplementation is particularly important in the winter during flu season.

We thank the Century City News of West Los Angeles for printing the genesis of Six Pillar Tips and the Newport Beach Sunrise Rotary Club for permitting us to publish the early editions and Phillip Reynolds for reviewing each NBSRC edition. We thank Senator Diane Feinstein for her staff's encouragement to perform PTSD research thereby introducing us to the danger of stimulants, and Oram Miller BBEC, EMRS for his guidance in our research and publication of material on electromagnetic fields.

Disclaimer

Any health program utilizing alternative and complementary medicine requires review by your medical practitioner. This means that any change you wish to make in taking food supplements or for other elements in the Six Pillar Model must be reviewed by your medical practitioner before beginning. The reason is that we are all different, take various medications, and utilization of alternative and complimentary medicine may be harmful for you. Thus, neither I nor the Newport Beach Sunrise Rotary Club are offering anything in Six Pillar Tips for Health Management as medical recommendations, but rather are ideas which you may consider along with your health practitioner given your specific medical conditions unknown to either of us.

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Abbreviations:

A β : Amyloid- β plaque

ACHMM: Alternative and complementary health management model

ADHD: Attention deficit hyperactivity disorder.

AGE: Aged garlic extract

AMA: American Medical Association

ANS: Autonomous nervous system including the sympathetic and parasympathetic nervous system branches.

BBB: Blood-brain barrier

BP: Blood pressure.

CLO: Cod liver oil

CS: Colloidal silver

CVs: Cruciferous vegetables

DBP: Diastolic blood pressure.

EEG: Electroencephalography, the measure of neuron brain activity in five wave-length categories up to 50-69 Hz.

EMF: Electromagnetic fields

EMF-RFs: non-ionizing radio frequencies from Wi-Fis, cell phones, and other RFFR emitting electrical equipment

EMH: Electromagnetic hypersensitivity

EMR: Electromagnetic radiation (far field only)

FOSBPT: Flax oil and Sulphur-based protein therapy

FSM: Flax seed meal

FSO: Flax seed oil

GE: Genetically engineered.

GFTS: Grass-fed to slaughter

HFCS: High fructose corn syrup.

HOT: Hyperbaric Oxygen Therapy

Maids: Immune Selective Anti-Inflammatory Derivatives.

MCP: Modified citrus pectin

MetS: Metabolic Syndrome

MgT: Magnesium L Threonate

MUFA: Monounsaturated fatty acids

MWR: Microwave Radiation

NaHCO₃; Bicarbonate of soda

NK cells: White, natural killer cells

nm: nanometers

NSAIDs: Non-Steroidal Anti-Inflammatory Drugs.

OA: Osteoarthritis

OEM: Original Equipment Manufacturer

PNS: Parasympathetic nervous system.

PHI: Prostate Health Index

PLOS: Public Library of Science

PUFA: Polyunsaturated fatty acids.

PSA: Prostate-specific antigen

RFFR: Radio frequency field radiation

RFs: Radio frequencies.

SBP: Systolic blood pressure.

SNS: Sympathetic nervous system.

SPCTP: Six Pillar Cancer Treatment Protocol

TRUS: Transrectal ultrasound guided biopsy

WSJ: Wall Street Journal

Pillar 1: The Planning Horizon

Pillar 1: The Planning Horizon: Vision building, strategic planning, knowledge accretion, risk assessment, and self-discipline

The Planning Horizon

The planning horizon is your dream of the person you wish to be for the remainder of your life. The things that give us happiness are our accomplishments at work and in our personal lives, the contributions we make to the well-being of others, and the harmony we bring to this world. It is obviously important to segregate our dreams into natural segments related to business careers, marriage, raising children, travel plans, and retirement. When I was 22 I was walking on Michigan Avenue crossing the bridge adjacent to the Tribune Tower and I decided in about a 100-yard walk that I wished to be the best technical person in my profession and that I did not wish to climb the management ladder. I also decided that I would like to be physically active in my lifetime, and indeed at 82 I bike, swim, hike in the mountains near Las Vegas, and perform strength training. In essence, I am living the life I planned 60 years ago and I am grateful to have been given that chance.

Planning for a productive life requires setting strategic goals and having the self-discipline to make wise choices which often forego short-term pleasures. While a dietary plan including organic fruits and vegetables, foods with Omega 3 oils to support cellular operation, reducing sugars, and not overeating improve our life style, it is crucial to have positive thoughts and reduce stress whenever possible. Daily meditation, particularly at end of day, permits improved sleep and waking up feeling energized without the need for artificial stimulants.

As you read the following components of The Planning Horizon, realize that each one is of paramount importance and perhaps more important than ideas in other sections of Six Pillar Tips because they furnish guidance for the execution of your strategic plan.

Pillar 1: The Planning Horizon

Vision building

The first step in a health management plan is to build a vision of what you would like to be for the remainder of your life—in other words, see yourself in the future as you wish yourself to be. And it is crucial to keep this vision in mind when you have choices of short-term pleasure which will undermine your vision. With a discrete vision for individual segments of your life, you can develop strategic principles upon which to base your choices and have the self-discipline to execute. For example, if you believe that processed foods—foods which have most of nature's nutrients removed-- contributes to health problems, you can then select more natural foods as a substitute.

Strategic planning

Strategic planning is derived from your vision and requires setting health management principles measured by improvements in professional performance, physical skills, good relationships with others, and feeling of harmony as you travel the road of life. For example, exercise is essential to a strategic plan because exercise drives oxygen into cells and organs, removes wastes, improves personal and business performance and gives one a feeling of well-being. Helping others and seeing them without flaws is strategically important because it reduces stress in your relationships with others.

Knowledge accretion

It has been said that a college education has an economic life of no than about five years. Indeed, how few college courses have contributed to our professional careers although many do help us think in different ways and perhaps build creative models in later life that serve us well. Indeed, I took two courses in engineering economics (i.e., capital budgeting that can be applied to business valuation) as an undergraduate that gave me focus in college of what I would like to do professionally, but it took me five job changes in four years to find a job applying engineering economics.

My business career required me to apply business models from about seven different academic lines—accounting, business valuation, economics, engineering economics, finance, statistics, and law. Integration of these different topics taught me the importance of pursuing knowledge throughout life. And, indeed this is crucial in the application of Six Pillar Tips because one must always seek knowledge of improved health management. I have only recently learned the importance of calcium management to prevent and heal fractures. While I am hopeful that reading the material in this book contributes to your life style and enjoyment, its essential that you continue your readings in health management.

The drive gear for knowledge accretion will be your ability to specify health issues—indeed, issue specification is crucial to success in all of your business and personal endeavors. For examples:

Pillar 1: The Planning Horizon

1. What does enzyme management mean and how can I utilize better systemic and complete enzyme supplements?
2. Is radio frequency field radiation more harmful in enclosed spaces (e.g., buildings and automobiles)?
3. Can cataracts be defeated with supplements?
4. What foods minimize and maximize the risk of cancer?

Gaining medical knowledge to improve your life style plan means reading at least one or two books, periodicals, or articles several times a year. Thus, knowledge accretion contribute to self-discipline in executing your Six Pillar plan.

If you are faced with a medical problem, it is wise to research the issue on the internet. For example, there are medical recommendations to take 5,000 IU or more of Vitamin D daily, but this may contribute to an overdose, which resembles stomach flu. And always research the side effects of any medication.

As you read ideas in Six Pillar Tips and find multiple ideas referenced to the same periodical, I recommend that you consider subscribing to that periodical to update your health management knowledge.

Risk assessment and risk management

Risk is defined as the probability of an adverse or harmful outcome from engaging in a process. The process may be mountain climbing, tackle football, side effects from a drug, a business activity, or special personal relationships. Risk assessment refers to our predictions of an adverse outcome and risk management the manner in which we adapt to risk. For example, injuries from bicycle falls may be reduced by wearing a helmet and other productive gear such as knee, hip, tailbone, and elbow pads, and consuming calcium-system supplements to increase bone density.

But risk is also associated with enjoyment because some enjoy the risk from an activity such as automobile racing and contact sports. Many years ago, Post magazine had a story about a semi-pro football player who enjoyed bending down and jumping up and hitting the barber shop ceiling with his head, which obviously is not for everyone. When asked why he enjoyed hitting his head on the ceiling, he replied “I love contact sports.” The issue is whether one can accept the “what happens if” in engaging in a risky activity. Risk can be managed by avoiding certain activities such as not driving at lane differential speeds over about five miles per hour and reducing consumption of foods which are healthy in small quantities, but damaging in large quantities (e.g., pasture butter).

Pillar 1: The Planning Horizon

The really important principle of risk is that one performs risk analysis and risk management *before* engaging in the activity. All too often individuals engage in a risky activity with no thought of adverse outcomes. Perhaps one reason is because everyone else is engaging in the risky activity and one is swept up in their culture. A modern day example is how many individuals using cell phones and Wi-Fi know the power density functions of these RFR-emitting devices?

Self-discipline

Self-discipline means that we stick to our Six Pillar strategic plan once we have an understanding that it will best contribute to our life's enjoyment. Self-discipline is crucial to assure that you subordinate immediate personal pleasures to less enjoyable, but healthier alternatives. For example, one should plan meals that are nutritionally balanced with vitamins, minerals, fiber, good fat, enzymes, and an appropriate pH balance. Having bacon and eggs for breakfast, hamburger and French fries for lunch, and a 16-ounce steak for dinner is an unbalanced set of choices because of the excess fat and animal proteins for which we might substitute whole grains, a salad, and a six-ounce grass-fed steak with fresh organic fruits and vegetables. Food grinders are an excellent way of accessing a half-dozen fresh organic vegetables at one meal.

Pillar 2: Life style, exercise, and the Circadian Rhythm

Pillar 2: Life style, Exercise, and the Circadian Rhythm

Life style

“Life style” refers to the integrated set of values, ideas, perception of others, activities, accomplishments, circadian rhythm, exercise, nutrition, use of wireless technology, etc. that identify us as unique individuals. Indeed, one proxy variable that measures the validity of our life style is the stress we endure in our daily lives, and the manner in which we actively try to reduce stress.

Exercise

Exercise is the drive gear of a life filled with excitement, ideas, and accomplishments. It begins in the morning and continues throughout the day to assure the best utilization of your time for work, personal enjoyment, relaxation, and helping others. Let us begin by listing the benefits of exercise and then turn to alternative exercise activity models.

Benefits of exercise

- Burn fat, lose weight, and broaden your menu choices with more of the things you like to eat without worry of weight gain and other unhealthy consequences.
- Increase your energy level, improve your professional performance, bring electricity to your work environment, improve human relationships, and stimulate others in their professional activities. One of the most important attributes of an employee is to energize others to perform better as an integrated team. And you will be a leader among others as your energy levels increase.
- Reduce stress and anxiety which accumulate with inactivity of sitting at your desk all day and improve your cognitive abilities. For retirement planning, it's crucial to engage in intellectual activities that stimulate creative. During my retirement, I have published a stock pricing model based upon a gross revenue multiplier which is used to value stocks and make buy-sell-decisions, recommendations to prevent and treat post-traumatic stress disorder, proposals for Congressional funded research and legislative action to assure the safety of wireless communications, and this health management book.
- Increase endorphins which improve mood and intellectual output.
- Improve self-discipline. An exercise plan, whether simple or complex, requires daily planning and assigning priorities to ball-control sports, biking, resistance training, swimming, walking, hiking, etc. Priority #1 to do some exercise each day. Quality exercise requires setting a long-term and daily plan based your vision. Football, for example is an excellent sport for planning and execution because it is a discrete sport involving a plan for each play and adapting to field conditions as the play evolves; this is analogous to business planning and execution. Self-discipline obviously has professional dimensions and elimination of activities that are not contributing to good health.

Pillar 2: Life style, exercise, and the Circadian Rhythm

- Improve self-confidence from completing your exercise each day and understanding how the exercise contributes positively to your life style.
- Manage blood sugar and insulin levels, reduce the likelihood of diabetes in conjunction with better weight control, and reduce blood pressure.
- Improve sexual function.
- Defeat high blood pressure, heart disease, and diabetes.
- Add to life expectancy and a more enjoyable life with real accomplishments. Any single accomplishment adds to your skills which may be useful in completing more complex tasks as one is able to specify issues and build dynamic models for solution.
- Sweat to remove impurities the elimination of which promote health.
- Improve relaxation, mental dexterity, and idea velocity all of which come from a relaxed mind.
- Promote the growth of new brain cells and improve memory. A bit of Garden of Life's Wobenzym-N daily may also promote memory by digesting amyloid beta plaque and tau tangles.
- Enjoy being outside with good air, nature, and in the presence of attractive architecture. I live in Las Vegas, and architecture on the Strip thrills, energizes, and gives me ideas in all facets of my life.
- Improve sleep because daily exercise reduces anxiety and tires one out.
- Improve creativity by energizing brain cells during and long after the exercise ends.
- Improve cardiovascular health. The circulatory system, consisting of the heart, arteries, and blood vessels, increase their performance of delivering oxygen and nutrients and removing waste products including carbon dioxide.
- Dream and seize The Impossible Dream because The Impossible Dream is really a vision of what others do not see and a model to execute and achieve what others cannot do.

Tips to select exercise alternatives and a few cautions

There is an almost infinite list of alternative exercise models allocated to different times of the day. Each time of day is important because of work priorities and the need to be energized for task completion. Morning exercise may begin with a walk or bicycle ride before breakfast. It continues with a nutritional breakfast because breakfast, along with any pre-breakfast exercise, is the drive gear of all body operations and mental activities during the morning. A good exercise breakfast includes:

- A glass of water with Bragg's Apple Cider Vinegar, grasses such as Garden of Life Perfect Food, spirulina, and corella.
- Eggs, a tasty meat like bacon, ham, or a lamb chop, and a complete digestive enzyme (e.g., Garden of Life's Ω -Zyme or Whole Foods' 365 Daily Digestive Formula) because

Pillar 2: Life style, exercise, and the Circadian Rhythm

our digestive enzymes peak at about age 27 and then decline. This decline may explain age related Alzheimer's.

- Whole grain cereal like oats, barley, or quinoa with almond beverage containing calcium. It may be helpful to add a food supplement with Vitamin K1 and K2 to assure absorption of the almond-beverage calcium in the bones.
- For older individuals it may be helpful to add a calcium supplement with Vitamin D3, Vitamin K1, and K2 to increase bone absorption of calcium.
- An occasional waffle with organic blueberries, strawberries, black berries, or other fruits.
- Yogurt and fresh fruit. Be careful, however, about relying upon yogurt for probiotics because at best yogurt contains few bacterial strains and the original probiotics may be weakened by age and handling. If you wish to take a probiotic, its best to rely on a dedicated probiotic which now have up to about 35 bacterial strains.

Your daily exercise plan may consider the following elements allocated to various portions of the day:

- A walk, swim, or bicycle ride before breakfast of up to 45 minutes.
- If you drive a distance to work that adds stress, arrive at least 15 minutes early and walk outside before starting.
- At work, take ten-minute walks or climb stairs about every 90 minutes throughout the day. This should increase your total actual work time by about 15 percent because you will be working energized, not tired or waiting for lunch and not dozing after lunch—and you will be working more efficiently with better execution of ideas. It is crucial that management has an open mind to this “10/90 Exercise Rule.”
- Exercise after work that may take the form of running, swimming, hiking in local scenic areas or in the city, resistance training, and ball control sports such as football, soccer, basketball, softball, volleyball, etc.
- Ball control sports have the benefit of eye contact with the ball in a field of play which makes one more alert and this alertness adds to business performance. Resistance training is beneficial because of the muscle strengthening which may have benefits for many hours after the exercise. But resistance training should be combined with a sport that increases speed of eye and body movement. Running, swimming, hiking, resistance training and ball control sports all contribute to cardiovascular benefits to improve the circulatory system in its delivery of nutrients and elimination of waste.
- Resistance training (weight lifting) builds muscle, increases bone density, and reduces weight. Its best to increase repetitions rather than increase weight to avoid injury. Perform 1/3 of the total repetitions, rest for a minute or two, then perform 1/3 more, rest, and complete the repetitions. One should perform resistance training at least twice a week and rest on at least alternate days.

Pillar 2: Life style, exercise, and the Circadian Rhythm

Caffeine is an artificial stimulant that leads to stress, anxiety, and other very serious illnesses discussed in the article in Appendix A, “Recommendations to Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel” for a better understanding of the adverse influence of caffeine. One of the cited articles “Storm in a Coffee Cup” discusses the link between caffeine and PTSD. Further, caffeine before or during exercise doesn’t make sense because it increases the pulse rate and then the exercise increases it even more which is an unnecessary stress on the heart.

Moderate exercise is preferred to very heavy exercise because the latter increases the stress hormone cortisol and boosts blood sugar. Continuous high levels of cortisol may contribute to chronic stress and may increase free radicals; short periods of earthing (connecting to the ground) draws electrons from the ground into your body and furnishes missing electrons to complete the free radical molecule. Chronically elevated levels of cortisol may also lead to a weakened immune system, systemic inflammation, loss of bone density, elevated blood sugar, and adrenal problems.

Symmetric exercise with balanced forward, backward, and side movements is preferred because every-day living results in uneven exercise (e.g., eating with the right hand, using the right foot in driving, bending forward while sitting.) Perform exercise every day against normal movement for symmetry. Be sure to stretch before and during exercise.

Exercising into pain may relieve the pain. Many years ago, I sustained a serious injury to my wrist playing volleyball and rested. Two weeks later, I returned with no reduction in discomfort, walked on the court and hit a spiked volleyball with the injured wrist with incredible discomfort. I continued to play that night, and the next morning had no pain and the pain never returned. In another case, I began contract gardening at 8:00 AM with a 103-degree fever, drank plenty of water, worked all day, and the next morning got up quite normal.

Exercise in all of its forms is the preferred alternative to artificial stimulants such as caffeine and radio frequency field radiation. And it far better to take an early morning walk or bike ride than that first cup of coffee which kicks you up because you are withdrawing overnight from the prior day’s caffeine. Again, review the article About PTSD in Appendix A.

Assure hydration during exercise. Exercise causes water loss through sweating and then evaporation. The amount of water loss depends upon the exercise intensity and the temperature and humidity environment. Heavy exercise in a hot humid climate causes heavy sweating and obvious water loss, but running in a dry, warm climate may seem to cause less sweat, but the faster evaporation also causes rapid water loss. The solution is to set standards for hydration in the sense of drinking water at some fixed rate per hour during exercise. Remember, water is the principal constituent of all cells and organs. Water burns fat, balances the work of the kidneys and liver, increases energy, and prevents damage to the brain and cognitive function.

Pillar 2: Life style, exercise, and the Circadian Rhythm

Dehydration draws water from the large intestine causing constipation, and from cells to maintain blood volume and damages cells.

Do not walk or run in bare feet because there is almost no cushion that absorbs the shock and the ankles, knees, hips and spine (e.g., disks) could be damaged and the damage noticed only years later.

Do not run around swimming pools or run and jump into the water. It increases the likelihood of slipping and falling hitting the head or hitting someone in the water as you jump in.

Heavy back packs should not be worn. I define “heavy” as requiring one to bend forward to counter the weight. The reasons are (1) bending the back forward under heavy loads places greater stress on the inside of the disks and may, thereby, damage them, (2) back packs stick out and can be hit by pedestrians or vehicles crossing the walker’s path from the side or rear, (3) if one falls on the back pack, the impact could bend one’s back thereby damaging the disks or vertebrae, and (4) heavy back packs worn by bike riders raise the center of gravity making involuntary dismounting more likely if the pack moves during side-to-side in turns.

For general walking, wear laced good-quality sneakers that provide side protection and support for the arch to avoid injury from unique impacts, and provide stability and support to the foot to avoid injury from constant unsupported movement. Do not wear flip-flops which provide no support for the feet, ankles, or vertical skeleton.

Do not run in flip-flops. They provide little cushion for your joints and no support for your ankles.

Never wear flip-flops when traveling on bikes, two-wheel scooters, skate boards, etc. because of lack of structural support, or snagging on an external impediment.

Minimize (to near zero) standing on bike pedals to provide power and speed; always pedal sitting on the seat. If you stand on the pedals to provide power and fall off forward of the pedals, your foot will hit and lock on the ground, the pedal will hit the back of the knee, you will be thrown forward on the handlebars, and then on the ground. I knew a professional cyclist that experienced this and his helmet was broken, he was knocked unconscious, and he was in a wheelchair with a broken leg in a right-angle cast for six weeks...this is very bad.

When playing in swimming pools, stay at least three feet away from the edge to avoid hitting the edge of the pool with one’s head or teeth, the latter of which will slowly sink to the bottom of the pool.

Wear full protective gear riding bicycles as you get older, have your bones tested for bone density, and take adequate calcium, vitamin D3, vitamins K1 and K2 to attract calcium to the bones, and vitamin C to promote bone density and healing.

Pillar 2: Life style, exercise, and the Circadian Rhythm

Circadian Rhythm (CR)

- The circadian rhythm is an intrinsic time-tracking system in our bodies that remembers historical activities (time of eating, sleeping, exercise, meditation), anticipates their return, and adapts to them at the appropriate time of day. The 24-hour CR governs physiological functions in substantially all organisms. Any irregularity in sleep, meals, exercise, work, meditation, etc. is “circadian desynchrony” that contributes to illnesses.
- The natural human clock is set by sunlight, and lunar, seasonal, and annual cycles. [Eliaz 2014]
- Disruption of the circadian rhythm interferes with cellular metabolism and increases proliferation of cancerous cells. [Eliaz 2014]
- Night shift work was classified as a probable carcinogen by the International Agency for Research on Cancer in 2007. Rotating night shifts may be worse. By inference, any activity that disrupts the normal life style rhythm may be a probable Group 2A carcinogen.
- The single most disrupting influence of the circadian rhythm is light during the hours of darkness and during sleep. Bright light at night reduces the production of the master hormone melatonin, which reduces hormone receptor cells on hormone-positive tumors, exhibits cytotoxic tumor-killing effects, promotes antioxidant defense of DNA from oxidative stress, regulates other hormones and biological processes, and exhibits neurotransmitter activity. [Eliaz 2014]
- Hormone-related cancers (e.g., breast and prostate) are particularly susceptible to disruptions in the circadian rhythm. [Eliaz 2014]
- The CR rule to improve health is to do the same thing at about the same time each day. For example, waking at 5:30 AM Monday to Friday and sleeping to noon on weekends is an extraordinarily unhealthy practice.
- Based upon digestive efficiency, the best time to eat a large caloric meal is at lunch. [Uncommon Cures 2009, 115] But the problem is that one may get tired after lunch and reduce professional activities.
- Large meals at night are less digestive efficient and may interfere with sleep if one goes to bed within about four hours of dinner. Further, if one has less than about four hours between dinner and bed time, it will result in uncontrollable weight gain. If it is necessary to go to bed with less than about four hours since the last meal, one should eat salad or some other light-caloric meal. In a study of 420 Spanish participants in a weight loss program, it was discovered that those eating an early lunch before 3:00 PM lost more weight than those eating lunch after 3:00 PM. The late eaters also ate less energetic breakfasts and more likely to skip breakfast than the early lunch eaters. [Garavley 2014]

Pillar 2: Life style, exercise, and the Circadian Rhythm

- Oncology is applying a new model of chronotherapy, which is treatment timing that maximizes the benefits of medical attention and is related to traditional Chinese medicine.
- See also “Sleep” for the consequences of sleep disruptions.

Pillar 3: Stress and relationship management

Stress

- Stress may be defined by and measured as “the physical deformation of and interrupted communications between and among cells, organs, and the immune system caused by (1) endogenous **negative thoughts** and behavior (2) violations of the circadian rhythm, (3) adverse bodily reactions from excess weight, heavy metals such as lead and cadmium, lack of sleep, and nutritional deficiencies (e.g., CoQ10), etc.), (4) environmental contamination (e.g., poor quality food and air, EMFs), (5) exogenous traumatic events, and (6) heavy exercise all of which contribute to poor cellular, organ, and immune system nutrition and, thereby, illness. Stress reduction increases cellular metabolism of oxygen and nutrients and elimination of wastes. [Item 3 taken from Dr. Shallenberger’s Second Opinion Healing Series, Volume 2, 2015, p. 26.]
- Stress, because of its physical deformation of cells and organs, may be the most important single cause of all illness and in particular cardiovascular events. [Bottom Line 100, 40]
- As much as 75-90% of all primary care doctor visits may be related to stress. [Life Extension, Steven Locke, 65]
- Stress closes cells and when they are closed they are less efficient at receiving and energizing vitamins, minerals, oxygen, etc. or excreting waste. The cell close-down operation is governed by the autonomous nervous system which is comprised of the sympathetic nervous system and the parasympathetic nervous system. When individuals are not under stress, the parasympathetic nervous system governs and cells are open and operate properly by admitting, and processing nutrients and oxygen. When individuals are under constant stress, the sympathetic nervous system governs and cells and organs enter the fight or flight mode and the cells close. Further, when the sympathetic nervous system governs, blood flow goes away from the gastro-intestinal tract and skin and is diverted to the muscles, and the body goes into high alert (which may be magnified by caffeine) and your cells close down. Thus, however well you eat and provide oxygen from exercise, you will not be getting the benefits of nutrients if you are under stress. Oxygen is of the utmost importance because it is oxygen that defeats many illnesses including cancer. And the bottom line is that stress must be managed in the sense of reducing and eliminating one’s perception of an adverse situation. For example, negative thoughts of others do not stress their cells and organs, rather negative thoughts of others close down and stress **your** cells and organs, is the direct cause of illness, and defeats the natural healing process. [Cavanaugh 2008, 107-114]. Indeed, stress reduction is crucial to the natural healing processes.

Pillar3: Stress and relationship management

- Processed foods cause physiological stress; thus, natural unprocessed foods relieve stress. [BLYB 2015, 83]
- Minimize heavy exercise because it causes stress through the production of stress hormones and free radicals. Earthing helps as an antioxidant after exercise.
- Stress increases the frequency of allergy attacks. [BL Mega 2016, 4]
- There are four adaptogens which may help to reduce stress; adaptogens defeat stress by restoring the body's natural balance. The four adaptogens are: [Life Extension, Steven Locke, August 2016, 65-70]
 - Ashwagandha which improves stamina, endurance, immune function, oxygen consumption, and testosterone levels 4.3 fold. The suggested dosage is up to 300 mg twice daily. [67]
 - Bacopa (south Asia herb) improves cognitive performance and reduces nervousness. The dosage is 125 mg twice daily. [68]
 - Cordyceps, a medicinal mushroom, improves immune function. [68]
 - Holy Basil (tulsi) protects against stress-based anxiety and depression by reducing blood sugar and cortisol, the stress hormone. Dosage may be 300 mg twice daily. [69]
- Bananas are potassium intensive and potassium helps lower blood pressure. Garlic also helps to lower blood pressure. [Uncommon Cures 2009, 165]
- Licorice root may help stress, but one should limit its consumption to two weeks. [Uncommon Cures 2009, 208]
- Stress may increase the discomfort of allergies because stress disrupts the endocrine and immune systems.
- Stress increases vascular resistance, the main cause of high blood pressure, cortisol, adrenaline, and promotes arterial inflammation. [Bottom Line 100, 40]
- Metaphysical activity may reduce stress if it promotes peaceful thoughts. Metaphysical activity should be performed at the same time each day. During metaphysical activity, identify negative thoughts and behavior and build a model that permits avoiding them in the future. A metaphysical model is a set of interrelated principles that may be reduced to writing and permits you to improve your thinking and human relationships.
- Those who distrust others are three times more likely to develop dementia than those who are more trusting. [BLYB 2016, 26]
- Be positive, hopeful, helpful, and inclusive toward all others. Remember, others reflect the light of your being and that positive reflection reduces your stress. Exclusiveness is a negative thought process, and, remember, too, that you could have been born like "one of those other people." Recently, I met a Puerto Rican lady at the Bellagio Hotel and Casino in Las Vegas who told me of how well integrated her

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- neighborhood in New York City was with individuals and families of many nationalities and religions getting along well together.
- It is essential to manage stress by improved thought models including improved visualization of others who are seemingly injuring you. As you improve your visualization of others, you will find that your vision of yourself improves and your relationships with others improve.
 - **Remember, negative thoughts, behavior, and opinions toward others don't deform their cells and organs, they deform yours!**
 - If you are ill, it is only natural to think of your illness, but those thoughts tend to perpetuate the illness so it is best to engage in positive thoughts that (a) displace the thoughts of illness, and/or (b) envision healthy bodily subsystems in place of the subsystem that isn't working quite right.
 - Striving for perfection in your business and personal activities, relationships with others, and thought models reduces stress.
 - "Strive for perfection" means setting strategic and tactical goals that recognize the possibility of performing activities, engaging in relationships, and having thought processes containing no measurable error using standards known to exist at the time of execution--rather than assuming perfection is not possible. Indeed, every woman who has looked upon her newborn as a perfect child has, thereby, become perfect herself.
 - Striving for perfections means that we do not accept limitations governing our behavior. The world seems to set all sorts of limitations many of which are dead wrong. For example, boys are better at math and girls better in literary activities are unnecessary limitations.
 - Proof that perfection is possible is shown by our knowing that we can add $2+2 = 4$ and that we can learn to solve perfectly very difficult problems in mathematics, statistics, physics, chemistry, and many other disciplines as we age through the learning process. Applied to law, for example, it means finding a set of cases that leads to irrefutable conclusions under stare decisis.
 - Do not see flaws in others. Indeed, others may behave inappropriately (e.g., self-centeredness, gossipers, criticizing others), but our negative interpretation of these does not injure their cells and organs, it injures ours. Moreover, differences in race, cultural traditions, or religion are NOT flaws because they are protectable attributes under the United States Constitution. As we improve our perception of others, they may reflect better your behavior and perceptual commonality with others, thereby reducing stress and improving your health and their health.
 - The singular road to perfect human relationships is to help others and see them as perfect.

Pillar3: Stress and relationship management

- These concepts do not mean that you will always be perfect, but it does mean you will be perfect sometimes with the choice of expanding the frequency and scale of these moments in our activities, relationships, and thought management.

Relationship management

- Relationship management is important because a very large portion of total stress comes from poor relationships at work, at home, and social organizations. Relationships may be improved by seeing others as you would like them to see you. Often, this means changing your interpretation of the adverse behavior of others.
- Be inclusive toward others in the sense of engaging them in your activities and with your friends. Exclusiveness separates people and breeds discontent and poor communications when good communications are crucial for business and personal productivity.
- Avoid “I am....” modeling and see yourself as part of the commonality of humanity.

Pillar 4: Reduction of environmental pollution

Reduction of environmental pollution in general

- Reduction of environmental pollution refers to external-to-the-person pollution from all sources including indoor and outdoor air pollution, food pesticides, noise, electromagnetic fields, etc.
- The pollution in urbanized areas today are sourced in the off-gassing of industrial processes into the environment, combustion of fossil fuels in transportation engines, motorcycle engines with no catalytic converter, dust from the ground blown in the wind, building materials such as plywood, personal property made of cheap materials that off gas in buildings, pollutants in the water from ground water sources, and the addition of fluoride, chemical fertilizers used in agricultural production, and antibiotics and grain contamination in farm fish and grain-fed cattle.
- Noise pollution causes stress. Examples are vehicles with non-original equipment manufacturer (OEM) mufflers and flying drones and using vehicles with non-OEM mufflers in wilderness areas.

Chemicals

- PFC chemicals found in nonstick cookware, take-out food containers, stain and water-resistant fabrics used in carpeting and upholstery, and some personal care products, such as shampoo and dental floss are linked to premature onset of menopause, higher LDL cholesterol, and reduced effectiveness of vaccinations. [BLYB 2015, 14]

Indoor Air Quality (IAQ) Tips

- The general standards and tips for IAQ is to select your home in a location with good air quality, air out new cars for up to a year, and avoid real or personal property that has an odor.
- Accept and execute the Zero Tolerance Rule (“ZTR”), not statutory permissible amounts, for all sources of pollution including food pesticides and food additives, whenever possible. The Zero Tolerance Rule means that if a product is harmful in any concentration, avoid its use. For example, there are permissible limits for pesticides in foods with limits heavily influenced or set by producers, but you will be better off by eating organic fruits and vegetables.
- Indeed, the home is the source of volatile organic compounds from structural building materials, poorly maintained heating, ventilating, and air conditioning systems, carpets and other floor coverings, furniture, mattresses and box springs, and cabinets. For

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example, air conditioning coils (flat plates of aluminum about 1/16" apart) should be cleaned every 60 days during air conditioning season. This 60-day coil cleaning rule is particularly important in high humidity climates because there is so much water condensation on the coils and that water is a breeding ground for bacteria. Once I moved into an apartment in the southern United States and found the 18" x 12" flat condensing plate ("coil") was stuffed with contamination for the lower five inches; it had not been cleaned in years. It was necessary to cut the coil out and soak it in water for a full day to clean the filth. I have also found thick slime in the water runoff sink hole of a air conditioning condensation coil. Clean the A/C coil with coil cleaner when the season ends because the bacteria will continue to grow even if the A/C is not used.

- I have discovered the substitution of porcelain or natural-stone floor tiles for carpets dramatically improves indoor air quality. First, new carpets off-gas for several months, Second, as carpets get dirty, they emit odors eliminated by washing and the elimination of carpets entirely gives universally good air quality assuming there are no other sources of contamination. Ivory Dish Soap is the best carpet cleaner and children may play on the carpets with greater safety.
- In some cases, it may be wise to add ozone to the entrance to the air intake near the air handler air (e.g., 15 minute timer every four hours) during the air conditioning season in very humid climates. Ozone will clean the air and the coils but its concentration must be very low because it is unhealthy. One office building with terrible air added ozone and resulted in excellent air quality.
- Avoid exposed engineered wood products ("EWP;" e.g., plywood, particle board, pressed wood chips; unfinished desk drawers) furniture in your home. EWP requires finishing on all surfaces and often unseen surfaces are unfinished (e.g., drawers). Moreover, the sealer (e.g., varnish, shellac) wears off over time and emissions may begin years later. Further, if you use a furniture polish, it may seep through the veneer and volatilize the glues and formaldehyde in EWPs. One of the best sealers is Verathane; it comes in a water-based product and three coats will do an excellent job of sealing new furniture.
- Many cabinets today have EWP on the back side. If they do, seal both sides or remove the EWP backing and replace it with aluminum as I did with a large cabinet.
- Avoid fiberglass insulation inside of ventilation ducts including the fiber glass insulation in the air handler. Fiberglass particles break off as a result of air flow particularly at T intersections and will get in the air...and in your eyes and lungs. [Miller IAQ, 5]
- Electronic-Cigarettes (E-Cigarettes) use a battery to heat a small cartridge containing liquid nicotine or a synthetic substitute turning it into a vapor that is inhaled...ugh. The vapor consists of propylene glycol, glycerol, nicotine, and flavorant chemicals. Propylene glycol and glycerol may interact to produce formaldehyde. Be careful in breathing secondary vapor from e-Cigarettes. [BLYB 2015, 13; Jansen 2015]
- Do not store paper shredders in the home. Shredded paper is highly toxic because shredded paper exposes so much more surface area with hidden emitting chemicals.

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- Do not store personal items in cardboard boxes in the home. Cardboard can be toxic and cause emissions particularly as it ages. Use plastic containers purchased from an office supply store.
- Do not store large quantities of uncovered paper in the home.
- Be careful with storing very old books because they can be toxic from dust, mildew, and mold.
- Use a dehumidifier if your home is over 55 percent humidity. Be sure that the dehumidifier coils are accessible for cleaning, and cleaned every 60 days. Many dehumidifier coils are not accessible for cleaning.
- The most toxic-free flooring is porcelain or natural stone tile. Hardwood floors are sealed only on the top; the bottom is unfinished, and can emit wood odors for years. For the toxicity of wood, Google “toxic wood.” Laminated flooring may have chemical emissions.
- Open your windows daily for cross ventilation. For homes that have not been ventilated properly for long periods of time, it may take several weeks of cross ventilation at a rate of ten hours per day to improve IAQ. Once properly ventilated, it may be best to have cross ventilation at least 30 minutes twice a day assuming outside air is suitable for quality, humidity, and temperature.
- Very large homes (e.g., 3,000 to 20,000 sq. ft.) have special indoor air quality issues because of the large amount of furniture, the furniture may be antique stuffed with toxic materials, and because windows may be closed for security purposes. With these caveats, however, it is necessary that very large homes be ventilated with good-quality, outside air. At the beginning of this ventilation process (where it has not been done before), it may be necessary to open cross-draft¹ windows ten hours a day or more for a period of several months or more. Use of 20” box fans in windows accelerate the natural flow of cross-draft air.
- Avoid synthetic clothing above the waist and synthetic bedding. Synthetics include rayon, polyester, acrylic, acetate, nylon, and cotton treated with wrinkle-free or stain resistant chemicals. Polyester contains esters of dihydric alcohol and terphthalic acid, acrylic are polycrylonitriles and may cause cancer, rayon is recycled wood pulp that is treated with caustic soda, ammonia, acetone, and sulphuric acid, acetate and triacetate are made from cellulose wood fibers and undergo chemicals in their processing, nylon is made from petroleum with a permanent chemical finishing, and Teflon is used in wrinkle and stain-free chemicals. Worn above the waist, particularly in warm weather, chemical off gassing can be inhaled and may also affect the skin. Preferred clothing fabrics are natural, untreated fabrics such as cotton, silk, linen, wool, and cashmere. [“The top 6 fabrics you should avoid wearing and why.” All Body Ecology Articles]. Special

¹ “Cross draft” means diagonally open windows that maximizes fresh air in ALL rooms and on all floors.

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attention should be directed toward cotton because pesticides are used in its production and the clothing should be washed several times to remove these.

- Sleep with an open window assuming good outside air quality and avoid odor emitting shrubbery underneath the window.
- Perform an air quality test for a new home because of new materials and then manage IAQ accordingly. These tests are available for a few hundred dollars and are worth their money. Preferred building materials include metal studs in walls, using Verathane on structural wood, and avoiding plywood in the structure. [Hodgson 2000]
- If you are building a home, it may be wise to use metal studs and structural members and avoid plywood to improve IAQ. It may also be wise to install shielded electrical wires to reduce substantially electrical fields in the home.
- Air out a new mattress, perhaps for as long as a month. Place a 20" box fan on the open mattress with the airflow up to the ceiling and leave a window open to assure fresh air is drawn into the mattress.
- Avoid tanning-odor from new leather furniture. There are a variety of tanning processes and some may influence adversely IAQ. This caution holds for leather clothes and leather interior in automobiles.
- Windows in new cars should be left fully down for at least several months when parked in a garage. Outside the protected garage, the windows should be open a crack.
- Don't paint a room for a newly born child. However little the off gassing, it should be avoided for infants.
- I have a willingness to inspect your residence for personal property that may be contributing to poor IAQ in the Las Vegas or Los Angeles area.

Electromagnetic fields: An Introductory note

- The material in “Electromagnetic fields” discusses:
 - Attributes of the four types of electromagnetic fields (EMFs): Electrical and magnetic fields, radio frequencies field radiation (RFFR), and dirty electricity.
 - A few of the worldwide facilities banning or restricting wireless devices.
 - Safety standards with an emphasis on the safety standards of the International Institute of Building Biology and Ecology.
 - Medical research and other studies linking RFFRs with specific harm to humans and inferences of harm to humans from rat-based experiments.
 - Limited evidence of broad-based harm to humans from RFFRs that may be causing increases in depression and contemplation of suicide of college students.
 - My proposals to Congress to create a new federal agency to fund research to determine if RFFR-emitting devices harm humans and legislation to educate the American people of the power density of enclosed facilities containing Wi-Fi and the power density of RFFR emitting devices at point-of-sale. These proposals are discussed in “United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)” in Appendix B. This article discusses 28 adverse changes in cells, harmful symptoms, and illnesses supported in medical research plus 20 symptoms described by individuals living near cell phone base stations for a total of 48 adverse health events known to be caused by RFFR.
- I have included this material on electromagnetic field radiation in a health management book, because:
 - There has been an explosive increase in the use of cell phones and Wi-Fi in the past 20 years.
 - There is no research on the harm from RFFR initiated by a United States government agency or by Congress even though a United States Air Force study in 1994 listed many illnesses caused by RFFRs.

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- Most individuals using RFFRs believe RFFR from cell phones, Wi-Fi, cordless phones is safe, when there is overwhelming evidence RFFR damage cells, cause adverse symptoms, and specific illnesses. I list 48 adverse cellular changes, symptoms and illnesses caused by RFFRs in “United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)” shown in Appendix B.
- The failure of local government agencies to measure or control electric field radiation from unshielded inside-the-wall household wires, when shielded wires could be installed in new construction at a small additional cost to reduce substantially electric field radiation.
- The absence of any environmental impact study evaluating the outdoor or indoor increase in RFFR to a line-of-sight building close to a cell phone base station. In one case I measured $1,500 \mu\text{W}/\text{m}^2$ outside and about 1,000 inside a home with line-of-sight to a cell phone base station about 3/4 miles distant.
- The refusal of the media to discuss harm to humans from wireless technology, I have informed several television stations and newspapers of supportable harm to humans and they have refused to publish the material.
- The uncontrolled addition of Wi-Fi to enclosed spaces with no notice to the public of the power density in the enclosed space measured in $\mu\text{W}/\text{m}^2$.
- The failure of government to alert the American people of the additional danger to fetuses and young children to wireless communications given their thinner skulls and higher absorption rates of RFFR.
- The failure of government to alert the American people to the additional danger of wireless communications in automobiles, airplanes, and busses because they act as reverse Faraday Cages and probably magnify the harm from RFFR. I have no evidence of any research worldwide that addresses the additional harm from RFFR in enclosures of metal and glass.
- Some standards indicate that only thermal harm comes from RFFR emitting devices when there is clear evidence that there is harm to humans and rats from the non-thermal effects of RFFR.

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- There is no research on whether there is increased harm from RFFR in combination with multiple sources of EMFs. For example, what is the harm to humans when you are sleeping in your bedroom with a line-of-sight cell phone base station throwing off $1,500 \mu\text{W}/\text{m}^2$ on the outside wall and $1,000 \mu\text{W}/\text{m}^2$ inside the room, a cell phone that may be adding another peak of $2,000 \mu\text{W}/\text{m}^2$, Wi-Fi throwing off $4,000 \mu\text{W}/\text{m}^2$ and sleeping next to an electric clock throwing off a magnetic field of 20 mG, plus a wireless security system?
- Changes in cell phone technology which may be increasing the power density.
- Little is known of the relationship between the ionospheric Schuman Resonance and human brain waves, both of which may be disrupted from nearby RFFR.

Electromagnetic fields (EMFs): Attributes of

- Electromagnetic fields (EMFs) are composed of alternating current (AC) electric fields, AC magnetic fields, non-ionizing RFFR, and dirty electricity. Alternating current electric fields are caused by differences in voltage and AC magnetic fields by alternating current (AC) flowing in wires and other grounded metallic paths, such as metal water and gas pipes and TV cable sheathing. The strength of AC electric fields is measured in volts/meter (e.g., millivolts/meter, mV/m), and AC magnetic fields in amps/meter, Gauss (e.g., milli-Gauss, mG), or tesla. The strength of RFFR in higher frequency ranges is a combination (coupling) of AC electric and AC magnetic fields and measured by the power density function in microWatts/meter² or milliWatts/cm² (e.g., $\mu\text{W}/\text{m}^2$, mW/cm^2). Substantially all RFFR professionals in North America use $\mu\text{W}/\text{m}^2$. From an engineering standpoint, AC electric and AC magnetic fields are independent and uncoupled from one another within the so-called “near field,” which is within about three wavelengths. Thus, near-field measurements need to be measured with magnetic field and electric field meters separately [Aaronia Manual Spectrum V4, p. 73²], and they have slightly different effects on human health. Since the wavelength for one wave at 60 Hz, the frequency of household electricity in circuits and power cords, is an astonishing 3,100 miles, and three times that distance (three wavelengths) is over 9,000 miles, we are all clearly in the near field whenever dealing with EMFs caused by house wiring and outside overhead electric power lines. Thus, we always measure and mitigate electric and magnetic fields from house wiring separately from RFFR. Dirty electricity is harmonics of 60 Hz electricity (e.g., 120 Hz, 180 Hz, etc.) often from sources outside the metered building.

² The Aaronia Manual Spectrum V4, p. 73 states “Inside the close-up range, E(lectric) and H(magnetic) fields would need to be measured separately.” The close-up range is the near field.

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- AC electric fields in a room are caused by voltage in an electric line in the wall or power cord to the appliance. If the appliance is turned off, the voltage and the electric field exists from the breaker to the switch on the appliance; if the appliance is turned on, the voltage proceeds to the point of utilization within the appliance (e.g., light bulb for a lamp, motor for an operating appliance). Electric fields caused by *inside-the-wall* line voltage induce a field of about six to eight feet into the room if the *house* wiring is plastic-jacketed Romax wiring. To mitigate this electric field from the Romax wiring in the walls, it is necessary to turn off the breaker to the room wiring to prevent the voltage to enter the inside-the-wall room wiring. If the home wiring in the walls is metal jacketed (i.e., shielded) or in metal conduits, the electric field in the walls is mitigated by the metal jacketing but there still is an electric field along the appliance wire to the switch (off) or utilization point (on); this can be mitigated by unplugging the appliance cord at night or using MuCord shielded wiring for the appliance cord. Since AC voltage changes polarity 120 times per second, it adversely affects cellular function. [Miller, “Electric fields (at 60 Hz AC)”]. It is extremely difficult to rewire lamps with three or four bulbs because of wiring complexity.
- Electromagnetic radiation is distinguished by its frequency in cycles per second called “hertz,” wavelength, and power; the higher the frequency, the shorter the wavelength and the greater the energy. Hence, household alternating current electricity has a frequency of 60 hertz or 60 cycles per second with a wave length of 3,100 miles. A frequency of 560 on the AM radio dial has a frequency of 560,000 hertz or 560 kHz. Cell phones, cordless phones, Wi-Fi enabled laptops, tablets and routers, and smart electric meters all transmit radio frequency signals in a frequency between 800,000,000 and 5,800,000,000 cycles per second, or 800 mega-hertz (800 MHz) to 5.8 giga-hertz (5.8 GHz). The color violet has the highest frequency in the color spectrum at 668-789 terahertz (THz, 10^{12} , GHz is 10^9).
- Radio frequency field radiation (far field only starting at three wave lengths from the antenna) consists of Electric field and magnetic field waves, which are synchronized oscillations of perpendicularly orientated electric and magnetic fields that travel at the speed of light in a vacuum and a bit slower through materials; they are generated by a transmitter and emitted by an antenna. The frequency and wave length of their oscillations and power characterize the field. The fundamental unit of energy to measure electromagnetic radiation (quantum theory) is the photon, which is massless and weightless and is measured by $E = FH$ where E is energy per photons, F is the frequency of the photon, and H is Planck’s constant; thus, as frequency increases, energy increases and wavelength shortens. Short-wave length RFFR have higher energy than long wave-length EMR. [Wikipedia]

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- In the near field, the magnetic and electric fields are dependent upon current and charges/charge separation at the source. In the far field, the magnetic and electric fields are only dependent upon changes in the other field. [Wikipedia].
- Wave lengths in meters and inches, as a function of frequency, are shown below using the formula:

Wave length in meters = 299,792,458 meters per second (speed of light in vacuum)/frequency in Hertz (Hz).

Wave length (meters and inches for different frequencies (MHz))

Hertz		Wavelength		Coupled at three times the wavelength To measure power density of RF	
MHz	Hertz	Meters	Inches	3x Inches	
	60	4,996,540 meters or 3,105 miles			
800 MHz	800,000,000	0.37	14.8	44.4	
900 MHz	900,000,000	0.33	13.1	39.3	
1800 MHz	1,800,800,000	0.17	6.6	19.8	
1900 MHz	1,900,000,000	0.16	6.2	18.6	
2500 MHz	2,500,000,000	0.12	4.7	14.1	

- Radio frequency radiation from wireless devices occur in a part of the Electromagnetic Frequency Spectrum in the hundreds of millions of cycles per second, or MegaHertz (MHz) to the low billions of cycles per second, or GigaHertz (GHz). In these frequency ranges, the wavelength is in a human scale. For instance, the wavelength at the frequency of 900 MHz, the frequency for many cell phones, smart meters and older cordless telephones, is 13 inches. Thus, the far field, where electric and magnetic fields are coupled, is three times that, or a bit beyond three feet. The far field for Wi-Fi routers, laptops, tablets and cell phones is only a few inches, so we consider the electric and magnetic fields from these RF-EMFs to be one field. [Miller]
- The electromagnetic spectrum is further classified in two categories depending upon its power: Ionizing or non-ionizing RFFR. Ionizing means the frequency is powerful enough to knock electrons off the atom or molecule and includes alpha, beta, gamma, neutrons, and X-rays. Non-ionizing means the RFFR does not have the power to knock off electrons and includes extremely low frequency RFFR, radio, microwaves, infrared, and visible light. It has long been known that ionizing radiation is dangerous, but some

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believe that non-ionizing radiation is safe except for its thermal effects. Recent studies have shown that non-thermal RFFR of non-ionizing radiation have adverse biological effects which disturb cellular function and, thereby, is also dangerous. [Blank 2014, 27-31]

- Absorption of the power density of radio frequencies from wireless devices by humans is measured by the “specific absorption rate” measured in watts/kg of body mass; 1.6 W/kg is the maximum allowable single-point rate of heat generated for cell phones in the United States. But the SAR disregards (1) actual usage of the cell phone vs. test performance usages, (2) that the cell phone continues to emit radio frequency radiation even when the phone is not used (on standby in your pocket or in a woman’s bra, or on your bedside table when used as an alarm clock—put it in Airplane mode when you use a cell phone as an alarm clock), and (3) all non-thermal cellular disturbances from non-ionizing RFFR radiation. [Blank 2014, 24, 42-44]
- Cell phones radiate two frequencies. The first is a low frequency at 16 Hz or 219-230 Hz (brain waves are in the 1-60 Hz range) that carries information, but this so-called Low-Frequency-Information-Carrying Radio Wave does not broadcast very far. Thus, the information frequency is piggy backed onto microwaves at 800-900 MHz and 1800-1900 MHz that provide long distance transmission, carrying the signal for miles to the nearest cell phone base station. These higher carrier wave frequencies are too fast to carry information on their own; thus, the need to piggy back the slower information waves onto the much faster carrier waves. The high frequencies create thermal effects on cells and the heat affects protein synthesis, but there is believed to be a safe distance from these heating effects. It is primarily the low frequency information carrying radio waves from cell phones, however, that have the most harmful effect on health, producing primarily non-thermal effects on cells, which have been proven to be dangerous. [Miller Cell, 3; Miller Radio, 1,2]
- Frequency ranges are difficult to characterize by name because there are at least three standards (ITU, IEEE, and EU-NATO-US). The ITU designations are:
 - 1-30 Hz Extremely low frequency (ELF)
 - 30Hz to 300 Hz Super low frequency (SLF)
 - 300 Hz to 3 kHz Ultra low frequency (ULF)
 - 3 kHz to 30 kHz Very low frequency (VLF)
 - 30 kHz to 300 kHz Low frequency (LF)
 - 300 kHz to 3 MHz Medium frequency (MF)
 - 3 to 30 MHz High frequency (HF)

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- o* 30 to 300 MHz Very high frequency (VHF)
 - o* 300 MHz to 3GHz Ultra high frequency (UHF)
 - o* 3 to 30 GHz Super high frequency (SHF)
 - o* 30 to 300 GHz Extremely high frequency (EHF)
- Alternating current magnetic fields pass through anything with almost no loss in strength. It is measured by:
 - o* Amperes per meter (A/m)
 - o* Gauss or milliGauss (G, mG)
 - o* Tesla (T)
- Alternating-current electric fields can be shielded with various wall materials that are grounded (e.g., paint, fabrics, metal), but magnetic fields are almost impossible to shield. [IBE 204.3, 39-40] Either maintain your distance or turn the appliance off, perhaps at the breaker box (e.g., microwave ovens).
- The total power of all EMFs inside the home depends upon the following: [IBE 204.3, 30 and Miller]
 - o* Wires in the wall having the hot and neutral conductors adjacent to each other cancel the two-wire, magnetic fields. If the return current flows through any other conductors (e.g., metal pipes), the resultant two separated currents cause magnetic fields that may be very dangerous. Thus, it is crucial to meter your homes walls, floors, and interior spaces for magnetic fields. In one home inspection, I discovered a 40 mG magnetic field at the sofa adjacent to an interior wall. It is highly likely this size of a magnetic field is carcinogenic caused by a wiring error in the wall.
 - o* A grounded AC power cord with a three-prong plug with a grounded third pin reduces, but does not completely eliminate, 60 Hz electric field EMFs. Plastic AC power cords with two-prong plugs are not grounded and the electrical cord of the device (e.g., metal lamp) will create an electric field. To completely eliminate electric fields in plastic AC power cords, one must rewire the appliance with grounded, shielded cord, such as MuCord available from LessEMF in New York (www.lessemf.com). It is best to have extension cords that use shielded wiring as well also available at LessEMF.

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- o Various personal property including, cell phones, cordless phones, Wi-Fi, microwave ovens, hair dryers, dimmer switches, junction boxes, electric stoves, radiant heating systems, electric blankets, baby monitors, and anything else that has current flows and/or power-switching attributes (e.g., transforming 120 volts to a lower voltage to operate a low voltage appliance) create magnetic fields from the current flow.
- o Exogenous broadcasting antennas, such as cell phone base station antennas transmit radio-frequency fields that may be measured immediately outside and inside the home on a line-of-sight with the broadcasting tower. You can verify that this signal is coming from outside sources by turning all circuits in the breaker panel off, which turns off any possible sources inside your own home, and turning off your cell phone. In other words, if you are in line-of-sight to a broadcasting tower, it is highly likely that you have high RFFR hitting and entering your home. It is wise to mitigate these with indoor shielding. For example, in one case a home was within about ¾ miles of a cell phone base station and transmitted a 1,500 $\mu\text{W}/\text{m}^2$ power density to the outside wall of the home and about 1,100 $\mu\text{W}/\text{m}^2$ inside the home the latter of which was mitigated down to 150 $\mu\text{W}/\text{m}^2$ with interior cloth shielding material.
- Smart meters are gas, water and or electric meters that transmit water, gas or electric usage information to the utility office using radio frequencies, instead of having a meter reader come to the house. There are vast differences in power of the radio transmission—up to 75-100 times—for different types of Smart Meters and different electric utilities. Some individuals are sensitive to the short, sharp, and persistent bursts of radio frequency from the beacon signals transmitted round the clock by neighborhood Smart Electric Meters. This is done to “keep the mesh network healthy” and synchronized, according to electric utility smart meter network administrators. Smart meters are banned in Italy, where the usage information is transmitted in the telephone system. [Miller Smart]

Electromagnetic fields: Schools banning WiFi and/or cell phone use

- o Schools banning WiFi and/or cell phone use are listed below [“A List of Schools and Organizations That Have Taken Action Regarding Wireless Technology,” WIFIIInSchools.com]:
 - o St. Augustine School, Italy, removed WiFi, 2014.
 - o Upper Stuart Primary School, Australia, installed cable rather than Wi-Fi, 2014.
 - o Te Horo School, New Zealand, removed WiFi, 2013.
 - o Winlaw Elementary School, B.C. Canada, removed WiFi. 2013.
 - o Blaise-Cendrars High School, Switzerland. Removed WiFi, 2013.
 - o Aurora School, Ontario, Canada removed WiFi, 2011.

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- North Cariboo Christian School, Quesnel, B.C. Canada, removed WiFi, 2011.
- Saanich School District, Victoria Island, B.C. Canada banned WiFi in elementary schools, 2011.
- Wayside Academy, Peterborough, Ontario, Canada, removed WiFi, 2011.
- Pretty River Academy, Collingwood Ontario, Canada, removed WiFi, 2011.
- St. Vincent Euphrasia Elementary School, Meaford, ON, Canada, removed WiFi, 2011.
- Roots and Wings Montessori Place, Surrey, B.C., removed WiFi, 2010.
- Herouville Saint-Claire, France. Banned WiFi in schools, 2009.
- Karnataka State, India. Banned cell phones in all schools and pre-university colleges, 2009.
- Sainte-Genevieve University, Paris, removed WiFi from Library. 2008.
- French National Library and four public libraries, removed WiFi, 2008-2010.
- Ballinderry Primary School, Ireland, removed WiFi, 2008.

Electromagnetic fields: Safety standards

- Formal safety standards for EMFs are provided by three organizations: The International Commission on Non-Ionizing Radiation Protection (ICNIRP), the Institute of Electrical and Electronics Engineers (IEEE), and Congressional rules governing the Federal Communications Commission (FCC).
- The non-ionizing safety standards for each of these organizations take into account only adverse thermal effects (i.e., heating of tissue) and disregard other biological harm from cell disruption caused by exposure to EMFs at much lower levels than the current safe exposure standards as set forth by these agencies. Further, only short-term exposure to a single source is taken into account and long-term exposure from multiple sources is disregarded in setting the standards.
- The supposedly safe levels of non-ionizing EMFs specified by the above three organizations “are much higher--**up to thousands of times higher**--than those that have demonstrated negative health effects in scientific studies cited in this book.” [Blank 2014, 162-8]
- The safety standards suggested by the International Institute for Bau-Biology and Ecology (IBE) for “no concern,” “slight concern,” “severe concern,” and “extreme concern” for AC magnetic fields and radio frequency radiation are shown below. Note that $1,000 \mu\text{W}/\text{m}^2$ converts to $1 \text{ mW}/\text{m}^2$. [Miller Safe, 3-4]

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	None	Slight	Severe	Extreme
	-----	-----	-----	-----
○ AC Electric Fields				
▪ Field strength, ground potential V/m	1	1-5	5-50	>50
▪ Body voltage, ground potential mV	10	10-100	100-1000	>1000
▪ Field strength, potential free V/m	<0.3	0.3-1.5	1.5-10	>10
○ AC Magnetic Fields				
Low frequency, ELF/VLF				
Flux density in:				
Nanotesla nT	<20	20-100	100-500	>500
Milligauss mG	<0.2	0.2 - 1	1 - 5	>5
○ Radio frequency field radiation (High freq., EM waves) $\mu\text{W}/\text{m}^2$	<0.1	0.1 – 10	10-1000	>1000
○ These standards are set by the International Institute of Building Biology and Ecology (IIBBE) in SBM-2008 (May 2008) by a panel of German experts evolving from Baubiologia Maes starting in 1987 and included the following individuals: [IBE 206.2 Electrical Home Wiring; Standard of Building Biology Testing Methods, ¼]				
○ Dr. Thomas Haumann Dipl-Ing				
○ Norbert Honisch				
○ Wolfgang Maes, Dipl-Ing				
○ Helmut Merkel,				
○ Dr. Manfred Mierau				
○ Llwe Munzenberg				
○ Peter Sierck, Dipl-Chem				
○ Jorg Thurnutta				
○ Dr. Martin Virnich				
○ Compared with the IIBBE standards of up to 1,000 $\mu\text{W}/\text{m}^2$, the FCC has safe exposure for non-ionizing RFFR limits at up to 10,000,000 uW/m^2 (1.0 mW/cm^2) depending upon frequency. In my opinion, the FCC standards are preposterously in excess of the correct safe medical limits for humans. I am in general agreement with the IIBBE standards for RFFR radiation based in part upon my home inspection experience				

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- There are no presently known safe levels of 60 Hz magnetic field radiation exposure, even though research studies indicate biological effects at low levels of magnetic field exposure. [Blank 2014, 188]
- From my home EMF inspections, I have discovered that a home with no internal or external sources of high EMFs will have power densities of less than $75 \mu\text{W}/\text{m}^2$ (75 micro watts per square meter) and certainly less than $100 \mu\text{W}/\text{m}^2$. No internal or external sources of high EMFs mean no line of sight to a cell phone base station and no Wi-Fi, cell phone, or cordless phone in the home.

Radio frequency field radiation: Legislation banning wireless devices

- In August 2018, France banned the use of cell phones on all school grounds for children ages 3 to 15 commencing in September 2018. The principal objection is addiction to cell phones and to encourage reading and playing outdoors during recess. [WSJ, August 14, 2018, 1, 6]
- On April 20, 2016, Haifa, Israel banned Wi-Fi in all schools. Reasons given for the ban were the suicide death of Jenny Fry, a 15-year old in the UK caused by Wi-Fi in her school and that over ten percent of Israelis' were electromagnetic hypersensitive (EMH) - -and the percentage was increasing. The normal pre-cell phone electromagnetic hypersensitivity was about three percent. [Jack O'Dwyer, "Israel WIFI breakthrough: TV Documentary, School Ban"]
- On January 29, 2015, the Members of the National Assembly in France banned all wireless devices in "spaces dedicated to the care, resting, and activities of children under 3 years." As a result, wireless devices were banned in nurseries and daycare centers, but not in primary schools. The reasons for the ban were that children's (1) brains can absorb up to three times the amount of radiation as an adult, (2) brains are more conductive, and (3) children's skulls are thinner. The French law was titled "An Act on Sobriety, Transparency, Information and Concentration for Exposure to Electromagnetic Waves." [del Sol; Burrell]
- On May 27, 2011, The Parliamentary Assembly of the Council of Europe adopted a resolution with the following provisions:
 - European governments should take "take all reasonable measures to reduce exposure to electromagnetic fields."
 - Schools and classrooms should give preference to wired internet connections.
 - The use of mobile phones by schoolchildren on school premises should be strictly regulated.
 - Information should be provided on the health risks associated with Wi-Fi, WiMAX, Bluetooth, DECT-type wireless telephones, baby monitors, and other domestic appliances which emit continuous impulse waves.

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- Wired RFFR connections are preferred to wireless RFFR connections.
- Special precautions are to be provided to pregnant women and children. I am curious of how many pregnant women in the United States have been warned of the danger of cell phones and Wi-Fi harm to fetuses particularly in automobiles?

Radio Frequency Field Radiation: Institutional opinions of the hazards of RFFR (e.g., cell phones)

- European Union countries are employing a stricter regulatory standard for RFFR and cell phones probably because socialized medicine is more common in Europe and the government must carry the medical cost burden.
- Perhaps the most definitive indication of the adverse effects of cell phones is the May 31, 2011 conclusion of the International Agency for Research on Cancer (IARC) that “radiofrequency electromagnetic fields such as, but not limited to those associated with wireless phones” were “possibly carcinogenic” to humans (Group 2B) based upon the increased risk of glioma, a malignant type of brain cancer. Group 2A, not assessed by IARC, is “probably” carcinogenic to humans. [IARC Press Release No 208 dated May 31, 2011]
- Another compelling document is Committee Resolution 1815 released by the Parliamentary Assembly of the Council of Europe, dated May 27, 2011 (<http://assembly.coe.int/Mainf.asp?link=/Documents/AdoptedText/ta11/ERES1815.htm>). This document, by an organization equivalent to our Consumer Product Safety Administration, spells out their recommendation that member countries of the European Union do the following: Adopt much tougher standards for radio frequency field radiation exposure; set aside “wave-free” areas in their countries without wireless (cell phone) networks for their electrically-sensitive citizens; implement public awareness campaigns on the dangers of long-term exposure to wireless devices; protect independent researchers; step up research on new types of antennas and wireless devices that are not radio frequency-based; set new, more stringent standards for safe exposure; replace Wi-Fi in schools with hardwired Ethernet cables for Internet in classrooms (which France has voted to do in day care centers and Haifa, Israel for all schools); and alert the public to the dangers of continuous RFFR transmission by cordless phone base units and Wi-Fi routers. [Miller]

Radio Frequency Field Radiation: The 100 Year Rule

- The material in Six Pillar Tips is written about 15 years after the heavy beginning use of cell phones and Wi-Fi. Many health contaminants were not linked to adverse human health for 100 years or more.

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- One strategic objective of Six Pillar Tips' presentation of harm from RFFR is to present evidence in about 15% of the 100-year life that it often has taken for medical science to link a contaminant with illnesses. Examples follow.
- **Tobacco:** The relationship between tobacco and adverse health effects was not known until the 1950s with the link to lung cancer. About two years ago five additional adverse health conditions were linked to tobacco.
- **Asbestos:** Asbestos was not regulated by the EPA until the 1970s, long after it was suspected of being a health hazard as early as the 1920s. Industry knew of the potential injury, but did nothing to promote public awareness.
- **Football head injuries:** Football in the United States began in the 1880s but the seriousness of head injuries was not known until about 2010.
- **Lead in gasoline:** Automobile exhaust as a carcinogen was not regulated with lead-free gasoline until 1996 about 100 years after inception of the automobile.
- **Sugar:** The sugar industry paid for and intentionally concealed the adverse effects of sugar on human health in their paid university research. [*Life Extension*, Michael Downey, "The Great Sugar Coverup Sugar Industry Paid Harvard Researchers to Exonerate Sugar." October 2017, p. 48-54] Thus, it was many years before the serious adverse health effects of sugar were known.

Radio Frequency Field Radiation: Research studies linking cell phone use to harm to humans³

- Introductory remarks
 - My review of peer-reviewed articles and the general literature of RFFR and wireless devices has indicated that some studies find a causal link between RFFR (e.g., cell phones) and adverse human health, and others do not. But at least some of the no-causal-link studies are funded by industry groups, thereby violating conflict-of-interest guidelines for independent research, and should have reduced emphasis as evidence of no-causal-link. The references I cite in this section are taken from that group of studies indicating human harm, and, therefore, are not a random sample of all studies. I believe that if independent studies show harm to humans or rats from cell phone RFFR, adults should use these wireless devices sparingly and that children should not use them except in only the rarest of necessity. Be mindful that when an adult uses a cell phone in a partial or full

³ The material in this section contains substantially all of the adverse health consequences/references described in "United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)" *Indian Journal of Applied Research*, January 2018, plus additional adverse health consequences and references.

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metal enclosure containing a child, it is highly likely that each occupant is receiving substantially higher levels of RFFR penetration because the RFFR are not free to leave the enclosure. This conclusion is based upon reversing the Faraday cage effect—the Faraday cage is a steel enclosure designed to keep RFFR outside of the enclosure and when you introduce an RFFR emitter inside the cage, the RFFR are contained inside the cage. The proportion held in the enclosure depend upon the amount and type of metal, glass, and other enclosure materials. This is my opinion and I have not seen research supporting this viewpoint.

- *Notably, Bottom Line Health Breakthroughs 2018, p. 58-60, and Bottom Line Yearbook 2018, p. 12-14 discuss cancer, meningioma, salivary gland tumors, acoustic neuroma (tumor at base of brain affecting different nerves including the ear), breast cancer, male infertility and potency, and sleeping problems caused by cell phones. These are the first retail health management books confirming some of the material you will find in Six Pillar Tips for Health Management first published in October 2014.*
- Autoimmune processes:
 - In a study of the effect of 2.450 GHz on autoimmune processes, it was found that there was a non-thermal effect on autoimmune processes measured by increases in formation of antibodies in the brain, which did not appear to be pathological, and possible adverse effects of blood serum affecting pregnancy and fetal development. [Grigoriev 2010 51]
- Behavior, abnormal caused by cell phone radiation
 - Rats exposed to fetal cell phone radiation tended to be more hyperactive after birth and had reduced memory capacity. These symptoms were attributed to improper development of neurons in the prefrontal cortex region of the brain while in the womb, and resembled attention deficit hyperactivity disorder after birth. Extrapolated to humans, exposure by pregnant women to cell phone radiation causes behavioral disorders in offspring. [Taylor 2013]
- Blood-brain barrier (BBB), increased permeability of
 - In a study of rats exposed to two hours of GSM microwaves in the 900 MHz band and given up to 28 days of recovery time, it was found that there was increased permeability of the BBB indicated by albumin in brain tissue and increased neuronal damage immediately after exposure up to 50 days after two hours of exposure. Since rat brains are similar to human brains, the study suggests

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increased permeability and neuronal damage to humans since human exposure occurs daily for potentially long periods of time. The blood brain barrier is a dense layer of cells and tissue that protects the brain from toxic products. [Nittby 2009; Brain 2011, 191; Eberhardt 2008]

- In my opinion, one of the most dangerous effects of cell phones is the increased permeability of the BBB caused by their RFFR because (1) of the added toxins that will enter the brain and do significant damage resulting in Alzheimer's and other memory/cognitive functions, (2) the effect is immediate, and (3) the effect is long lasting.
- Bone densities
 - Bone density of the hip was reduced on the side the mobile phone was carried. In my opinion, this suggests greater likelihood of hip fractures on the hip side of mobile phone position. [Saravi 2011]
- Brain blood glucose metabolism
 - "The findings of increased (glucose) metabolism in regions (of the brain) closest to the antenna during acute cell phone exposure suggest that brain absorption of RFFR may enhance the excitability of brain tissue." [Volkow 2011, Conclusions]
- Brain tumors and other brain damage from cell phone use
 - "There is a consistent pattern of increased risk of glioma and acoustic neuroma (both brain tumors associated with use of mobile phones and cordless phones." [Hardell 2013, 107]
 - In a study of malignant brain tumors, Lennart Hardell found the following results for cellular and cordless telephones; other odds ratios are also provided. An odds ratio of 5.9 times means there is 5.9 times *greater* chance of a malignant brain tumor vs. non-users. [Hardell March 2006, Abstract]
 - Analog cell phones for > 2,000 hours of cumulative lifetime use: OR = 5.9
 - Digital cell phones for > 2,000 hours of cumulative lifetime use: OR = 3.7
 - Cordless phones for > 2,000 hours of cumulative lifetime use: OR = 2.3
 - "In conclusion use of mobile and cordless phone increased the risk for glioma (brain tumor) with highest odds ratio for ipsilateral (same side), latency > 10 years..." [Carlberg 2012, Abstract]
 - The Italian Supreme Court ruled that cell phone use had a causal link to a benign tumor on the trigeminal nerve (fifth cranial nerve) from the plaintiff's five to six hours of daily business cell phone use for 12 years. The plaintiff had surgery which resulted in his face being paralyzed and now takes daily morphine for pain. The court emphasized the Hardell study over the Interphone group study, the latter of which was funded in part by the cell phone industry. **The plaintiff**

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stated “Parents need to know their children are at risk of this illness.” [Little 2012]

- “Studies carried out in Sweden indicate that those who begin using either cordless or mobile phones regularly before age 20 have greater than a fourfold increased risk of ipsilateral glioma.” (brain tumors) [Davis 2013, Abstract]
- “Our analysis of the literature studies and of the results from meta-analysis of the significant data alone shows an almost doubling of the risk of head tumors induced by long-term mobile phone use or latency.” [Levis 2011, Abstract] Continuing, they stated “...even an established modest increase (20-30%) in tumor risk for MP (mobile phone) users would result in significant social and health costs and individual suffering, while higher risks could give rise to a health crisis of dramatic proportions.” [Levis 2011, 1/15]
- “We found highly significant ($p < 0.002$) evidence for neuronal damage in the cortex, hippocampus, and basal ganglia in the brains of exposed rats.” These rats were exposed to Global System for Mobile Communication (GSM) cell phone RFs. [Salford 2003, Abstract]
- In a study of brain damage from one hour of exposure to 900 MHz cell phones for 15 days at a power density of $1 \pm 0.40 \text{ mW/cm}^2$, it was found that there was significant loss in cells in the hippocampus portion of the brain; the hippocampus regulates emotions and long-term memory. This damage could be reduced with melatonin and omega-3 fatty acids. Notably, 1 mW/cm^2 converts to $10,000,000 \mu\text{W/m}^2$ a rather massive power density limit supported by the FCC and grossly excessive using the guidelines of the International Institute of Building Biology and Ecology. [Gamze 2017, 2/31],
- Absorption of radiation in the skull from a GSM 900 MHz cell phone was 25% for adults, 50% for a 10-year old, and 75% for a five-year old child.
- A Swedish study indicated a 420% increase of getting brain cancer for those who began cell phone use when they were teenagers or younger. [Kumar, 2016, 14]
- In a study of rats exposed to one hour per day for 30 days of 900-1800 MHz and SAR 0.92 w/kg, the author concluded “The whole-body exposure of neonatal mice to the nonionizing radiation produced many pathological lesions in their cerebella at the cellular and subcellular levels.” The changes included “ruptured mitochondria” and “damage of neurons.” [Nassar 2009, Abstract]
- In an in vitro study of the effect of RFFR upon rat cortical neurons, it was found that various-length RFFR “...may contribute to the adverse effects of RF-EMF

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exposure on the function of nervous system and to RF-EMF-associated neuronal injury..." [Zhang 2013, 983]

-
- Brain waves, disruption from cell phones
 - Research of brain wave disruptions was conducted using a Nokia 6110 cell phone with a 900MHz carrier wave and 217 Hz modulation wave (which carries the information). Subjects were exposed to five separate exposure times of five-minute full power duration a few inches from the skull with 15 minute breaks between experimental times which included five minute sham exposure (i.e., cell phone off) for a total of 25-minutes of full power exposure time. There were statistically significant differences in EEG brain wave power increases between the exposure and sham periods in the 9.75 Hz-12.5 Hz, 12.75 Hz - 18.5 Hz and 18.75 Hz -35 Hz brain bands. The duration of these exposure periods-- five minutes with at least a 15-minute break between exposures--are considerably less than actual exposure times most individuals with cell phones encounter during vastly expanded exposure times over multiple days. Thus, the brain wave disruptions found in this study probably understate brain wave disruptions for most cell phone users. [D'Costa 2003] This study also raises the issue of disruption of natural radio frequencies of cells throughout the human body.
- Breast cancer from cell phone use
 - Two of four women who placed cellphones in their bras were diagnosed with breast cancer. [Morgan 2014, 5/27]
- Calcium ion changes
 - Exposure to 2.48 MHz radio frequency field led to an increase in calcium ion efflux and ornithine decarboxylase activity with a decrease in calcium-dependent protein kinase. These changes promote cell proliferation and differentiation leading to tumors. [Paulraj 2002 35]
- Cancer generally
 - The average latency period between first exposure to a carcinogen and diagnosing the tumor is three or more decades. [Morgan 2014, 7/27]
 - "Many epidemiological studies on residential and occupational exposure to extremely weak low-frequency (ELF) magnetic field show varying, but in general positive association with different cancer forms such as leukemia, brain tumors, and breast cancer." [Haigamuge 2009, 1479]
 - Radar technicians exposed to high levels of radiation for long periods are candidates for cancer of various organs including melanoma of the eye, testicular cancer, nasopharyngioma, non-Hodgkin's lymphoma, and breast cancer. [Richter 2002 32]
- Cancer: heat shock proteins:
 - Chronic expression of heat shock proteins is a known cause of oncogenesis, metastasis, and/or resistance to anti-cancer drugs. The hypothesis is that cell

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phone radiation triggers repetitive stress leading to heat shock proteins and, thereby, cancer. Heat shock protein HSP 70 increased after 4 hours of 1800 MHz exposure suggesting that cell phones may cause cancer from extended cell phone use. [French 2001 33; Calabro 2012 34]

- Cancer, leukemia
 - Radio frequencies of 2.48 GHz increase lipid peroxidation and proliferation of leukemia cancer cells. [Nazirolu 2012]
- Cancer Parotid (salivary) gland.
 - Mobile phones have a causal relationship with parotid gland tumors for regular cell phone users or high-power density conditions with odds ratios of about 1.50. [Sadetzki 2008 31]
- Cataracts:
 - Mobile telephone radiation leads to oxidative stress in the corneal and lens tissues and Vitamin C may help to correct. [Balci 2007 43]
- Cell phone towers, harm to humans
 - In a French study, it was found that those living closest to cell phone towers had the highest incidence of fatigue, sleep disturbances, headaches, discomfort, difficulty concentrating, depression, memory loss, visual disruption, instability, hearing disruptions, skin problems, cardiovascular disorders, and dizziness. [Santini 2003]
 - In a German study by Eger, it was found that those living within 400 meters of cell phone towers during the past ten years were at greater risk of malignant tumors. After five years, the risk of getting cancer was three times higher than those living beyond 400 meters. [Eger 2004]
 - In an Israeli study, it was found that there was fourfold increase in getting cancer for those living within 350 meters of a cell phone tower. [Wolf 2004]
 - In a Spanish study of individuals living near two cell phone base stations, the Odds Ratios for symptoms were as follows after adjustment for age, sex, and distance:

	Odds ratio

Fatigue	40
Nausea	13
Lack of appetite	28
Sleeping disorder	11

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Depressive tendency	59
Feeling of discomfort	11
Difficulty concentrating	19
Loss of memory	8
Skin disorder	8
Dizziness	8
Cardiovascular problems	18

In my opinion, these Odds Ratios are ghastly high. [Oberfeld 2004]

- Children, harm from RFR (e.g., cell phones)
 - The myelin sheath, protecting the electrical activity of brain neurons, degenerates from exposure to microwave radiation. The first layer of the myelin sheath develops in mid-gestation to two years of age and continues to develop during adolescence. The myelin sheath is not completed until early adulthood. [Morgan 2014, 4/27; Redmayne 2014; Switzer 1977]
 - A Swedish study reported findings indicating that when cellphone use began as a teenager or younger there was a significant risk of ipsilateral (same side) brain cancer (OR=7.8) and an almost identical ipsilateral risk from cordless phones (OR = 7.9). OR refers to the odds ratio; 7.8 means 7.8 times the risk of those with no such use of cellphones. [Morgan 2014, 5/27]
 - For children, “A higher than median averaged APD {Annual Power Density} was significantly associated with an increased AOR {Adjusted Odds Ratio} for all neoplasms ..., but not for leukemia... or brain neoplasms” There were higher incidents of leukemia and brain neoplasms, but they were not statistically significant. [Li 2012, Abstract] Neoplasms are tumors or abnormal growth of tissue.
 - Children should not play with toys containing radio transmitters (i.e., wireless). [Morgan 2014, 10/27]
 - Children, Attention Deficit Hyperactive Disorder (ADHD): About 3-7% of school aged children suffer from ADHD and the rate is growing about three percent per year since 1997. ADHD children have deficiencies in working memory controlled by neurons in the prefrontal cortex. In a study of in-utero (pregnant) rats exposed to radiofrequencies similar to cell phones/Wi-Fi, it was found that after birth the rats were hyperactive and had impaired memory caused by altered neuronal development in the prefrontal cortex. Thus, there appears to be a causal link between ADHD and exposure to radio frequencies from cell phones, Wi-Fi, cordless phones, and other sources of radio frequencies during pregnancy. [Aldad 2012] 16

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- Children, behavioral difficulties: In a study of 13,159 children exposed before or after birth to cell phones, the odds ratio was 1.80 the children had behavioral difficulties or were hyperactive at the beginning of school. Since this study was completed in 2006 before extensive cell phone use, the present odds ratio may be much higher. [Divan 2008] 17 Children living near a radio station in Latvia were found to have reduced developed memory, attention, reaction time, and neuromuscular apparatus vs. control group. [Kolodysynski 1996] Exposure to 2450 MHz radio frequency field for prenatal and postnatal rats resulted in increased total oxidant stress and oxidative stress indicating chronic stress, postnatal growth restriction, and delayed puberty. [Sangun 2015] In a study of children and adolescents exposed to radio frequencies for 24 hours, 7% of the children and 5% of the adolescents showed abnormal behavior. [Thomas 2010]
- Children: Dry eye disease. Up to 9.1% of children had dry eye disease which improved when smart phone use discontinued for four weeks. [Moon 2016 23]
- Smartphones cause dry eye disease in children. Dry eye disease can adversely affect vision and school performance. Smartphones reduce blinking and accelerate evaporation of the tear film. When smartphone use was discontinued for a month, the dry eye symptoms significantly improved. There may also be an inverse relationship between cell phone use and spending time outdoors. [Wall Street Journal, Lukits, Friday, January 6, 2017, A9]
- Depression
 - "...high mobile phone use was associated with sleep disturbances and symptoms of depression for the men and symptoms of depression for the women at 1-year follow-up. ...In prospective analysis, overuse was associated with stress and sleep disturbances for women, and high accessibility stress was associated with stress, sleep disturbances and symptoms of depression for both men and women." [Thomee 2011, Abstract]
- DNA damage from cell phones
 - DNA damage: In a study of 900 MHz, 1800 MHz, and 2450 MHz radio frequencies applied to rats for 30 days, it was found that brain DNA strands were broken indicating damage to brain DNA from radio frequencies similar to cell phones and Wi-Fi. [Deshmukh 2013; Lai 2005]
 - "The UV-vis and circular dichroism (CD) experiments depict that mobile phone EMFs can remarkably cause disturbance on ct DNA {calf thymus DNA} structure...In other words, the EMF-induced conformational changes are irreversible. Collectively our results reveal that 940 MHz can alter the structure of DNA." [Hekmat 2013, Abstract]

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- Electromagnetic hypersensitivity (EMH): EMH is a collection of symptoms including redness, tingling, burning sensations, fatigue, tiredness, concentration difficulties, dizziness, headaches, nausea, heart palpitations, digestive disturbances, etc. [WHO 2004] In October 2014, the World Health Organization of the United Nations stated, “To date, no adverse health effects have been established as being caused by mobile phone use...Further research has not been able to provide support for a causal relationship between exposure to electromagnetic fields and self-reported symptoms or ‘electromagnetic hypersensitivity’.” [WHO 2014] In a study of 23 individuals claiming EHS, it was demonstrated that transcranial magnetic stimulation resulted in alternations to the central nervous system from altered cortical excitability showing that there ARE objective measures of a causal relationship between EMH claims and changes in body function indicating that EMH is a real, not imagined illness. [Landgrebe 2007 50]
- Eye damage
 - Rats were exposed to Wi-Fi for one hour per day for 30 days resulting in statistically significant lower glutathione peroxidase (GSH-Px), an enzyme family that protects the eye from oxidative damage. Melatonin supplementation reversed the damage, but radio frequency radiation reduces natural melatonin and if you do not take melatonin supplements the lens damage may be permanent. [Tok 2014 42]
- Fetuses, harm from EMFs (e.g., cell phones)
 - The harm to humans from RFR is a function of three-group development maturity beginning with first exposure to continuous, intensive RFR: Fetuses, children under 20, and adults over 20 years of age. Thus, the greatest harm is to fetuses, then children under 20, and then adults over 20. “Harm” is defined as when the damage to cells and organs occurs, but the damage may not be known for many years later.
 - Rat fetuses exposed to microwave radiation (MWR) in a Yale University School of Medicine were hyperactive and had impaired memory after birth. The symptoms resembled attention deficit hyperactivity disorder (ADHD) in children. [Morgan 2014, 4/27]
 - In a Turkish study of rat fetuses exposed to 900 MHz (a typical cell phone frequency), there was a decrease in the number of granule cells in the dentate gyrus of the rats suggesting damage to the hippocampus of the brain, the source of emotions, learning and memory. [Morgan 2014, 4/27]
 - In a Chinese study of rat fetuses exposed to cell phones, it was found that there was reduction in the number of cortical neuronal cells in the brain. Neuronal cells had a significantly higher death rate at power densities of 0.05 mW/cm² (500μW/m²). To the best of my current knowledge, this power density is much lower than peak power densities from cell phones generally. [Morgan 2014, 4/27]
 - *Fetuses: Increased risk of brain damage.* Pregnant rats were exposed to 900 MHz radio frequency 60 minutes per day during gestation (carrying of embryo). Four

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weeks after birth it was found that there was a decrease in the number of granule cells in the dentate gyrus in the rats' brain hippocampus. [Odaci 2008]

- *Fetuses, Miscarriages:* In an occupational setting, mothers exposed to microwaves were more likely to have miscarriages and the rate was dose dependent. [Ouellet-Halstrom 1993]
- Gene expression, changes in.
 - It was found that a radio frequency field of 2.48 GHz changed 221 genes in two hours of exposure and 759 genes in six hours for human cultured HL-60 cell genes through a non-thermal mechanism. [Lee 2005 54]
- Hearing loss
 - Tinnitus, the perception of hearing phantom sound (ringing) in the ears, may be caused by excessive cell phone use and may not be reversible. Ear health depends upon 16,000 hair cells present in the inner ear. These hair cells may be damaged by cell phone use, may not be regenerated, and cause permanent hearing loss. [Kumar 2016, 18]
 - Do not place electric ear pieces in your ear (e.g., music, other recordings). Over a lifetime, these devices will almost certainly cause damage to the ear.
- Heart, adverse influence on:
 - Heart, adverse influence on: It was found that 2.48 GHz radio frequency for 60 minutes per day for 28 days increased lipid peroxidation (*i.e.*, free radicals steal electrons from lipids such as fats and fat-soluble vitamins leading to damaged molecules) in the heart and decreased concentrations of Vitamins A, C, and E. Improvements were shown by supplementation with selenium and L-carnitine. [Turker 2011 45]
 - RFFRs increased oxidative stress in the heart. [Kim 2004 46]
- Heat shock proteins (HSPs)
 - Heat shock proteins are created in the body to protect cells from environmental hazards and toxic materials. In the early years of cell phone exposure HSPs (*i.e.*, HSP27 and HSP70) are created to protect cells from RFFR damage. But HSP27 and HSP70 inhibit damaged-cell apoptosis (cell death) and this failure of a cell to die creates cancer, Thus, even low intensity RFFR can be deadly in the long run. [Kumar 2016, 17-18]
- Inflammation:
 - Radio frequency radiation of 2.48 GHz significantly increased lung multinucleated giant cells associated with inflammation formed by fusion of macrophages as a measure of pulmonary stress. [Trosic 2001 52]

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- Internet addiction disorder:
 - Research indicated that internet addiction disorder results in multiple structural changes in the brain. [Yuan 2011 53]
- Melatonin
 - Melatonin reduction: There is evidence that RFFR disrupt and reduce melatonin perhaps because the pineal gland interprets RFFR as light. Melatonin is a very powerful anti-oxidant, is believed to defeat several types of cancer, and enhances sleep. [Bogdan 2014; Halgamuga 2013]
- Miscellaneous RFFR harm to humans
 - “We note that brain cancer is the proverbial ‘tip of the iceberg’; the rest of the body is also showing effects other than cancers.” [Davis 2013, 2/18]
- Pacemakers
 - RFFR from cell phones can interfere with the operation of pacemakers. [Kumar 2016, 17]
- Parotid gland tumors (salivary gland)
 - The parotid gland is a large salivary gland in the cheek immediately next to where a cellphone is held to the ear. [Morgan 2014, 5/27]
 - A Chinese study reported increased risks of 10 to 30-fold for cancer of the parotid gland from more than ten years use of a cellphone. If the average daily use was 3.5 hours per day, the OR = 30.3 (i.e., a 30.3 fold increase over nonusers).
 - Regular and higher intensity users of cell phones have a higher probability of parotid gland tumors. The odds ratios varied from 1.49 to 1.58 for these groups. [Sadetzki, 2008]
- Reactive oxidant species (ROS)
 - ROS are molecules/ions of oxygen that have an unpaired electron making them highly unstable. They steal electrons from healthy cells, damage them in the process, and make more likely for healthy cells to turn into cancer cells (fermentation on sucrose).
 - It was found that rats exposed to 900 MHz cell phone radiation for 30 minutes per day for ten days had a significant decrease in antioxidant enzymes and thereby an increase in reactive oxidant species which could be largely offset by an increase in administered melatonin. [Oktem 2005] Increases in reactive oxygen species increase the likelihood of cancer. Melatonin, a powerful antioxidant, decrease reactive oxygen species and thereby protect from cancer.

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- Saliva and oxidative stress
 - It was found that the saliva of cell phone users with an average of 30 hours per week use for 12 years showed more signs of oxidative stress in their saliva. Oxidative stress disrupts cellular signaling and leads to cancer and other illnesses. [Hamzany 2013]
- Skin
 - Frequent use of cell phones created skin symptoms including crawling, biting, stinging, lesions, and colored materials beneath the skin. [Kumar 2016, 18]
- Sleep interruption from EMFs
 - “The present results show for the first time that (1) pm-EMF {late night electromagnetic field} alters waking rCBF {regional Cerebral Blood Flow} and (2) pulse modulation of EMF is necessary to induce waking and sleep EEG {electroencephalogram} changes.” [Huber 2002, Abstract]
 - In a study of three hours of exposure to 884 MHz GSM cell phones, it was discovered that it took longer to reach stage 3 sleep and the amount of stage 4 sleep was shorter. Since sleep is necessary to repair daily damage to cells and organs, this study suggested that cell phone use prior to bedtime may contribute to cellular and organ damage. [Arnetz 2007]
- Sperm damage from cell phones
 - Sperm in contact with cell phone radiation die three times faster and have other markers of damage that impair the chance to produce healthy offspring. [Dr. Devra Davis, President of Environmental Health Trust; Laureate Professor John C. Aitken, Australia’s Research Council Center of Excellence. From “Save the Males! Keep your cell phone out of your pocket”; Morgan 2014, 6/27]
 - Study of 361 men in fertility clinic had reduced sperm count, motility (moving properly through the female reproductive tract), viability, and normal morphology (size and shape of sperm under microscope; >14% normal) as daily cell phone usage increased from zero, <2 hours daily, 2-4 hours daily, and to >4 hours daily usage. [Agarwal 2008 47]
- Sperm damage from wireless internet
 - There was a decrease in sperm count due to an increased use of wireless internet vs. wired internet use. [Yildirim 2015, Abstract]
 -
- Sperm damage.

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- Study of 361 men in fertility clinic had reduced sperm count, motility (moving properly through the female reproductive tract), viability, and normal morphology (size and shape of sperm under microscope; >14% normal) as daily cell phone usage increased from zero, <2 hours daily, 2-4 hours daily, and to >4 hours daily usage. [Agarwal 2008 47]
- Testes damage
 - - Rats were exposed to 2.437 GHz Wi-Fi for 24 hours per day for 20 weeks resulting in a significant increase in serum 8-hydroxy-2-deoxyguanosine levels and 8-hydroxyguanosine staining indicating DNA damage in the testes due to Wi-Fi exposure. [Atasoy 2012 48] The exposure in this experiment for 24/7 may be similar to anyone living at home with the WiFi on 24/7.
- Thyroid hormones:
 - A 2480 MHz radiofrequency field decreased thyroid hormone T3, increased T4, and caused hyperactive and aggressive behavior after 16-21 days. [Sinha 2008]
- Additional research citation on the health hazard of cell phones may be found at CreateHealthyHomes.com, “Research Citations on the Health Hazards of Cell Phones, Cordless, Telephones and Wireless Internet.”

Electromagnetic Fields: Research studies linking WiFi, cordless phones and other electronic devices to adverse health consequences

- About 3% - 5% of the population has electromagnetic hypersensitivity in which the presence of electromagnetic fields causes temporal pain, headaches, muscle twitching, and skipped heartbeats. [McCarty 2011, 670] In my opinion, it is essential to minimize one’s exposure to EMFs in order to reduce the incidence of EMF hypersensitivity. The sources of EMFs may be a variety of electronic equipment including cell phones, Wi-Fis, cordless phones, microwave ovens, computers, hairdryers, cell phone towers, and wireless security systems.
- A group of ninth grade students in Denmark placed six trays of garden cress herb seeds in one room with two Wi-Fi routers and six trays in another room without Wi-Fi routers. After 12 days, the five girls discovered that the seeds grew normally in the room without the Wi-Fi router, but did not grow—some seeds turned brown and died—in the room with the two routers. They conducted this experiment because they had earlier found that

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they had trouble concentrating at school after sleeping with their cell phones near their heads. [Daniel Bean, abcnews.com, May 14, 2013]

Radio frequencies: Brain wave frequencies and the Schumann resonance

- Understanding brain wave frequencies was little known in the early 1970s. [Basar 2001, 241] Thus, even today it is an emerging science given the obvious complexity of the human brain.
- Brain radio frequencies (“brain waves”) are classified in five groups of NATURAL brain wave oscillations measured by Hertz in ascending order. [Wikipedia; Teplan 2002, 2]⁴
 - Delta 0 – 4 Hz; Deep sleep in state III and stage IV
 - Theta 4-8 Hz
 - Alpha 8-14 Hz: Best known and most studied; EEG dominant frequency in the human brain [Klimesch 1999, 169]; induced by closing eyes and relaxation; beta to alpha transition; abolished by eye opening and mental activity; inverse EEG synchronization power relationships in the alpha and theta bands is related to cognitive and memory performance; inverse means one is high (strong) and the other low (weak). [Klimesch 1999, Conclusions]
 - Beta: 12-40 Hz; dominant wave category during open eyes and wakefulness
 - Gamma: 40-100 Hz
- Within these five categories are three additional groups: [Wikipedia]
 - Mn: 8-12 Hz
 - Sigma (sleep spindle): 12-14 Hz
 - Sensorimotor rhythm (SMR): 12.5 to 15.5 Hz.
- The basic issue facing neuroscience is to understand the mechanisms by which huge number of neurons interact to produce higher-level cognitive functions. [Basar 2001, 242]. Indeed, when you use wireless communications you should think about how you believe these exogenous radio frequencies influence the brain’s natural RFR oscillations; scientific studies indicate wireless is harmful to many bodily functions.
- The Schumann Resonance (SR) is an extremely low radio frequency (ELF) from about three to 60 Hertz with the fundamental and basic frequency at 7.83 Hz, with a wave length about equal to the circumference of the earth. The SR has resonant frequencies of 14, 21, 27, 34, 39, 45, and 51 Hz, and the eighth resonant at about 60 Hz. [Cherry 2002, 281]
- The SR was predicted by physicist Otto Schumann in 1952 and is generated in the cavity formed by the surface of the earth and the conductive ionosphere by electric currents in lightning strikes; there are about 50 lightning strikes per second on earth. [Wikipedia]

⁴ There may be variations in these ranges based upon different references.

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The ionosphere is 50-375 miles from earth. [Kozłowski 2015, 1]. The SR predates the development of animal and human life on planet Earth. [Cherry 2002, 280] As we use the term “Schuman Resonance” in Six Pillar Tips, it means all peaks of the SR, not just the base resonance of 7.83 Hz unless a specific resonance (e.g., 7.83) is specifically stated.

- Brain wave frequencies and the Schumann Resonance have about the same span of 3 to the common upper limit of 60 Hz for brain waves, which suggest that the evolution of life and development of RFFR in the human brain may have been influenced by the Schumann Resonance. Thus, it is possible that the human brain naturally absorbed the Schumann Resonance at the development of human life, and that the SR may govern our brain and, thereby, our bodies. [Cherry 2002, 280, 283, 284, 286]
- Research by E. Jacobi at the University of Dusseldorf and Rutger Wever at the Max Planck Institute have shown that isolation of humans from the Schumann Resonance in an underground bunker caused emotional distress and migraine headaches and restoration of the SR returned the isolated individuals to good health. [Joe Martino. “Experiment proves why staying in tune with the earth’s pulse is key to our well being.” (December 19, 2013) CollectiveEvolution.com.].
- The relationship between the Schumann Resonance and brain waves may be crucial in understanding the damage to the brain from radio frequencies because the Schumann Resonance may be damaged or impeded by cell phones, Wi-Fi, cordless phones, and cell phone base stations. Thus, these radio frequencies may damage the reception of the Schumann Resonance by the brain, or the radio frequencies may damage directly the natural radio frequencies in the brain. It is crucial to understand scientifically these two types of harm before we continue to add to radio frequencies in our environment.
- Electrical current in the brain consists mostly of Na⁺, K⁺, CA⁺⁺, and Cl⁻ that are pumped through channels in neuron membranes. The human brain electrical activity begins during week 17-23 of prenatal development. [Teplan 2002, 1] In my opinion, it is possible that exposure to RFFR from cell phones, Wi-Fi, cordless phones, cell phone towers, etc. during this period may well interfere with the development of neuronal electrical activity in 10¹¹ neurons available at birth.
- The internally generated frequency of the planet Earth is 10 Hz, and is not a frequency in the set of SR harmonics. [Kozłowski 2015, 1]
- The health issues related to the Schumann Resonance and human brain waves both measured in Hz are whether (1) the Schumann Resonance found in the ionosphere has induced Schuman Resonance harmonics in the brain, and (2) whether radio frequencies from cell phones, Wi-Fi, cordless phones, and cell phone base stations interfere with the transmission of the Schumann Resonance to the brain.
- The third issue, irrespective of the relationship between the Schuman Resonance and brain wave, is whether RFFR from wireless devices interfere with the creation and transmission of brain waves.

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- Kozłowski and Kozłowska confirm the importance of these three issues and damage to brain waves from wireless technology. Given the known damage to rat brains from cell phone radiation, I believe it is likely that there is electrical dysfunctionality caused by wireless technology.

“That natural resonance [SR] helps us achieve our optimal brainwave states, but this atmosphere to human linkage is disrupted by the electrosmog of today’s technology.” [Kozłowski 2015, 197]

Electromagnetic fields: Historical delays in relating harmful goods or activities to human symptoms and regulations: Wireless equipment use and cancer.

- Cell phones did not begin intensive use until about the mid-1990s and now about 90 percent of Americans use a cell phone. While some studies have found no causal link between cell phone use and brain cancer, others have. At least some of the studies that found no causal link between cell phones and brain cancer have been funded by industry. In a Danish study, “...corporate users, people who would have been the heaviest users, were included in the unexposed group” [Davis 2013, 125] which obviously would tilt the conclusions to no-causal-link between cell phone use and brain cancer. Wi-Fis began heavy use in about 2000.
- Historically, there have been long lags between commencement of the use of a hazardous substance or activity and links to adverse human health—sometimes well over a hundred years. Applied to cell phone hazards, that would suggest 2100 as the expected time for statistically significant evidence of the hazards of cell phone use, disregarding all of the other hazardous EMFs. Examples follow of the delayed discovery of non-EMF hazardous substances and activities. Thus, as you consider the use of cell phones, other RFFR devices, and proximity to cell phone base stations, I urge that you remember the following lags in provable hazards in reference to historical usage of those hazards.
- “The survivors of the atomic bombs that fell at the end of World War II did not exhibit any increased rate of malignant cancer of the brain until four decades later.” [Davis 2013, 134]
- Professional football began in 1892, but it was not until about 2009 that attention was focused on the casual effect of concussions and mental disabilities—a delay of over a hundred years, and there remains no real solution to the problem. *Concussions, defined by the brain hitting the skull with direct head contact or whiplash, cannot be eliminated by any helmet.*

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- Smoking cigarettes began well over a hundred years ago, but it was not until 1959 that the causal effect between cigarette smoking and lung cancer was proven. [Cornfield 1959]. It follows that at least 200 years elapsed before the hazards of cigarette smoking were proven. On February 11, 2015, The New York Times (“Health”), reporting an article in the New England Journal of Medicine edited by Dr. Graham A. Colditz, indicated that five additional diseases have been found to be caused by smoking: infections, kidney disease, intestinal disease caused by inadequate blood flow, and heart and lung ailments not previously attributed to tobacco. All of these have been found only recently, 56 years after the lung cancer findings. Previously, lung cancer, artery disease, heart attacks, chronic lung disease and stroke were found to be caused by smoking. This is further evidence of the massive lag in knowledge linking a hazardous source and the ailment.
- As an example of historical declines in tolerable exposure to ionizing radiation tolerance, standards have come down from 500 mSv/a (50 rems/year) to 2 mSv/a—a 99.6 percent reduction! Thus, if you continue high usage of cell phones and other RFFR devices, you may find 30 or 40 years from now that the present exposure guidelines set by authorities were way too high and you will suffer the consequences in retirement or perhaps much sooner.

Electromagnetic Fields: Media reports on EMF harm to humans

- On May 28-29, 2016, the Wall Street Journal, p. A1, A8 printed an article “Study Fans Cellphone Cancer Worries” The article reported on a partially completed government study finding an association between cell phones and brain and heart tumors in male but not female rats. The article also discussed opinions that (1) “Scientists said it was still too soon to draw sweeping conclusions about whether cell phones cause cancer” (2) “There is a long way to go from the findings reported here...and a finding that radio frequency [electromagnetic radiation] is a human carcinogen” (Johnathan Samet, PhD University of Southern California), (3) Michael Lauer, deputy director extramural research, National Institutes of Health, said he could not support the study’s conclusions, (4) There are many studies showing no harmful effects from cellphone use, etc. The majority of the article seemed devoted to showing no harm from electromagnetic fields.
- In Bottom Line’s *2018 Health Breakthroughs*, p. 58-60, “Can your Cell Phone Cause Cancer?” there is a discussion of evidence linking RFFR to adverse health consequences. This was the first discussion of documented harm to humans from RFFR I have seen in a retail health book.
 - 90 studies relating RFFR to damaged DNA and cancer.
 - Damage from non-thermal RFFR.
 - RFFR causing cancers in the form of gliomas, schwannomas, precancer changes in glial cells, meningioma (cancer of the protective coverings that surround the brain), salivary gland tumors, breast cancer, acoustic neuroma (noncancerous

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tumors on the nerve that connects the inner ear to the brain), gradual hearing loss, balancing problems, headaches, facial numbness and tingling, male infertility (fewer sperm, sluggish sperm, abnormally shaped sperm, sperm with damaged DNA, erectile dysfunction, and sleeping problems.

- Wireless devices include cell phones, cordless phones, Wi-Fi routers, wireless computers, iPads and other tablets, wireless game consoles, wireless security networks, wireless sound systems, wireless smart meters, etc.
- Advice not to use your cell phone in metal surroundings such as on a bus, train,, airplane or elevator. They suggest it is OK to use a cell phone in a car if the phone is connected to Bluetooth system.

Radio frequency radiation: Macro evidence of harm from economic and health data

- Since beginning EMF research in June 2014, I have often wondered if the huge increases in RFFR in our everyday life may be affecting adversely United States Labor Productivity, rates of depression, suicide, drug use, reductions in work life and other medical conditions measured by macro data. In the following paragraphs, I address evidence supporting a few of these hypotheses.
- **Decline in Labor Force Productivity:** Labor force productivity has declined from about a 2.7% increase coming out of a recession to 0.5% for 2011 to 2016 as shown in the following table

"Bureau of Labor Statistics"
 "Major Sector Productivity and Costs"
 "Original Data Value"
 "Labor productivity (Output per hour)"

Year	Increase	Year span	Av Prod
2000	3		
2001	2.7		
2002	4.4		
2003	3.7		
2004	3.1		
2005	2.1	2000-5	3.2
2006	0.9		
2007	1.6		
2008	0.8	2006-8	1.1
2009	3.1		
2010	3.3	2009-10	3.2
2011	0.1		

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2012	0.9	•
2013	0.3	
2014	0.8	
2015	0.9	
2016	0.2	2011-16 0.5

- Increases in depression and suicide:** The American College Health Association National College Health Assessment indicates increasing rates of depression and contemplation of suicide for college students (33,500 total respondents) as shown in the following table. The questions were “Felt so depressed that it was difficult to function at any time in the last 12 months.” And ”Seriously considered suicide.” The percentages shown are for males and females combined. Note that depression rates have increases from 30.6% in the Fall of 2008 to 38.2% in the Fall of 2016 for an average increase of about one percent per year. Most of the increase has been from Fall 2013 (30.9%) to Fall 2016 (38.2%), a three-year span, for an average rate of increase of 2.4%. If this rate of increase continues, the results to the nation will be catastrophic. Notably, there has been no safety testing of wireless devices and now 5G is about to be placed throughout cities with nor recourse by citizens, cities, or even states because of Congressional legislation that makes mandatory these dangerous installations.

Melissa Korn reported the data on depression and suicides in an article “Counselors Go Where Student Are, [Wall Street Journal, July 10, 2017, A3]. I responded with a Letter to the Editor of the WSJ dated July 15, 2017 “...indicating the possibility of broad-based harm from wireless technology,” which was rejected for publication on August 16, 2017. Indeed, I had hypothesized declines in Labor Force Productivity and increases in depression, suicide, drug use, and shortened work life a short time after I completed my initial research of the literature of wireless technology in October 2014.

	Depression	Suicide
	-----	-----
Fall 2008	30.6%	6.4%
Spring 2009	30.7	6.0
Fall 2010	28.4	6.0
Spring 2010	30.7	6.2
Fall 2010	28.4	6.0
Spring 2011	31.1	6.4
Fall 2011	30.3	6.6
Spring 2012	31.3	7.1
Fall 2012	29.5	6.9

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Spring 2013	31.3	7.4
Fall 2013	30.9	7.5
Spring 2014	32.6	8.1
Fall 2014	33.5	8.7
Spring 2015	34.5	8.9
Fall 2015	35.3	9.6
Spring 2016	36.7	9.8
Fall 2016	38.2	10.4

The Korn data was supported by:

- ◆ *An article in the Wall Street Journal, “Youth Suicide Attempts Rising,” [Wall Street Journal, May 16, 2018, A13] in which Jeanne Whelan reported that the percentage of young people treated at 31 U.S. children’s hospitals for suicidal thoughts or attempts increased from 0.68% in 2008 to 1.82% in 2015, a 167 % increase. Rates were higher during the school year and two-thirds were girls. The article indicated that depression and suicide rates are generally rising. The article also indicated that the Center for Disease Control that suicide has become the second leading cause of death for 10- to 24- year olds. Overall suicide rates have increased from 10.4 to 13.4 per 100,000 people between 2000 and 2016. Smartphones were mentioned as a factor. There was no mention of Wi-Fi in classrooms which is probably over 20,000 $\mu\text{W}/\text{m}^2$.*
- ◆ *An article in the Wall Street Journal, “Colleges Give the disabled More Leeway,” May 25, 2018, A3, in which Douglas Belkin indicated that about 25% of college students are claiming mental disabilities caused by depression and anxiety to receive additional testing times and private testing rooms. Depression and anxiety may be caused by RFFR.*
- ◆ *An article in the Wall Street Journal, “More K-12 Students Get Special Help,” July 5, 2018, A4, in which Douglas Belkin and Tawnell D. Hobbs reported that up to 20% of high school students in higher income high schools are claiming mental disability from ADHD and anxiety to get extended testing time for course tests and SAT and ACT. ADHD and anxiety have been linked to RFFR.*
- ***Decline in work lives:***
 - *The best evidence I have found to support shorter work lives are increases in physician burnout. The Farm Report in The Stanford Magazine, May 2018, p. 28-29 reported that a physician wellness survey found 26 percent of physician respondents experienced burnout in 2013 and this increased to 39 percent in 2016—a 50 percent increase. Interestingly, these increases in physician burnout*

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parallel the increases in college student depression rates from 30.9 percent in Fall 2013 to 38.2 percent in Fall 2016, a 23.6 percent increase. Further, contemplation of suicide rates increased from 7.7% in Fall 2013 to 10.4% in Fall 2016, a 38.7 percent increase. I suggest that brain and nervous system injury from RFFR may be influential in all three categories of physician burnout, and college student depression and contemplation of suicide rates found in the American College Health Association National College Health Assessment.

- *A second inferential source of shorter predicted work lives is the vast increases in the percentage of college students claiming disabilities. The percentage of students claiming disabilities at Pomona College was 5% in 2014 and has increased to 22% in 2018—a 340% increase in 4 years! Further, nationally about 25% of college students are claiming disabilities the vast majority from stress and anxiety. Students with these disabilities are given 50% to 100% more time on examinations and special, no-disturbance testing rooms. [Douglas Belkin. “Colleges Give the Disabled More Leeway.” *Wall Street Journal*, 05.25.2018, A3]*
- *As many as 20% of high school students in wealthier districts have mental health problems and are filing claims under 504 plans for special accommodations such as extended time for tests and extended time for SAT and ACT. [Wall Street Journal, “More K12 Students Get Special Help.” 07.05.2018, A4]*

Electromagnetic Fields: Health tips to avoid

- As you read the tips in this section, you may be inclined to believe many of them are unimportant because you use a cell phone and Wi-Fi and come into contact with RFFR from cell phone base stations and seem to be unaffected. Be mindful, however, that injury from RFFR comes over a long period of time and adverse mental conditions may come so gradually that you are unable to detect the change.

Thus, my first suggestion is to purchase an RFFR meter. The most cost effective RFFR meter is the TES 593 (10MHz-8GHz) Electrosmog meter sold by LessEMF for \$499. If you search the Internet, you may find a lower price. It is a digital meter with a yellow ball on top designating X, Y, and Z axes and has the following button offerings: Green power button, Max Avg, Unit, Time Alarm, Set, XYZ Cal, Mem, up and down arrows, and Read. The unit selection measures the power density of RFFR in $\mu\text{W}/\text{m}^2$ and $\mu\text{W}/\text{cm}^2$. The TES 593 will measure the near-field electric field, but only the far-field magnetic field. [Instruction, p. 2]

When you observe the variations in peak RFFR readings, you will read the material in this section with an improved viewpoint of knowing RFFR really exist and are quite high under certain circumstances. When you measure a cell phone, it is important to establish

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a pre-measurement power density of close to $0.0 \mu\text{W}/\text{m}^2$, and measure the cell phone during boot-up, operation under various conditions, and boot-down.

- Avoid wireless devices in the home and keep your computer wireless capability “off.” That means no Wi-Fi, wireless computer mouse, wireless baby monitor, cordless phone, wireless security systems, etc. Hard wire all devices, such as Ethernet cables for Internet access on your computer. You can also use a Network Adapter to extend Internet into distant rooms from the room where the router is located, using the electric circuits to pass the Internet signal. [Miller Computers]
- Use only a hard-wired security system.
- Adults should use cell phones sparingly. I suggest cell phone use for navigation, telephone calls during travel, and not under other circumstances. Use the speaker phone on the cell phone and keep the cell phone at least 12” from your ear. If you use an earphone, purchase an “air tube” earphone that uses a plastic tube in the six inches closest to your head. Also, affix a ferrite bead to the earphone cord near the end that plugs into the cell phone. Both products are available at LessEMF. Keep the cell phone off except when you use it and do not carry the phone near your body if it is “on.” The Institute of Bau-Biology and Ecology does not recommend the use of cell phones. [IBE 204.3, 54] See also Oram Miller, CreateHealthyHomes.com, “Steps to Protect Yourself from Harmful Cell Phone Frequencies” for greater detail.
- Cell phone use in enclosed spaces (e.g., automobiles, busses, aircraft, buildings) may be more harmful than outdoors because the signal may need to be stronger and will bounce off the walls of the enclosure and thereby magnified. And if you are pregnant or have a small child in these enclosed spaces the danger to the child will be even worse than for adults. I have not found any research supporting this hypothesis indicating inadequacies in using untested and dangerous RFFR. However, Bottom Line Health Breakthroughs 2018, p. 60, cautions about not using cell phones in metal surroundings such as buses, trains, airplanes, or elevators.
- Use the speaker phone on land-line telephones to avoid headset magnetic fields that can approach 25 mG; remember homes in magnetic field equilibrium usually have a reading of less than 1.0 mG.
- Do not use cordless phones which operate at 1.9 gigahertz (GHz) (the so-called “DECT 6.0” cordless phones), 2.4 gigahertz (GHz) and 5.8 GHz. The base stations for the cordless phone generate microwave radiation even when in standby mode, with the call ended and the handset placed back in its charging cradle. [IBE 204.3, 46 and Miller Radio Frequency]
- Avoid land line telephone that have wireless capability. Some of these are labeled “5.8 GHz” or “6.0 DECT” printed on the box or phone.

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- AntennaSearch.com can be used to locate and find the location and power of cell phone antennas within four miles of your home. Measure the radio frequency field on the side of the home facing the antenna and the other side of the home to determine if there are substantial differences in the RFFR; if your home is in line of sight to the antenna, it is highly likely you will have elevated RFFR in your home. If there is a substantial difference and if the in-house fields are also high, remediate with radio frequency-reflective fabric, which can be used as wall coverings, or use a radio frequency-shielding paint, covered with a traditional top coat of paint properly grounded. These products are available through LessEMF. [Miller Radio Frequency]
- Avoid the use of cell phones in automobiles. The interior of an automobile acts as a Faraday cage in the sense of containing RFFR within the vehicle and magnifying their effect because they bounce off the metal body. [Lloyd Burrell, electricssense.com as quoted in Jack O'Dwyer's "Don't Fly in Planes with Wi-Fi says EMF Health Expert." April 26, 2016]
- *If you connect your phone into the Bluetooth system in your automobile, meter RFFR when you start the car up and during Bluetooth use to assure there is no marginal increase of RFFR in your automobile over the RFFR outdoor readings. In other words, find an outdoor area that yields about $0.0 \mu\text{W}/\text{m}^2$, meter your car when the ignition is turned "off" and then "on" with the car started, and when the cell phone/Bluetooth is in use. Safe use of the vehicle is when all RFFR readings in $\mu\text{W}/\text{m}^2$ remain 0.0.*
- Do not add non-Original Equipment Manufacturer (OEM) navigational equipment to your auto. It is my understanding that non-OEM automobile navigational equipment can have power densities of well over $2,000 \mu\text{W}/\text{m}^2$.
- Exercise caution in flying in planes with Wi-Fi. The fuselage acts as a Faraday cage magnifying the RFFR from the Wi-Fi and cell phones. There have been at least two pilots who have lost consciousness and many passengers who have become ill with nausea, vertigo, and fainting in planes with Wi-Fi; while these illnesses do not prove that the Wi-Fi was the cause, the symptoms are similar to those known to be caused by RFFR. The article by Todd Curtis provides opinions by over two dozen doctors and EMF experts that there may be serious adverse health effects from using Wi-Fi and cell phones in airplanes. For example, there could be over 100 passengers using their cell phones which is inherently dangerous because of the Faraday effect—the magnification of RFFR effects. [Curtis]
- Do not permit children to use cell phones. I define "children" as ages up to 20 years of age. Children have faster cell division with a greater likelihood of DNA errors, their skulls are thinner with less insulation, and they have greater electrical conductivity than adults. One study concluded: "...EMF emitted by mobile phones has effects on brain

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oscillatory responses during cognitive processing in children.” “Children should not use cell or cordless phones.” If you do place a tablet in front of your child to watch a movie, play that movie from the hard drive on the tablet, not streaming via the Internet, and place the tablet in Airplane mode. [Blank 214, 216, 217]

- Pregnant women and newborn children should avoid all RFFR. That means no cell phone use and no presence of wireless technology during pregnancy or immediately thereafter. Frequently, young children are placed in incubators that emit EMFs from temperature and air circulation controls plus monitoring devices of the children. These devices emit a magnetic field of about 12 mG vs. three to four mG that have been associated with an increased likelihood of leukemia. [Blank 2014, 215]
- Don't use wireless baby monitors. These have been shown to emit dangerously high levels of radio frequency RFFR exposure, as high as a cell phone or cordless phone next to the head. The only baby monitor you should use is a hardwired webcam with a camera and microphone. The webcam connects to a laptop in another room through a wired Ethernet cable network, which can be in your wall, or through the use of a Network Adapter. [Blank 2014, 217 and Miller Computers]
- Children born to mothers who had an average magnetic field exposure of 2 mG or greater (average in homes is less than 1.0 [IBE 204.3, 85]) during pregnancy had a 3.5 times greater chance of developing asthma than the control group. [Blank 2014, 221-2]
- Replace a wireless router with a hard-wired router and connect the hardwired router to your computer with an ethernet cable. Manually disable the Wi-Fi on the computer. Simply plugging in an Ethernet cable does not automatically disable the computer Wi-Fi. Also, disable the BlueTooth on your computer once you have replaced your cordless mouse and keyboard with hardwired equipment. [Miller Computers]
- Do not use a microwave oven. Microwave ovens utilize microwaves to cook food and are permitted to leak up to 5mW/cm². However, as the seal around the edge of the door ages, microwave leakage will increase. Microwave ovens also emit extremely low frequency (ELF) radiation which has no shielding requirements. I have recently measured 125 mG three feet from a microwave that was cooking (vs. 0.6 mG for the interior of most homes). The former Soviet Union banned micro wave ovens in the late 1970s. [Blank 2014, 40; IBE 204.3, 46]
- Use an external keyboard for laptop computers because the motor in the computer keyboard can generate magnetic fields up to 40 milliGauss (mG) at the keyboard vs. less than one mG in the home generally. [Miller Computers] Also, the Microsoft external keyboard reduces the likelihood of carpel tunnel syndrome because it avoids bending of the wrist.

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- Do not place laptop computers on your lap because of the high magnetic field (mG) field.
- The preferred healthy lighting is halogen incandescent bulbs, which have replaced tungsten filament incandescent light bulbs and are 28% more energy-efficient than tungsten filament bulbs. The reason these bulbs are the safest is because they use 120 volts rather than reducing the voltage using a chip-based transformer in the base of the bulb as compact fluorescent lights and some LEDs do. You may also use “transformer-less, line voltage LEDs.” Voltage reductions for any electrical equipment require “switched mode power supplies” and the voltage reductions may create dirty electricity in the home’s electrical wiring. [Miller Lighting]
- One of the most powerful EMF sources in your home is the electrical breaker panel or sub panel. It is best that these are kept far from interior walkways because the magnetic field can be up to 40 mG at the panel and then decline rapidly with distance of even three feet. It is also necessary to avoid sitting, standing or sleeping within three to four feet of the inside of the wall where these panels are mounted. [Miller Magnetic Fields]
- Substantially all homes are built with unshielded wiring in the walls. This means that electrical fields generated by voltage, irrespective of current in the wire, will enter rooms for several feet parallel with all wiring in the walls and in a device (e.g., lamp). For sleeping, it is wise to place the headboard of the bed in the center of the room. Recently, I discovered a sprinkler control system on the wall of the garage throwing off a large electrical field in the adjacent living room; the sprinkler control system was relocated to an outside wall and the add-on electrical circuit was removed.
- If you build a new home, it is wise to select shielded wiring in the walls because it will defeat electrical fields inside the home. Shielded wiring must be properly grounded. Remember that electrical fields extend along any wire that is hot irrespective of whether current is flowing to lamps and appliances. And the electrical field extends from the wall to the switch in the lamp or appliance.
- Avoid high voltage power lines. If you live near overhead power lines, purchase a Gauss meter and take your own measurements of ELF AC magnetic fields. It is generally accepted that 1-2 milliGauss (mG) is the safe level by the EMF safety community worldwide. Magnetic field levels from overhead power lines rise in the evening, when everyone is home and lights and other appliances are turned on, and in the summer when air conditioning is in use. Readings are generally lower at night. If readings within your home, particularly in your bedroom, are consistently above 2 mG, consider the use of an electrical consultant. [Miller Magnetic Fields]
- Check all transformers in your home for magnetic fields with a Gauss meter and stay a required distance to reduce the MF to below 1-2 mG.

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- Do not use dimmers because they manipulate voltage to affect brightness. This results in the creation of dirty electricity that emanates off circuits in walls and plastic power lines that you plug in, not only in the room in which the dimmer is located, but potentially throughout the entire house. Have an electrician replace the dimmer switch with a straight on-off switch. Central control modules such as those used in Crestron, Lutron, and Vantage systems, on the other hand, have high-end dimming modules that are clean and do not produce significant dirty electricity. [Miller Dirty Electricity]
- Avoid radiant electrical floor heating because of potential high magnetic fields in the floor. The only exceptions would be products using so-called “dual conductor” wiring technology, from such manufacturers as Danfoss, Thermotile and Suntouch. [Miller Magnetic Fields]
- Dirty electricity (harmonics of 60 hertz and other fundamental frequencies) should be measured and filters installed in the home. The best way to mitigate dirty electricity, however, is to reduce the use of dirty-electricity producing devices in the first place, such as dimmer switches, compact fluorescent lamps (CFLs), and solar panel inverters (except Sunny Boy brand inverters, which are clean). [Miller Dirty Electricity]
- It is also important to not install dirty electricity filters if your house has magnetic fields from wiring errors or electric current on the water pipe.
- While these filters reduce dirty electricity, they also worsen magnetic fields from other sources at the same time. If your house has wiring errors or current on the water pipes, have an electrician and plumber, if necessary, mitigate these sources of magnetic fields first before installing dirty electricity filters. [Miller Magnetic Fields, Dirty Electricity]
- Do not use appliances that emit magnetic fields such as hair dryers, electrical tooth brushes, electric blankets, heated waterbeds, etc.
- Do not permit extension cords near your body and do not permit them to coil because the coil creates a separate magnetic field. The safest extension cords are shielded with MuCord and are available at LessEMF.
- Do not use electric alarm clocks; use only battery-operated alarm clocks because of high magnetic fields. The plastic-jacketed AC power cord for the bedside clock radio also emits electric fields, which disturbs nighttime sleep. [Miller Electric Fields]
- Do not use florescent or compact fluorescent lights. Florescent lights use high voltage to ionize the gas in the bulb and that adds EMFs, including dirty electricity. Fluorescent light fixtures also contain a ballast, which is a form of transformer. This produces a magnetic field within a few feet around it, particularly in the space above the light fixture. Indications are that compact fluorescent lights produce RFFR between 10KHz

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and 500KHz, which are not produced by incandescent lights. [Letertre EMC'09Kyoto, 475]

- Purchase meters to measure EMFs from 60 Hz AC electrical fields, 60 Hz AC magnetic fields, RFFR, and dirty electricity. A Gauss meter measures AC magnetic fields caused by 60 Hz (ELF) household electricity in mG using up to three axes (triple-axis, x, y, z axes). To measure 60 Hz (ELF) electrical fields from house wiring, particularly where you sleep, it is necessary to use a so-called “body voltage meter,” or purchase a hand-held electric field meter. You can measure the power density for a wide range of frequencies (radio frequencies and micro waves) in $\mu\text{W}/\text{m}^2$ using one of a number of radio frequency meters. For information about and to purchase a meter see:

lessemf.com,
powerwatch.org.uk,
emfsolutions.ca,
www.slt.co
weepinitiative.org.

You will also find a discussion on which meters to buy for each type of EMF at www.createhealthyhomes.com, “EMF Meters and Instruments,” Before purchasing other than a Gauss meter, be sure to understand the attributes of electrical and magnetic fields. Take measurements with appliances on and off and with the breakers in the breaker panel on and off. Be sure to measure the magnetic and electric fields around all of your walls; I once found a 40 mG magnetic field in a living room partition wall right behind the sofa. [Blank 2014, 191 and Miller]

- The Specific Absorption Rate may not be useful as a measure of safety for RFFR. [Blank 2014, 202]
- Avoid smart electric meters, if your utility so permits.
- Avoid metal frame eyeglasses because they can act as antenna and focus RFFR and MW frequencies into your brain and cornea.
- Avoid metal springs in mattresses because they act as an antenna and focus EMFs into your body. Instead, it is best to purchase a latex mattress or cotton futon. [207]
- In automobiles, the alternator of a gas-powered engine may create a magnetic field near the legs of the driver and front passenger. Further, it is best not to use Wi-Fi, BlueTooth, and/or GPS in automobiles. Cell phone use should be minimized, and special antenna jacks may be used with external rooftop antennas, if your cell phone has an external antenna jack. [Miller Cars01; Miller Cars02]

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- Shielding material may be purchased and hung on walls to protect against ELF magnetic and electric, RF, or MW frequencies--but not all EMF. Grounding may be necessary. There is also shielding paint that can be used for shielding RFFR from outside sources, such as a cell or radio or TV tower, or a smart meter on a nearby neighbor's house. Shielded power cords reduce 60 Hz ELF electric field EMF emissions.
- For additional and more detailed tips, see Oram Miller, BBEC, Tips for a Healthy Home, CreateHealthyHomes.com. Research citations on the health hazards of EMFs may be found at CreateHealthyHomes.com, "Articles on EMFs," "Cell Phone and Radio Frequency Risks," and "Research Citations on the Health Hazards of Electromagnetic Fields (EMFs)."

Magnetic Fields: Research studies linking magnetic fields to adverse health consequences

- In a review of current knowledge of the relationship of magnetic fields to harm to humans, evidence was found to support a causal relationship between magnetic fields (caused by current) and increased rates of Alzheimer's and breast cancer. Magnetic fields increase the production of amyloid beta plaque and decrease melatonin, a powerful antioxidant. [Davanipour 2009, Abstract]

Nail polish

- Fingernail polish contains toluene, a known carcinogen. It is best not to use fingernail polish and, if so, only in a well ventilated area. I doubt there is any indoor space that is well enough ventilated to eliminate fully its ingestion and even outside it may be necessary to be downwind.
- Fingernail polish is particularly harmful to a growing child because their DNA replicates several times the rate at which an adult's DNA replicates; thus, one damaged DNA cell replicates into many damaged cells. Children should never use fingernail polish because of cellular damage throughout the body and particularly the brain.

Fluoride

- Fluoride may be harmful and one should minimize its consumption. It is found in water supplies, all products made with municipal water supplies, toothpaste, etc.
- Avoid chronic use of fluoride-containing products (e.g., water, swallowing fluoride tooth paste) because fluoride combines with aluminum to increase the bioavailability of aluminum in the brain, which alters neurons and the integrity of the cerebrovasculature.
- In a study of rats, it was found that fluoride, in combination with aluminum, increased the bioavailability of aluminum in the brain. This means that fluoride increases the amount of aluminum that passes the blood brain barrier and that reducing fluoride reduces

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aluminum passing the blood brain barrier. Aluminum is believed to increase the likelihood of cognitive decline- [Varner 1998, 296]

- Fluoride may be harmful to health because some researchers have concluded it may:
 - Decrease bone strength. Excess fluoride may cause bone fractures.
 - Lower IQ in children based upon a Chinese study of children in two villages.
 - Increase calcification of cardiac tissue.
 - Cause oxidative stress and inflammation throughout the body.
 - Cause hormone disruption, which are crucial for digestion and metabolism.
 - Impair thyroid function.
 - Increase free radical activity in the brain contributing to dementia.[Hushed 2014, 33-34]
- In a study of rats, it was found that it is likely that sodium fluoride crosses the blood brain barrier under situations of chronic exposure. [Mullenix 1995, 176]. In my opinion, crossing the BBB may contribute to both immediate mental decline and to age-related mental decline

Pillar 5: Relief from symptoms and sign of illnesses; Treatment options

Scope of Pillar 5

- Pillar 5 is dedicated to offering ideas to prevent illness and relief from symptoms and signs of illnesses. Symptoms are subjective notions of the patient of discomfort (e.g., pain) while sign are visible to others (broken bone).
- Six Pillar Tips offers ideas to support alternative and complementary medicine. This is medicine that is alternative to the American Medical Association (AMA) approach to healing and complementary because it may be used in addition to the AMA model. Alternative medicine emphasizes natural alternatives to prevent illness, while the normal medicine model in the Unites States is to treat symptoms and findings with little effort to prevent illnesses. Further, doctors often use approaches approved by their colleagues becauseu this standardization better protects them from law suits, but it delays introduction of treatments that work but are not generally approved. For example, gout may be defeated by using Braggs Apple Cider Vinegar but is probably not offered as a treatment plan within the AMA model. Vitamins and minerals are intended as supplements to food to turn deficiencies into healthy amounts; the most common deficiencies are Vitamin D3, magnesium, and calcium. Corella is a complement used to overcome some of the adverse effects of chemotherapy and radiation.
- The scope of Pillar 5 discusses natural approaches to treat anxiety, Alzheimer's, candida, cancer, cataracts, the Metabolic Syndrome, and many other illnesses. Collodial silver may be used to treat bacteria and viruses and mineral rich foods to increase pH. Adequate good quality water (e.g., reverse osmosis, distilled) is crucial to prevent constipation and removal of water from cells which damages the cells.
- We begin Pillar 5 with a discussion of the basic causes of most illnesses.

Basic causes of most illnesses

- **Inflammation caused by grossly excessive Omega 6s over Omega 3 fats and oils:** Omega 6 fats and oils are inflammatory, and inflammation is one of the basic causes of all illnesses. Omega 3s reduce inflammation and C-reactive protein, the latter of which is poisonous to nerves and nerve tissue and is a marker of inflammation. [Brain 2011, 224]
- **Bad bacteria in the large intestine.** Hippocrates said “All diseases begin in the gut.” and Phillipe Pinel, the father of modern psychiatry said “The primary seat of insanity is the region of the stomach and intestines.” Keith Scott-Mumby MD said “...over the last forty years as a top expert in food intolerance, allergies, and dysbiosis, I have found almost every disease imaginable has some connection with the bowel and digestion.” [Mumby 2012, 8] Bad bacteria in the large intestine can be distributed throughout the body including the small intestine and stomach. About 2/3s of the immune system is located near the large intestine and bad bacteria compromises the immune system. The best simple solution is to take a multi-strain probiotic.
- **Poor enzyme management:** Cooked fruits and vegetables contain no enzymes because digestive, proteolytic (systematic; excess protein digesting), and metabolic enzymes are killed at about 120 degrees. These enzymes are crucial for substantially all body processes. Further, as one ages the body produces less of these enzymes. Thus, eat fresh, uncooked, organic, multicolored fruits and vegetables. Systematic enzymes (protein-digesting enzymes) are crucial to reduce the three bad proteins: fibrin, A β plaque, and tau tangles.
- **Refined carbohydrates (RCs):** RCs have about 65 percent of the nutrients removed and convert to sucrose, which is food for cancer, anxiety, etc.
- **Processed foods:** Processed foods are inflammatory, rich in refined carbohydrates, unhealthy additives (e.g., nitrates, trans fats, high fructose corn syrup, artificial sweeteners), etc. that cause illnesses directly or indirectly.
- **Food intolerance:** Normal foods can wreak havoc on individuals who are allergic. There are cases of potatoes causing intoxication, carrot family foods (e.g., parsley, dill, celery, fennel, etc.) causing epileptic fits, migraine headaches from licking office envelopes with corn starch glue, violent behavior caused by allergies to potatoes, onions, beef, and strawberries, etc. [Mumby 2012, 23, 29]
- **Improper balance between stress and exercise:** Adequate exercise is required for cellular oxygen (prevents sucrose fermentation), general cellular nutrition, joint mobility and balance, and to overcome stress and negative thoughts. Heavy exercise causes stress.

Pillar 5: Symptom relief

- **Environmental sensitivities:** Air, water, and EMF pollution contribute to many illnesses.
- **Inadequate good quality water.** Inadequate water requires the body to pull water from the large intestine causing constipation and from the cells, which damages cells and leads to all damaged cell diseases including cancer.
- **Lack of quality meditation.** Lack of quality daily meditation contributes to stress and, thereby, to illnesses. It is very important to use some system of relaxation for at least 30 minutes each day to lower stress. If the meditation is performed after dinner, it will promote relaxation in the evening before bed, a better night's sleep, and an improved morning. If you wish to undermine all of this good work, have a cup of coffee to defeat overnight caffeine withdrawal symptoms.

Adrenal Fatigue Syndrome (ADS)

- Adrenal Fatigue Syndrome has very complex symptoms and thereby very complex treatment options. The following material is an overview, but one needs to consult more detailed literature and *you must* seek medical attention.
- The adrenal, hypothalamus (forebrain), and the pituitary glands (forebrain; "HPA axis") work as an integrated system to manage and regulate metabolism, energy levels, inflammation, libido, immune system, mood, and stress response. [Reeves 2015, 12]
- Perhaps the most important hormone produced by the adrenals is cortisol, which is produced in greater quantity during stress. But cortisol is also necessary to govern portions of the nervous system, anti-inflammatory and immune system responses, glucose levels in the blood, heart contractions, and the metabolism of fat, protein, and carbohydrates. Cortisol is also related to the thyroid. Under conditions of excessive stress, the adrenals are overworked and produce less cortisol in response to stress. [Reeves 2015 14-15]
- The paramount symptoms associated with adrenal fatigue (AF) are fatigue and tiredness that cannot be overcome. The cause of the tiredness is a deficiency in the functioning of the two adrenal glands, which assist the body to cope with stress. They are located on top of each kidney and secrete minute amounts of steroid hormones the most important of which is cortisol. The cause of the deficient functioning of the adrenal glands is physical, emotional, environmental pollution, or psychological stress over a long period of time. Deficiencies in the adrenal hormones have adverse effects on many body organs without limit. [Wilson AF 2001, 6]
- Other symptoms of adrenal fatigue are difficulty waking up in the morning, weight gain or weight loss, low blood pressure, recurrent infections, slow healing, low sex drive, etc.

Pillar 5: Symptom relief

- The causes of adrenal fatigue are a single traumatic event, chronic disease, not enough sleep, emotional stress, poor diet, and pollutants and chemicals [Reeves 2015, 17-19]
- Adrenal insufficiency (Addison's Disease) and adrenal fatigue are similar but distinguishable. Addison's Disease may include prolonged vomiting, severe muscle weakness, very low blood pressure, profound sleepiness or coma. Addison's Disease occurs when the adrenals are unable to function, absent, or have been removed. It may be caused by autoimmune disease where the immune system attacks the cells of the adrenal gland. Synthetic steroid medications can cause adrenal insufficiency and adrenal supplements contain active adrenal hormones may render the adrenal glands useless. [Reeves 2015, 23]
- Dr. Michael Lam has stated that over 50% of the adult population will experience Adrenal Fatigue at some time in their lives. There is no simple lab test to confirm Adrenal Fatigue. Further there are other illnesses that are similar to ADS: Fibromyalgia, chronic fatigue syndrome, hypothyroidism, estrogen dominance, ovarian-adrenal thyroid imbalance syndrome, etc. [Reeves 2015, 22, 27]
- Testing for ADS may include the following: [Reeves 2015, 34-41]
 - Cortisol: Saliva is the most accurate test. It peaks in the morning and declines during the day so it is necessary to take several tests in a day. 5-23 mcg/dL (micrograms per deciliter) in the morning and 3-16 mcg/dL in the afternoon is considered normal.
 - ACTH: ACTH simulates stress and cortisol should double if the adrenal glands are normal.
 - Thyroid: Weakening of the hypothalamus or pituitary glands may result in lower thyroid function.
 - TSH: TSH is related to the production of T3 and T4 by the thyroid gland. High TSH may be related to lower T3 and T4. AFS is often associated with a poorly performing thyroid. Hence, the importance of testing for TSH, T3, and T4.
 - There are also sitting and standing blood pressure and heart rate tests for AFS.
 - Home saliva tests are available to test the cortisol profile.
- Curing Adrenal Fatigue Syndrome: Diet, Vitamins, and Supplements [Reeves 2015, 42-65]

Pillar 5: Symptom relief

- To cure AFS by diet, it is important to eat a plant-based diet and whole, not processed foods. That means complex carbohydrates with fiber, vitamins, and minerals. The preferred food groups are vegetables, whole fruits, whole grains, legumes, nuts and seeds, and little or no animal products.
- Omit stimulants such as caffeine, cacao, energy drinks, drugs, alcohol, and EMFs (e.g., cell phones, Wi-Fi). Through Six Pillars, I recommend eliminating controllable stimulants including RFFR and other EMFs
- The best food supplement to take for adrenal fatigue syndrome is licorice root. Licorice root contains glycyrrhizin which slows down the breakdown of adrenal hormones like cortisol, progesterone, and aldosterone and this takes the stress off the adrenal glands. Licorice root also supports liver (which detoxifies) health. In one study, patients were given glycyrrhizin and saw an 88% improvement in liver function and an 86% decrease in their adrenal fatigue symptoms. In another group who were given glycyrrhizin twice daily there was no evidence of liver inflammation after three months.
- The medicinal mushroom Royal Agaricus (*Agaricus blazei*) contains very high levels of Beta-1.3-glucans which stimulate the immune system to fight viruses, bacteria, and other dangerous pathogens, and also protects the liver from toxins.
- A third nutrient to protect the liver and brain from toxic chemicals is Phosphatidylcholine (PC); PC assists in growing new liver cells. [Shallenberger Second , August 30, 2016]
- Timing meals is important. Eat breakfast immediately after waking or immediately after waking and performing early AM exercise, lunch between 11:30 AM and 12:00 PM., a snack in mid-afternoon, and dinner between 5:00 and 6:00 PM. One should complete dinner at least four hours before bedtime or you will gain weight.
- Since this material is long, I urge second readings and reading the citations and other material on ADS, if you believe ADS may be affecting you. It's also valuable material to read to prevent ADS.
- Establish a seven-day sleep pattern that does not vary on weekends—no sleeping to noon on Saturday and Sunday. [Reeves 2015, 66-73]
- Do not take long daytime naps.
- Manage your response to external events to reduce stress. Of all the rules, this may be the most important.

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- Stop intense exercise to reduce stress.

Aging

- As we age, bodily functions decline; this section will describe a few of the results of aging and how we can reverse the aging process.
- Decline in AMPK [Life Extension, Linton, Nov-Dec 2015, 49-59]
 - AMPK, adenosine monophosphate-activated protein kinase, is a cellular enzyme that assists in maintaining cellular balance, extracts energy from food, stores and distributes energy throughout the body, and uses that energy for bodily functions.
 - The processes which reduce AMPK are normal aging, inadequate exercise, overeating, and excess fat and sucrose.
 - High levels of AMPK can reduce symptoms associated with poor immune function, cancer, cardiovascular disease, atherosclerosis, metabolic syndrome, diabetes, liver disease, etc.
 - AMPK levels can be maintained or improved as we age by supplementing with metformin, gynostemma pentaphyllum, and trans-tiliroside (AMPK activators), increasing exercise, and eating less.
 - The information in this section comes from the cited, well-researched article in *Life Extension* and should be read for its highly technical detail that cannot be duplicated in this column.
- Intestinal bacteria [Downey Probiotics 2015, 25-26]
 - The large intestine contains about 70 percent of the immune system with a variety of good and bad bacteria. Good bacteria contribute to good health throughout the body and bad bacteria can adversely affect many other organs. Hence, the importance of taking probiotics which clean the large intestine.
 - Contributing to bad bacteria are antibiotics, excessive hygiene, the carb- and poor fat-intensive western diet, medications, and obesity.
 - As one ages, there is a tendency toward more bad bacteria and less good bacteria in the large intestine.
 - A good probiotic is necessary to restore intestinal balance of favorable bacteria thereby avoiding many illnesses beyond the intestinal tract.
- Four nutrients, termed geroprotectors, have been found to reverse or delay the aging process. [Life Extension, April 2017, p. 37-48] These are:
 - Myricetin, a polyphenol.
 - N acetyl-cysteine (NAC), a natural sulfur containing molecule that scavenges free-radicals.
 - Gamma tocotrienol, one form of Vitamin E.
 - Egigallocatechin-gallate, an anti-inflammatory polyphenol.
- The three forms of selenium are crucial to slow the aging process. [See “selenium”]

Allergies

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- Allergies are caused by (1) airborne molecules triggering the immune system to defend itself by producing IgE (immunoglobulin E) that attach to mast cells, which release inflammation-causing histamines, and (2) chemicals in food or water. These cause mucus flows, tissue to swell, and sneezing in order to remove the offending foreign particles. [Baker 2007, 111; BLYB 2015, 55]
- Stimulating substances and conditions cause allergies. These include food, chemicals, and stress.
- Food allergies and intolerances. [Fenten, “Do You Have a Food Allergy—Or a Different Problem.” BL Mega 2016, 5-6.]
 - Food allergies are dangerous and are caused by the immune system mistakenly identifying food as a threat and issuing antibodies that cause the allergic reaction.
 - Food intolerances are complex reactions such as stomach upset or headache, unpleasant, not dangerous, and not caused by the immune system. Food intolerances may be more common than food allergies.
- Food sources of allergies are:
 - Fermented foods such as cheeses.
 - Wine.
 - High protein foods that contain arachidonic acid (AA), which produce inflammatory prostaglandins.
 - Bagels that feed candida yeast that can overwhelm your immune system.
 - Chlorinated public water containing dichlorophenols may cause food allergies. [BLYB 2015, 55] Best to drink distilled or reverse osmosis filtered water.
- Foods and vitamins which reduce allergies include:
 - Apples, onions, oranges, peppers, and pineapples contain natural antihistamines which defeat histamines. [Super, 1]
 - Vitamin C prevents and neutralizes the release of histamine. Time-release vitamin C may be best. [Super, 1]
 - Quercetin fights inflammation and regulates histamine. [Super, 2]
 - Stinging nettle is one of nature’s best antihistamines. Dosage is one capsule two times per day away from meals to increase absorption. [BLHB 2016, 5]
 - Beans contain folate which reduce the risk of allergies. [Super, 3]
 - Omega 3 intensive foods including tuna, salmon, other cold-water fish, and grass-fed cattle; Omega 3 supplements are also helpful.
 - Flaxseed oil.
 - Blueberries, blackberries, and cherries contain bioflavonoids that keep mast cells from releasing allergy-causing histamines. Other foods that affect mast cells favorably are apples, tomatoes, and turmeric (which contains an antihistamine), [Baker 2007, 15-16]

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- The B vitamin pantothenic acid acts as an anti-histamine and reduces cortisol, the stress hormone that can trigger or increase allergy symptoms. [Baker 2007, 17]
- Take Omega 3 fatty acids which protect the immune system from allergic threats and avoid Omega 6 fatty acids which encourage inflammation and hay fever symptoms. [Baker 2007, 15-16; BLHB 2016, 4]
- Avoid rice, wheat, corn, fermented foods, sugar, peanuts, soy, and dairy products. [Baker 2007, 15]
- Vitamin C may reduce allergic symptoms, but be careful in dosage. With daily consumption of fresh fruits and vegetables, a supplement of no more than about 250 mg should be taken. Excess Vitamin C may cause diarrhea and kidney stones. Perhaps the best brand of Vitamin C may be Alive because the capsules come from fruit and are only 125 mg each. [Uncommon Cures 2009, 143]
- Avoid allergy drugs such as Benadryl and Chlor-Trimeton because they are in a class of drugs called **anticholinergics**, which contribute to mental decline. Other anticholinergics include Dramamine (anti-nausea), Sominex (sleep aid), xybutynin, tolterodine (overactive bladder), Zyban, Welibutrin, and Spiriva (COPD). About 50 percent of all Americans over 65 have taken at least one anticholinergic drug. These drugs cause not only short term mental confusion but in the long run may contribute to dementia. In a study of 3,430 men and women it was found that 54 percent of those taking the largest amount of anticholinergic drugs had a 54 percent chance of getting dementia including Alzheimer's. Further, even those taking the minimum effective daily dose for three years put them in the highest category for dementia risk. [Micozzi Insider April 2015, 1-2]
- Select ceramic tile floors which emit no VOCs. In my opinion, any type of rug emits odors and many must be cleaned every four months to reduce "dirty carpet" VOCs. I tend to think that good quality wool carpets may emit less odors than any other carpeting materials.

Alzheimer's Disease, cognitive decline, and loss of memory

An introduction

- Alzheimer's disease (AD), cognitive decline, and loss of memory are among the most devastating illnesses we face because they represent declining cognitive function in our golden years. The following sections of Six Pillars Tips offer suggestions to both prevent and treat these illnesses. I will discuss the importance of life style changes, a strategic diet, and food supplements that may reverse AD and cognitive decline.

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- The model for bad memory is the following:

Lack of exercise + Refined carbs + Acidity + Reduced enzymes (aging) → Brain shrinks → Declining memory, Alzheimer's

- Cognitive decline appears to have six causes:
 1. Amyloid beta plaque and tau tangles, both of which are proteins, accumulate in the brain and appear to cause AD.
 2. Inadequate processing of sucrose in the brain.
 3. Parkinson's disease.
 4. Inadequate exercise.
 5. A poor strategic diet with junk food, refined carbohydrates, poor fats and oils, etc.
 6. Medications.
 7. Aging of the brain.
 8. Loss of purpose in life and poor memories of the past.

The importance of a strategic life style to reverse cognitive decline

- Life style must be supportive of good health. Wide variations in the circadian rhythm may contribute to cognitive decline.
- Diet must furnish healthy food choices, or one may have deficiencies in enzymes, vitamins, and minerals. Systematic enzymes may be more important to defeat cognitive decline than vitamins and minerals. Brightly colored fruits and vegetables are crucial to a healthy diet.
- Adequate exercise is crucial to a healthy brain. That means some combination of walking, hiking, bicycle riding, swimming, resistance training, or some other form of exercise for at least one hour per day.
- Daily meditation with a focus on positive thoughts will rebuild your mind to be more productive. Do not be distrustful because it is a fast route to cognitive decline.
- Have a purpose in life and favorable memories of the past.
- Practice a musical instrument, which reduces stress and stimulates the mind to enjoy thinking. [Hushed, 2014, 22]
- Expand human relationships. As one ages it is natural to reduce one's associations because of the loss of employment contacts. Thus, one should look for other sources of contacts from religious and social organizations, volunteer work, etc.
- In a study of sauna users in Finland, it was found that frequent users of saunas have reduced risk of Alzheimer's. Men taking saunas four to seven times a week had a 66 percent less risk to develop dementia or Alzheimer's. [Sears House January 23, 2017]
- Stay busy. The more you do, the less likelihood of cognitive decline. You are better off being overworked than under worked. And this means being intellectually active with a hobby or performing research and publishing article if you have those abilities. Vacant minds are the fast route to cognitive decline.

Utilize the Mediterranean diet to prevent and reverse cognitive decline [Merrill 2016]

- Emphasize the Mediterranean diet, or some equivalent thereof, to prevent and treat cognitive decline. This means:
 - Fresh, uncooked, organic multicolored fruits and vegetables to assure the best in enzymes, vitamins and minerals. Cooking at 119 degrees destroys enzymes.
 - Wild fish for Omega 3 oils.
 - Free range beef for Omega 3 oils.
 - Do not drink tap water. It may have excess copper and other pollutants that affect cognitive function. Use reverse osmosis or remineralized distilled water.
 - Eggs from free range chickens for Omega 3 oils.
 - Olive oil judiciously used because olive oil is Omega 6 intensive.
 - Beans and organic whole grains for fiber, vitamins, and minerals. Organic is important not only for the absence of toxic pesticides but because natural fertilizers have more enzymes than manufactured fertilizer.
 - Alkaline foods to increase pH.
 - Vitamin D should have blood concentrations of 60 ng/ml. [BI Mega 2016, 49]
 - Grasses, spirulina, and corella for a broad range of vitamins and minerals, cleansing of heavy metals, and sources of natural energy. The grass container should be kept in the freezer to assure no condensed water damages the product.
 - Exercise, intellectual and human activity, and good nutrition for stimulants; avoid coffee and RFFR.
 - Avoid junk foods that include (1) refined carbohydrates, (2) sugar-intensive foods such as soft drinks, fruit juices, and ice cream, which contribute to diabetes, cancer, and anxiety, (3) chemically intensive foods such as artificial sweeteners (4) processed meats with or without preservatives, (5) foods with food colorings, (6) breads, pastries, and any baked foods with refined flours. “Refined” means that about 65 percent of nutrients are removed. Further, refined carbohydrates convert to glucose faster than complex natural carbohydrates (e.g., whole grains). In a recent study of mice, it was found that elevated glucose caused by carbohydrates—particularly refined carbohydrates—and sugar result in elevated levels of A β plaque and tau tangles and thereby may both cause and increase the symptoms of AD. Thus, if one does not have AD, it is wise to reduce refined carbohydrates and if one has AD one should avoid all refined carbohydrates (e.g., sugar, high fructose corn syrup, processed foods). In other sections of Six Pillar Tips, we recommend a greater reliance on proteins and fats and indeed those recommendations are borne out by this latest research. (McCauley 2015). Sprouted grain breads are preferred because the flour is not refined.
 - Avoid processed meats.
 - Do not eat between the end of dinner and breakfast. Fasting permits the body to digest dysfunctional cells like amyloid beta plaque, promotes ketosis, ketones

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which protect neurons, and reduces insulin. [Bottom Line Health. Summer 2016, 5]

- Do not overeat! In a study of mice, it was shown that overeating reduces learning ability and memory because the hippocampus cells, required for good memory, were damaged. Further, a caloric restricted diet increased learning and memory. [Dong 2015 as reported in Shallenger's Second Opinion Newsletter 07.27.2015] An additional benefit of dietary restrictions is that one tends to metabolize impurities for energy.
- Avoid excess meat because of fat and cholesterol. There is the possibility that the heme iron in meats is more likely to create brain plaque than the non-heme iron in plant foods. [Bottom Line 100, 2014, 37]

Cognitive decline: Sucrose to energy conversion

- The first issue that should be addressed with declining cognitive function is whether the brain is processing sucrose into energy because if it is not, it is pointless to treat for AD. Some individuals have brains that do not process sucrose into energy with aging. That requires an alternative source of energy.
- Ketones from medium chain triglycerides are an alternative source of energy to sucrose. Several teaspoons of extra virgin coconut oil, which contain medium chain triglycerides, taken daily for about four to six weeks, may improve cognitive function by furnishing a reliable source of energy. If cognitive function is improved, it would suggest that the brain is not processing sucrose into energy and the coconut oil protocol should be continued indefinitely, perhaps with alternative fats.
- If there is no improvement from the coconut protocol in six weeks, then the brain's sucrose processing ability is probably not an issue. [Shallenberger Healing 2014, 51-53]

Cognitive decline: Supplements to defeat Amyloid-beta plaque and tau tangles causing AD

- When we are young, the pancreas secretes adequate systematic, proteolytic, protein-digesting enzymes to digest amyloid-beta ($A\beta$) plaque and tau tangles, which are proteins and believed to be the causes of AD. But as we get older, the pancreas is less effective at creating systematic enzymes and we may be eating cooked fruits and vegetables which kill the natural, protein-digesting, systematic enzymes. [Brain 2011, 13]
- Wobenzym-N: The prevention and treatment of AD is to add systematic enzymes from food supplements. One such product is Wobenzym-N. It must be taken about an hour before meals to assure it is not used in food digestion, and passes through the stomach to arrive at the brain intact to digest the $A\beta$ and tau tangles. Indeed, I have taken Wobenzym-N for about five years and I have noticed the improvement in memory.
 - The normal dosage assuming minimum cognitive decline is about five per day. But Wobenzym-N can be taken up to about 20 per day, or five tablets four times per day, with declining dosages of 16 (4x4), 12 (4x3), 8 (4x2), and asymptotically five per day as AD symptoms improvement. I have taken up to 20 tablets daily

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with declining dosage over a two-month period to defeat terrible back pain from a sports injury and had no side effects.

- Resveratrol: Resveratrol is believed to remove amyloid-beta plaque, neutralizes toxic proteins, and increases blood flow to the brain. [Brain 2011, 246] There is a negative association between resveratrol and markers of Alzheimer's. [Life Extension Jan 2016, 17; Neurology 2015 Sept11] Take at least one resveratrol supplement daily.
- Turmeric/curcumin with black pepper (Piperine) (See Pillar 6 Turmeric)
- Aged garlic extract because it may delay or prevent Alzheimer's by stopping the formation of amyloid beta plaque. [Brain 2011, 109]
- Modified citrus pectin and corella eliminate toxic heavy metals such as mercury, aluminum, and copper, which may contribute to Alzheimer's symptoms. Mercury concentrations in Alzheimer victims are often over three times that of the rest of the population. Aluminum found in antiperspirants, cooking with aluminum pots, and taking aluminum intensive drugs contribute to Alzheimer's. Fluoride binds with aluminum which eases passage through the blood brain barrier, so avoid fluorides and drink fluoride-free water (e.g., distilled water or filtered with reverse osmosis). Copper destroys detoxifying nutrients including vitamin C, B, and zinc. Take tests for levels of these metals, avoid their use as much as possible. [Rothfeld, July 2015, 1-2]
- Colostrum, a proline-rich polypeptide in mother's milk may also defeat amyloid β plaque and tau tangles. [Life Extension Winter 2016-2017, Faloon and Richards, 12-14] However, cow's milk contains about 11 grams of sugar per glass.
- Take blood tests to assure you are not vitamin or mineral deficient.
 - Magnesium is the most common mineral deficiency. About 70 percent of the population is deficient in Mg because of processed foods, soil depletion, and reduced absorption as one ages; the refining process for grains in bread and pasta removes 80 to 90 percent of the Mg and refined sugars have 100 percent of the Mg removed. Whole food sources of magnesium include dark leafy green vegetables, beans, brown rice, halibut, mackerel, boiled spinach, almonds, cashews, pumpkin seeds, etc. Mg supplements are not very effective in delivering Mg to the brain, but there is an exception, magnesium-L-threonate (MgT), which crosses the blood brain barrier. Magnesium-L-Threonate (MgT) has shown promise in recent studies of rat memories. [Cagan, Feb 2014] There have been three animal studies and one human present clinical trial (results unpublished) that indicates MgT reverses cognitive decline; Mg was increased 15 percent in 24 days in rats and it appears to reverse advanced Alzheimer's. [Cagan, 2014] Magnesium-L-threonate increases brain plasticity, the ability of the brain to form new connections and neural pathways to communicate internally, which is a marker for a more youthful brain and increased memory, learning, and cognition. Magnesium-L-threonate is better absorbed than other compounds

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- of magnesium. Post-traumatic stress disorder also benefits from improved brain plasticity. [Life Extension, June 2016, 40-48]
- Vitamin B's are perhaps the most important of the vitamins for good memory and to prevent and treat Alzheimer's. B12 may be the best among the B's, but it is best to take a complete vitamin B to avoid imbalance in the vitamin B's. [Micozzi Insider Nov 2014, 3; Super 2012, 17]
 - Vitamins C and E taken synergistically reduce oxidative stress in the brain by reducing free radicals (oxygen with unpaired electrons). Vitamin E interacts with various drugs and supplements, so consult a doctor before taking Vitamin E. [Uncommon Cures, 2009, 28]. In a very limited study, it was found that those supplementing with Vitamin C and E have a substantially reduced incidence of Alzheimer's; but supplements are necessary because dosage in multivitamins is too low. For example, multivitamins contain about 30 IU of vitamin E compared with 400 IU in supplements and multivitamins contain about 60 mg of vitamin C vs. 125-500 mg in most vitamin C supplements [Morris 1998, 123]. I believe that Vitamin C in 125 mg is best because it assures no detrimentally high Vitamin C and one can take two or three if it is necessary.
 - Assure adequate levels of Vitamin D, which is one of the most common vitamin deficiencies by taking a supplement. Vitamin D prevents cognitive decline and enhances hippocampal synaptic function (has a role in memory and anxiety). [Latimer 2014]. Amyloid- β ($A\beta$) plaque triggers neurodegeneration; Vitamin D protects brain neurons by preventing neuron cytotoxicity and apoptosis (prevents cancer cell death). Thus, Vitamin D may be useful in the prevention and treatment of Alzheimer's. [Dursum 2011, Abstract] Be sure to share this idea with your medical practitioner. Older individuals with Vitamin D deficiencies may lose their memories and cognitive abilities faster than those with normal levels and increase the likelihood of Alzheimer's. [Life Extension Jan 2016, 17; JAMA Neurology 2015 Sep. 14; Micozzi Insider Nov 2014, 3; Wright Nov 2014]
 - Zinc is crucial for brain health and if you have failing memory, you should take tests for zinc deficiency. [Health Alert, 31(10) (Oct 2014).
 - Excess copper from tap water may contribute to Alzheimer's. It has been found that amyloid beta plaque in the brains of Alzheimer's victims contain high levels of copper. [BL Mega 2016, 49]
- Taurine, an amino acid, can stimulate new brain cells to grow in adults. Individuals with metabolic syndrome (e.g., obese, diabetes, etc.) and/or age-related brain disorders have substantially reduced levels of taurine. Taurine supplementation can improve brain function by growth of new brain cells. [Life Extension Collector's Edition 2016, 2-9]

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- Take a full bodied digestive enzyme to digest proteins, carbohydrates, and fats such as Garden of Life Ω (Omega) Zyme for meals that are protein and fat intensive. Full-bodied digestive enzymes may also be helpful to defeat food allergies by assisting with digestion.
- Head injuries contribute to Alzheimer's and NFL football players have four times the risk of getting Alzheimer's. [BL Mega 2016, 50]
- Take at least four multi-strain probiotics (e.g., from 18 to 35 strains of bacteria) weekly to assure the digestive tract near the immune system is controlled by good bacteria.
- Omega 3 fish oils help to relieve inflammation. DHA is found in the gray matter of the brain which deals with memory. Studies have shown that people with the highest levels of DHA were 47 percent less likely to develop dementia of any kind and 39 percent less likely to develop Alzheimer's. Sources are wild fish including salmon, tuna, shad, whitefish, trout, sardines, bass bluefish, oysters, halibut and cod. [Super 2012, 31]. But remember, farm fish are often fed grains which produce fish that are Omega 6 intensive. It is essential to consume wild fish not only for Alzheimer's treatment, but for general health. DHA, an Omega 3 fish oil, boosts Nrf-2, an inherent antioxidant. Fish oils are blood thinners so if you take blood thinners, see your doctor first. [Bottom Line 100, 60] Higher levels of Omega 3s (EPA, DHA) are associated with a decreased rate of cognitive decline in those with Alzheimer's for dosage rates of 150 mg EPA and 450 mg of DHA. [Life Extension Feb 2016, 20; J Alz Dis. 2015 Sep 4]
- Walnuts contain flavonoids which improve brain cells. [Brain 2011, 86]
- Foods containing anthocyanins raise HDL cholesterol (13.7 percent in one study) and reduce LDL cholesterol (13.6 percent), which reduce artery-clogging cholesterol and lower blood pressure. These foods include berries, bilberry and black current. Anthocyanins are available in capsules. [Brain 2011, 87]
- Turmeric/curcumin/black pepper stimulates Nrf-2 and is a potent anti-oxidant and anti-inflammatory. [Bottom Line 100, 60]. Curcumin is an excellent choice for a daily supplement for many other reasons. India, with the highest consumption of curcumin/turmeric, has a rate of cognitive decline about 1/8 of the U.S. rate. Curcumin/turmeric has been shown to eliminate A β plaque. [Brain 2011, 58; Super 2012, 8] Black pepper increases dramatically the bioavailability of turmeric/curcumin.
- Adequate good-quality water (e.g. reverse osmosis, distilled) is crucial to avoid dehydration in the brain because your brain is 70 percent water. Do not drink tap water because fluorides combine with aluminum to cross the blood-brain barrier and damage the brain. When the body becomes dehydrated, it draws water from cells (and the large intestine causing constipation), thus damaging them. Dehydration also damages the blood brain barrier by causing leaks in the BBB and leakage of toxic chemicals into the brain. [Super 2012, 21]. It is wise to take about four ounces of water immediately before going to bed and a few ounces during the night.

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- Pomegranate juice may be helpful in reversing memory loss. [Schallenberger Second 12(1) 01.02.2015]
- Beet juice increases blood flow to the white matter of the brain's frontal lobes, an important area of the brain for memory. It is high in nitrates, which mouth saliva converts to nitrites, and expands blood vessels to improve blood flow. [Super 2012, 19]
- Blackberries provide the most antioxidants followed by blueberries, which improve memory because they contain flavonoids and other antioxidants that reduce inflammation in the brain. Suggested consumption is one cup of blackberries or blueberries at least twice a week. Other foods that are excellent substitutes are strawberries, raspberries, and/or cranberries. I enjoy adding frozen organic fruit to breakfast oatmeal or quinoa. The sugars in cranberries are also anti-pathogen. [Super 2012, 12; BLYB 2015, 82]
- Cantaloupes are rich in beta carotene, which converts to vitamin A and is a powerful antioxidant. Other sources of beta carotene are sweet potatoes, spinach, apricots, carrots, sweet red peppers, broccoli and green leafy vegetables like kale, collards, and turnip greens. [Super 2012, 15-17]
- Astaxanthin is a super antioxidant and anti-inflammatory that crosses the blood/brain barrier and may be helpful to defeat free radical (reactive oxygen species) damage to the brain.
- Spirulina and Chlorella are super foods rich in nucleic acids (DNA, RNA) and vitamins and minerals. Chlorella builds nerve tissue, and may be helpful for degenerative brain and nerve disorders. [Think01]
- Lithium aspartate or lithium orotate may be effective to improve Alzheimer's symptoms. [Shocking Medical Coverups, Matthew Simons, p. 8-10].
- Lutien [Micozzi Insider Nov 2014, 3]
- Rosemary seems to contain compounds that prevent the breakdown of a neurotransmitter that is deficient in Alzheimer's patients. [Uncommon Cures, 2009, 27]
- Sulforaphane, found in broccoli, stimulates liver enzymes that clear carcinogenic metabolites from the body and brain. [Bottom Line 100, 60]
- Avoid drugs which may cause memory loss such as: [Brain 2011, 189; Micozzi, Insider, July 2016 Vii(7), 1-3]
 - Advil PM
 - Ambien (sedative)
 - *Anafranil (Antidepressant)*
 - Asendin Ativan (antianxiety)
 - Benadryl
 - Betapace (beta blocker)
 - Cipro
 - Coreq (beta blocker)
 - Deerol
 - Detrol

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- Ditropan
 - *Elavil (Antidepressant)*
 - Enablex
 - Excedrin PM
 - Flagyl
 - Florinal,
 - Floxin
 - Haldol (antianxiety)
 - Inderal (beta blocker)
 - Levaquin
 - Limbitrol
 - Lunesta (sedative)
 - Nytol
 - *Norpramin (Antidepressant),*
 - Pepcid
 - Percocet
 - Percodan
 - Sanctura
 - Sinequan (antidepressant)
 - Sonata (sedative)
 - Sudafed
 - Sominex
 - Tagamet
 - Tenormin (beta blocker)
 - Tofranil (antidepressant)
 - Triavil
 - Tylenol PM
 - Valium (antianxiety)
 - Vesicare
 - Vicodin
 - Xanax
 - Zantac.
- An enzyme called GSK-3 (glycogen synthase kinase-3) promotes cell damage as we age. It accelerates aging in the heart and muscle, increases pro-inflammatory cytokines, ages the joints, stomach, and liver, disrupts mitochondria, prevents clearing of debris in aging cells, and contributes to the development of type II diabetes, Alzheimer's and other illnesses. [Life Extension Winter 2016-2017, Faloon and Richards, 8-12]
 - Treatment requires finding safe substances that are GSK-3 inhibitors—that is, safe substances that stop the aging and cellular damage caused by GSK-3. In the

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case of Alzheimer's, a GSK-3 inhibitor will prevent the formation of amyloid β plaque and tau tangles. But GSK-3 inhibitors also lower blood glucose and increase insulin sensitivity, which are associated with Alzheimer's. [Life Extension Winter 2016-2017, Faloon and Richards, 8-12]

- The preferred GSK-3 inhibitor is a microdose of lithium of about 300 mcg where 1,000 mcg is the recommended daily total dosage. The problem in getting enough lithium from natural sources is that lithium is unavailable in some water sources and filtered out with distilled water. [Life Extension Winter 2016-2017, Faloon and Richards, 8-12] “Concern Trace Trace Mineral Drops” from seawater contains 1.5 mg of lithium per ½ teaspoon (40 drops).

Indoor Environment

- Poor air quality and other indoor contaminants contribute to cognitive decline.
- It is important to have air exchange with the outdoors, assuming good outdoor air quality. Every enclosed space has sources of off gassing of personal property and building materials. Thus, it is important to have a source of fresh air makeup. This means cross-draft open windows or an exhaust fan in the house for fresh make-up air summer and winter. Air conditioning, particularly in high humidity areas, promotes bacteria growth on the wet A/C coils that requires fresh air and periodic cleaning with a coil cleaner. An exhaust fan over the stove or in a bathroom increases fresh make-up air.
- Carpets contribute to poor air quality and must be regularly cleaned, probably ever four months.
- Clean the air conditioning coils and change the A/C filters every 60 days particularly in high humidity areas. Place the date of A/C maintenance on the A/C handler as a reminder. To improve air quality, it is best to place the air handler within the home, not in the garage. My home had a terrible odor in the garage around the air handler which disappeared when I moved the air handler to the laundry room.
- Avoid electromagnetic fields. EMFs are stimulants and cause many illnesses. This means using a hard-wired router and Ethernet cable for Internet access instead of Wi-Fi and avoiding cell phones except for emergency use. Do not use cordless phones because of high RFR. Use the “speaker” on land line phones only. After installing a hard-wired router and Ethernet cable, turn off W-Fi on the computer. See “Pillar 4 Electromagnetic Fields.”

Antibiotics, Benefits and Danger of

- Two antibiotics may cause heart disease increasing cardiac arrhythmias and death. These are azithromycin (Zithromax and Zmax) and levofloxacin (Levoquin). Amoxicilin is safer. [West August 2014, 1]
- All antibiotics damage intestinal flora and one should take a probiotic perhaps during and most certainly after a dose of antibiotics. [West August 2014, 2] If you do not take probiotics after antibiotics, you take the risk of bad bacteria controlling your digestive track and that can cause many other difficult-to-link illnesses as it backs up into the small intestine where it is distributed throughout the body.
- Antibiotic resistant bacteria are an increasing problem as the bacteria adapt to defeat antibiotics. One useful resource may be Keith Scott Mumby MD, “How to Survive in a World Without Antibiotics.” 2011.
- My choice for an alternative to antibiotics is colloidal silver to destroy pathogens. But colloidal silver does not destroy all pathogens.

Anticholinergics

See “Allergies” for use prohibition.

Anti-inflammatories: Medical

- Non-natural anti-inflammatories include Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), which counter act the cyclooxygenase (COX) enzyme and prevent the prostaglandins from being synthesized. Side effects include stomach ulcers, which may hemorrhage and cause death, asthma, kidney damage, myocardial infarction, and stroke.
- Medical research indicates that NSAIDs can raise the risk of heart attacks by 20% to 50% over those not taking NSAIDs. The risk begins as early as the first week of use. The medications include ibuprofen (Advil, Motrin), diclofenac (Voltaren, Cambia, celecoxib (Celebrex, and naproxen (Midol, Aleve). Aspirin, which is also a NSAID, is not linked to increased risk of heart attacks. [Dr. Crandall’s Heart Health Report, August 2, 2017; Bally 2017, Abstract].
- A second type of non-natural, anti-inflammatory is Immune Selective Anti-Inflammatory Derivatives (ImSAIDs), which are peptides altering the activation and migration of inflammatory cells. ImSAIDs are currently under development. [Wikipedia]

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Anti-inflammatories: Earthing (see Pain Management: Earthing)

Anti-inflammatories: Natural herbs

- Astaxanthin, black pepper, basil, cardamom, cayenne, chamomile, chives, cilantro, cinnamon, cloves, garlic, ginger, parsley, nutmeg, rosemary, turmeric/black pepper,

Anti-inflammatories: Proprietary food supplements

- Wobenzym-N: Contains systematic proteolytic or protein-digesting enzymes; second most popular natural pain killer sold in Germany.
- Zyflamend: Contains ten different herbs including turmeric and ginger.
- Vitamin C. [Brain 2011, 291]
- See “Free radicals and antioxidants”

Anesthesia: Acupuncture

- Acupuncture is the technique of inserting stainless steel needles about 1/100” in diameter at one or several of 1,000 acupuncture points lying on one of about 14 meridians terminating at the toes or fingers. The objective is to balance the Yin and Yang forces and affect Qi, the energy of life. [Armstrong, 1972]
- Acupuncture may be used as a type of anesthesia for dental and surgical procedures (except abdominal surgery) by blocking spinal nerves. [Armstrong, 1972]
- The advantages of acupuncture as an anesthesia for dental and surgical procedures are (1) blood pressure is not lowered, (2) no interruption in hydration, (3) no post-operative nausea or vomiting, (4) patient may talk to doctors during surgery, (5) patient may consume fluids or fruit, and (6) in some cases, the patient may walk to the hospital room after surgery. [Armstrong, 1972]
- Acupuncture is sedating by addressing the outer ear or lower arm or between eyebrows. [Baker 2007, 37]

Anxiety

- There are many causes of anxiety: Overwork, poor relationships, poor diet including caffeine and refined carbohydrates, low blood sugar, inadequate sleep, inadequate exercise, traumatic events, negative thoughts, electromagnetic fields, etc.
- The basic symptom of anxiety is excess adrenaline, which results in anxiety attacks, heart palpitations, chest pain, difficulty breathing, muscular tension, dry mouth, headaches, sweating, insomnia, etc.
- Stress must be defeated by changing your opinions of others, taking action to reverse an unfavorable situation, or using an adverse situation to find new opportunities. Daily meditation performed at the same time each day is very important to reduce stress.
- Behave with high standards of personal integrity even if another person has injured you.

Pillar 5: Symptom relief

- One of the first tests for anxiety is for low blood sugar (hypoglycemia). Low blood sugar deprives the brain of oxygen, which causes the adrenal glands to release adrenaline, which leads to agitation. [BLYB 2016, 12]
- Eliminate controllable electromagnetic fields because they are stimulants and may have other anxiety-producing attributes unknown to medical science at the present time. That means reduce RFFR such as Wi-Fi, cell phones, and cordless phones, and reduce magnetic and electric fields in the home. Reduction of MFs and EFs requires meters to survey all walls and interior of rooms, relocating furniture, rewiring, or turning off the breaker in the bedroom to improve sleep.
- Dietary improvements to reduce anxiety include the following:
 - Eliminate caffeine found in coffee, energy drinks, soft drinks, chocolate, and other foods. Caffeine may increase the pulse rate, respiration rate, and blood pressure. Caffeine, refined carbs, and stress act synergistically to increase anxiety and blood pressure.
 - Reduce refined carbohydrates found in table sugar, soft drinks, most processed foods, etc.
 - Reduce or eliminate alcohol, a simple sugar.
 - Eat fresh organic, multicolored fruits and vegetables daily. One good source of these is to grind several fruits and vegetables in a mixer and eat them with other foods at a meal, or make them as meal by themselves. Food grinding makes broccoli and cauliflower tasteful!
 - Reduce fats.
 - Omega 3 fatty acids improve mood, but are also blood thinners. [Baker 2007, 35]
 - Food supplements that may help reduce anxiety are valerian, kava, chamomile, skullcap, and B Vitamins. [Kane, Sept 2013, 22]
 - Valerian root and GABA relieves tension. [Baker 2007, 36]
 - Passionflower relieves thumping hearts. [Baker 2007, 36]

Arsenic

- Pesticides and poultry fertilizers contain arsenic. As a result, arsenic may be present in many foods. The worst are grapes and rice. According to Janet Zand [Journal of Natural Healing, August 2018, 1-11], a Consumer Report test of rice found arsenic in almost all of them. But arsenic may be found in many other foods. Since pesticides contain many harmful chemicals (e.g., PCBs, organochlorine pesticides, brominated flame retardants, and perfluorinated chemicals), they too may enter your body and cause harm.
- The solution to arsenic and other chemical contamination is modified citrus pectin, chelating substance. MCP operates by eliminating metal contaminants in the urine. According to one study, the percentage increase in metal elimination was 130% increase for arsenic, 150% increase in mercury, 230% increase in cadmium, and 560% increase in lead.

Arterial plaque-cleaning food supplements

- In one research study of arterial plaque it was found that the composition of arterial plaque was as follows: ⁵

	Average	Range +- -----
○ Lipid core	9.43%	6.6%
○ Calcium	0.99%	0.9%
○ Fibrous	68.04%	9.8%
○ Fibrolpidic	19.31%	7.3%

- The lipid core is called the atheroma in atherosclerosis, one of three types of arteriosclerosis. The atheroma is composed of white blood cells, especially macrophages, and oxidized low-density lipoproteins (LDL) eventually forming foam cells. When foam cells die, they attract more macrophages and create the lipid core. The outer portion contains cholesterol crystals and becomes calcified. Fibrous plaque is composed of lipids (fatty acids), cell debris, smooth muscle cells, collagen, and calcium. Lipid-rich plaques are more likely to rupture than fibrotic plaques and rupture often causes fatal cardiovascular events. [Rodriquez-Granillo 2006; Wikipedia “Atheroma,” “Atherosclerosis”]
- Supplements that may be useful to reduce arterial plaque and/or cholesterol are the following:
 - Wobenzym-N, a systematic protein digesting enzyme, may clean arteries by digesting the fibrin portion of arterial plaque which also include cholesterol, calcium, fatty substances, and other debris. It may also reduce cholesterol.
 - Vitamin E tocotrienol (not tocopherol) cleans arteries and reduces cholesterol. [Hushed, 2014, 3] There are indications that tocotrienol reduces total cholesterol and LDL cholesterol by 15 percent each, raises good cholesterol by 4-8 percent, and reduces triglycerides (makes blood sluggish and less capable of transporting oxygen) by 20-25 percent. In addition, CoQ10 may be increased by up to 20 percent. Tocotrienols reduce the enzyme HMG co-reductase which assists in the manufacture of 80 percent of total cholesterol. And the benefits of Tocotrienols are fast—up to a 15-20 percent reduction in 30 days. [Shallenberger Second April 24, 2015]
 - Resveratrol may clean arteries and amyloid beta plaque and tau tangles to treat Alzheimer’s.

⁵ Composition of arterial plaque is very complex so be careful in drawing inferences from this one study.

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- Garlic will clean arteries, lower total cholesterol, LDL, and triglycerides. [Hushed, 2014, 3]
 - Pomegranate Juice reduces arterial plaque (about two ounces per day). [Hushed, 2014, 3]
 - Vitamin K (K1 and K2) may defeat arterial calcification. [Hushed, 2014, 3]
 - Fish oils and flax seeds reduce triglycerides.
 - Modified citrus pectin reduces cholesterol and has many other benefits including safe chelation of heavy metals and cancer prevention and treatment.
 - Oat bran has soluble fiber that binds to cholesterol for excretion. But as with any grain or rice, it's wise to take a probiotic to reduce the phytic acid effect (i.e., demineralization).
- Statins drugs are often prescribed by medical practitioners to reduce cholesterol, but these are dangerous and may not provide benefits because:
 - 20-25 percent of patients have side effects, some serious. These side effects include
 - Decreasing CoQ10 by up to 50 percent in 30 days. CoQ10 is useful for heart health and cellular energy production, improves memory, and is an antioxidant. After age 30 natural levels of CoQ10 tend to decline and supplements may be desirable. But be careful about the type of CoQ10 you use because most is synthetic “cisform” CoQ10 and may be derived from tobacco products. The correct CoQ10 to take contains the term “trans-form” on the label and is made using yeast fermentation. This form of CoQ10 may overcome some of the disadvantages I have mentioned elsewhere in this document. [Corn CoQ10]
 - Muscle pain, termed myalgia, which increases with higher doses. Rhabdomyolysis is a severe form of muscle damage that can lead to kidney failure, which can be fatal. [BLYB 2017, 7]
 - “Most studies of statins have not shown a reduction in mortality.” (an increase in life span) [BLYB 2017, 7]
 - “In people who haven’t been diagnosed with cardiovascular disease, the use of statins reduced the risk for heart attacks and other cardiovascular events by a paltry 1% to 2%.” [BLYB 2017, 7]
 - The preferred alternative to statins is the Mediterranean Diet which emphasizes olive oil, wild fish for Omega 3s, and fresh organic fruits and vegetables, which reduce inflammation and blood clots.
 - Do not take red rice yeast because it has statin-equivalent compounds that may be unhealthy.

Arthritis

- Osteoarthritis (OA), the most common form of arthritis—there are over 100 types of arthritis-- is caused by the protective cartilage on the ends of the bones wearing thin resulting in bone on bone.
- Walking exercise has been shown to reduce pain from arthritis. [Uncommon Cures, 2009, 30]
- One of the new ideas to defeat arthritis is injecting stem cell concentrations in the arthritic joint. Stem cells are cells that can convert to any cell your body needs. In the case of arthritic joints, they can convert to chondrocytes, which form new cartilage, fibroblasts that repair soft tissue, or osteoblasts that grow new bone. The source of the stem cells is body fat from the abdomen or buttocks. These are injected into the arthritic joint to repair damage by growing new cells necessary for healing. [Bottom Line Health, Special issue 2017, 1-3]
- Glucosamine sulfate, a natural amino sugar that is produced by shellfish, provides pain relief and combats cartilage-destroying enzymes thereby halting cartilage loss. Chondroitin acts as a sponge to soak up fluids that provide cushion in the joints. The dosage is 500 to 1,000 mg glucosamine sulfate and 400 mg chondroitin taken with each meal. [Baker 2007, 41-42] In my opinion, you should start with only one dosage per day with one meal and work up to higher dosages as needed after about a one- month test period for each elevation in dosage.
- Take Omega 3 oils that reduce inflammation and cartilage destruction. [Baker 2007, 42] There are many other benefits to Omega 3 oils. Omega 3s reduce the likelihood of: high blood pressure, irregular heartbeat, arthritic pain, heart attack by 50 percent, depression, attention deficit disorder, and Alzheimer's disease. [Uncommon Cures, 2009, 34]
- Boron may be crucial to avoid arthritis. In parts of the world where the intake of boron is 1 mg or less the incidence of arthritis ranges from 20% to 70%; where the boron intake is between 3 to 10 mg, the incidence of arthritis is from 0 to 10%. [Downey 2015, 19]
- Piperine found in black pepper is an antioxidant and can stop the destructive damage to cartilage cells. [BLYB 2016, 84]
- Flavonoids found in cherries, blueberries, and blackberries reduce swollen arthritic joints [Uncommon Cures, 2009, 33].
- Onions and garlic reduce pain from arthritis. [Uncommon Cures, 2009, 33]
- CoQ10 and quercetin may also help with arthritis discomfort. [Uncommon Cures, 2009, 33]. I do not recommend CoQ10 because it may cause stomach upset, insomnia, irritability, fatigue, alter liver enzymes, etc.
- Oregano may be helpful for osteoarthritis and rheumatoid arthritis because it duplicates the effect of powerful cox-2 inhibitors such as Celebrex without the harmful side effects.

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- Oregano also has other anti-inflammatory effects and is found in Zyflamend.
- Capsaicin cream reduces inflammation. [Baker 2007, 43]
- Avoid plants from the nightshade family such as potatoes, eggplant, peppers, and tomatoes, which contain solanine, an inflammatory agent that can increase arthritic discomfort.
- Avoid corn and peanut oil.
- Eliminate gluten (e.g., wheat) which triggers allergies that increase arthritic pain [Uncommon Cures, 2009, 33-4]
- If you drink more than four cups of coffee a day, you are doubling your chances of developing arthritis because coffee dries up the joint fluids. [Baker 2007, 43] Its best to get your stimulants from exercise and avoid coffee entirely.
- Knee arthritis progresses faster in men who drink more than five non-diet sodas per week probably from an interaction between phosphoric acid and calcium. [BLYB 2015, 15]
- Bike riding builds thigh muscles which defeats OA. [Baker 2007, 44]
- In a recent study, 100 percent (31 cases) of knee operations to repair tears of the meniscus (cartilage that stabilizes the knee joint) developed arthritis within one year compared with 59 percent of the knees (165 cases) that did not have surgery. [BLYB 2016, 21]

Arthritis vs bone spurs

- It is important to distinguish arthritis from bone spurs. Bone spurs are pointed or smooth additional bone growth near areas of OA. They can be much more painful than OA and must be treated separately. [BLYB 2016, 19-21]
- OA pain tends to come and go gradually, but pain from a bone spur is more sudden and severe. [BLYB 2016, 19-21]
- Treatment for bone spurs includes heating and ice packs for 20-minute intervals, acupuncture, avoiding inflammatory foods, taking fish oil, turmeric/black pepper, and ginger supplements, ultrasound therapy, and surgery. It's probably best to try alternative treatments for about a year before considering surgery. [BLYB 2016, 19-21]

Attention Deficit Hyperactivity Disorder (ADHD)

- ADHD is often caused by excess sugar, excess acidity, or EMF/RFFR (e.g., cell phones, Wi-Fi).
- Excess sugar can be reduced by eliminating soft drinks, candy, and excess refined carbohydrates including sugar-intensive breakfast cereals.
- Excess acid can be eliminated by eliminating soft drinks, wheat products, processed foods, refined carbohydrates, and sugar intensive breakfast cereals.

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- Radio frequency field radiation (RFFR) cause ADHD and RFFR can be reduced by installing hardwired internet connectivity with an Ethernet cable connecting a hardwired (not wireless) router to the computer and avoiding cell phones. See Appendix B for the article “United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$).”
- Adding usable calcium will offset excess acidity, but the food elimination ideas noted above should still be followed. [West, August 2014] “Useable calcium” means unsweetened almond beverage with 45% of RDA calcium per glass plus some combination of Vitamins D3, K1 and K2, and /or algae-based calcium supplements.

Autism

- Autism is characterized by behavioral and multilevel disturbances of underlying biology the latter of which include oxidative stress, free radical damage, cellular stress proteins, antioxidant deficiencies (e.g., glutathione), elevated intracellular calcium, dysfunctional mitochondria, immune system disturbances, blood brain barrier and brain perfusion compromise, alternations of electrophysiological oscillatory synchronization, sleep disruption, etc. All of these phenomena occur with EMF exposure that can add to system overload ...in ASC [autism spectrum conditions] by increasing risk, and worsen challenging biological problems and symptoms; conversely, reducing EMF exposure may ameliorate symptoms of ASCs by reducing obstruction of physiological repair. This means that commonality between the symptoms of autism and EMF/RFFR (electromagnetic fields/radio frequency field radiation) suggests that reduction of EMF/RFFR may reduce autism symptoms. This article does not address whether EMF/RFFR cause autism. “With dramatic increases in reported ASCs that are coincident in time with the deployment of wireless technologies, we need aggressive investigation of potential ASC-EMF/RFR links.” [Herbert 2013, Abstract]
- Keith Scott Mumby, MD, has observed the onset of autism a few days after measles vaccination. And Dr. Andrew Wakefield has found rogue measles virus, the vaccination strain, in the bowel of children with autism. While neither of these sources proves that measles vaccination causes autism, they do lead one to be suspicious that the measles vaccine may cause autism. [Scott-Mumby, “Is This the Biggest Medical Breakthrough Ever?” an advertisement for his book “Fire in the Belly.”]
- Dr. Frank Shallenberger states:

“My strong advice to any parent is to avoid all childhood vaccines until the child is at least five years old.”

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As partial evidence for this recommendation, Dr. Shallenberger notes that a group of doctors “lied, cheated, and committed gross fraud...by deliberately deleting data from their study that indicated a possible connection between the MMR vaccine and autism.” MMR refers to the measles, mumps, and rubella vaccine. In other words, the final study found no link between the MMR vaccine and autism for African American children because data indicating a link between the MMR vaccine and autism were deleted in the final report. [Second Opinion XXVI(7) (July 2016), 5 ff] This conclusion is supported by other material I have found on the Internet.

- Low levels of Vitamin D have been found in autistic individuals and those with alexithymia, a personality trait related to autism characterized by impaired ability to experience, differentiate, and verbalize emotional experiences. It is essential that young children be tested for deficiencies in vitamin D. [Altbacker 2014, 1, 6]

Autoimmune diseases

- Autoimmune diseases occur when the immune system, designed to defeat pathogens attacks the body’s natural proteins because it is believed they are foreign invaders requiring T-cells or antibodies to defeat them. The symptoms may be vague, transitory, and difficult to diagnose, and it may take years for an accurate diagnosis. [Neil R. Rose, MD, PhD, BL Mega, 9-13]
- The most common autoimmune diseases are celiac disease (gluten intolerance), Crohn’s disease (inflammatory bowel disease), Type 1 diabetes (pancreatic cells are destroyed that create insulin), Hashimoto’s disease (thyroid is gradually destroyed), lupus (inflammation of joints, skin, kidneys, etc.), multiple sclerosis (damage to brain and spinal cord), psoriasis (inflammatory skin disease), rheumatoid arthritis (autoimmune joint disease), and scleroderma (inflammation of the skin, esophagus, lungs, and other organs).
- Other autoimmune diseases include pemphigus (antibodies that mistakenly attack proteins in skin cells that keep adjacent cells adhering to one another; Mega 2016, p. 38), autoimmune encephalitis (inflammation of the brain; Mega 2016, p. 39)
- It is very important to write down all of your symptoms, unrelated though they may seem to be, because the lack of connection in itself may indicate an autoimmune disease.
- Be careful about medications because some may cause side effects that can be very serious.
- Treatment of autoimmune diseases include an anti-inflammatory diet, omega 3 fish oils, minimizing environmental pollutants including EMFs and RFR, and taking vitamin D, probiotics, and a complete digestive enzyme.

Bacterial infections and bacteriophages

- Bacteria are microscopic, one-celled organisms that cause infectious diseases.

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- Antibiotics are the principal current product used to defeat bacteria, but bacteria are becoming increasingly drug-resistant. [BLYB 2015, 51]
- Antibiotics kill all bacteria-- both good and bad—with which they come in contact. Natural products may work as well as antibiotics to kill bacteria.
 - Probiotics taken during and after the antibiotics dosage adds good bacteria. Based upon my experience, probiotics may be used successfully to treat stomach and intestinal flu attendant with diarrhea.
 - Probiotic-intensive foods include fermented vegetables (sauerkraut, kimchi), fermented soy foods (miso, tempeh), and kefir (fermented milk product). [BLYB 2015, 52]
 - Colloidal silver, nano-sized particles of silver (e.g., 0.6 nm) suspended in pure water, defeats many pathogens. “True silver particles” are believed to be superior to “ionic silver.” [BLYB 2015, 52]
 - Colloidal silver may be used for ear, nose, throat, and eye infections. [BLYB 2015, 52] It may also be used for some flu/viruses, but not all as I have discovered. If you use colloidal silver to defeat bacteria or flu, as I have done, it is essential to use it until the bacteria is 100% defeated; if you stop at say 80% success, the pathogen will probably return and then you can start the dose over as I have discovered. This will prove that colloidal silver works, but adds a bit to the treatment time.
 - Curcumin, the active ingredient of in the root of the turmeric plant acts as an antibiotic that kills bacteria, relieves inflammation, pain and helps form new skin cells to close the wound. Mix 1-2 tablespoons of ground turmeric with water or coconut oil (which is anti-pathogen) into a thick paste. Apply the paste to a wound and cover with a bandage, changing them for three days’ total treatment time. [Sears House, November 16, 2016]
 - Oil of oregano contains carvacrol, a powerful antimicrobial chemical that can defeat staph (Staphylococcus aureus). Take two drops of oil of oregano with one teaspoon of olive or coconut oil. [BLYB 2015, 52]
 - Echinacea and oregano leaf can also defeat sore throats if taken immediately by dropping some in the throat and not washing it down with liquids. For example, take about 1/3 capsule of echinacea and drop it in your throat in response to a sore throat and additional portions as necessary. But to be effective echinacea must be taken at the first sign of a sore throat so one should carry a capsule when traveling outside the home. I have terminated over 95% of sore throats with this dosage of echinacea.
 - Garlic, which contains allicin, fights a variety of bacteria, viruses, and fungi. Some antibiotic resistant H. Pylori were defeated with garlic. Deodorized capsules are best. [BLYB 2015, 52] Garlicin is a good choice.

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- Zinc oral lozenges or syrup may shorten colds, but may cause nausea and a bad taste in the mouth. [BLYB 2015, 53]
- Zinc acetate is best for colds. Zinc gluconate also works but not as well.
- Bacteriophages (“bacteria eating”) are submicroscopic packages of DNA or RNA enclosed in a protein envelop that selectively target specific bacteria; they attach to the bacteria’s cell wall and then kill the bad bacteria. Thus, they are distinguishable from antibiotics which kill all bacteria. [Life Extension, Whitman, Jan 2017, 28-33)
 - Bacteriophages are part of phage therapy that began before the use of antibiotics. They may be used to clean bad bacteria in the intestinal tract, skin, head and neck, bone, chest, and abdomen.
 - They are effective against E. coli (e.g., H10407), Salmonella, and pseudomonas.
 - Bacteriophages are particularly effective in the intestinal track where they massively reduce targeted bacteria and massively increase probiotics where without the bacteriophages the probiotics would be defeated by highly colonized bad bacteria. Further, the combat life of bacteriophages is short—a few hours--measured by the time they take to defeat bad bacteria.
 - Because humans have been exposed to bacteriophages since the beginning of time, our bodies adept well and safely to their presence and action.
 - Phage therapy is returning because of the increase in antibiotic resistant bacteria.
 - Life Extension sells probiotics with phage technology.

Biologics

- Biologics are a new classification of joint pain killing drugs that are made from genetically-engineered proteins derived from human genes. They alter the immune system to inhibit joint inflammation and pain associated with arthritis, rheumatoid arthritis, Crohn’s disease, and other chronic pain centers. They include Actemra, Cimzia, Enbrel, Humira, Kinerst, Orencia, Remicade, Rituxan, and Simponi. And they do work to reduce or eliminate pain. Unfortunately, they render the immune system ineffective against some infections which can be deadly if used long-term. In one case, a 70-year old individual came down with Multiple Sclerosis after ten years of use and it appears there may be other similar cases. [Health Alert 33(4), 1]

Blood pressure (BP), high and hypertension: The metabolic syndrome

- Blood pressure is the force exerted on the walls of arteries; The first number, systolic pressure, measures pumping pressure (heart contracts), and the second number, diastolic pressure, measures relaxing pressure when the heart is not pumping. Pulse pressure, the difference between systolic and diastolic pressure, is now believed to be important with a target of 40 (e.g., 120/80 = 40) and divergences from this are viewed as undesirable. [Heilbron 2013, 15]

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- About 60% (58.2%) of the population have hypertension or are pre-hypertensive. Population segments at highest risk are non-Hispanic blacks (63%), non-Hispanic black men (69%), all adults over 60 years (88%), those with less than a high school education (65%), and those with body mass indexes over 30 (76%). Hypertension normally exists with elevated triglycerides, low HDL, belly fat, high blood sugar, and high insulin levels which, when combined together, are termed “the metabolic syndrome.” The metabolic syndrome is the most reliable predictor of heart attack or stroke and Type 2 diabetes. Twenty-five percent (25%) of the US population now has metabolic syndrome. [Heilbron 2013, 5- 9]
- High blood pressure and hypertension are interchangeable terms. They should be treated without prescription medicine because (1) there are about 18 side effects to prescription medicine to lower blood pressure [Heilbron 2013, 19, 28], (2) prescription medicine doesn’t always work to reduce hypertension, and (3) there are many natural ways to treat high blood pressure without medication. About 50% of the individuals who take prescription medication stop because of the severe side effects. [Heilbron 2013, 22]
- “Nobody should be taking blood pressure drugs... These drugs can cause asthma, impotence, extremely low blood pressure, kidney damage, heart failure, and even death. And that’s just to name a few of the possible complications.” [Shallenberger Healing 2015, 25]
- Blood pressure lowering drugs cause dizziness and a dry cough that gets worse when you lie down at night. These drugs include Zestril, Prinivil, Capoten, and Vasotec, which contain an angiotensin-converting enzyme (ACE) inhibitor. An alternative set of drugs contain an angiotensin receptor blocker such as Cozaar or Diovan which avoid the cough symptom. [BLYB 2017, 44]
- Recent studies indicate that individuals over 60 can have blood pressure of up to 150/90 before taking medication. [BLYB 2015, 6]
- However, the no-medication-rule ends when the BP reading is 160/100 or higher. When the blood pressure comes down, every possible holistic effort should be made to discontinue the use of medications by turning to ACHMM. [Heilbron 2013, 14]
- High blood pressure damages artery walls, overtaxes the heart in its pumping activity, and increases the likelihood of heart and kidney failure. It also ages the brain, enlarges the heart, and damages eye blood vessels. [Heilbron 2013, 11-12, 16]
- Measuring blood pressure accurately is difficult. Here are some of the problems and some tips:
 - Inaccurate high readings can result from nicotine, caffeine, and “white coat” hypertension. Blood pressure readings in a doctor’s office are unreliable because the cause of the high blood pressure reading may be the patient’s anxiety in the doctor’s office. Up to 50% of the readings in a doctor’s office can be up to ten points higher than the true reading outside the doctor’s office; these incorrect

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doctor's office readings are called "white coat" hypertension. [Heilbron 2013, 30-32; BLHB 2016, 22]

- Some individuals have masked hypertension in doctor's offices in the sense their readings in the doctor's offices are understated and at home will be higher and more accurate. [BLYB 2017, 5]
- BP is best taken at home to get accurate readings. [Heilbron 2013, 30-32]
- It is also important to monitor both arms successively because there can be up to a ten-point difference between the arms [Heilbron 2013, 30-32]
- The most accurate equipment to measure blood pressure is the manual (mercury) blood pressure kit. Another accurate type of equipment is the use of a stethoscope to listen to the sound of blood flowing. Cuff-style monitoring around the upper arm is also accurate. Any equipment that you purchase should be approved by the Association for the Advancement of Medical Instrumentation (AAMI). The more automated equipment in doctors' offices is not as precise. [BLYB 2016, 6]
- In a recently completed study of 4,480 participants over 22 years, it was found that there was no cardiovascular event difference (e.g., heart attacks, strokes, etc.) in Group 1 with systolic blood pressure less than 120 ("low") and Group 2 with SPB of 120-139 ("standard"); this means that SBP of less than 140 is normal and no medication is necessary. Therefore, it would be ill-advised to take blood pressure medication if you have SBP of 139 or less. Group 3 with SBP of 140-159 had a 16 percent increase in the incidence of cardiovascular events and Group 4 with SBP over 160 a 73 percent increase in cardiovascular events. [Rodriquez 2014]
- Slightly elevated blood pressure for older individuals may be helpful to deliver oxygen and sucrose to the brain preserving memory and cognitive skills [Micozzi Insider October 2014]
- Low diastolic blood pressure may harm the brain. [BLYB 2015, 6]
- If you have high blood pressure, test your blood pressure before drinking coffee in the mornings and then about 45-60 minutes later. If you find that your blood pressure increases, decline coffee. This rule is particularly true if you are under stress, because caffeine plus stress almost certainly increase blood pressure and contribute to other health issues. Caffeine constricts the bold vessels thereby increasing blood pressure
- Different blood pressure readings in both arms indicates cardiac risk. A difference of more than ten points in systolic pressure suggests a 38 percent increase in a cardiac event. [BLYB 2016, 7]

Blood pressure, high: causes

- The causes of high blood pressure are
 - lack of physical activity,
 - smoking,
 - stress,

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- belly fat,
- potassium deficiency,
- refined carbohydrates; High blood pressure is highly correlated with the consumption of sweetened beverages, HFCS, and sugar generally. Thus, the likelihood of high blood pressure and diabetes is increased with the consumption of refined carbohydrates. [Heilbron 2013, 114].
- high fructose corn syrup raises blood pressure by increasing uric acid, which reduces nitric acid the latter of which is crucial to maintain blood vessel elasticity and dilation. *Uric acid may be lowered with Bragg's Apple Cider Vinegar.*
- body mass index over 25,
- salt (but be careful if you live in a very hot climate where you may have a salt deficiency),
- excess alcohol consumption (alcohol is a simple sugar),
- vitamin D deficiency (which is perhaps the most common vitamin deficiency for all individuals),
- indoor and outdoor air pollution,
- heavy metal toxicity. [Heilbron 2013, 13]
- Refined carbs, sugar, HFCS, etc. cause arterial inflammation by scratching the artery walls and forming hard arterial plaque. Further, insulin is highly inflammatory. And we are consuming massive amounts of sugar...about 150 to 175 pounds annually. [Heilbron 2013, 86-89]
- Hypertension is highly correlated with heart disease, stroke, obesity, and diabetes; refined carbohydrates may be the underlying cause of all of these. Thus, it is important to reduce refined carbohydrates and increase foods with healthy fats. [Heilbron 2013, 84-5]
- Much of the material in this section comes from “The 30-Day Blood Pressure Cure” by Roy Heilbron and Jim Healthy (2013). If you have or wish to avoid high blood pressure, which is associated with hypertension, it is best to purchase the book and follow its guidelines.

Blood pressure, high: Solutions

- Potassium reduces blood pressure. Garlic and bananas, which are potassium intensive, reduce blood pressure. The ratio of potassium to salt should be 2.5:1. [Uncommon Cures 2009, 165; BLYB 2016, 7]
- Omega 3 fish oils combat hypertension. [Shallenberger Healing 2015, 27; BLHB 2016, 27]
- Probiotics help to reduce blood pressure. [BLHB 2016, 29]
- Use sesame seed oil exclusively for cooking because it helps reduce blood pressure. In one group, blood pressure was reduced from 166/101 to 134/84.6. [Bottom Line 100, 50]
- Deep breathing may reduce high blood pressure. [Uncommon Cures, 2009, 41]

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- Exercise daily. [Health Alert, July 2014, 2]
- Magnesium and CoQ10 are common deficiencies for those with high blood pressure and magnesium is a common deficiency generally. [Shallenberger Healing 2015, 27]
- Foods that fight high blood pressure are raisins (high in potassium that helps in excreting sodium), prunes, beets (high in potassium), low fat milk (but there are other reasons not to drink milk), flaxseed (contains ALA and magnesium), flavonoids which reduce inflammation), and two ounces. of walnuts daily (monounsaturated fatty acids, ALA, magnesium, and fiber).
- L-arginine causes blood vessels to dilate and is the precursor to nitric acid. [Shallenberger Healing 2015, 28]

Blood pressure (BP), high and hypertension; diabetes: Medications and foods to avoid

- Anyone at an advanced age should not take blood pressure medications because the likelihood of dizziness contributes to the likelihood of a serious fall in which one breaks a hip, other bones, major head injuries, or joint dislocations. About one in ten seniors experience these serious injuries. In addition, blood pressure medications contribute to weakness, impotence, chronic fatigue, and heart failure. One 80-year old senior was prescribed blood pressure medication, fell and injured his hip, went in for surgery, and was dead a week later from complications. [Health Alert, July 2014, 1]
- There is compelling evidence that refined carbohydrates are the principal cause of hypertension. When fats became the “no-no” about 30 years ago, processed foods were added to diets which reduced fat and added sugar/sucrose-intensive refined carbohydrates, high fructose corn syrup, other sweeteners, and reduced food nutrients because “refining” removes about 65% of nutrients. High carb diets tend to retain water and salt and increase insulin production all of which raise blood pressure and the incidence of diabetes. [Heilbron, 2013, 82-3]
- Minimize sweeteners which include sugar, agave syrup, brown sugar, molasses, high fructose corn syrup, artificial sweeteners (Splenda, NutraSweet, Sweet’ N Low, Aspartame), and all sugar alcohols (sorbitol, malitol, and erythritol)
- Avoid high fructose corn syrup.
- Avoid all soda pop, both regular and diet
- Avoid fruit juices because of added sugar and the absence of fiber; fiber reduces the Glycemic Index.
- Avoid sport drinks, energy drinks, and sweetened teas.
- Avoid sugar intensive foods including candy, energy bars, granola bars, sugary deserts, ice cream or sorbet.
- Reduce sweetened dairy products and flavored yogurts; even milk contains about 11 grams of sugar per glass, so if you substitute unsweetened plant beverages (e.g., coconut, almond), you will substantially reduce sugar—perhaps 50 grams per day.

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- Avoid bread and baked goods containing refined wheat including white flour, rice flour, or soy flour. The food equivalents are muffins, bagels, rolls, pastries, cookies, donuts, waffles, and pancakes. Preferred baked goods are from sprouted grains, which are whole and not refined.
- Two excellent breads are Alvarado Street Bakery's Sprouted Rye and Sour Dough and Ezekiel 4:9 Sprouted Grain Breads. *They are made mostly from whole grains* and do not use processed (milled) flour or sugar and both are intense in Vitamin B and C and the protein amino acids. Alvarado's bread contains about 75-85 percent sprouted grain. They may be found in the refrigerated bread section at your local food store.
- Avoid refined grain products including breakfast cereals, sweetened granola, chips, crackers, pasta, and all processed snack foods. Whole grain products are preferred, but remember they convert to sucrose.
- Avoid fast food hamburgers, hot dogs, French Fries, fried chicken, etc.
- Avoid all deep-fried foods.
- Avoid margarine and foods containing hydrogenated or partially hydrogenated oils. This includes most snack foods and processed cheeses (Velveeta or American slices).
- Avoid refined vegetable oils including corn, safflower, sunflower, soybean, peanut, and canola. Unrefined vegetable oils marked "unrefined expeller pressed" are probably OK.
- Avoid all highly processed meats (cold cuts, sausages, jerky) containing nitrates and other chemical preservatives: Most food stores have processed meats and ham that are preservative free.
- Avoid ketchup, sweet condiments, creamy salad dressings, and relishes because they usually contain sugar, HFCS, and refined vegetable oils.
- Avoid all beers and ales if they contain barley malt and dextrose. Wine limited to one glass per day or one oz. of spirits are preferred. [Heilbron 2013, 109-110].

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Blood test results

- The following blood test results are from [BLYB 2015, 36-38] unless otherwise indicated.
- Potassium
 - Normal potassium: 3.6 milliequivalents per liter (mEq/L) to 5.2 mEq/L.
 - Optimal potassium: 4.5 mEq/L to 5.2 mEq/L.
 - Discussion: In order to increase potassium, eat bananas, oranges, cantaloupe, tomatoes, sweet potatoes, quinoa, and buckwheat. Since sodium depletes potassium, reduce sodium to under 2,300 mg daily. Reduce stress because stress increases cortisol which depletes potassium.
- Glucose
 - Normal glucose: 65 mg/dL to 99 mg/dL.
 - Optimal glucose: 70 mg/dL to 84 mg/dL.
- Discussion: While diabetes is defined at 126 mg/dL, for every point over 84 mg/dl, the likelihood of diabetes increases by six percent. Vascular and kidney damage may occur at 90 mg/dL. Cinnamon may help but research carefully the type and amount of cinnamon you take because large amounts of cinnamon may be toxic depending upon its type.
- Homocysteine
 - Normal homocysteine: Less than 15 micromoles per liter ($\mu\text{mol/L}$).
 - Optimal homocysteine: Less than 8 $\mu\text{mol/L}$.
 - Discussion: Homocysteine is a naturally occurring amino acid. High levels are associated with heart disease, stroke, Alzheimer's, and osteoporosis. Everyone should get tested for homocysteine. Causes of high homocysteine are inadequate vitamin B-6, unable to metabolize methionine, an amino acid in meat, fish, and dairy, lack of exercise, chronic stress, smoking, and too much caffeine. Take a B-complex vitamin with 50 mg of vitamin B-6.

DHEA

- DHEA is useful to increase the number of brain cells and combat metabolic syndrome.
- DHEA is the most abundant steroid hormone in humans and declines as we age. [LifeExt, Sandro, November 2017, 26-32]

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- DHEA contributes to mental health, improved cognitive function, less anxiety, less depression, greater hippocampus volume (memory processing), and improved mood.
- Low levels of DHEA are correlated to stress-induced clinical burnout, mood disorders, bipolar disorder, major depression, anxiety, and chronic fatigue syndrome. [LifeExt, Sandro, November 2017, 27-32)
- DHEA may offset the negative effects of too much cortisol.
- DHEA may be an alternative to powerful psychoactive drugs. [LifeExt, Sandro, November 2017, 27-32)
- DHEA in doses of 25 mg daily may lower blood sugar by 26%.
- DHA also treats metabolic syndrome, which is obesity, hypertension, elevated blood sugar, excess body fat around the waist and his cholesterol and triglycerides.
- DHEA improves arterial health.
- Dosage is about 15 mg to 25 mg per day, although in some higher doses may improve symptoms.

Body Odor

- Natural ingredients to defeat body odor are witch hazel, tea tree oil (a strong antimicrobial), green tea extract, bergamot essential oil (an antiseptic), and apple cider vinegar (an acid which kills bacteria).
- One interesting under arm deodorant is Jason's Cooling Mineral Gel with tea tree oil, but use sparingly.
- Body odor may be caused by excess saturated fats in meats and dairy products so reduce your consumption of these and add more olive oil. [Uncommon Cures, 2009, 75

Bone density and bone fractures

- Bone density is a measure of the amount of calcium, magnesium, zinc, vitamin D3, boron and other trace minerals in bones. As the outer shell of bones becomes thinner and the interior more porous, bone density declines. As bone density declines, the likelihood of bone fractures increases.
- There are three stages to healing bone fractures:
 - Inflammation for about seven days to promote soft callus formation.
 - Soft callus formation begins with a fibrous, putty-like substance with no calcium that fills in between the break.

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- Hard callus formation caused by calcium attracted to soft callus forming hard callus and new bone formation.
- Important minerals for rapid healing are calcium, magnesium, Vitamin D3, Vitamin C, Vitamins K1 and K2, and the trace minerals boron, copper, phosphorus, silicon, strontium, vanadian, zinc, and other trace minerals. Vitamins D3, K1, and K2 act to attract calcium and magnesium to the bone. It is believed that plant-based calcium from algae is better than a limestone-based calcium supplement. Supplements containing bone minerals are important as one ages because of the natural declines in bone minerals.
- There are different combinations of calcium and other minerals for rapid bone fracture healing. One combination is unsweetened almond, coconut, or other plant beverages with Vitamin K1 and K2 supplements, Vitamin C from supplements or fruits and vegetables, and magnesium from supplements or other sources. One eight-ounce glass of some plant beverages will contain 45% of calcium and 25% of vitamin D. An alternative is to take calcium, Vitamin K1, K2, vitamin C, and magnesium supplements. Some calcium supplements are from algae.
- The daily requirements for calcium are 1,000-1,200 for adults, and up to 1,500 for women depending upon age, and position in the female cycle. It is essential for women to consult their doctor or other technical medical authority for their calcium needs.
- It is estimated that 55% of men and 78% of women are calcium deficient. [Spline-Health] Inadequate calcium requires the body to withdraw calcium from bones leading to reduced bone density and osteoporosis. Because of this common deficiency, it is crucial that one is aware of his or her calcium content and make dietary changes. The dietary changes may include sources of calcium such as almond or other plant beverages with calcium and Vitamin D3, and supporting vitamins and minerals including dedicated Vitamin K1 and K2 supplements.
- Natural sources of calcium are kale, sardines, yogurt, broccoli watercress, cheese, almonds, milk and plant-based beverages such as unsweetened almond milk.
- Modern calcium supplements use algae as the source for calcium and include vitamins D3, K1, and K2 (for bone absorption of the calcium), magnesium, and trace minerals. Thus, one may increase his or her calcium by drinking unsweetened almond milk perhaps with a dedicated K1/K2 supplement, or with a bit less almond milk plus calcium supplements. It may be best to avoid taking 100% of a recommended supplement and add other sources of calcium.
- Vitamin C assists in healing bone fractures and one of the best vitamin C supplements is Alive Vitamin C because it is sourced from four organic fruits and because each capsule contains 125 mg Vitamin C compared with the

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recommended daily amount of 90 mg for men and 75 mg for women. Many vitamin C supplements have massive doses of vitamin C.

- Excess calcium probably starts at 2,000 mg per day and causes many health problems. These include constipation, kidney stones, heart disease and stroke, memory loss, nausea, vomiting, excess tiredness, etc.
- Caffeine drains calcium from the system thereby contributing to osteoporosis. [Baker 2007, 334]

Caffeine

- Caffeine constricts the blood vessels thereby contributing to high blood pressure. When the caffeine wears off, the blood vessels over dilate. [Baker 2007, 252]
- In recent studies, it was found that folks who drank 28 or more cups of coffee per week were 21 percent more likely to die during the study period. And those under age 55 who drank 28 or more cups of coffee per week were 56 percent more likely to die. [BLYB 2015, 29]
- “Thus, reviving your grey matter with caffeine all day is a pretty dumb act; it will lead to nervous exhaustion, which then requires more caffeine to get it firing again, and so on, round and round in a vicious cycle... The truth is that brain overload or fatigue can lead to hundreds of symptoms, if not thousands.” [Mumby 2012, 16-17]
- See Appendix B for the contribution of caffeine to PTSD in the article “Recommendations to Prevent and Treat PTSD.” *Indian Journal of Applied Research*. 6(9) (September 2016): 510-519.

Cancer: The Six-Pillar Cancer Treatment Protocol

Introduction

- The Six Pillar Cancer Treatment Protocol (SPCTP) is a model which includes the following categories for prevention and treatment:
 - Improve life style and strategic dietary models .
 - Select tactical dietary models to defeat cancer naturally.
 - Tactical dietary models.
 - Supplements targeting cancer and cancer cell apoptosis.
 - Utilizing Avant Garde cancer treatment models.
- Cancer goes through four stages. The first stage is “initiation” when a normal DNA cell is damaged, is not subject to apoptosis as it should when damaged, mutates, and begins to proliferate. The second stage is “promotion” in which the cancer grows into a

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measurable and identifiable tumor and may be subject to treatment with supplements. The third stage is “clinical” where the cancer has begun to provide its own blood vessels (angiogenesis) and can be defeated if the blood vessels can be destroyed through anti-angiogenesis. The fourth stage is spreading (metastasis) to other areas through the addition of additional blood vessels. [Shallenberger Healing 2014] ⁶

- The causes of initial cellular damage may be:
 - Environmental pollution from chemicals.
 - Smoking.
 - Alcohol.
 - Dehydration. When the body becomes dehydrated, it draws water for the large intestine causing constipation and from cells. When cells have inadequate water, they are damaged and cannot perform their functions of processing food and emitting waste products. These increase the likelihood of converting from oxygen respiration to sucrose fermentation.
 - Stress.
 - *Prescription drugs to control or defeat chronic illnesses such as arthritis, heart disease, (high blood pressure, heart rate, cholesterol), diabetes, gout, kidney disease, lung disease, and dementia. Statins increase the likelihood of cataracts, dementia, diabetes, kidney disease, muscular disorders, etc. [Micozzi Insider May 2018, 1-2]*
 - *Birth control pills, which may cause breast cancer. [Micozzi Insider May 2018, 1]*
 - Electromagnetic fields/radio frequency field radiation.
 - The failure to repair this initial damage may be the continuous nature of the source of the cause. At some point, lymph nodes, the source of white blood cells and a key to the immune system, become damaged and unable to defeat the body’s ability to influence cancer cell apoptosis.
- The objective of cancer prevention and/or treatment is to prevent the initial damage or to repair damage done as early as possible in the linear conversion of cellular respiration with oxygen to cellular fermentation on sucrose.

Step #1: Improve life style and strategic dietary models

- Life style includes the complete package of how and what we do as we move through time and space. It includes exercise, the food we eat, thoughts of and interactions with others, contacts with the environment through which we pass, and our time allocations to all of these on a daily rhythm.

⁶ Dr. Al Sears, MD, in The 8th Element, Nature’s Universal Cancer Killer, p. 13 states that after a few hours of a cell’s conversion from respiration on oxygen to fermentation on sucrose, the change is irreversible. The science of Epigenetics reported by Danica Collins indicates the process may be reversible.

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- Exercise should include joint mobility and deep breathing to assure maximum oxygen to cells thereby defeating fermentation on sucrose. Exercise is also crucial to energize and stimulate us naturally rather than depend upon caffeine and artificial stimulants.
- A diet rich in natural unprocessed foods including free range, grass fed meats, wild seafood, Omega 3 fats, a variety of organic, multi-colored fruits and vegetables, fiber from beans and whole grains, plus a bit of olive oil is crucial for cancer prevention and treatment. Cruciferous vegetables (i.e., broccoli, cauliflower, celery, Brussel sprouts) contain compounds that defeat cancer. It is important to have adequate good quality water such as distilled or reverse osmosis water. Its best to avoid sugar, heat altered oils, refined carbohydrates, and processed foods.
- One of the most important strategic dietary models is enzyme management to assure the availability of digestive enzymes as we age, systemic enzymes to defeat fibrin, amyloid beta plaque, and tau tangles, and metabolic enzymes to control bodily processes. From my review of commercial health literature and medical research articles, there is a major void in the lack of emphasis on enzyme management. It is very important, for example, to take daily systematic enzymes to control fibrin, amyloid beta plaque and tau tangles, and a complete digestive enzyme to digest fats, proteins, and other foods as we age.
- Stress reduction requires that we be attentive to good human relationships with others by seeing them without flaws and helping them whenever possible.
- Stress reduction also requires that we set a plan for continuous learning to expand our professional knowledge so the assets on our personal income statement reflects new knowledge each period. This requires becoming active in broadly defined trade associations and research of the literature of our profession. For example, if you are engaged in the entertainment industry, you should include reading of entertainment state and federal case law to learn of the different operations of the entertainment business and the application of law to define business relationships and opportunities. These skills increase the likelihood of retaining your present job and reducing job search periods for new employment.
- It is very important to read health literature and understand the strategic shifts in life style recommended by medical professionals. For example, a change is underway now which emphasizes increased good-quality fats and less refined carbohydrates to reduce diabetes and improve nutrition. In order to manage cancer prevention and treatment, it is important to specify medical issues associated with the specific type of cancer, and research that issue on Google Scholar or some equivalent research engine to find alternative and complimentary medical models to defeat the cancer.
- It is also important to work participatively with your medical practitioner to integrate standard cancer treatment models with alternative and complementary medicine to

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maximize the chance of defeating the cancer quickly with minimum damage to other organs.

Step #2: Select tactical dietary models to defeat cancer naturally.

- Fresh, uncooked, organic fruits and vegetables are helpful in preventing and treating cancer because of their vitamins and minerals and live enzymes assure better digestion of food, reduction of the three bad proteins, fibrin, amyloid beta plaque, and tau tangles, and improved metabolic enzymes. Artificial fertilizers have few enzymes.
- The Ketogenic Diet (KD) is high in fats, moderate in proteins, and very low in carbohydrates. The fats product ketones, an alternate-to-sucrose form of energy in the form of beta-hydroxybutyric acid and acetoacetic acid, which are byproducts of fat metabolism. Getting energy from fat and ketones starves cancer cells which energize on sucrose. Since the American diet is about 50-60% carbohydrates, the Ketogenic diet will reduce carbs substantially. The increase in ketones may also improve energy because the aging brain often finds it difficult to convert sucrose to energy, but it can convert ketones to energy. The Ketogenic diet is usually performed in conjunction with surgery and chemotherapy and radiation and places one in a state similar to fasting and reduces insulin. You must apply the Ketogenic diet under the supervision of medical personnel familiar with its use. [BLYB 2015, 89]
- Carbohydrate reduction stimulates the body to produce ketones from stored and daily fat.
- Brassicaceae-family cruciferous vegetables are rich in vitamin A, K, and C, and fiber. Cruciferous vegetables also contain sulforaphane, a phytonutrient which blocks an enzyme (HDAC) which results in the restoration of normal cell function including apoptosis. [Marchione Food Doctor, Spring 2016, 1] They are anti-inflammatory, provide anti-oxidants, are heart healthy, and reduce the risk of cancer. But they also contain goitrogens which block iodine absorption and should be avoided if one has thyroid problems. They include broccoli, cauliflower, Arugula, Bok Choy, Turnip, cauliflower, Brussel sprouts, Kale, cabbage, radish, Bollard greens, maca, mizima, mustard greens, and rutabaga.
- Piperine in black pepper has many anti-cancer functions for prevention and treatment. Piperine is an anti-oxidant, anti-inflammatory, immunomodulatory, anti-asthmatic, anti-convulsant, anti-mutagenic anti-mycobacterial, anti-amoebic and anti-cancer. Piperine creates reactive oxygen species in cancer cells thereby killing them. The many other functions of piperine are described in Rather and Bhaget, Cancer Chemoprevention and Piperine: Molecular Mechanisms and Therapeutic Opportunities.” *Frontiers in Cell and Developmental Biology*, February 15, 2018, a review-of-the-literature article. The impression I received from reading this article is that piperine may be one of the best foods to prevent and treat cancer.
- Parsley and celery contain apigenin, a polyphenol, prevents cancer by starving cancer cells, promotes cancer cell apoptosis, and protects from environmental toxins. Apigenin

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also complements indole-3-carbinol found in cruciferous vegetables to defeat cancer. [Life Extension, Rita Haven, January 2017, 48-55]

- Flax seed meal (FSM) and oil (FSO) are excellent sources of fiber, Omega 3 oils, and lignans, and reduce the incidence of cancer. [Donaldson 2014, 3] Lignans may reduce cancer risk by preventing pre-cancerous cellular changes and by reducing angiogenesis and metastasis. [Adolphe 2010] In a study of rats fed FSM and FSO vs. a control diet of soybeans, it was found that diets of FSM and FSO reduced precancerous lesions in the colon by up to 87.5 percent. The beneficial ingredients in flax seeds are ALA, a specific lignin, and dietary fiber that improves cell membrane structure. [Williams D 2007, Abstract, 157]. Flax seed may be chewed or placed in a small coffee grinder and ground. If you grind, immediately place the grindings in cold food to preserve the beneficial oils from evaporating. Its best to avoid pre-ground flax seeds because the oils will evaporate when the package is opened.
- Add freshly squeezed organic lemon or lime juice to purified water (e.g., distilled, reverse osmosis) you drink each day. These fruits remineralize the water and digestion utilizes the pectin, iron, calcium, phosphorous, potassium, vitamin C and fiber to create alkalinity in the body; alkalinity helps defeat cancer. In addition, lemons and limes are antibacterial and antiviral, cleanse the liver, boost the immune system, and furnish energy. Some recommend warm lemon juice first thing in the morning. [Geary, 09.12.2004]
- Spice your foods with black pepper by grinding black peppercorns immediately before using. These peppers contain piperine which kills cancer cells associated with breast, prostate, colorectal, lung, cervical, liver, and stomach cancer. Piperine also increases the bioavailability of curcumin by 2,000 percent in humans [BLYB 2016, 83; Wikipedia]
- Take about eight grams of Omega 3 fish oils daily in two servings. Bulk fish oils are much cheaper than capsules, but the polyunsaturated oils may go rancid, which is harmful. If you purchase bulk fish oils, wrap the bottle in tinfoil to prevent light deterioration, add plastic wrap to protect against skin injection of aluminum from the tin foil, and store in the refrigerator.
- Avocados (*Persea Americana*) reduce substantially the ability of prostate cancer cells to ferment glucose and when cancer cells cannot get energy from glucose, they die. Notably there is a high correlation between diabetes, high blood sugar, and cancer. In one study, rats on a low-fat, high-carb diet had a cancer incidence rate of 43% while rats on a high-fat, low-carb diet had a seven percent cancer incidence rate. [Shallenberger, Foods that Heal, 2014, 1; Shallenberger, Healing 2014, 43-45]
- Black beans contain antbocyanins and triterpenoids, which are strong antioxidants. They reduce inflammation and may destroy cancer cells. The dosage is three cups a week and they make an excellent breakfast or lunch. [BLYB 2015, 82]
- Lycopene, which is increased by cooking tomatoes, is a phytonutrient and protects against a variety of cancers and many other illnesses.

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- Do not overeat because there is a high correlation between overweight and certain types of cancer. [Donaldson 2004, 2]
- The fluid mosaic model of cell structure suggests that cell membranes are composed of phospholipids (fats with phosphorous) and a bit of cholesterol. Since the cell membrane governs the entry of oxygen and nutrients into cells and removal of waste products, it is crucial that cell-membrane fats (i.e., lipids) be of the highest quality. The highest quality fats are found in Omega 3s and 6s from grass-fed cattle, free range chicken and eggs, and wild fish; further, the target ratio of Omega 3s to Omega 6s should be about 1:2. Grain-fed cattle, chickens, and farm fish are deficient in Omega 3s and intensive in Omega 6s. Heat altered fats and oils such as poly unsaturated vegetable oils, and fats found in French fries, potato chips, donuts, and processed foods generally are sources of poor-quality fats and impede entry of nutrients and removal of waste products across the phospholipid cell membrane. Add inadequate exercise and, thereby, inadequate oxygen and you have the recipe for oxygen-deprived cells that begin to ferment glucose for energy and that's cancer.
- Mitochondrion (plural: mitochondria) is a membrane-enclosed organelle within a cell that contains a nucleus and is the power plant providing cellular energy, cell cycle and growth, and cell death (apoptosis). Thus, when a cell is damaged, the mitochondrion should cause cell apoptosis; in the case of cancer, the mitochondria are often damaged and unable to cause cell apoptosis and the cancer cells continue to live and multiply. Present research is attempting to restore the vitality of the mitochondria, which then cause cancer-cell apoptosis. Further, when the mitochondria are damaged, cells cannot burn fat—they must survive on glucose. Mitochondria are COQ10 intensive and adding CoQ10 supplements may help in restoring their vitality. [Shallenberger, Healing 2014, 45-46]
- If you have cancer, do not consume any foods with refined sugar or foods with refined flour products. There is a highly positive relationship between sugar and many types of cancer. [Donaldson 2004, 2-3] .
- If you have cancer, avoid all processed foods. This means no refined carbohydrates, potato chips, French fries, cookies, baked goods including cakes, canned goods, processed meats (e.g., salami), etc. Refined carbohydrates convert to sugar and have about 65 percent of the nutritional value refined out—that's what "refined" really means.
- Avoid all foods with heat-damaged oils. Do not use canola oil.
- Olive oil contains monounsaturated fatty acids and polyphenols. But it is Omega 6 intensive and should be used sparingly.
- Emphasize alkaline foods because alkaline foods off set acidic foods (amino-acid proteins)—cancer thrives on acid—and because acids draw calcium from bones, if there is inadequate alkalinity.
- Eliminate all soft drinks, which are sugar and caffeine intensive.

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- Eliminate all fruit juices, which are sugar intensive and have little or no fiber to decrease the glycemic index. Eat only fresh organic whole fruit.
- Eliminate caffeine from the diet because coffee is a stimulant and undermines the need for exercise the additional oxygen from which is crucial for defeating cancer. Further, caffeine is a stimulant that may undermine the natural healing process, which is the strategic objective of these recommendations.
- Eat strawberries because they may be effective to defeat pre-cancerous esophageal lesions. [Bottom Line 100, 63]

Step #3: Reduce electromagnetic fields in your environment

- The International Agency for Research on Cancer has branded radio frequency field radiation as a “possible carcinogen” in 2011 based upon medical studies that RFFR cause brain tumors. The article “United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)” shown in Appendix XX provides evidence of 28 types of damages to cells, adverse symptoms, and illness shown by scientific studies to be caused by RFFR, and 20 additional symptoms reported by those living near cell phone towers for a total of 48 instances of harm to living creatures.
- In order to reduce electromagnetic fields, it is necessary to identify magnetic fields, electrical fields, radio frequency field radiation (RFFR), and dirty electricity in the controllable spaces of home and automobile. This requires purchasing meters measuring these fields and/or employing a professional from the International Institute of Building Biology and Ecology to inspect your environment for EMFs. One should inspect all walls in the home for magnetic fields and reduce these by correcting wiring errors, managing transformers and other sources of magnetic fields; it is particularly important to test walls next to frequently used furniture such as sofas, comfortable chairs, and beds. Electrical fields are inherent from unshielded Romax wiring and it may be necessary to turn off breakers in the bedroom to avoid magnetic and electrical fields when one sleeps and place the headboard of the bed in the center of the room, not adjacent to the wall with internal wiring.
- One of the most cost-effective meter is an Electrosmog meter which measures RFFR, magnetic, and electric fields. The RFFR range is from 10 MHz to 8.0 GHz and covers current cell phones, Wi-Fi, and cordless phones.
- Reduction of RFFR means using cell phones only in emergencies and never carrying them in the “on” position, switching from Wi-Fi to hard wired internet connections, and eliminating cordless phones. One should also meter one’s automobile to assure near-zero power densities.
- I suggest reading carefully “Electromagnetic Fields” in Six Pillar Tips for Health Management for other rules to identify and reduce EMFs in the environment.

Step #4: Increase consumption of alkaline foods

- The fourth step is to increase the consumption of alkaline foods to improve gut bacteria and to reduce inflammation. While cancer creates an acidic environment and produces lactic acid, blood pH maintains a constant range of 7.35 to 7.45 and alkaline foods will not change blood or cellular systems' pH. Alkaline foods will change elimination water pH dramatically (e.g., from 4.5 to 7.7) but the blood and elimination water are two different and separate systems.
- Foods that increase good gut bacteria, reduce inflammation, and increase elimination water pH are greens such as spinach, grasses, spirulina, corella, and vinegar. To measure pH, pH strips are available at Indigo Instruments, 877.746.4764. Initially, measure your pH at least twice daily after beginning dietary changes to determine the relationship between pH-intensive foods and pH values. Notably, however, improvement of elimination water pH will NOT affect blood pH.

Step #5: Supplements to defeat cancer

- Supplements, broadly defined to include combinations of natural products, may assist to prevent cancer cell formation and defeat them when they occur. A few of these ideas follow.
- Vitamin D
 - Vitamin from the sun, foods, and food supplements induces cancer cell apoptosis (cancer cell death) and reduces blood supply to tumors. [Hushed, 2014, 6] There is evidence of reduced cancer rates with higher rates of Vitamin D for over a dozen different cancers in sun intensive climates.
 - Colon and breast cancer rates are 50 percent lower in individuals with high concentrations of Vitamin D. Low concentrations of vitamin D double the risk of aggressive prostate cancer. [Uncommon Cures, 2009, 79] Since Vitamin D is a common deficiency, it is wise to take a daily supplement; this is a must in northern climates. Based upon my present knowledge, about 2,000 mg pure Vitamin D dosage may be helpful ("pure" means no other vitamins in the supplement). However, do not overdose with Vitamin D because the consequences are severe.
- Vitamin E
 - High levels of Vitamin E in the form of gamma-tocopherol limit the multiplication of cancer cells particularly in the prostate and lungs. [Sinatra 2012, 123] Gamma tocotrienol also blocks the formation of new blood vessels near cancer cells. [Life Extension, Oppenheimer, October 2016, 52]

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- Tocotrienols convert the immortality of cancer cells to mortality by damaging the mitochondrial thereby starving cancer cells of energy, and inducing cancer cell apoptosis. (see also tocotrienols in Vitamin E, P6) [Life Extension, Oppenheimer, October 2016, 50-52]
- Proteolytic (protein digesting) enzymes
 - Proteolytic, protein digesting enzymes may reduce the thick fibrin/polymeric form of human serum albumin (HAS) coating around cancer cells (up to 15 times thicker than the coating on normal cells) which, in contrast to pure fibrin, is resistant to fibrinolytic degradation. The thick layer of fibrin/HAS, a protein, insulates the cancer cells from the body's normal defenses to destroy the cancer cell. Systemic enzymes may digest some of the fibrin to permit the body's normal defenses to destroy the cancer cells. Proteolytic (systemic) enzymes must be taken at least one hour before meals to assure they pass the digestive tract intact and get into the blood stream. [Tausig 1988, 193; www.anticancerinfo.co.uk/enzymes.htm; Howensteine 2009; Lipinski 2000, abstract; Shallenberger's *Second Opinion Healing Series*, Volume 2, 2015, 2-3]
 - Bromelain, a protease, or protein-digesting enzyme, has been shown to cause cancer cell apoptosis in some cases. [Bhui 2012, Abstract]
- Probiotics
 - Probiotics improve the bacteria in the large intestine and thereby create a cleaner environment for the immune system located nearby.
- Chlorophyll-based supplements
 - Chlorophyll-based supplements are the most nutrient dense foods available. They include organic grasses, spirulina, and corella. Grass supplements include wheat, oat, alfalfa, and oat, fermented foods, probiotics, and other nutritious foods with many vitamins and minerals. Spirulina is over 50% protein and has vitamins A, some B's, C, D, E, and copper, iron, magnesium, chromium, potassium, and magnesium. Corella is another blue-green algae with dense nutrients including GLA and nucleic acid, and removes heavy metals. Chlorophyll, which builds red blood cells, and blood hemoglobin are nearly identical molecules except blood hemoglobin contains an atom of iron and chlorophyll contains an atom of magnesium with similar bonds. In blood transfusion emergencies, chlorophyll has been used as a substitute for hemoglobin. Chlorophyll-based supplements also contribute to pH alkalinity in the water elimination system, improves gut bacteria, and reduces inflammation.

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- Curcumin and black pepper
 - Curcumin with a bit of black pepper prevents and treats cancer. But turmeric/curcumin in the absence of black pepper is not bioavailable and pepper must be added to increase substantially its bioavailability. One idea is to eat one black peppercorn with a small amount of turmeric/curcumin. Do not consume ground pepper because of the loss of vital oils.
- Pomegranates
 - Pomegranates are rich in polyphenols, which are strong anti-oxidants, and there is evidence that these compounds may be useful in the treatment of colon, prostate, breast, and skin cancer. [Contantini 2014]
- Flax seed meal and flax seed oil
 - Flax seed meal and oil contain ALA, lignin's, and dietary fiber which may help in preventing and treating cancer. Lignin's are believed to be anti-carcinogenic.
- Modified citrus pectin (MCP)
 - MCP from orange and grapefruit peels has been found to stop the spread of cancer (metastase) by binding with and rendering galectin-3 ineffective. Galectin-3 normally assists in the spread of cancer.
 - MCP permits chemotherapy to be more effective because galectin-3 helps cancer cells survive chemotherapy.
 - MCP has been shown to kill prostate cancer cells.
 - MCP also helps the immune system fight cancer by increasing cytotoxic T-cells and NK cells, which kill tumors. PectaSol-C is one of the main proprietary formulations, but one should take MCP under the care of a doctor. [Hushed, 2014, 20-21; Nangia-Makker 2002; Pienta 1995; Shallenberger Healing, 2015, 3]
- Bee propolis, bee pollen, and royal jelly.
 - Bee propolis, rich in caffeic acid phenethyl ester, chrysin, and cinnamic acid has been shown to be anti-inflammatory, anti-angiogenic, and reduce the growth of colon, prostate, and kidney cancers. Dosage is 500 mg once daily. [Triple Bee Complex from Y.S. Organic Bee Farm.]
- Magnolia extract

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- Honokiol and magnolol from the bark of the Magnolia tree is an anti-inflammatory and anti-angiogenic (limits blood supply to the cancer and defeats compounds that signal cancer growth) Dosage: 200 mg daily. [BLHB 2017, 59]
- Artichoke extract
 - The extract from artichoke leaves contains rutin, quercetin, gallic acid, and chlorogenic acid all of which kill colon, breast, liver, and leukemia cancer cells.
 - The extract also improves insulin sensitivity.
 - The source is Artichoke Extract from Enzymatic Therapy. [BLHB 2017, 59]
- Black Cumin Seed oil
 - Black Cumin Seed Oil is rich in thymoquinone and may be helpful for prostate cancer by stopping cancer cells from dividing and spreading through cancer cell apoptosis, and limiting angiogenesis.
 - Animal studies have supported benefits in breast and ovarian cancer. [BLHB 2017, 609]

Step #6: Maximize oxygen intake during the day

- Dr. Otto Warberg, perhaps the first pioneer in cancer identification and treatment, stated in 1966 “The prime cause of cancer is the replacement of the respiration of oxygen (oxidation of sugar) in normal body cells by fermentation of sugar.” Continuing, Warburg said “It is indisputable that all cancer could be prevented if the respiration of body cells were kept intact.” That means stopping the conversion of oxygen respiration to sugar fermentation defeats cancer. [Sears 2015, 11]
- Inadequate oxygen shortens the telomeres at the end of the chromosomes which impedes mitochondrial (cellular level) production of ATP energy. CoQ10 and Vitamin B are used in this process of energy production. [Sears 2015, 12, 20, 27]
- Omega 3s sponge up the oxygen and deliver it to the mitochondrial. Thus, one must have a supply of Omega 3s, which are inadequate in most diets. [Sears 2015,28]
- Historically, atmospheric oxygen was as high as 35%, may be as low as about 21% today and falling ten times faster than previously thought. [Science in Society “O₂ Diving Towards Danger Point”]. Major cities may have 15 percent or less oxygen in the air. [AGreenRoadJournal.com]
- Other necessary nutrients for cellular energy production are alpha lipoic acid, manganese, glutathione, glycine, cysteine, glutamine, melatonin, bilberry, grape seed extract, turmeric, Vitamin C, N-acetyl cysteine, selenium [Sears 2015, 31, 32, 33]

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- All types of exercise that increase oxygen intake with an emphasis on power not endurance. Thus, it is important to perform intense exercise that requires you to stop and catch your breath such as climbing stairs, jumping rope, or body weight exertion for a maximum of about 12 minutes. [Sears 2015, 37, 40]

Cancer treatment models: Avant Guard

- Maple syrup and bicarbonate of soda
 - Dr. Jim Kelmun found that oral ingestion of heated maple syrup and bicarbonate of soda may defeat cancers; heating integrates the two ingredients. Before starting the protocol, one should avoid sugar, white bread, white potatoes and other sources of sugar (which feed cancer) for several days. The mixture acts by cancer cells devouring the maple syrup as a source of sugar and ingesting baking soda which is highly alkaline. Cancer loves an acid environment and dies in the alkalinity of baking soda. The protocol may involve increasing the frequency of use and intensity of the baking soda, so it would be wise to research this further and find, if you can, a medical practitioner who can guide you in its application. [George Sanford “Country Doctor Cures Cancer with baking soda and maple syrup. Healing Cancer Naturally]
 - If you are unable to find a medical practitioner to assist you, be sure to conduct an exhaustive internet research describing the protocol before engaging in its use.
- 35% food grade hydrogen peroxide
 - Cancer is anaerobic which means it ferments on sucrose rather than respirating on oxygen and cannot survive in an oxygen-rich environment. One source of such an environment is diluted (to about three percent) with carefully measured dosage of 35% food grade hydrogen peroxide. One protocol is provided by Dr. David G. Williams in “The Many Benefits of Hydrogen Peroxide.”
 - Treatment with diluted 35% food grade hydrogen peroxide **MUST** be performed under medical supervision because H_2O_2 can cause very, very serious medical effects if improperly used. And it must be security-stored with no access to children because if they were to consume it undiluted, the consequences could be catastrophic.
 - Do not take H_2O_2 with anti-oxidants. [CancerTutor.com]
 - Three percent hydrogen peroxide can cause gastric ulcers and duodenal erosions in children. [Henry, Mark, et. al. Journal of Toxicology: Clinical Toxicology 34(3) (1996): 323-327.
- Organic sulfur

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- The objective of organic sulfur taken in water is to force massive amounts of oxygen into the cancer cell by removing oxygen from water (i.e., remove the O from H₂O have it form an O₂ molecule) and transporting the O₂ to the cancer cell.
- The sulfur also reduces inflammation and pain and removes heavy metals.
- The water transport system requires:
 - ◆ No chlorine or fluoride in the water because these may block the uptake of oxygen into the cells.
 - ◆ No distilled water because it may leach minerals from the body. Distilled water may be partially re-mineralized with lemon or with supplemental mineral drops. Reverse osmosis water may be acceptable. [Patrick McGear, *Cancer Tutor*]
- Some types of volcanic rice is rich in sulfur.

Immunotherapy

- The latest cancer treatment model is cancer immunotherapy, which captures and directs the body's immune system to defeat cancer. This approach prevents tumors from neutralizing the natural power of the immune system to defeat cancer by assuring that natural killer T-cells ("NK T-cells") remain in prime condition to defeat cancer. [BLYB 2017, 16-18]
- The body has immune checkpoints that prevent the NK T-cells from damaging good cells. But cancer cells learn to come within this umbrella of protection and the newest drugs called "Immune Checkpoint Inhibitors" block the checkpoints to assure that NK T-cells attack the cancer. While the side effects of Immune Checkpoint Inhibitors include fatigue, cough, nausea, skin rash and itching severe diarrhea, colitis, and intestinal inflammation and perforation, these side effects may be less severe than the side effects associated with chemotherapy. [BLYB 2017, 16-18]
- A special form of cancer immunotherapy is "Chimeric Antigen Receptor T-cell Therapy" in which the NK T-cells are genetically engineered to produce antibodies against a specific type of cancer. It has been used effectively against acute lymphocytic leukemia. [BLYB, 2017, 17-18]
- Proton beam therapy
 - Proton beam therapy directs a beam to target cancer cells in a defined special volume of cancer cells without damaging healthy cells. Further, the beam kills the cancer DNA so it cannot replicate later. [Shallenberger Healing 2014, 39]

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- Cannabidiol
 - Dr. Frank Shallenberger [Shallenberger Second, January 2017, 1-6] has suggested supplementing with CBD (cannabidiol) found in hemp (and marijuana). Hemp contains very little THC (tetrahydrocannabinol), the drug that gives the marijuana high--less than 0.3% compared with marijuana that may contain 5-30%. CBD furnishes the following anti-cancer benefits:
 - ◆ Decreases inflammation, pain, tension and anxiety, and increases energy levels. Inflammation is required for growth of cancer cells and CBD deactivates the NF-kB inflammatory pathway. Less inflammation means the cancer cells cannot grow or spread as easily.
 - ◆ Stimulates the immune system.
 - ◆ Inhibits angiogenesis, the creation of new blood vessels to feed the cancer.
 - ◆ Interacts with the cannabinoid receptors to inhibit tumor growth and accelerate cancer cell apoptosis (death). Normally, cancer cells do not die, which is the cause of their uncontrolled growth.
 - ◆ Acts independently of the cannabinoid receptors to prevent spread of cancer to nearby cells and organs. This anti-cancer effect has been demonstrated for glioma, lung, hormonal, melanoma, leukemia, colon thyroid, prostate, and estrogen positive and negative breast cancers.
 - Dr. Shallenberger has used CBD successfully in his practice for 18 months and uses Healthy CBD gel at CBDformulations.com or 800.230.1137 as a source for CBD. It must be taken under medical supervision.
 - Dr. Shallenberger cites the following articles to support his position on the anti-cancer benefits of CBD:
 - ◆ Paola, et.al. “Cannabidiol as potential anticancer drug.” *British Journal of Clinical Pharmacology*. 75(2) (Feb 2013): 303-312.
 - ◆ Shohami, et.al. “Cannabinoids in Health and Disease.” *Journal of Basic Clinical Pharmacology*. 27(3) (May 2016): 175-179.
 - ◆ Vaccani, et.al. “Cannabidiol inhibits human glioma cell migration through a cannabinoid receptor-independent mechanism.” *British Journal of Pharmacology* 144(8) (April 2005): 1032-1036.”
- Another resource for natural cancer cures is Danica Collins’ “Top 10 Natural Cancer Cures.”

Cancer treatment: Bladder cancer

- Vitamin D (serum 25-hydroxyvitamin D) deficiency is associated with higher levels of bladder cancer. It has been found that vitamin D activates transitional epithelial cells

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which stimulates an immune system response defeating cancer. [Life Extension May 2017, 23]

Cancer treatment: Breast cancer

- There is an association between Vitamin D and a lower risk of developing invasive breast cancer for postmenopausal users of hormone replacement. [Life Extension Feb 2016, 19; Am J Clin Nutr 2015 Sept 9]
- The methanol extract from pomegranate suppresses estrogen-dependent breast cancers in vitro (laboratory tests outside the organ) and may act to prevent these types of cancer. [Sreeja 2012]
- Pomegranate seed oil contains conjugated linolenic acids (e.g., punicic acid) that decrease the viability of breast cancer cells. [Costantini 2014]
- There are indications that 20 Hz RFFR with 30mG (3 mT) magnetic field for 60 minutes per day for three days were cytotoxic (i.e., kills) to breast cancer cells. [Crocetti 2013] The same results for 50 Hz RFFR. [Filipovic 2014] But do not interpret these results to justify your close proximity to RFFR generally and certainly not to very high-energy RFFR.
- While reactive oxygen species (ROS) induce breast cancer cells at lower intensities, it was shown that chronic exposure to ROS using H₂O₂ eventually confers resistance to cancer cell death. [Mahalingaiah 2014, Abstract, 8]
- Dr. Marc Micozzi stated "...surgery and radiation does not appear to be necessary at all for the vast majority of women with DCIS (ductal carcinoma in situ). It is only warranted in a small number of cases." These aggressive treatments (surgery and radiation) are warranted only if you answer yes to one of the following: (1) Age 35 or younger, (2) African American, (3) your DCIS cells high grade. [Micozzi Insider Jan 2016]

Cancer treatment: Colon and colorectal cancer

- Cruciferous vegetables reduce the risk of colon and colorectal cancer [Wu 2013]
- Flax seed oil and flax seed meal are sources of Omega 3 oils and reduce, perhaps significantly, the incidence of colon cancer by reducing the incidence of aberrant crypt foci, which are precursors of colon cancer. [Williams 2007, Abstract]
- Early morning colonoscopies detect more polyps than later in the day and the number identified decreases hourly. [Bottom Line 100, 67]
- The latest colon cancer diagnostic tool is the fecal immunochemical test (FIT). This involves taking a stool sample at home and sending it to a lab which tests for blood in the stool indicating a polyp. Its 94% accurate at ruling out colon cancer. [Bottom Line Health, Special Issue, February 2017, 2]
- Ground ginger fights inflammation and guards against colon cancer. [Super 2012, 65]
- Krill oil is believed to stop the growth of human colon cancer cells. [Aging 2011, 87]

Colonoscopies and colorectal cancer

- Colorectal cancer results from a rectum polyp that becomes cancerous. The average period for the conversion of a polyp to cancer is about 15 years. Thus, if you are 70 years old with a new polyp, you will be on average 85 years old before it becomes cancerous. However, some individuals are more likely to get polyps and have a higher risk of colorectal cancer.
- Colonoscopies are not a safe procedure. There are cases of perforated intestines, peritonitis (a potentially fatal inflammation of the abdominal lining), lacerated and punctured livers with massive bleeding, and pumped air to inflate the colon that escaped into the abdominal cavity and caused death.
- Anesthesia charges for colonoscopies vary from \$700 to \$7,000 even though colonoscopies do not require anesthesia in most cases. Moderate sedation is acceptable, cheaper, and safer.
- The alternatives to colonoscopies are (1) hemoccult test, which detects differentials in stool blood, (2) sigmoidoscopy, which looks at the lower intestine where most cancers occur, is far less invasive, and studies indicate that this test is more effective than colonoscopies, (3) CT colonography, and (4) stool testing including a fecal immunochemical test (FIT). *An FIT can detect blood in the stool indicative of a tumor or polyp. [Bottom Line Health Special Report 2017, 2]*
- Two stool tests are a fecal DNA assay and a fecal immunochemical test. If your doctor is not interested in doing stool testing, get a doctor who is interested. [West August 2014, 6] [Micozzi Insider Sept 2013]

Cancer treatment: Glioblastoma

- Glioblastoma (GBM) is the most common form of brain cancer.
- GBM cells lack key proteins (enzymes) that are necessary to metabolize methionine and tryptophan, two essential amino acids which are not manufactured in the body. These inadequacies lead to cancer growth, and keeps the immune system from recognizing the cancerous GBM cells as candidates for apoptosis (cancer cell death). If these missing proteins (enzymes) can be restored to the GBM, it may be a method of treating GBM. However, until this treatment is possible, it may be best to avoid turkey and other foods containing methionine and tryptophan such as cheese, lamb, beef, pork, chicken, turkey, fish, eggs, nuts, and soybeans. Since these foods are the principal sources of proteins, it may be necessary to have a dietician recommend other sources of proteins. [Shallenberger, Second Opinion, 09.14.2016]
- *Sterotactic radiosurgery is a non-surgery treatment for brain cancers that offer radiation specifically to small tumors thus avoiding damage to surrounding tissue. [BLHB, 2018, 67]*

Cancer treatment: Leukemia

- Wheatgrass is an antioxidant that inhibits proliferation of leukemia cells, and induces leukemia cell apoptosis. [Aydos 2011] Further, wheatgrass also increases dramatically elimination water pH.

Cancer treatment: Metastasis

- It was discovered that the ketogenic diet, ketone supplementation, and hyperbaric oxygen therapy (pure oxygen delivered under pressure) applied to mice reduced tumor growth rate and metastatic spread. [Poff 2015 Abstract]
- In another study of applying hyperbaric oxygen therapy to mice, it was found that HOT promoted growth of malignant glioma cells in vivo and inhibited apoptosis (cell death) of these cells. [Yong 2015, Abstract]

Cancer treatment: Ovarian cancer

- Cruciferous vegetables are associated with a reduced risk of ovarian cancer. [Han 2014, Abstract]
- Ground ginger kills ovarian cancer cells. It leads ovarian cancer cells to commit suicide (apoptosis) and encourages ovarian cancer cells to attack themselves (autophagy). [Super 2012, 65]

Cancer treatment: Pancreatic cancer; The Gonzales Protocol: [Gonzales 28/4]

- The pancreas is about six inches long, lies behind the stomach, and feeds exocrine digestive enzymes into the small intestine. The exocrine digestive enzymes include proteolytic enzymes (e.g., trypsin and chymotrypsin) which break down proteins into amino acids, lipases, that break down long-chain fatty acids into smaller molecules, and the amylases, that convert carbohydrates into sugars (e.g., glucose, fructose). The pancreas also manufactures endocrine cells that manufacture hormones to control metabolic processes. Ninety percent of all cancers originate with the exocrine digestive enzyme cells. Through its supply of enzymes and hormones, it should be obvious that the pancreas serves crucial functions for human health.
- The material in this section classified as “Pancreatic cancer: The Gonzales Protocol” is applicable to perhaps all cancers, other illnesses, and preventive alternative medicine in general. This classification was used because Dr. Gonzales claimed longer survival life for those using his Protocol for inoperable pancreatic cancer that had metastasized and which usually kills in three to six months. An independent clinical study of 55 patients did not support The Gonzales Protocol’s reduced mortality findings. The independent study found that the median survival rates for gemcitabine-based chemotherapy was 14 months and 4.3 months using The Gonzales Protocol of pancreatic enzymes, nutritional supplements, detoxification, and an organic diet. [Chabot 2010, Abstract]

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- Thus, I am reporting on The Gonzales Protocol because it may treat successfully this terrible disease and because it promotes dietary intervention based upon restoring the balance in the Autonomous Nervous System (ANS). The material I provide herein is a simple summary of a very complex healing protocol that requires a doctor learned in balancing the autonomic nervous system with diet, food supplements, and other procedures.
- Presently, Dr. Linda Isaacs, New York City is practicing The Gonzales Protocol, 212.213.3337. In a telephone conversation with her office on December 2, 2016, I was told that Dr. Isaacs has increased life expectancy significantly using The Gonzales Protocol for those suffering from pancreatic cancer. I do not have an opinion as to the effectiveness of the Protocol or if dietary intervention to restore ANS balance improves human health.
- Several doctors have concluded that treatment of pancreatic cancer (and other cancers and illnesses) lies in understanding the autonomic nervous system. The autonomic nervous system is composed of the sympathetic (SNS) and parasympathetic nervous system (PNS). The SNS and PNS operate in synergistically opposite ways to govern metabolic processes such as digestion, blood flow, thyroid and adrenal secretions, etc. The SNS also governs our response to stress and the PNS helps to repair the body.
- Dr. William Kelley, a dentist, believed that everyone may be placed in one of three categories: (1) those who are sympathetic nervous system (SNS) dominant, (2) those who are parasympathetic nervous system (PNS) dominant, and (3) those who are balanced between the SNS and the PNS and are NOT dominant in either. “Dominant” means that some individuals have overly developed SNS and under developed PNS while others have an under developed SNS and overly developed PNS.
- Organs governed by the SNS and PNS include the following:
 - Sympathetic nervous system:
 - Increases the heart rate.
 - Increases strength of cardiac contraction.
 - Small blood vessels of the skin and digestive tract constrict and the vessels feeding the muscles and brain dilate increasing blood pressure.
 - Inhibits all digestive processes.
 - Signals most endocrine organs including the thyroid, the adrenals, and the gonads, to release their hormones.
 - Parasympathetic nervous system:
 - Slows endocrine activity.
 - Promotes digestion and nutrient utilization in cells..
 - Repairs and rebuild the wear and tear of daily activities.
- Underdevelopment of SNS- or PNS-governed organs are more likely to become cancerous because they are weak, slow to act, and inefficient.

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- Dr. Nicholas Gonzales stated “I have never seen a cancer patient whose autonomic branches, when first seen in my office, proved to be in balance.” Thus, cancer treatment for those with underdeveloped SNS or PNS requires a diet, food supplements, and other procedures that restore balance to the autonomic nervous system (ANS).
- The alternative and complementary medicine procedures include dietary changes which emphasize either plant/grains or red meats and fats (!), food supplements (e.g., various minerals, pancreatic, proteolytic enzymes,) and possibly coffee enemas,
- Red meat with sulfates, phosphates and amino acids stimulate the SNS and thereby are therapeutic for an individual with a strong PNS and weak SNS.
- Plant foods provide an alkaline environment which suppresses a dominant SNS and strengthening a weak PNS.
- Nuts, grains, and leafy green vegetables inhibit a strong SNS and strengthens a weak PNS.
- The fundamental principal behind The Gonzales Protocol is that prevention and treatment diets for cancer and other illnesses should begin with determining if one is SNS dominant, PNS dominant, the degree of imbalance, or if one is SNS/PNS balanced; then, if one is SNS or PNS dominant, a diet should be designed to rebalance the ANS. This is not something that an individual can do by himself/herself, but needs testing by a medical professional trained in The Gonzales Protocol. One such doctor that worked with Dr. Gonzales, now deceased, is Dr. Linda L. Isaacs, 36 East 36th Street, New York, NY 10016, 212.213.3337.

Cancer treatment: Pancreatic cancer, other ideas

- Pancreatic cancer is the fourth most frequently form of cancer that leads to death. [Akimoto 2015 2/22]
- There is evidence that Vitamin E in the form of delta tocotrienol may suppress pancreatic cancer cells. Tocotrienols and alpha tocopherols should be taken at different times of the day. [Wright, 2014, XIII; Husain, 2008]
- Cellophane from broccoli inhibits pancreatic cancer (see also “Cancer treatment: Bladder cancer”) [Li 2011, Abstract]
- The extract of Syussal ginger (*Zingiber officinale roscoe*) has been shown to have anti-proliferative effects on cancer cells generally and has been shown to induce the death of human pancreatic cancer cells through reactive oxygen species autosis, a form of cancer cell death. Ginger has anti-inflammatory, antioxidant, and anticancer attributes and may also be used to treat osteoarthritis and rheumatoid arthritis. [Akimoto 2015, Abstract, 2/22, 16/22]. Ginger contains 12 antioxidants more powerful than Vitamin E. [Sears House, 09.15.2016]
- One of the problems with the spread of cancer cells is that normal cell processes which kill a bad cell (cell apoptosis) are not operative.

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- Triptolide, an extract of the Chinese herb Thunder God Vine, suppresses GRP78 (which defeats normal cancer cell death) the suppression of which leads to cancer cell death. [Mujumdar 2014]

Cancer treatment: Prostate cancer

- There is a debate about whether prostate cancer screening in the form of the PSA test should be done. The argument that it should not be done is based upon over treatment and complications that occur with treatment and it is better to be blissfully ignorant of prostate cancer because most aging men have cancer cells in their prostate. Supporting the PSA test is the belief that natural methods are available to prevent and reverse prostate cancer. Life Extension advocates screening and improved diets. [Life Extension, June 2016, 9-17]
- A new prostate cancer blood test is the Prostate Health Index (PHI), which measures three separate proteins; the PHI test reduces the need for biopsies by 31 percent. It is believed to be three times more accurate than the Prostate-specific antigen (PSA) test. The PSA test is inaccurate because the elevated protein it measures may be caused by cancer, inflammation, or enlargement of the prostate. [BLYB 2016, 120]
- Natural methods to prevent and reduce prostate cancer include eating a diet low in fats, rich in [uncooked] fruits and vegetables, [wild] fish, legumes, whole grains, lutein, zeaxanthin, vitamin E, lycopene, cryptoxanthin, folate, carotenoids plus regular exercise. It is essential to reduce dairy products, starchy foods, red meat, and obesity. These life style changes also reduce mortality. [Life Extension, June 2016, 9-17]
- Prostate cancer is rather common as men get older. At least some AMA and alternative medicine personnel recommend doing nothing if cancer is present because prostate cancer is slow moving and because treatment (e.g., removal of the prostate gland, early lymph nodes) causes more severe problems. Thus, the best treatment may be to watch and wait and hope you pass from something else.
- Do not eat meat with nitrate preservatives in processed meats. These are known stimulants of prostate problems. First, reduce your consumption of processed meats because some are very high in fat. Second, nitrate-free bacon, ham, pepperoni, etc. are available in food stores, and if it is not, shop elsewhere.
- Broil bacon with a top burner to avoid carcinogenic smoke from a bottom broiler; when finished wrap it in a paper towel, squeeze out the excess fat, physically remove the remaining excess fat, and eat only the meat portion. If you follow these guidelines, you will probably reduce the excess fat by 75 percent or more.
- Do not cook any meats with heat from the bottom (e.g., outdoor broiler). The juices drop, hit the heat, and the smoke is carcinogenic.
- Avoid prostate biopsies that involve needle extraction of prostate material. If cancer is present, these biopsies may metastasize (spread) the cancer.
- To improve elimination water flow, the following are some helpful food supplements:

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- “Solaray, Saw Palmetto & Pygeum One Daily 76280 03766 once a day.”
- Prostate Optimizer.
- “Now Prostate Support.”
 - Saw Palmetto 160 mg.
 - Stinging Nettle Root Extract 300 mg.
 - Pumpkin Seed Oil 1,000 mg
 - Lycopene 3 mg
- Pumpkin seed oil.
- Stinging nettle.
- Lycopene
- Zyflamend (New Chapter) has been found to reduce prostate cancer cell proliferation by up to 78 percent and may even kill some existing prostate cancer cells. [Bottom Line 100, 57]
- Ginger slows prostate cancer growth, but adding ginger to your diet should be reviewed by a doctor because of other interactions. [Bottom Line 100, 73]
- The following supplements may also be helpful but its best to talk to your doctor first: Zinc (50 mg), copper (2mg), selenium (200mcg), Vitamin E (200 IU mixed), limiting calcium to 500 mg, Indole 3-carbinol (400 mg), maitake mushroom extract (1 mg/2.2 lbs), beta glucan (500 mg twice) [Bottom Line 100, 58]
- Raisins may reduce multiple bathroom visits. It has been reported that two spoons of raisins reduce bathroom visits from three or four per night to one. [BLYB 2017, 49]
- Boron is crucial for a healthy prostate and to treat cancer. Boron lowers the PSA score and is believed to kill cancer cells, decrease prostate tumor size, and lower the likelihood of the cancer spreading to bones. The minimum daily intake is 3 mg, but even foods containing boron such as apples, plums, grapes avocados, vegetables, nuts and legumes may be inadequate to supply the minimum daily requirements. If you have a prostate problem, I suggest you read the article cited in this reference because of its excellent discussion. [Downey Boron 2015, 15-20]

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- Treating prostate cancer with diethylstilbesterol (DES) and melatonin may be helpful in reducing the growth rate of prostate cancer. The theory is that DES blocks estrogen which increases as men get older and melatonin which binds with estrogen receptors and blocks their growth effect on prostate cancer cells. [Shallenberger Healing 2014, 40]
- Modified citrus pectin has been shown to slow PSA doubling time. The logic is that clumps of cancer cells are required (vs. individual cells) for the cancer to spread and MCP interferes with Galectin3 receptor sites, which facilitate clumping. MCP may also be effective in defeating Galectin3 clumping for colon, stomach, and thyroid cancers. [Strum 1999, 1]
- Pomegranate extract may also reduce PSA after radiation or radical prostatectomy. [Paller 2013, 53] Pomegranate polyphenols in whole juice appear to inhibit some types of prostate cancer cells. [Young 2008]
- In order to treat prostate cancer with ACMM, it may be helpful to combine pomegranate, green tea, broccoli, and turmeric. [Thomas 2014; Adhami 2006]
- Sulforaphane from broccoli inhibits prostate cancer cells (see also “Cancer treatment: Bladder cancer”) [Wong Jan 2014, 1]
- Cruciferous vegetables intake reduces the risk of prostate cancer. [Liu 2011, Abstract]
- An extract from the avocado (*Persea Americana*) reduces substantially the ability of prostate cancer cells to ferment glucose and when cancer cells cannot get energy from glucose, they die. [Shallenberger, *Foods that Heal*, 2014, 1] And it is important to get exercise to burn glucose in the blood. [Shallenberger, *Potpouuri* 2014, 3]
- Salinomycin inhibits the growth of prostate cancer cells and cancer stem cells, but does not induce apoptosis based upon clinical research. [Ketola 2012, 105]

Cancer treatment: Skin cancer

- Basal cell carcinoma is characterized by an itch in about 30 percent of the cases. [BLYB 2016, 17]
- Squamous cell carcinoma is characterized by pain in about 30 percent of the cases. [BLYB 2016, 17]
- There is evidence that Curaderm/BEC developed by Dr. Bill Cham contain substances from the Australian Devil’s Apple plant (*Solanum linnaeaum*) that kill skin cancer cells (basal cell carcinoma and squamous cell carcinoma) and leave healthy cells undamaged. There is limited evidence that Curaderm/BEC may also kill other cancer cells. [Wright 2014 XIII]

Cancer treatment: Thyroid

- About 90 percent of diagnosed thyroid cancers are small papillary cancers that can be less than one millimeter in size. Many are unlikely to grow or cause damage. Thus, they are best left untreated because treatment may include removal of the thyroid gland, radioactive iodine treatment, and life-long medication. [BLYB 2016, 15]

Candida

- Candida is an opportunistic, systemic yeast which converts to a fungus infection in the blood stream or in deep tissue. The most common strain is *C. albicans*, but there are several other strains. “Opportunistic” means that there must be host dysfunction caused by broad spectrum antibiotics, chemotherapy, etc. Impaired immunity is usually present to permit the growth of candida. Candida begins in the intestines, mouth, or skin and causes blood stream infections which are delivered to organs causing deep tissue damage including cancer; once it has grown roots into tissue, it is extraordinarily difficult to eradicate. It is the predominant fungal infections behind human disease thriving on dead tissue and sugar. In conjunction with a weakened immune system, weakened adrenals, excess sugars, low levels of minerals (from foods grown in depleted soils), improper blood-healthy pH, and a serious illness like cancer or AIDS, candida enters the blood stream and often is the source of death. Diagnosis is difficult because its symptoms are similar to other illnesses. [Haynes 2001, 591; BodyEcology.com, “The Largely Unknown Health Epidemic Affecting Almost ALL Americans”]
- Vaginal yeast infections are often an indicator of a fungus blood infection which can be very serious and spread to an unborn child; “Fungal yeast infections are present in all children with autism and also their mothers. We know autism begins in the womb when the fetus is exposed to the fungus.” [BodyEcology.com, “The Largely Unknown Health Epidemic Affecting Almost ALL Americans”]
- Treatment of candida is often with antifungals that create side effects and acidity in the body. Antifungals become ineffective because candida mutates. [BodyEcology.com, “The Largely Unknown Health Epidemic Affecting Almost ALL Americans”]
- *C. albicans* has the highest crude mortality of any blood stream infection. [Mavor 2005]
- The alternative medicine treatment of candida is performed with dietary changes which include no sugar, no gluten, no casein, includes fermented foods, defeats the harmful effects of antibiotics, improves digestion, adds greens in the AM, young coconut kefir, and cultured (fermented) vegetables. See The Body Ecology Diet for a complete anti-candida dietary plan.
- Types of candida infections
 - Mouth or throat: Termed “thrush” candidiasis, symptoms are white patches or plaques on the tongue and other oral mucous membranes; thrush candidiasis is unusual among adults. [Center for Disease Control and Prevention]

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- Vagina candidiasis caused by an overgrowth of yeast in the vagina. [Center for Disease Control and Prevention]
- Invasive candidiasis is candida found in the blood stream or in organs including heart, brain, eyes, bones, and other organs. Invasive candidiasis often begins with medical care for other symptoms. [Center for Disease Control and Prevention]
- Candida glabrata is often associated with hematologic malignancy and is less responsive to the antifungal fluconazole prophylaxis. [Bodey 2002]
- Candida auris appears to be caused by hospitalization in which the fungus enters the blood and spreads throughout the body. C. auris is difficult to identify in lab tests and becomes resistant to the commonly used antifungal drugs, making infections difficult to treat. The most likely sources are patients in intensive care for long periods, recent surgery, diabetes, or have a central venous catheter placed in a large vein and have previously received antibiotics or antifungal medications. C. auris is rare in the United States, but has a high mortality rate in other countries. [Center for Disease Control and Prevention]
- Many candida infections are associated with medical care including, but not limited to the following:
 - Antibiotics, and particularly long-term use of antibiotics, is the main cause of C. albicans. Normally, the ratio of intestinal bacteria to C. albicans YEAST is 1000:1. Antibiotics destroy all bacteria in the large intestine but do not destroy the C. albicans YEAST. Termination of antibiotic use results in a recolonization of bacteria which may include candida YEAST turning to candida fungus which forms roots (rhizoids) into the walls of the large intestine; rhizoids suck nutrients from the organ to which they plant themselves. This is why it is so important to take daily probiotics after antibiotics to assure the return of good bacteria in the large intestine which checks the candida yeast from turning into candida fungus. [owndoc.com/candida-albicans/candida-facts/]
 - Lack of sleep caused by an illness.
 - Alcohol, caffeine, nicotine, and corticosteroids (depress the immune system). [owndoc.com/candida-albicans/candida-facts/]
 - Chemotherapy compromises the immune system, which is unable to control candida. Based upon research at Rice University, candida is present in about 70% of individuals, but it remains in check with probiotics and a strong immune system. [Body Ecology]
 - Implantation of medical devices. Medical devices may contain candida on surfaces of the devices and these are distributed by the blood stream throughout the body. Medical devices include blood vein and artery catheters (tubes), joint replacements, dialysis access devices, cardiovascular devices (heart valves, pacemakers, defibrillators, ventricular assist devices), central nervous system devices (ventriculoperitoneal shunts), and urinary catheters (tubes). Of these

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devices, urinary tract catheters have the highest rate of infection (10% to 30% overall rate of infections of about 30,000,000 inserted annually in the United States). [Kojic 2004]

- “...the most recent findings demonstrate that *C. albicans* is capable of promoting cancer by several mechanisms as described in the review: Production of carcinogenic byproducts, triggering of inflammation, induction of Th17 response, and molecular mimicry. We underline the need not only to control this type of infection during cancer treatment, especially given the major role of this yeast species in nosocomial [any disease occurring while under medical care; hospital acquired] infections, but also to find new therapeutic approaches to avoid the pro-tumor effect of this fungal species.” [Ramirez-Garcia 2016, Abstract]
- If you are being treated for cancer, it is essential that you be tested for candida. If the quantity of candida is large, it is essential that the candida be treated with anti-fungals.
- To avoid candida, maintain your immune system in top shape, get adequate sleep, take at least three probiotics per week, a teaspoon or so of extra virgin coconut oil, which is anti-fungal, and minimize refined carbohydrates on which both cancer and candida thrive. Needless to say, it is helpful to follow the life style guidelines in Six Pillar Tips for Health Management contributing to a healthy life style.
- Candida does not like an acid environment. [owndoc.com/candida-albicans/candida-facts/]

Carpel tunnel syndrome (CTS)

- Carpel tunnel syndrome is inflammation or swelling in the tendons of the wrist. Repetitive motion triggers, but is not the cause of CTS. The causes and correction are the following:
 - Deficiency in vitamin B2 (riboflavin). Take a B-complex capsule containing 50 mg of each of the B vitamins. Its best to avoid individual B's because they are synergistic as a complex.
 - Inflammation of the wrist. See an acupuncturist to reduce the wrist inflammation.
 - Cervical (neck) subluxation. See a chiropractor for treatment.
 - Excessive exposure to fluoride. Terminate tap water and use distilled or reverse osmosis water. Do not swallow toothpaste with fluoride.
 - Injections of methyl-B12 along with procaine and ozone under the skin of the wrist. [Shallenberger Potpouri 2014, 2]
- *To prevent and treat carpel tunnel syndrome, use a Microsoft keyboard that reduces bending of the wrist.*

Cardiovascular health

- See also “Heart disease.”

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- “Cardiovascular” refers to the heart, arteries, and veins which transport nutrients and remove waste from cells and organs; it includes the microcirculatory system comprised of very small arterioles, capillaries, and venules.
- Cardiovascular disease includes Ischemic heart disease, stroke, hypertensive heart disease, rheumatic heart disease, aortic aneurysms, cardiomyopathy, atrial fibrillation, congenital heart disease, endocarditis, peripheral artery disease, blood vessel + high blood pressure, etc.
- Poor microcirculation is linked to the metabolic syndrome, high blood pressure, sleep disorders, Alzheimer’s, vein problem, liver disease, polycystic ovary syndrome, gestational diabetes, heart attacks and strokes, and autoimmune diseases. [Wright 2014 XIII]
- Herbs that improve microcirculation are bilberry, blueberries, garlic, Ginkgo, gotu kola and grape seed and pine bark extracts. Bilberry improves vision by improving the microcirculation in the eye. [Wright 2014 XIII]
- Diet soda increases the likelihood of stroke. [Bottom Line 100, 52]. The rule: Do not drink any type of soda because of caffeine, sugar, and other undesirables.
- It is estimated that about 90 percent of cardiovascular disease is caused by (1) smoking, (2) drinking to excess, (3) poor diet of nutrient deficient foods (e.g., refined carbohydrates), (4) overweight and big stomach, and (5) lack of exercise. [Wikipedia; Health Alert, February 2015]
- According to Dr. Bruce West, heart attacks are caused by an imbalance in the autonomic nervous system over which one does not have direct control. Rather, the imbalance is caused by life style factors such as high stress, no hobbies, under constant stimulation of coffee, sugar, nicotine, etc., and nutritional deficiencies in fat-soluble and B-complex vitamins, [Health Alert February 2015, 5]

Cataracts

- Cataracts are a clouding of the lens of the eye.
- A new cataract treatment is to “bleach” the yellowing of the lens with a laser rather than lens-replacement. [Bottom Line 100, 67]
- Food supplements which may prevent and defeat cataracts include: [Life Extension Feb 2016, 64]
 - “Bluebonnet Zeaxanthin plus Lutein Eye Antioxidants”
 - Zeaxanthin 4 mg.
 - Lutein 12 mg.
 - “Solaray Bilberry [160 mg] & Lutein [6mg] One Daily,” (no substitutes) the latter of which also contains 75 mg of blueberry. Billberry, a relative of blueberries, strengthens capillaries and improves blood flow to the eyes. [Uncommon Cures 2009, 115]
 - Meso-zeaxanthin

Celiac disease: Gluten intolerance

- Gluten is a protein found in wheat, rye, barley, oats, and spelt that cannot be digested by some individuals. It forms “glue” with other foods eaten at the same meal preventing digestion of those foods as well. The undigested gluten results in the immune system attacking the lining of the small intestine causing many other problems. Gluten sensitivity is about 4.5 times more likely today than it was in the 1950s.
- The most easily linked symptoms are diarrhea, constipation, nausea, and abdominal pain, but the more elusive problems are autoimmune disorders, neurological problems, osteoporosis, cancer, mental impairment, autism, anemia, vitamin K deficiency, diabetes, heart disease, etc. The probability of an autoimmune disorder increases from 3.5 percent to 34 percent for those with gluten intolerance.
- It may take up to four years to diagnose gluten intolerance and the solution is to avoid foods with gluten.
- Two supplements may improve the symptoms of Celiac disease: [Murray 2013]
 - B-Complex
 - Digestive enzymes including dipeptidyl peptidase, which targets gliadin (a derivative of gluten) and casein, a milk protein.
- The problem with wheat is that it was genetically altered in the 1960s to produce higher yields and resist drought and pathogens but the gluten intensity is also greater.
- *Illnesses associated with gluten intolerance may not be caused by gluten but by glyphosate (Roundup), a herbicide/pesticide used to kill weeds, causes cancer, and may cause Alzheimer’s, autism, diabetes, heart disease, infertility, multiple sclerosis, and obesity. It was used on 45% of wheat acreage in 2012. Glyphosate may interfere with a plant’s uptake of many minerals. The partial solution is to avoid wheat processed foods, purchase “GMO free” foods, and eat organic. [Micozzi, Insider Cures, October 2017 VIII(10)]*
- **Wheat adds more to blood sugar than sucrose** because of amylopectin A, which is efficiently converted to blood sugar and creates a hunger stimulant which requires more food, and, thereby, adds visceral (belly) fat, the stimulant to hell because of its inflammatory properties. [Nicholas Jackson, “Your Addiction to Wheat Products Is Making You Fat and Unhealthy.” Life Extension, “Wheat: The Unhealthy Whole Grain”]
- Even if you are not gluten intolerant, gluten can (1) cause inflammation in the digestive tract, (2) permeability in the gut leading to Leaky Gut, and (3) other digestive issues and autoimmune problems. The probable cause of these problems is the hybridization of wheat about 40 years ago, which created newly modified gluten molecules. [Geary, 09.30.2014]

Cholesterol: Part I

- Part I provides the traditional viewpoint that high levels of cholesterol are harmful and increases mortality (i.e., increases death rates and reduces life span). Part II is based upon two studies which I found indicating that **high** cholesterol **reduces mortality** (decreases death rates and increases life span)! I would be cautious about rejecting the Part II findings because it has long been known that the French, with average cholesterol of 260, have the lowest incidence of heart disease in Europe. While the Part II findings are not directly related to the French paradox, there has long been data that cholesterol is not as bad as many medical personnel believe and that statin drugs are harmful and not purposeful. The reader is left to set strategic cholesterol goals that he or she believes comports with the evidence. Six Pillar Tips offers tips in Pillar 6 “Fats and oils” to resolve the contradictions between cholesterol and saturated fats.
- There are two types of cholesterol, which are an integral part of all cell membranes: High density lipoproteins (HDL) and low-density lipoproteins (LDL). HDL extracts cholesterol from artery walls and excretes them through the liver and bile and is viewed as good HDL. Estrogen increases HDL so women usually have higher HDL than men. There are two types of LDL: A and B. Pattern A are large particles and are not associated with atherosclerosis and are viewed as good LDL. Pattern B particles are small and dense and squeeze through cracks in the membrane of arteries to get inside artery walls and are more easily oxidized. Pattern B LDL is associated with low HDL, elevated triglycerides, high blood sugar, and three to five times the heart attack risk. Diet, exercise, and medications may increase LDL size. The polyacrylamide gradient Gel Electrophoresis Test measures the ratio of pattern A and B LDL.
- Triglycerides levels are positively correlated with refined carbohydrates (e.g., sugar); so reduction of refined carbohydrates lowers triglycerides. Triglycerides may also be reduced with exercise and omega 3 fatty acids from fish and flax seed oil.
- For the normal person without risk factors, total cholesterol below 200 mg/dl is desirable, 200-239 is considered borderline high, and over 240 mg/dl is considered high. For the normal person, LDL of 100-129 mg/dl, HDL over 60 mg/dl, and triglycerides of below 150 mg/dl is desirable. But if risk factors are present, lower levels are required.
- There are several ways to deal with high cholesterol:
 - Exercise,
 - Reduce high cholesterol foods in the diet.
 - Take supplements that reduce cholesterol.
 - Eat foods that reduce cholesterol or increase HDL. Soluble fiber in oats and apples binds with the cholesterol for elimination. Avocados increase HDL by up to 11% in a week [BLYB 2015, 83] Two large apples a day can reduce LDL (bad) cholesterol by up to 23 percent. [Baker 2014, 3]
 - Eat whole grains, fresh, multi-colored organic fruits and vegetables to lower cholesterol.

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- Since cholesterol is associated with saturated fats, reduction of foods with saturated fats is crucial, but this does not mean elimination of saturated fats because good-quality saturated fats in moderation are healthy. For example, the heart muscle requires good-quality saturated fats. Foods to reduce are fatty meats [but remember grass-fed beef is acceptable in moderate amounts (e.g., 12 ozs. per week)], egg yolks, whole dairy products, shellfish etc.
- Supplements *and foods* that may be useful to reduce cholesterol or arterial plaque are the following:
 - Wobenzym-N may reduce cholesterol and clean arteries. Up to six per day are quite acceptable; in clinical research, up to ten at each of three meals (i.e., 30 per day) has been used without side effects.
 - Vitamin E tocotrienol (not tocopherol) reduces cholesterol and cleans arteries. [Hushed, 2014, 3] There are indications that tocotrienol reduces total cholesterol and LDL cholesterol by 15 percent each, raises good cholesterol by 4-8 percent, and reduces triglycerides (makes blood sluggish and less capable of transporting oxygen) by 20-25 percent. In addition, CoQ10 may be increased by up to 20 percent. Tocotrienols reduce the enzyme HMG co-reductase which assists in the manufacture of 80 percent of total cholesterol. And the benefits of Tocotrienols are fast—up to a 15-20 percent reduction in 30 days. [Shallenberger Second April 24, 2015]
 - Fish oils and flax seeds reduce triglycerides.
 - Garlic will lower total cholesterol, LDL, and triglycerides, and will clean arteries. [Hushed, 2014, 3]
 - Pomegranate Juice reduces arterial plaque (about two ounces per day). [Hushed, 2014, 3]
 - Oat bran has soluble fiber that binds to cholesterol for excretion.
 - Do not take red rice yeast because it has statin-equivalent compounds that may be unhealthy.
 - Modified citrus pectin reduces cholesterol and has many other benefits including safe chelation of heavy metals and cancer prevention and treatment.
 - *Avocados reduce cholesterol.* [BLHB 2016, 32]
- Statins drugs are often prescribed by medical practitioners, but these are dangerous for the following reasons:
 - Statins decrease CoQ10 by up to 50 percent in 30 days. CoQ10 is useful for heart health and cellular energy production, improves memory, and is an antioxidant. After age 30 natural levels of CoQ10 tend to decline and supplements may be desirable. But be careful about the type of CoQ10 you use because most is synthetic “cisform” CoQ10 and may be derived from tobacco products. The correct CoQ10 to take contains the term “trans-form” on the label and is made

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using yeast fermentation. This form of CoQ10 may overcome some of the disadvantages I have mentioned elsewhere in this document. [Corn CoQ10]

Cholesterol: Part II

- During the period 1968-73, data was collected in the Minnesota Coronary Experiment for 9,423 men and women in one Minnesota nursing home and six state mental hospitals. Saturated fat was replaced with vegetable oil rich in linoleic acid. The results indicated that (1) cholesterol was reduced by 13.8% in the intervention group, and (2) **there was a 22% higher risk of death for each 30 mg/dl reduction in serum cholesterol for the intervention group—this means the reduction in saturated fat increased the death rate.** This study data was not completed until 2016, probably because the political atmosphere in the 1970s would not have viewed favorably research questioning the prevailing opinion that lower cholesterol leads to longer life. [Ramsden 2016, Abstract]
- In a study of 5,750 adults aged 55 to 99, it was found “...that each 1mmol/L **increase** in total cholesterol was associated with an approximately 12 % lower risk of non-cardiovascular mortality (hazard ratio (HR) = 0.88, 95% confidence interval (CI) = 0.84-0.92, P =< 0.001).” Further, the association became stronger in older age groups. (Newson 2011 Abstract)
- In a study of 24,847 male participants, it was found that mortality from coronary heart disease tended to be lower for men receiving cholesterol-lowering treatment, but there was no effect on total mortality from such treatment because of the significant increase in deaths from accidents, suicide, or violence. [Muldoon 1990, Abstract]

Colds and flu: Prevention

- The causes of cold and flu are contact with others, stress, inadequate sleep, inadequate diet, inadequate sun, and colder weather. The most common contact is airborne particles from sneezes, coughs, and talk; touching the virus and then having contact with your mouth, eyes, or nose is another source of transmission. The virus can last up to about 30 minutes on your fingers. [BLYB 2016, 57] All of these contribute to a weakened immune system and exposure to bacteria/viruses, etc. The keys to reducing the likelihood of getting a cold or the flu are to reduce stress, get exercise, avoid sources of contamination, improved diet with adequate Vitamin D3, avoiding hand to mouth contact, washing hands, stay warm, etc.
- In hospitals, it has been shown that the #1 transmitter of illness is door knobs, and this is probably true of door knobs generally. [BLYB 2015, 54] So wash your hands frequently and do not bring your hands in contact with your mouth, eyes, or ears if your hands have not been recently washed. Once, I observed someone touching an elevator button with an elbow to avoid finger contagion. Small children get five to seven colds per year because of an undeveloped immune system and twice that number if they are in day care.

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- Get adequate sleep. I suggest about seven hours. Do not get more sleep than you need and do not sleep irregular hours; do not sleep until noon on weekends when you get up early the other five days. Live with the circadian rhythm for sleep, meals, exercise, etc. Violations of the Circadian Rhythm are carcinogenic.
- The foods you eat reduce the likelihood of cold and flu: [Bottom Line Super Healing Unlimited, 2007, p. 1-3]
 - Eat fresh (cooking kills enzymes and many vitamins), alkaline, multicolored organic fruits and vegetables such as blueberries, blackberries, strawberries, raspberries, plums, oranges, red grapes, cherries, kiwis, pink grapefruit, kale, spinach, Brussels sprouts, alfalfa sprouts, broccoli florets, beets, red bell peppers, onions, corn eggplant, etc. Organic is preferred because the fertilizers are natural with more enzymes and there are little or no pesticides.
 - Eat wild fish twice a week for the Omega 3s and take about eight grams of Omega 3s daily. Don't buy cheap fish oils, which can be more harmful than taking none. Avoid farmed fish. Because of the confined and crowded conditions in which they are raised, the type of food they are fed (recycled fish meal, grains, etc.) and the extensive use of antibiotics and other chemical agents, farmed fish may contain unusually high level of antibiotics, mercury, and other toxic substances, and have less of the health-producing Omega 3s than wild fish.
 - Resveratrol in red grapes and pterostilbene in blueberries activate the immune system to defeat colds. [Bottom 2105, 53]
 - Avoid refined carbohydrates in candy, cakes, cookies, jams, etc. to improve overall health.
 - Saturated fats in meats, etc. weaken the immune function. Always eat grass-fed beef.
- Avoid foods containing gluten and acidic foods (e.g., coffee)
- Food supplements are helpful for prevention such as Vitamin C (100 mg per day), vitamin D3, E, magnesium, selenium, and zinc. In my opinion, about 2,000 IU of Vitamin D3 is the most important single nutritional step to take to avoid colds and flu.
- Bio-available turmeric with black pepper acts as an antiviral. Mushrooms (maitake, shitake, and reishi) are immune boosters and are available in capsules. Garlic is an anti-viral, anti-fungal and anti-bacterial. Coconut oil is anti-pathogen.
- Take at least three probiotics per week to reduce bad bacteria in the large intestine. See "Probiotics." Lactobacillus reuteri is particularly helpful to prevent viruses from binding to tissue. [The Doctors Book of Food Remedies, 2007, p. 187]
- Exercise regularly to maintain the immune system and reduce stress. Avoid heavy exercise because it increases stress and free radicals.
- Get 60 minutes of sunshine weekly say in three, 20-minute increments. Sunshine creates vitamin D and vitamin D interacts with other vitamins to improve the immune system. Men should wear a regular bathing suit and women a two-piece bathing suit. Use an oil

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such as Hawaiian Tropic, but no sun screen assuming your skin is normal. The *weekly* 60- minutes-of-sunshine rule is very important unless you have a skin condition which requires you to avoid the sun; this 60-minutes per week treatment is also a cancer preventive. If you get a cold or the flu, it is wise to get about 30 minutes of sun about daily to defeat the symptoms faster.

- Antibiotics are effective against bacteria, but not viruses, and are useless against colds and flu. Taking antibiotics when you don't need them is harmful because it decreases their effectiveness in the future.
- I am not a fan of flu shots. Flu shots may have both design and non-design impurities and they are designed for about three likely flues at the beginning of the season. If there is a fourth virus, flu shots are ineffective for the fourth. While there is evidence they reduce the incidence of flu, if you follow the guidelines in Six Pillar Tips, you will also reduce the incidence of colds and flu probably as much or more as flu shots. There is evidence that flu shots given to children interfere with the development of killer T-cells that naturally defeat pathogens; thus, while a flu shot may be effective against the specific viruses in the shot, it may reduce the body's defenses against all other pathogens. [Eliaz 08.29.2014]
- One of the best sources on cold and flu remedies is found in Gary Null, PhD, The Complete Encyclopedia of Natural Healing, p. 171-178.
- Stomach acidity is important in killing bacteria and viruses. Thus, antacids and bicarbonate of soda increase the likelihood of colds and flu. Braggs Apple Cider Vinegar probably helps.
- Influenzinum may be helpful to prevent colds and flu and is an alternative to flu shots. [Hushed, 2014, 31]

Colds and flu (CF): Treatment and cures

- As soon as you get any discomfort or dryness in the throat, which may lead to a sore throat and then a cold or flu, it is essential to drop the ingredients from 1/3 of a capsule of Echinacea in your throat, swallow, and do not eat or drink anything for at least 15 minutes. Take another 1/3 capsule in about 15 minutes, if the throat discomfort continues and additional doses as necessary. **Echinacea must be used as soon as you get any throat discomfort or the sore throat will convert to a full blown cold or flu and then Echinacea is not very effective.** If you take Echinacea as I suggest, there is a 97 percent chance you will not get a CF in response to a throat discomfort. This means it is crucial to carry a couple of capsules of Echinacea with you at all times; and you must, must, must take Echinacea with you on an airplane because of the concentration of people and very dry air (10 percent humidity) which increases the likelihood of a cold or flu. Some echinaceas taste terrible, but an echinacea with *augustifolia* and *purpurea* minimizes the taste inadequacies.

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- Do not use echinacea if you have an autoimmune disease such as lupus, rheumatoid arthritis, or multiple sclerosis, or if you are pregnant or nursing. [Baker 2007, 175]
- For a stubborn sore throat, bite a capsule of New Chapter's Ginger Force, discard the capsule, and swallow; Ginger Force is an unpleasant experience for several minutes (you'll think your hair is falling out, but it's not!) but it works for most beginning stage sore throats and even for some more advanced stage sore throats. Ginger may also be helpful to treat colds and flu in general. [Uncommon Cures 2009, 88] But, try echinacea first because it is more tasty.
- Sore throats may also be defeated with oregano or cayenne, the latter of which resembles a forest fire in your throat so take very little.
- Take about 50 percent more fluids than I suggest elsewhere (1.5 x 3/4 liter water per 50 lbs.) and the best of all fluids is chicken soup; just boil some chicken wings or legs in water. [Uncommon Cures 2009, 86]
- Vitamin C (100 mg per day), vitamin D3, E, magnesium, selenium, and zinc are helpful to shorten CF. Zinc acetate is best and zinc gluconate also works but not as well.
- Goldenseal contains berberine, a natural antibiotic. [Uncommon Cures 2009, 85]
- Garlic may also be helpful by taking a up to a whole clove every several hours. [Uncommon Cures 2009, 85] My suggestion from experience is to take about four cloves of garlic per day by cutting a whole clove in very small pieces, crushing it if possible, and placing it on a cracker with olive oil and eating the garlic cracker in one setting. Be careful about contacting garlic with your tongue because it is very hot. In my opinion, garlic may be the best single treatment to reduce the elapsed time for a cold.
- Sambocul, available at health food stores, is also believed to reduce the elapsed time for a cold.
- Since probiotics clean the intestinal tract where about 70 percent of the immune system exist, it is wise to take a well-diversified (e.g., 30+ strains) probiotic to assure the intestines are free of pathogens.
- For full blown flu, try colloidal silver per directions. Colloidal silver is very small particles of silver suspended in pure water. Colloidal silver is believed to disable the flu virus and prevent replication, and has been used for at least 1,500 years as an antimicrobial (the Soviet Army used silver vessels to transport its drinking water in World War II). The advent of antibiotics has reduced the importance of colloidal silver. One brand, Sovereign Silver, is 0.8 nano meters (0.8 billionths of a meter) in diameter and has a concentration of 10 PPM (parts per million); it requires dosages of about seven teaspoons per day. Over doses or very long-term use may cause skin discoloration but this condition is very rare. I have used colloidal silver to defeat flus and other infections.
- If you use colloidal silver for the flu, this is what you should expect: (1) the symptoms of the flu will level off in about three days and then slowly decline, (2) continue usage until the flu is gone, which may be several weeks, and continue dosage for about five days after the symptoms have ended, (3) if you discontinue use before the flu virus has been

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100% defeated, it will probably return—this will prove that colloidal silver works-- and then you will have to return to the original dosage for the original renewed life of the flu. Colloidal silver can defeat many other unusual bacterial and viral symptoms and is useful because, unlike antibiotics that become ineffective because of pathogen adaptation, pathogens do not adapt to colloidal silver. Be sure to read more on the internet about colloidal silver if you wish to use it.

- For severe colds and flu, try intravenous hydrogen peroxide therapy. H_2O_2 produces massive amounts of cytokines, which are antiviral. Dr. Shallenberger states that very severe colds and flu can be corrected in 24 hours. [Shallenberger Second, January 2016, p. 10-11] A medical practitioner is necessary to sue this protocol.

Constipation

- Constipation is irregular or absence of bowel movement.
- The causes of constipation are inadequate water, fiber, exercise, magnesium, low thyroid function, and opioid painkillers, regular use of laxatives, aluminum-based antacids, anti-depressants, allergy drugs like Benadryl, iron or calcium supplements, and too much stress, [Micozzi Insider, Feb 2017, 7]
- Dehydration (inadequate water) is probably the most common cause of constipation because the body draws water from the large intestine which hardens the stool and reduces its mobility. Constipation also draws water from cells damaging them and probably making them eligible for cancer; the brain is water intensive and reduced water in the brain is particularly serious. Drink adequate water (at least 3/4 liter per 50 lbs.). Avoid excess fluids during meals because it can cause acid reflux and dilutes the digestive enzymes; it's better to take about eight ozs. of water about one hour before meals and reduce water during meals to about three ozs. Take about three ozs. of water before bedtime and additional water during the night to regenerate the spinal cord disks.
- Chronic constipation contributes to incomplete digestion of food which forms toxins that are delivered throughout the body from fluids extracted from the large intestine.
- Illnesses that are associated with constipation are breast cancer, chronic kidney disease, and kidney failure. Women with constipation have twice the risk of breast cancer. [Micozzi Insider, February 2017, 7]
- Chronic constipation causes arthritis because of higher level of guanidine, the most alkaline substance in your body. The higher level of alkalinity causes calcium to form on the joints causing the arthritis. [Health Alert 33(4), 4]
- Prunes are the most fiber intensive fruit or vegetable known. Take dried prunes or prune juice for regularity. [Baker 2007, 166] But do not depend upon prunes for regularity if inadequate water is the problem.
- Oatmeal, and even better whole oats (better than oatmeal because it retains all of the sealed-in nutrients), contains a gummy fiber called mucilage which soaks up water and softens stool. [Baker 2007, 166]

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- Vitamin C may help constipation. Take 1,000 mg of vitamin C several times a day until the constipation ends and then return to small doses. Alive is one of the best vitamin Cs because it comes in 125 mg capsules from four fruits. Excess vitamin C can cause diarrhea. [Baker 2007,167]
- Take magnesium supplements and eat spinach regularly because it is magnesium intensive. [Baker 2007, 167}
- Capsules of artichoke leaf may help constipation. [Shallenberger, Foods that Heal, 2014, 3]

Cosmetics

- Cosmetics, because of their many ingredients, may be very harmful.
- Chemical hair straighteners may contain formaldehyde which may cause skin irritation and many other injuries. Further these products may indicate no formaldehyde but in fact may contain this ingredient. [BL Mega 2106, 3] And even if a hair straightener does not contain formaldehyde, it will probably contain alternatives that are harmful. So do not use hair straighteners.
- Gradual change hair dyes often contain lead acetate which should not be used because they are harmful not only to the user but may contaminate the home as well. [BL Mega 2106, 3]
- Dark hair dyes may contain coal-tar ingredients which may cause cancer and other illnesses.
- Notably hair salons use products that are not within US federal regulatory standards.
- Shampoos may cause allergies, so if you get an allergy associated with shampoo, change shampoos to a safe product. One source of safe hair products is Skin Deep by the Environmental Working Group.
- It probably best not to use hair modifying products because the range of harmful ingredients is too wide.

Coughs

- For severe coughs associated with colds and flu, the following are helpful:
 - Chartreuse (yellow=40% alcohol and green=55% alcohol) is a French liquor with 130 Alpine herbs from a 1605 formula. Take only enough to cover the throat affected by the cough—about 3/16 cubic inch volume. This will stop uncontrollable coughs, is tastier than cayenne described below, and lasts longer.
 - Wash your hands, wet your forefinger, dip it into cayenne for a 3/8” diameter coating of cayenne, place your finger with the cayenne as far back on the tongue as possible, and close your mouth. As saliva builds up, swallow it on the cayenne pathway and that should defeat the cough—particularly very severe, uncontrollable coughs.

Dangerous Drugs

- For a list of dangerous drugs for older adults, see
 - “Beers Criteria for Potentially Inappropriate Medication Use in Older Adults.”
 - AmericanGeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2012.
 - “Bottom Line Year Book 2015” pages 43-47. This discusses anticholinergic medications, beta blockers, anesthesia, biologics, NSAIDs, opioids and many other groups of drugs including specific brand names and safer alternatives.
- Clarithromycin, an antibiotic used to treat respiratory infections has been associated with a 76 percent increase of death compared with penicillin. [BLYB 2016, 10]
- The use of NSAIDs such as naproxen and ibuprofen increase the risk of venous thromboembolism (type of blood clot) by 80 percent compared with nonusers. [BLYB 2016,11]
- NSAIDs often cause stomach and intestinal bleeding that leads up to 20,000 deaths annually, threaten heart health, and may increase heart attacks by up to one-third. [BLYB 2016, 23].
- Avoid drugs which may cause memory loss such as: [Brain 2011, 189; Micozzi, Insider, July 2016 VII (7), 1-3]
 - Advil PM
 - Ambien (sedative)
 - *Anafranil (Antidepressant)*
 - Asendin Ativan (antianxiety)
 - Benadryl
 - Betapace (beta blocker)
 - Cipro
 - Coreq (beta blocker)
 - Deerol
 - Detrol
 - Ditropan
 - *Elavil (Antidepressant)*
 - Enablex
 - Excedrin PM
 - Flagyl
 - Florinal,
 - Floxin

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- Haldol (antianxiety)
- Inderal (beta blocker)
- Levaquin
- Limbitrol
- Lunesta (sedative)
- Nytol
- *Norpramin (Antidepressant)*,
- Pepcid
- Percocet
- Percodan
- Sanctura
- Sinequan (antidepressant)
- Sonata (sedative)
- Sudafed
- Sominex
- Tagamet
- Tenormin (beta blocker)
- Tofranil (antidepressant)
- Triavil
- Tylenol PM
- Valium (antianxiety)
- Vesicare
- Vicodin
- Xanax
- Zantac.

Dental hygiene

- Dental hygiene remains one of the most elusive health management issues, because the mouth is so small in relationship to the rest of the body and because it is so difficult to understand the physical linkages between poor oral hygiene and adverse effects on the rest of the body. Dental hygiene is extraordinarily important for overall health because dental pathogens travel throughout the body. There have been many cases of serious illnesses that were corrected when mouth bacteria were eliminated in a dental procedure.
- It has been shown that periodontal pathogens have been found in atherosclerotic plaques. That means that periodontal disease (e.g., bleeding gums), a chronic infection, enters the blood stream and causes clogging of the arteries. (Dr, David Williams, *Alternatives*, August 2013, p. 4) Further, **any** chronic dental infection depletes the immune system as a “one front war” and any additional “fronts” have reduced access to the immune system.
- Infected teeth should be removed and replaced with implants because the infection can spread to the tubules in the dentin and remain.

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- Tooth removal requires implant replacement. One missing tooth results in a domino effect for three teeth because (1) the loss of bone at the missing tooth will create loss of bone for the two adjacent teeth, and (2) the lack of biting load on the vertically matting tooth will cause loss of bone for that tooth.
- It may be best to avoid root canals because of the “dead tooth” issue, have the tooth removed, and replace it with an implant.
- Regular dental visits reduce the likelihood of pneumonia. [BLYB 2018, 61]
- It’s important to floss and/or use a water pick to clean the under the crown of an implant.
- Oil pulling is one method of keeping your oral cavity clean. It involves swishing a tablespoon of sesame seed or coconut oil for about ten minutes a couple of times a week and discharging it in the sink. Another helpful mouth cleaner is a bit of cinnamon taken orally.
- If you are an older person and have loose teeth, it may be caused by inadequate vanadium, a bone-strengthening trace mineral. But do not over dose because the total amount of vanadium in the human body is about 100 mcg (micro grams). It is easy to overdose with supplements and they should be taken about once per week. Vanadium-intensive foods include buckwheat (25 mcg per oz), oats (10 mcg per oz), and eggs (13 mcg per oz). [Shallenberger Potpourri, 1]
- Keep your toothbrush clean with hydrogen peroxide.

Depression

- Eighty-percent (80%) of people with depression are deficient in vitamin B₆. But do not take B₆ by itself—take it in a B-complex because of interaction among all of the vitamin Bs. [Baker 2007, 179]
- Elevated levels of homocysteine, an amino acid, are related to and may cause depression. A study found that those in the highest homocysteine tercile (highest 1/3 group) had twice the incidence of depression as those in the lowest tercile (tercile = 1/3 groupings). The optimal range of homocysteine per Life Extension is <7-8 μmol/L, not <15 μmol/L. Supplementing with 5-MTHF, an active form of folate, may reduce homocysteine. Elevated levels of homocysteine may also contribute to Alzheimer's and stroke. [Life Extension, Timothy Rice, 25-30]
- A second source of depression are RFFR. If you are depressed, it may be necessary to substitute a hard-wired router for Wi-Fi, use a land line telephone rather than a cell phone, and remove cordless phones.
- Wild fish and fish oil Omega 3s help the brain receive serotonin. Omega 3s also contain eicosapentaenoic acid, an anti-depressant. [Baker 2007, 179] Remember, farm fish are Omega 6 intensive. See Leslie Stanton, "How Omega-3 Fights Depression." Life Extension. July 2016, 44-48].
- Turkey, chicken, wild fish, dairy products, soybeans, nuts, and avocados contain tryptophan, an amino acid that is converted into serotonin, an anti-depressant. It is helpful to take complex carbohydrates (e.g., whole grain bread, brown rice) with turkey etc. because the combination increases insulin which provides a path for the tryptophan to enter the brain to increase serotonin there. [Baker 2007, 180]
- Outside daily exercise is crucial to overcome depression. Outdoor exercise increases vitamin D which helps maintain higher levels of serotonin and may improve air quality during the exercise. Obviously, supplementing with vitamin D, a common deficiency, is also helpful. Notably, even if one sunbaths, he or she may have a vitamin D deficiency.
- Massages and acupuncture are also excellent anti-depressants. [Baker 2007, 181]
- Avoid St. John's Wort because of side effects. [Baker 2007, 182]

Detoxification and Chelation Therapy

- Detoxification is the process of removing pesticides, heavy metals, and chemicals from your body.
- There are many sources of toxins including the following:

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- Pesticides in foods.
 - Impurities in air outside or inside buildings.
 - Prescription and over the counter drugs contain compounds that damage memory.
 - Personal care products (e.g., cosmetics, shampoos, aftershaves, deodorants and antibacterial soaps) contain hundreds of chemicals.
 - Food cans contain a plastic coating containing BPA, which can cause cancer, diabetes, heart disease, and memory problems. [Aging 2011, 107]
 - Airline seats contain BPDE fire retardant which volatilizes. If you fly frequently, these may build up to cause neurological damage
 - Automobiles contain phthalates to make plastic more pliable.
- Detox procedures include colonics, saunas, modified citrus pectin, and chlorella. Colonics, which flush the colon with 60 liters of water, are best avoided because of many side effects. Saunas are very effective.
 - According to Dr. Nan Kathryn Fuchs (“The Case Against Detoxing”), detoxing can add to poor health because (1) toxic materials are stored in fat cells in concentrations that are up to 200 times the concentrations in the blood, (2) detoxing removes the toxic materials from the fat cells and transfers them to your blood which then delivers them to many of your cells, joints, and organs (e.g., brain, heart, endocrine system, eyes, stomach), (3) toxins are not soluble in water and cannot be eliminated in the urine, (4) they can be eliminated in the stool, but only if you have adequate fiber, and if you do not have adequate fiber, they are digested back into the body, (5) even worse, toxins can be created in the intestines and reabsorbed into the body.
 - Modified citrus pectin and chlorella appear to be the safest way to detox heavy metals and chemicals; MCP binds to toxins and eliminates them quickly with no side effects and MCP with alginate is even better in eliminating toxins. One product with MCP and alginate is PectaSol and may eliminate up to about 74 percent of toxins. [Fuchs Jan 2015]
 - Dr. Isaac Eliaz discovered safe mercury detoxification with MCP that reduced mercury from 74 to 38 percent in five patients in from four to ten months. [Eliaz]

Diabetes: Understanding the attributes causing diabetes

- Ideally, energy production comes from the metabolism of 80% fat and 20% sucrose into energy via the cells’ mitochondria. But as the percentage of energy production from fat declines, more energy from sucrose increases, insulin production increases but the insulin does not work as effectively, more insulin is required, and the onset of diabetes begins. The original cause though is inadequate energy from fats and low energy production because of too much carbohydrates. Thus, as you eat more carbohydrates, which convert to sucrose, you force the body to violate the 80% fat/20% sucrose metabolism rule and the result is low energy, excess production of insulin, and wearing out of the pancreas.

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The solution to diabetes is to consume more fat to force the body to return to the 80% fat/20% sucrose metabolism rule. [Shallenberger Healing 2015, 17-20]

- About 11.6 percent of children in the United States have diabetes today.

Diabetes prevention: Foods and Beverages

- One half cup of beans per day significantly lower fasting glucose, insulin, and hemoglobin A1C. [Hushed, 2014, 35]
- Drink unsweetened coconut, soy, rice, and other similar unsweetened plant beverages to avoid sugar from milk, fruit juices, and soft drinks.
- Avoid “sugar free” plant beverages because they are sweetened with artificial sweeteners.
- Never use artificial sweeteners. There is evidence that artificial sweeteners (e.g., saccharin, sucralose, aspartame) cause Type 2 diabetes (i.e., glucose intolerance) by altering the flora or microbiome (rich population of bacteria and microbes) in the intestines. Artificial sweeteners cause many other health problems as well. [Health Alert February 2015, 3]
- Do not drink soft drinks because they are massively sugar intensive. Twelve-oz. colas have about nine teaspoons of sugar and some have huge amounts of caffeine.
- Avoid fruit juices. Most have added sugar and none has the fiber that reduces the glycemic index (GI). Eat whole organic fruits that contain fiber and reduce the GI.
- Sugary drinks increase blood sugar, spike insulin levels, and increase C-reactive protein a marker of inflammation.
- Avoid low fat milk because all milk is milk-sugar intensive (about 11 grams per glass) and the absence of fat increases sugar spikes and increases fast insulin. Milk is not the proper drink for adults. Plant beverages (coconut, almond, and other nuts) are much better and many are sugar free.
- Soluble fiber is the ideal fiber for diabetes because it slows the rate at which sugar enters the blood stream. Soluble-fiber intensive foods include oatmeal and whole oats, apples, avocados, raw spinach, cooked broccoli, and beans. [BLYB 2015, 2]
- Vinegar is believed to reduce blood sugar and is particularly helpful if taken at the beginning of a meal or at bedtime to reduce AM blood sugar. The suggested dosage is one teaspoon of vinegar with a glass of water, or added to salad. [Bottom Line 100, 75]. Vinegar is very acidic and must be balanced with alkaline foods. Apple cider vinegar is an exception and converts the acetic acid to alkaline in the body. Braggs is an excellent Apple Cider Vinegar.
- For nutrition, whole fruit is preferred in general to any fruit juice for the reasons described above. Exceptions are bananas and pineapple which are naturally sugar intensive. [Bottom Line 100, 53]
- A recent study relating Type 2 diabetes to individual fruit consumption discovered the following: [Muraki et. Al., “Fruit Consumption and risk of type 2 diabetes: Results from three prospective longitudinal cohort studies, BMJ, August 29, 2013, 347:15001]

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- The study covered 3,464,641 person years and was based upon three servings per week of various fruit. The hazard ratio of individual fruit to type 2 diabetes was as follows (hazard ratio of less than 1.0 indicates that fruit reduced the hazard for type 2 diabetes. Hazard ratios of greater than 1.0 indicated an increased hazard for type 2 diabetes):

Blueberries	0.74
Grapes and raisins	0.88
Prunes	0.89
Apples	0.93
Pears	0.93
Bananas	0.95
Grapefruit	0.95
Peaches	0.97
Plums	0.97
Apricots	0.97
Oranges	0.99
Strawberries	1.03
Cantaloupe	1.10

The pooled hazard ratio for total whole fruit consumption was 0.98 and for total fruit juices 1.08. Thus, this study indicated that fruit juices increased the hazard ratio by ten percent over fresh fruit.

Diabetes prevention: Exercise

- Exercise assists in burning up blood sugar and is one of two ways of reducing blood sugar; the other is insulin.
- A 15-minute walk about 30 minutes after a meal lowers post-meal blood sugar for at least three hours because heart muscle contractions clear the blood sugar. [AARP April/May 2014, 38]
- Resistance training in the form of weight lifting increases muscle size and most glucose is stored in muscles; hence larger muscles store more glucose and reduce glucose in the blood. [AARP April/May 2014, 39]
- It is essential to get exercise throughout the day, not simply concentrated exercise at the end of the work day. I suggest about ten minutes of fast walking every 90 minutes of the day. The 10/90 plan increases alertness and will increase total work output during the day.

Diabetes, Type 1: Treatment

- The journal Cell reported on October 9, 2014 that Harvard stem cell researchers found a method of growing insulin-secreting cells in large quantities from human stem cells that would defeat Type 1 diabetes. The successful development of the process may take several years to be commercially available.

Diabetes prevention and management

- Target 80% fats and 20% carbohydrates for maximum energy production. Thus, increase foods with good fats and reduce carbohydrates. [Shallenberger Healing 2015, 17-20] Carbohydrates are not necessary in a diet because the body can manufacture carbohydrates from fat and protein. [Sears House, August 3, 2016]
- Excess body fat produces hormones and chemicals that trigger inflammation throughout the body and belly fat is the worst type of fat because it is chemically different from other body fats. Further, excess belly fat leads to insulin resistance, which is caused by excess simple carbohydrates (i.e., sugar) requiring excess insulin production. Thus, it is important to reduce added sugars to a bare minimum throughout one's lifetime. (Dr. David Williams, August 2013, p. 3)
- Reduce sugar and processed foods to a minimum and NO high fructose corn syrup. [Baker 2007, 189]
- Take Omega 7 supplements in dosage of about 250 mg daily. See Pillar 6, Omega 7.
- Conjugated linolenic acid (CLA) lowers blood sugar up to five-fold. CLA is available in milk from grass fed cows, beef, lamb, eggs, and turkey. [Baker 2007,83, 187]
- Bitter melon, a natural plant insulin, in the form of powdered seeds for three weeks reduced blood sugar 25 percent; a liquid extract of bitter melon reduced blood sugar by 54 percent in two studies. [Baker 2007, 189; Uncommon Cures 2009, 98]
- Resveratrol normalizes blood sugar levels by moving glucose from the blood into cells. [Bottom Line Healing Kitchen, 81]
- Bauhinia, a tree found in the Amazon, controls blood sugar and is also a blood cleaner because it is antibacterial, antifungal, lowers cholesterol, and triglycerides, protects kidney function, and acts as a diuretic. (Williams, p. 3)
- Chromium picolinate (CP) may be helpful to prevent diabetic kidney disease when high blood pressure destroys small blood vessels in the kidneys. CP is sold in 200 mcg to 800 mcg dosages. CP, however, may interfere with diabetes medications, metformin, Glucophage, and Diabeta, NSAIDs and antacids and should be avoided if these are taken. [Bottom Line 100, 2014, 38]
- Bay leaf controls glucose. [Uncommon Cures 2009, 98]
- Brewer's yeast, rich in chromium, controls blood sugar. [Uncommon Cures 2009, 167].
- Individuals with sluggish digestion tend to accumulate weight. [Baker 2007, 84]. Thus, taking a full bodied digestive supplement with meals may help with digestion and weight loss.

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- A new class of diabetes drugs called glucagon-like peptide-1-based therapies (GLP-1) [e.g., sitagliptin (Januvia) and exenatide (Byetta)] foster formation of lesions and inflammation in the pancreas, which cause pancreatitis the symptoms for which are nausea, vomiting and abdominal pain. [BLYB 2015, 11].

Dizziness

- Dizziness is most frequently caused by a disturbance in the inner ear that provides a sense of balance. The disturbance may be caused by bits of calcium carbonate that have dislodged and will eventually dissolve, infections, head injury, migraine headaches, and reduced blood flow to the inner ear. Reduced blood flow can be caused by hardening of the arteries, caffeine, salt, or anxiety. [Baker 2007, 197]
- Blood flow can be increased by eliminating caffeine, reducing salt, and increasing magnesium and calcium. [Baker 2007, 197]
- Perform exercises that overcome dizziness. See Baker 2007, 198-199.

Doctors, naturopathic or homoeopathic

- See Naturopathic.org or HomeopathicUSA.org.

Doctors, questions you must ask of

- If you have any medical symptom that causes you to visit a doctor, and particularly if the symptom is serious requiring major medical attention, you must ask your doctor the following questions, because he or she may not be required by state law to provide you with this information. [BLYB 2016, 31-50]
 - The correct name of the illness.
 - A complete description of his or her recommendations to treat the illness.
 - Treatment alternatives placed on a time line.
 - Side effects from treatment placed on the treatment time line with a treatment plan for the side effects.
 - Probability distribution of outcome alternatives placed on a time line.
 - A list of medications placed on the treatment time line, their side effects, and treatment of the side effects.
 - Interactions with other illnesses you have and with other medications.
 - The doctor's experience in treating this symptom.
 - Access to a written summary of answers to your questions.
 - Cost of treatment.

Drug/supplement adverse interactions

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- While supplements are generally safe if one takes no medications, there are adverse interactions between drugs and supplements. Some supplements increase or decrease drug density because they slow drug or accelerate drug metabolism. In other cases, drugs and supplements use the same pathways, and increase the direct and side effects of the drugs. [BLYB 2018, 110]
- It is essential that you tell your doctor about all medications you take, if he or she prescribe medications.
 - Echinacea: Echinacea interferes with exemestane (Aromasin), which treats breast cancer, and cyclophosphamide and fluorouracil, two chemotherapy drugs.
 - Iodine:
 - ◆ Iodine is necessary for thyroid health, but the recommended daily dosage is 150 mcg. Supplements often contain 500-1000 mcg. Doses over 300 mcg can damage thyroid function.
 - ◆ Iodine supplementation can interfere with levothyroxine (Synthroid and Levoxyl), a synthetic form of a thyroid hormone.
 - Fish oil
 - ◆ Fish oil contributes to brain health, reduces high triglycerides, and reduces pain from rheumatoid arthritis.
 - ◆ But fish oil is also a blood thinner and may interfere with any drug that is a blood thinners like warfarin and NSAIDs.
 - ◆ Excess blood thinners may create excess bleeding during surgery, dental procedures, and injuries.
 - GABA (gamma-aminobutyric acid)
 - ◆ GABA has a calming effect and may lower cortisol, the stress hormone.
 - ◆ GABA can interact with sedatives (e.g., opioids, codeine, antianxiety medications, Ativan, Xanax) to promote excess sedation.
 - St. John's Wort
 - ◆ St. John's Wort, used as an antidepressant, has so many interactions with drugs, that it may be best to avoid its use.
 - ◆ St. John's Wort interacts with selective serotonin reuptake inhibitors and may cause medication-induced serotonin syndrome. This may cause variations in blood pressure and heart rate, heavy sweating, diarrhea, and extreme agitation.
 - ◆ The supplement also interferes with many other prescription drugs.

Ear infections

- The broad-based use of antibiotics in the food we eat (e.g., farm-raised fish) renders antibiotics less effective to defeat ear infections. Some alternative treatments for ear conditions follow.

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- Colloidal silver was used extensively before the introduction of antibiotics to defeat infections and may be helpful for ear infections. (See also “Colloidal silver.”) Take as directed (e.g., about seven teaspoons per day) and continue the dosage for at least several days after the infection appears to have been defeated. If you stop the colloidal silver before all infectious signs of the ear condition have been defeated, you may have to start the dosage over.
- Echinacea may be used to treat ear infections. One method is to take one teaspoon of Echinacea tincture orally, two or three times a day. The second is to bend your head and take four to six drops of Echinacea tincture directly into the ear every two to three hours until the pain is gone. Echinacea may also be helpful when the infection begins by increasing the response of the immune system—take one to three Echinacea capsules every two or three hours. [Uncommon Cures 2009, 107]
- Goldenseal tea, rich in berberine, a natural antibiotic, may be taken up to three cups a day using one teaspoon of dried goldenseal in the boiled water. [Uncommon Cures 2009, 107]
- Ear infections of young children may be improved by eliminating dairy products during the illness because dairy products are mucus forming. [Uncommon Cures 2009, 107]
- Enzymes in organic ground carrots placed in a piece of cheesecloth held against the infected ear for 15 minutes may draw out the infection in the ear. [Uncommon Cures 2009, 108]
- Garlic mullein eardrops, an antimicrobial, may defeat ear infections. [Uncommon Cures 2009, 108]
- Ear drops by NutriBiotic are recommended by Dr. Bruce West. These drops contain grapefruit seed extract, tea tree oil, alcohol and glycerin. Used as directed, it may clear up the infection in 1-3 days. [West, July 2016 33(7), 2-3]
- Avoid blowing your nose repeatedly by closing off one nostril. Impediments to the nostril will add pressure to the ear drum and you take the risk of rupturing a portion of the ear drum and going deaf in that ear. The correct way of blowing one’s nose to prevent ear damage, is to:
 - (1) Blow the nose with no restraints on either nose side. This is not as effective as blocking one side of the nose, but it prevents ear damage and loss of hearing.
 - (2) Take a hot shower, breathe in a bit of water from the shower, wait about two minutes and then blow the nose with no restraints on either nose side to clear interference. I have used each of these to clear the nose after I damaged my ear.

Ear: Hearing loss

- Hearing loss generally occurs over a lifetime. It is important to avoid exposure to loud noise over 85 decibels. The sources of loud noises include industrial processes, household equipment (e.g., carpet cleaners), target shooting without ear protection, driving in a convertible with the top down with exposure to traffic (unmuffled automobile

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and motorcycle engines), rock and roll bands, listening to music with headphones or electronic ear plugs, thin-faced titanium golf clubs (120 decibels), etc. In addition to the issue of hearing loss from loud noises, those noises also create stress and distraction from productivity and knowledge of nearby environmental hazards. [Shallenberger Natural Medicine, November 2016, 1-2]

- Hearing loss can also be caused by medications, ear infections, circulation problems, high blood pressure, and injury to the ear. [Shallenberger, Natural Medicine, November 2016, 1-2]
- Hearing loss can affect memory, balance, contribute to stroke, decrease safety, and injure relationships. [Brain 2011, 129-130]
- Medications are a common cause of hearing loss. Regular acetaminophen use is a guarantee of hearing loss if you are under the age of 50. Frequent use of other pain relievers such as aspirin and NSAIDs such as ibuprofen and naproxen increase substantially the likelihood of hearing loss. All aminoglycoside antibiotics (e.g., streptomycin, neomycin, gentamicin) are known to cause permanent hearing loss. Vancomycin also causes hearing loss. Women taking progestin with estrogen experienced a 10 to 30 percent greater hearing loss than women not taking progestin. [Brain 2011, 131, 132]
- Another way to assure good hearing is to avoid sources of RFFR and magnetic fields near the ear. Thus, use speaker telephones on land line and cell phones and do not insert electronic listening devices in the ear. Avoid the use of cell phones. Electronic devices near the ear can not only damage the ear, but lead to brain tumors and other brain damage.

Earthing or grounding: See Pain management: Earthing

Eye health

- *Aging of the population.* There has been a dramatic increase in eye disease since 2000. Macular degeneration has increased 26% for those over age 50, cataracts have increased 19% for those over age 40, open angle glaucoma has increased 22% for those over age 40, and diabetic retinopathy has increased 89% for those over age 40. The principal causes seem to be increases in the aging of the population and increases in diabetes.
- Other causes of eye damage are:
 - *Blue light from smartphones and computers.* Blue light is damaging to the retina. This can be prevented and treated with lutein, zeaxanthin, meso-zeaxanthin, and low-dose Omega 3s. [Life Extension, Cortex, Feb 2017, 63]
 - *Extremely bright headlights.* Many years ago, automobile headlights were about 50% of the intensity they are today and at an intersection with three straight lanes, two left turn lanes and one right turn lane, there are twelve very bright lights

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shinning in your eyes. Indeed, special polarized yellow or amber glasses reduce this intensity considerably.

- Sulforaphane, an antioxidant found in broccoli, protects eyes from ultraviolet light damage that can lead to macular degeneration. [Gao 2004]
- Coconut oil and water may treat cataracts and other eye illnesses. [Dr. Bruce Fife, Stop Vision Loss Now]
- Macular degeneration
 - The macula is a small spot at the center of the retina which contains light sensing cells and permits seeing things sharply in front of us.
 - Individuals with the highest level of carotenoid intake have a 43% reduction in macular degeneration risk. [Life Extension, Faloon, July 2016, 10]
 - Macular degeneration is a reduction in the macular pigment and may be prevented and treated with the following foods and food supplements: [Shallenberger, Foods that Heal, 2014, 4]
 - ◆ Vitamin E (400 IR) in combination with bilberry is believed to reduce cataracts 97 percent. Bottom Line Health Special Report 2017, 7].
 - ◆ Spinach
 - ◆ Lutein, a bioflavonoid, which protects the pigment in the eyes by absorbing harmful blue light from the sun and neutralizes harmful free radicals. [Life Extension Feb 2016, 62] The dosage is about six grams per day. Lutein naturally occurs in leafy green vegetables (e.g., spinach), kiwi, grapes, oranges, zucchini, and squash.
 - ◆ Bilberry extract. The dosage is 400-600 mg standardized to contain 25% anthocyanidins.
 - ◆ Zeaxanthin (1-2 mg). [Life Extension Feb 2016, 62]
 - ◆ Meso-zeaxanthin, which is necessary to maintain macular density. Meso-zeaxanthin is manufactured from lutein in the macula, but later in life one must take supplements. [Life Extension, Faloon, July 2016, 10]
 - ◆ α -carotene.
 - ◆ Saffron extracts. Saffron is a culinary spice from the *Crocus Sativus* flower. It protects the light sensitive cells in the macula. The
 - ◆ Zinc (50-100 mg)
 - ◆ Dark berries such as blueberries, blackberries, and dark cherries all of which are rich in flavonoids.
 - ◆ Red wine, which is rich in flavonoids including quercetin, rutin, and Resveratrol all of which are strong antioxidants.
 - ◆ Astaxanthin is a powerful antioxidant which protects the retina from damage from excessive light exposure.
- There is one additional concern I have with the increase in eye damage: Automobile headlights are probably twice as bright today as they were 50 years ago. At six-lane,

traffic-light intersections, there are 12 on-coming headlights and some may not be properly adjusted. For this reason, I believe that it is helpful to wear tinted Polaroid glasses that substantially reduce glare. For clarity, yellow Polaroid is excellent because they are light in tint but reduce diffusion. A second choice is Eagle Eyes, which are amber colored (blue blockers), a bit darker than yellow with coatings on the lenses. Eagle Eyes does not recommend them for night driving because they say they are too dark,⁷ but there is a trade-off between the increased speed of recognizing danger in the presence of on-coming headlight glare with tinted glasses and reduced reaction time from on-coming headlight glare without glasses. Eagle Eyes are helpful wherever there is ambient light, but should not be worn where there is little or no ambient light, the latter of which is rare in city driving. Eagle Eyes should not be worn in bright sunlight because they are too light.

- Tight neckties increase intraocular pressure (IOP) and contribute to glaucoma. The increase in IOP can range from 2 mmHg to over 4 mmHg (i.e., 4 millimeters of Mercury).
- Diabetes-caused eye problems may be reduced by eliminating animal products and dairy. [Hushed, 2014, 36]
- Medications and over-the-counter drugs can injure your eyes. The symptoms are dry eyes, eyes sensitive to light, blurred vision, floaters, cataracts, etc. Source medications causing adverse eye problems include Coumadin, Plaquenil, Adipex, Enduron, Norpramin, Xanax, Celebrex, Lamictal, Mevacor, Tylenol, Zantac, Actified, Catapres, Detrol, Paxil, Cardizem, Voltaren, Benadryl, Cardizem, Elavil, Diabinese, Dilantin, Lipitor, Pepcid, Viagra, Diabinese, Elavil, Librium, etc.[BLYB 2017, 22-24]
- Excess calcium supplementation over 800 mg daily can double the risk of age related macular degeneration. [BLYB 2017, 24]
- Contact lens cause eye infections caused by the Acanthamoeba parasite. To avoid this risk, avoid all water contact with the lens; water contact includes showers, swimming pools, washing the lens in tap water, etc.

Fibromyalgia

- Fibromyalgia is a condition with widespread pain for at least three months plus unusual tenderness at 11 or more of 18 places on the neck, shoulders, chest, back, hips, thighs, knees and elbows, plus headaches, stiff joints, constipation, diarrhea, depression, sleep problems, and sensitiveity to lights, sounds, or smells.
- It is extremely difficult to diagnose and blood tests may be normal.
- Bottom Line's Mega Cures, 2016, p. 27-32 has an excellent discussion of supplements and other therapies that may help.
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⁷ In one court case, the judge inspected Eagle Eyes and accepted them for night driving.

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Food sensitivities in children

- Food sensitivities in children are caused by too little exercise and too much sugar from carbohydrates. Children today have substituted video games and cell phones for exercise and the cure for food sensitivity is more exercise and less use of wireless electronics. Fats and proteins should be substituted for carbohydrates, soft drinks, and candy.

Gout

- Gout is a form of arthritis in which glasslike shards of built-up uric acid jab into the big toe, joints, and connective tissues causing pain, fever, and chills particularly at night. It may also develop into uric acid kidney stones. [Yeager 2007, 296]
- Uric acid is produced when the body breaks down proteins into by-products called purines. Normally the uric acid is dissolved in the blood, filtered by the kidneys, and eliminated in the urine. These processes are less available to gout sufferers. There may be long periods of its absence, but it still returns. Gout typically attacks the big toe, ankles, knees, hands, and shoulders. After ten years, lumps of uric acid crystals (tophi) begin to build up in the joints and cartilage. [Yeager 2007, 296-7]
- The foods which may cause gout are meats (organ meats such as liver and kidneys), seafood (shellfish, sardines, anchovies), table sugar, cauliflower, white bread, beer, and liquor (but not wine) all of which are purine-rich foods. [Yeager 2007, 298; Barnard 2008, 96; Cleary 2007, 166-7]
- Foods that reduce gout symptoms are water (which dilutes uric acid in the blood) and foods rich in vitamin C (lowers blood levels of uric acid), which include fresh cherries, fresh pineapple (rich in bromelain), oranges, strawberries, kiwifruit, cabbage, kale, leafy greens, celery (3-n-butylphalide), carrots, green peppers, broccoli, Brussel sprouts, black pepper (piperine), soy products, and unsaturated fats. [Yeager 2007, 298-9; Cleary 2007, 166-7; BLYB 2016, 83]
- Organic raw, unfiltered apple cider vinegar (fermented apple juice; Bragg's Apple Cider Vinegar) contains potassium, iron, calcium, and acetic acid which may defeat gout. Acetic acid becomes alkaline in the body, which provides a healthy environment to defeat the formation of uric acid crystals. The dosage is a table spoon of vinegar in a glass of water twice daily. Indeed, I know of one individual who defeated gout in both ankles and knees in two weeks with Bragg's Apple Cider Vinegar at a dosage of two table spoons for one week and then one table spoon daily.
- Cherries also reduce uric acid levels. [Marchione, Food Doctor, Spring 2016, 3]

Hair care

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- Hair care requiring conditioners or dyes can be extremely toxic irrespective of what the label or ingredient list state. They can cause allergies, cancer, and many other illnesses. Its best as a general rule to use a simple shampoo that cleans but does not conditions or dyes the hair. [BL Mega 2016, Lunder, Sonya. “Danger in Your Hair.” 3-4]
- Hair straighteners may contain formaldehyde or chemicals similar to formaldehyde which are toxic. [BL Mega 2016, Lunder, Sonya. “Danger in Your Hair.” 3-4]
- Hair dyes may contain lead compounds or coal tar ingredients. [BL Mega 2016, Lunder, Sonya. “Danger in Your Hair.” 3-4]

Healing and pain management: Platelet-rich plasma therapy (PRPT)

- PRPT therapy for healing and pain management is a process in which blood is drawn from a patient and placed in a centrifuge which removes red blood cells leaving plasma which has five to ten times more platelets than regular blood. These platelets are applied to the damaged area which attract stem cells. Stem cells promote rapid healing and pain reduction. Platelets also contain growth factors that promote healing. [Sears House, 04.01.2017].
- PRPT relieves joint pain and restores joint function, boosts the immune system, promotes healing after surgery, rebuilds collagen, rejuvenates skin by reducing fine lines, wrinkles, dark circles, age spots, and sun damage, and defeats dead jaw syndrome. [Sears House, 04.01.2017]
- It is particularly useful in dental surgery and has been found to improve the rate of healing by a multiple of six based upon improvements to bone density. [Sears House, 04.01.2017]

Headaches

- Headaches have a variety of causes some of which are easily corrected and others more difficult. But if you get headaches, I urge that you read the following information carefully and have the self-discipline to use the simplest choices first—although “simplest” may not be simple for you. Our presentation will present the causes of headaches and then the solutions that reduce or eliminate symptoms.
- Cause #1: About 1/3 of all headaches are caused by foods: [Baker 2007, 250-252; BLYB 2015, 55]
 - Red wine
 - Hot dogs
 - Chocolate
 - Fermented foods such as miso, teriyaki sauce, soy sauce
 - Monosodium glutamate (MSG); In my opinion, everyone should avoid foods with MSG.

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- Tyramine, an amino acid, found in aged cheese (blue, Brie, cheddar, provolone)
- Meat preservatives including nitrites (sodium and potassium), nitrates (sodium and potassium), sorbates, sulphites, etc. Some of these preservatives are also carcinogenic, hell on the prostate, and should never be eaten.
- Corn
- Wheat
- Soy
- Peanuts
- Milk and other dairy products
- Cause #2: Prescription drugs [Shallenberger, Second Opinion, XXXVI (8) (August 2016), 1-3]
 - Ergot medications like caffergot.
 - Antidepressants like Prozac, Wellbutrin, Paxil, etc.
 - Codeine.
 - Tranquillizers.
- Cause #3: Caffeine [Shallenberger, Second Opinion, XXXVI (8) (August 2016), 1-3]
 - Excessive caffeine is a cause of migraine headaches.
 - Any amount of caffeine for some individuals may cause headaches.
 - Avoiding coffee causes withdrawal headaches for several days.
 - Caffeine constricts blood vessels, which may temporarily reduce symptoms, but when the caffeine wears off the blood vessels will over-dilate giving a massive headache.
 - Exercise should be substituted for caffeine to remain alert. It takes only about ten minutes of level walking or up-stairs every 90 minutes to induce alertness and additional oxygen which also defeats cancer cells from respirating on sugar. Indeed, when I worked and followed this exercise plan, I increased my overall output by at least 15 percent by working faster and avoiding periods of tiredness before lunch and end-of-day. Further, caffeine, because it causes anxiety, in combination with exogenous stress is a cocktail for serious mental decline and illness. [Keltling, PTSD Recommendations] I have read many medical sources that stated caffeine is good for you, but none mentioned its adverse mental health effects.
 - Cause #4: Hormonal imbalance in women.
 - ◆ In both younger and older women, the period causes hormonal imbalances. For younger women, the problem may be corrected with additional magnesium and progesterone before their cycle.
 - Cause #5: Imbalance in the neurotransmitters or brain chemicals.
 - Cause #6: Inadequate levels of magnesium and calcium are a common deficiency in folks with migraines. [Baker 2007, 253-254]
 - Cause #7: Presence of electromagnetic fields and particularly RFFR.

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- Other helpful foods and supplements are COQ10, dandelion, stinging nettle tea, and white willow bark. [Baker 2007, 252-254]
- Acupuncture and meditation may be helpful to conquer headaches.
- Hypnotic relaxation therapy may be helpful to avoid and reduce the severity of tension headaches. This involves finding a quiet place, turning off all sources of EMFs, sitting comfortably, and thinking peaceful thoughts which may include (1) emptying the mind of all thoughts, (2) transposing oneself to a peaceful place, and (3) sequentially relaxing all muscles (e.g., “The muscles in my feet are relaxed, the muscles in my legs are relaxed, ...”) [BLYB 2016, 58-59]
- It’s best not to use Ibuprofen or other NSAIDs because they constrict the blood vessels to reduce symptoms and when their effect wears off the vessels over dilate giving a massive headache. Continued use of NSAIDs can lead to ulcers and interfere with the absorption of nutrients including tryptophan which the body uses to make serotonin. [Baker 2007, 253]
- Corticosteroids can cause osteoporosis, which is thinning of the bones. [Baker 2007, 250]

Heart Disease

- Heart disease is any disease of the heart including coronary artery disease, arrhythmias, congenital heart defects, etc.
- Historically, high and improper balance of the different types of cholesterol and saturated fats have been considered the chief causes of heart disease because it was believed they cause arterial plaque. These opinions have led to low fat diets, increased carbohydrates, heat altered oils, and processed foods.
- ”True or false: Saturated fat causes heart disease.” Answer: “False. An analysis of about 80 studies that involved more than 500,000 people found that saturated fat does not increase heart disease risk. [BLYB 2016, 1; quoting from an article in *Annals of Internal Medicine*]
- Dr. Bruce West in Health Alert believes that there are two underlying causes of heart disease:
 - Inflammation of the inner layer of the arteries and particularly the coronary arteries. Arterial inflammation is caused by too much sugar and carbohydrates, which cause high levels of insulin. Other sources of inflammation are polyunsaturated fats, processed vegetable oils, and deficiencies of vitamin C and bioflavonoids. Processed foods inflame the arteries and plaque is attracted to heal the inflammation. The solution is to eat a whole food diet that includes fresh organic fruits and vegetables, healthy oils such as Omega 3s, flax, olive, and cod liver oil, grass-fed meat, butter from grass-fed cows (not margarine), lemon-intensified distilled water, and general adherence to the Mediterranean diet. [Health Alert 10(7); Kelting]

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- Beriberi of the heart. Beriberi is a deficiency in the vitamin B complex and particularly vitamin B4. Processed foods are deficient in vitamin B complex because vitamin B4 (and many other vitamins, minerals, and fiber) has been removed in processing. The solution is to take complex vitamin B supplements rich in vitamin B4. [Health Alert 10(7)]
- In a study of 20,721 Swedish men, it was discovered that men with none of five risk factors present experienced a **79 percent reduction in heart attacks** (myocardial infarctions). The five risk factors were the presence of (1) a healthy diet, (2) moderate alcohol consumption (10 to 30 g/day), (3) no smoking, (4) being physically active (walking/bicycling >40 minutes per day and > 1 hour exercise per week), and (5) waist circumference of < 95 cm (37 inches). [Akesson 2014]
- Exercise reduces blood pressure and cholesterol, strengthens the heart muscle and reduces the likelihood of dying from heart disease. [Uncommon cures 2009, 159]
- Stress markedly increases pulse rate and overall damage to your heart. Get adequate exercise and eliminate negative thoughts. Read again the Six Pillar definition of “Stress.” [Uncommon cures 2009, 159]
- Over the counter pain killers increase heart disease by 19 percent. These include nonsteroidal anti-inflammatory drugs containing piroxicam, diclofenac, and naproxen. [Life Extension May 2017, 22]
- Galectin-3, a protein, is a marker for and cause of heart failure and other illnesses. Galectin-3 increases when there is injury, inflammation, or infection by sending out fibroblasts to contain the problem through fibrosis, which is similar to scar tissue. But if Galectin-3 is uncontrolled and the fibrosis continues it may reshape the heart and cause heart failure. Furthermore, Galectin-3 is a marker for death because clinical research indicates that a value of over 17.8 indicates a high risk for heart failure, cancer, kidney disease, ulcerative colitis, Crohn’s disease, cirrhosis of the liver, arthritis, type 2 diabetes, and hypertension. Galectin-3 can be controlled with PectaSol-C, a modified orange peel, which binds with and blocks Galectin-3. [Cagan September 2014]
- Hawthorne increases blood supply to the heart, tends to lower heart rate, regulates cardiac rhythms, and increases the strength of contractions by the heart muscle. It is used in 36 German heart preparations [Uncommon cures 2009, 153]
- Celery seeds, in addition to lowering cholesterol and blood pressure, promote a health heart. [Uncommon cures 2009, 153]
- Tomatoes help prevent heart attacks and strokes as well as cancer. [Uncommon cures 2009, 153]
- The Vitamin B complex (particularly folic acid, B6 and B12) reduce homocysteine (which damages arterial walls) level in the blood. [Uncommon cures 2009, 153]
- Vitamin E in the form of natural (not synthetic) tocopherol reduced the likelihood of heart attacks substantially. A control group of 2,000 people with a history of heart

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trouble discovered that those taking natural tocopherol had 75 percent fewer heart attacks than those taking a placebo. [Uncommon cures 2009, 155]

- Aspirin is believed to improve heart health, but it also damages the kidneys and I believe application of the zero-tolerance rule means it is inappropriate to take any medication that places the kidneys at risk.
- Flavonoid-containing foods such as apples, onions, red wine, deeply colored berries and grapes reduce the buildup of cholesterol and plaque in the arteries. [Uncommon cures 2009, 156]
- Carrots not only improve vision, but also reduce heart disease, lower cholesterol (pectin), and reduce the incidence of cancer. [Uncommon cures 2009, 156]
- There appears to be a strong correlation between gum disease and heart attack rates because of dental bacteria. Brush and floss regularly, but do not use mouth washes with chlorhexidine, which raises blood pressure. [Uncommon cures 2009, 156]
- Garlic, in addition to its strong antiviral properties, lowers blood cholesterol. [Uncommon cures 2009, 158]
- Omega 3 fats are believed to reduce blood clots, raise good cholesterol (HDL), and maintain lower blood pressure. [Uncommon cures 2009, 158]
- Fiber helps to eliminate cholesterol before it enters the blood stream. High fiber foods include whole grains, broccoli, strawberries, and other fresh organic, multicolored fruits and vegetables. [Uncommon cures 2009, 158]
- Dandelion roots brewed as tea reduces cholesterol and may help break the coffee habit. [Uncommon cures 2009, 158]
- About eight to ten ounces of grape juice thins blood and reduces clotting by about 40 percent. [Uncommon cures 2009, 158]

Heart disease: Tests for

- Bottom Line Yearbook 2017, pages 3-4 discusses several tests for heart disease. These are:
 - Coronary calcium computed tomography (CT) scan. This test checks for calcium deposits in the arteries a measure of atherosclerosis. Individuals with little or no calcium in the arteries have a less than five percent risk of a heart attack in the next three to five years. Very high levels of calcium have up to a nine times greater risk of a heart attack in this period. This test uses radiation, so it is preferred to take the test using a fast machine (a 256-slice machine is preferred to a 64-slice machine).
 - Carotid intima-media thickness (CIMT). This ultrasound test checks for the thickness of the intima and media lining of the blood vessels in the carotid arteries of the neck. Thickening is a measure of plaque in these linings. This plaque may be reduced with a better diet, increased exercise, statin medications, pomegranate, Kyolic aged garlic, and vitamin K-2.

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- Advanced lipid test. This test measured amounts and sizes of LDL and HDL cholesterol. Large amounts of very small LDL is high risk because these small particles can easily enter the artery wall.
- C-reactive protein. Elevated C-reactive protein indicates inflammation in the body, perhaps in the blood vessels.

Herpes

- The amino acid arginine helps the herpes virus replicate. Arginine is found in nuts, seeds, chocolate, coconut and sardines. Another amino acid, lysine, found in lentils, legumes, black beans, wheat germ, and seafood may help moderate herpes. [Baker 2006, 12]

Hypoglycemia

- Hypoglycemia is low blood sugar measured by blood sugar less than 70 milligrams per deciliter (mg/dL). Low blood sugar means the body does not have enough sucrose to use as fuel. [BLYB 2016, 12]
- One of the causes of hypoglycemia is consumption of excess carbohydrates which causes the pancreas to overreact and release too much insulin.

Hypothyroidism

- The thyroid gland, located in the front of the neck, produces thyroxine (T4) that goes to every cell in the body. Deficiencies in T4 is called hypothyroidism and results in less heat and energy and many bodily functions slow down including memory and brain activity. Women over 60 are at the greatest risk. Iodine is required to make T4 and other thyroid hormones. The recommend dosage of Iodine is 150 mg per day. Dosages of over 1,500 mg per day are excessive and seaweed is a major cause of excess Iodine.
- Hypothyroidism may be treated with synthetic T4 taken daily.
- Prevention of hypothyroidism depends upon natural antioxidants clearing toxics from your body. Vitamin C, vitamin E, and beta carotene are helpful along with citrus, red peppers, leafy green vegetables, deep orange fruits and vegetables and whole grains. [Brain 2011, 148-151] Assure that you have adequate iodine, zinc, and selenium.

Inflammation

- There are two types of inflammation: acute and chronic. Acute inflammation is the severe response of the immune system to an injury (redness around a bump or cut), bacteria, or virus, but it does not last very long. Chronic inflammation is continuous because the immune system continues in combat mode delivering white blood cells perhaps for months or years. Because chronic inflammation interferes with natural body processes and destroys tissues, in the long run it can cause cancer, diabetes, arthritis, Alzheimer's and many other very serious conditions. [Brain 2011, 152]

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- Inflammation causes free radicals and it is necessary to furnish anti-oxidants to defeat the free radicals. The best anti-oxidants are quercetin and alpha tocopherol. Defeating free radicals also defeats inflammation. [Mumby 2012, 39]
- Growing old may be caused by an inflammatory condition and may be deferred by better adaptation of the immune system to the aging processes. Anti-oxidants, omega 3 oils, and reduced sugar is crucial to delaying the aging processes. [Mumby 2012, 51]
- To avoid inflammation, consume Omega 3 grass-fed meats, and wild cold-water fish and do not consume large amounts of Omega 6s, which are naturally inflammatory. Thus, it is important to eat meat from free range cattle and chicken. Antioxidants are important because they defeat free radicals contributing to inflammation. Soluble fiber in oats can convert inflammatory cells into anti-inflammatory cells. Curry powder, ginger, garlic, and cloves also defeat inflammation. [Brain 2011, 152-153]
- Dietary sources of inflammation are Omega 6 fats, trans fats from partially hydrogenated oils, and processed and refined foods.

Irritable bowel syndrome (IBS)

- IBS is a condition in which the muscles in the intestines contract and become erratic with the contractions being more intense and for longer periods causing pain. Because of the erratic flow of food, digestive symptoms occur. [Sinatra 2013, 130]
- Before IBS can be diagnosed correctly, other conditions must be ruled out. These may include celiac disease, lactose intolerance, inadequate digestive enzymes, parasites, etc.
- The partial solutions to IBS include: [Sinatra, 130-3;]
 - Adding a multi-strain probiotic supplement to clean the intestinal tract. I have recently heard of a case in which probiotics by themselves reversed IBS.
 - Eliminating all refined white-flour foods including pastries, cookies, white bread, and pasta.
 - Restricting monounsaturated and saturated fat because they are harder to digest. [Bottom Line Hushed-Up 100, 19] It may be helpful to take a complete digestive enzyme like Garden of Life Omega-Zyme or Whole Food's 365 equivalent. I take one of these whenever I eat a fat/protein intensive meal.
 - Eliminating all added sugar. [Bottom Line Hushed-Up 100, 19]
 - Eliminating fructose found in fruits because some people are fructose intolerant and because fructose is more difficult to digest. Thus, selectively eliminate fruits. [Bottom Line Hushed-Up 100, 19]
 - Eliminating high-fructose corn syrup.
 - Eliminating all sugar substitutes.
 - Eliminating coffee.
 - Test for and manage serotonin because 95 percent of serotonin is in the bowels and its excess can cause IBS. [Mumby 2012, 34]

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- Reduce stress.
- Preparing your own meals so you know the ingredients.
- Adding artichoke leaf may cure irritable bowel syndrome with a dosage of 200-400 mg three times daily for about a month; decrease dosage as you improve. [Shallenberger, Second Opinion Healing Series, Volume 2, 42] Capsules of artichoke leaf combined with an anti-yeast program may reduce significantly the symptoms of IBS [Shallenberger, Food that Heal, 2014, 2]
- Increasing dietary fiber such as whole grains (e.g., oats, barley) and beans for soluble fiber. [Uncommon Cures 2009, 105]
- Increasing fish consumption because the oils are natural anti-inflammatories.
- Adding eight grams of high-quality fish oil daily.
- Eating lean meats such as turkey and chicken breast (no skin).
- Adding a bit of extra virgin olive oil for healing polyphenols.
- Drinking adequate water (e.g., 3/4 liter per 50 lbs.), which moves fiber-intensive foods through the intestines.
- Eating fresh organic pears or drinking 100 percent pear juice. When drinking any fruit juice make sure it is from 100 percent pure juice from organic fruit and has no added sugar. [Baker 2014, 14]
- Eating less at each meal and increasing the number of meals per day (grazing).
- Exercising more frequently.
- Correlating your IBS distress with foods consumed.
- Adding slippery elm bark may ease symptoms during flare-ups. [Uncommon Cures 2009, 101]
- Increasing fish oils may help avoid the symptoms of Crohn's disease or ulcerative colitis. The Omega 3's in fish oil may aid the body's synthesis of prostaglandins. [Uncommon Cures 2009, 102]
-

Joint (knees, hips) replacement

- The latest medical procedure to repair joint damage in knees and hips is stem cell replacement. This involves removing stem cells from the abdomen or buttocks, spinning the stem cells in a centrifuge to get a high concentration, and injecting the concentrated stem cells into the injured (i.e., arthritic) joint using a local anesthetic. Stem cells have the ability to transform themselves into any cell the body needs such as cartilage, soft tissue, or new bone. Payton Manning missed an entire season of play from a neck injury, had this procedure executed, and went on to win the 2014 Super Bowl. [Bottom Line Special Issue, February 2017, 1-2]

Kidney disease

- The functions of the two kidneys are to remove toxic waste from the blood, support water/fluid balance, secrete hormones to make red blood cells, maintain electrolyte

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levels, regulate blood pressure, maintain healthy levels of nitric oxide, filter 120 to 150 quarts of blood daily, and produce about one to two quarts of urine daily. [Life Extension, Faloon, Feb 2017, 11]

- Kidney disease is increasing in individuals over 60 years. The principal causes of kidney disease are excess blood sugar, blood pressure, cholesterol, smoking, proton pump inhibiting drugs, pain killers, other medications, hypertension, and diabetes. Common pain relievers such as ibuprofen “are notoriously damaging to kidneys, yet few warnings about their nephrotoxic effects are provided to consumers.” [Life Extension, Faloon, Feb 2017, 7; BLYB 2017, 18-20]
- The best ways to maintain your kidneys in top condition are to avoid excess salt to stabilize blood pressure, avoid soft drinks and their grossly excessive sugar, avoid iced tea that contains oxalate, avoid pain killers and other medications that damage kidneys, and eat more vegetable protein from soy, legumes, nuts, and quinoa because meat protein places a greater load on the kidneys. [BLYB 2017, 19]
- Individuals who use proton pump inhibiting drugs to treat heart burn (acid reflux) are at a 20% to 50% increased risk to develop chronic kidney disease. One daily dose increases the risk of kidney damage by 15% and two daily doses increases risk by 46%. There is scientific evidence that proton pump inhibitors cause acute interstitial nephritis, a condition in which the spaces between the kidney tubules become swollen and interfere with filtration of toxins out of one’s blood. Prilosec and Prevacid increase kidney damage and are number-of-dose dependent. Proton pump inhibiting drugs also cause vitamin B12 deficiencies which lead to neurological impairment. Proton pump inhibiting drugs also increase the risk of cognitive decline; Individuals over 74 who use PPDs increase their risk of cognitive decline by 44%. [Life Extension, Faloon, Feb 2017, 7,9, 51]

Lactose sensitivity

- Lactose sensitivity is caused by the body’s inability to digest the sugars in milk.
- One solution is to take a digestive enzyme which permits digestion of milk sugars. One full bodied digestive enzyme is Garden of Life’s Omega-Ω-Zyme.

Liver cleansing and milk thistle

- The liver is the hardest working organ in your body. The liver has 1,000 functions to filter and process blood. It metabolizes nutrients, alcohol, and drugs, detoxifies harmful substances, makes blood clotting proteins, and produces cholesterol. It produces over 13,000 chemicals, regulates over 50,000 enzymes, balances the sex hormones, filters 100 gallons of blood per day, produces a quart of bile daily to break down fat and assist with food digestion, detoxifies waste and pollution, converts glucose into energy, maintains cholesterol, hold sugar and amino acids, stores nutrients such as vitamins A, B, D, and K, etc. [Shallenberger Natural Healing, January 2016, 1-2]
- The metabolic syndrome caused by abdominal obesity, hypertension, loss of blood sugar control, and blood lipid disturbances severely damage the liver with inflammation and fibrosis (scarring) of liver tissue. The end result of liver fibrosis is liver cirrhosis
- Milk thistle contains compounds (e.g., silybin, silymarin) that have beneficial effects on the operation of the liver and thereby other organ function. It improves metabolism and insulin resistance; reduces oxidative stress, inflammation, excess liver weight, and the likelihood of liver cancer; binds to and eliminates excess iron; prevents the hepatitis C virus from attaching itself to liver cells. Silybin and silymarin, components in milk thistle, improve oxidative stress, insulin resistance, damaged energy metabolism, reduces obesity, suppresses liver inflammation, reduces liver fibrosis, etc. [Life Extension May 2016, 50-58]
- A healthy lifestyle with exercise and a good diet contribute to the effectiveness of milk thistle to improve liver function.

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- A fatigued liver can cause joint and back pain, age spots, high cholesterol and triglycerides, increased blood pressure, skin discoloration, memory and vision problems, muscle loss, poor immunity, indigestion and constipation, etc.
- The best supplements to improve liver function are milk thistle, the medicinal mushroom, Royal Agaricus (*Agaricus blazei*), and Phosphatidylcholine (PC). The Royal Agaricus mushroom has the highest level of Beta-1,3-glucans of any mushroom, which stimulates the immune system and fights off viruses, bacteria, and other pathogens. It also blocks inflammation in the liver and protects the liver and immune system from toxicity. PC helps remove fat and cholesterol deposits in the liver, and also regenerates new liver cells. Other helpful supplements for the liver are quercetin, N-Acetyl-L-Cysteine, alpha lipoic acid, and selenium. [Shallenberger Natural Healing, January 2016, 3-5; Baker 2007, 134]
- Underperforming adrenals can cause liver problems. The best supplement to improve adrenal function is licorice root, which contains glycyrrhizin . Licorice root also improves liver function by reducing inflammation and drug toxicity. [Shallenberger Natural Healing, January 2016, 3]
- The liver is also part of the immune system including macrophages, white natural killer cells, T-cells, B-cells, etc.

Macular Degeneration

- See “Eye health”

Medical errors

- Medical errors are the third leading cause of death in the United States.

Mercury

- Mercury poisoning comes from many potential sources especially fish. Predatory, older fish such as swordfish and shark accumulate the most mercury. The sources of mercury in the sea are volcanoes and environmental contamination.
- The principal nutritional benefits of wild fish are EPA and DHA Omega 3 fats, but these can be obtained mercury-free from supplements.
- If you do eat fish and if you wish to rid your body of accumulated mercury, take DMSA (dimercaptosuccinic acid) capsules. DMSA binds to mercury and eliminates it through the water elimination system. DMSA acts to avoid absorption and to eliminate mercury that is absorbed. Doses of up to 1,500 mg per week appear to be safe. [Shallenberger, *Foods that Heal*, 2014, 5-6; Mozaffarian 2006]]

Milk, problems with

- Milk is sugar intensive; there are about 11 grams of sugar per glass and the sugars are not healthy sugars.

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- Note that I have placed milk under “Symptom relief” not under “Dietary management and food supplements.” The reason I have classified milk under “symptom relief” is because there are more problems with even mild consumption than benefits.
- Milk may cause allergic reactions, bowel, and liver problems.
- In children, milk may cause diarrhea, constipation, anemia, skin rashes, ear infections, and hyperactivity. [Shallenberger, Foods that Heal, 2014, 6]
- Low- or non-fat milk increases milk problems because the absence of fat combined with the milk sugar intensity makes low-or non-fat milk a high-glycemic index food and contributes to diabetes. [Al Sears M.D. May 5, 2016]
- Unsweetened plant beverages are preferred drinks to milk.

Multiple sclerosis

- Evidence from human and animal studies have shown an association between low serum levels of Vitamin D and multiple sclerosis. Serum Vitamin D concentrations of between 75 and 100 nmol/L are optimal and dosage of up to 3,000 IU daily may be necessary to achieve these concentrations. [Summerday 2012, Abstract; BLHB 2018, 69]
- Natural treatments include [Terry L. Wahls, MD, BL Mega 2016, p. 34-36]
 - Eat a diet low in sugar and processed foods
 - Sulfur vegetables such as cabbage, kale, collard greens and asparagus. The sulfur defeats glutamate which causes brain-cell death.
 - Brightly colored vegetables or berries.
 - Coenzyme Q-10 is a fat-soluble compound that defeats the effect of environmental toxins and increases mitochondrial energy. Organ meats such as calf and chicken liver are good sources of COQ10 along with sardines, herring, and rainbow trout.
 - Omega 3 fatty acids produces myelin that insulates brain and spinal cord cells.
 - Kelp and algae detoxify the body by binding to heavy metals and removing them in the stool.

Mycoplasmas

- Mycoplasmas are stealth pathogens that burrow deep into tissues and cells where they lie undetected from medical tests. Very recent medical opinions have concluded that they may be responsible for substantially all chronic degenerative disease including arthritis, lupus, multiple sclerosis chronic fatigue syndrome, Alzheimer’s disease, heart disease, cancer, chronic fatigue syndrome, Crohn’s colitis, Type I diabetes, rheumatoid arthritis, etc.
- Mycoplasmas do not have a rigid cell structure. Rather, they have a very fluid, gel, or lipid outer surface that permits them to fuse with other cells and have mobility throughout the body. The immune system cannot identify these cells.
- Mycoplasmas can be detected with a DNA-PCR test, but only if no colloidal silver has been taken recently.

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- Colloidal silver containing the smallest particles of silver are the best and perhaps only antibiotic that can defeat these pathogens. [Health Over 40 Newsletter, Special information, 1-4]

Osteoporosis

- Osteoporosis is a medical condition in which there is loss of bone material and bones become brittle and fragile. It is most common in postmenopausal women probably because of hormonal changes. It is associated with inadequate calcium, vitamin D, and hormones.
- Often sufferers resort to calcium supplementation, but this is dangerous because the excess calcium may calcify the arteries combining with fibrin, cholesterol and debris to form arterial plaque, and calcify the heart valves and the heart muscle to cause heart disease.
- Rather than resort to calcium supplementation, it is preferred to (1) eat foods rich in calcium and vitamin C such as dairy, meat seafood, fruit, fresh organic cruciferous vegetables and leafy greens rich in vitamin C, and (2) increase the absorption of calcium by supplementing with vitamin C, vitamin D, and magnesium and boron. [Micozzi Insider, Dec 2016, 1-3] Vitamin K1 and K2 supplementation may be helpful to draw the calcium into bones.
- In a recent study of 3,047 Koreans, it was found that those with the highest Vitamin C levels had a more than 50 percent reduction in Osteoporosis. [Micozzi Insider, Dec 2016, 2]

Ozone therapy

- Regular oxygen has two atoms of oxygen (O₂) and is stable, but ozone has three atoms of oxygen (O₃) and is unstable.
- Ozone was used in World War I to treat infections. It is used by Los Angeles and Paris to purify water, and to clean air in operating rooms. I use it to purify the air in my home by placing the output of an ozone generator at the entry to the air return duct on my air handler for about 15 minutes of use several times per day. Do not breath ozone concentrations. Ozone has a half life of about five minutes which means it decomposes into O₂ very quickly.
- Ozone therapy, which adds ozone to your blood (e.g., CheZone therapy), increases the uptake of regular oxygen into cells up to 30% - 40%, and the cells reproduce faster. The increased oxygen is used to treat chronic diseases (e.g., heal arteries). [Shallenberger Healing 2015, 12-13]
- Ozone therapy has been used to treat interstitial cystitis, chronic inflammation of the bladder which requires very frequent bathroom visits. The extra atom of oxygen kills

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bacteria, viruses, and other pathogens and regenerates bladder cells permanently.
[Shallenberger Healing 2015, 15]

Oxygen therapy

- An adequate supply of oxygen is crucial to defeat disease and it must be delivered by blood to cells. If you are under stress and the sympathetic nervous system governs the fight or flight mode, your cells close and do not admit an adequate supply of oxygen or other nutrients. You must reduce stress.
- Over time, the percentage of oxygen in the air has declined from as high as 30-35 percent many hundreds of years ago to an average of about 20 percent today and perhaps under 15 percent in large cities now. The reduction in oxygen is caused by burning fossil fuels, deforestation, reduction of ocean phytoplankton by 30 % since the 1980s, dumping garbage in the oceans, etc. [Tatchell 2008]
- Oxygen furnishes the following benefits: [Sears, Confidential Cures, V(11), 2]
 - Regenerates cells and tissues, blood vessels and nerves.
 - Refreshes the mind, repairs brain cells after stroke and seizures.
 - Purifies the blood.
 - Repairs DNA.
 - Reduces inflammation and oxidative stress.
 - Mobilizes sleeping stem cells.
 - Increases energy

Pain management: Back pain

- Do not lift with your back—this means do not bend over and lift because that loads the bottom of the back non-vertically. Only lift with your bending legs and if that cannot be done, do not lift the object. Do not engage in strength training by lifting with your back bent at a 90 degree angle—while you may increase muscle strength in the back, you are taking the risk of a permanent back injury that may not be subject to healing or even a back operation with a lifetime of severe pain.
- Drink adequate water to hydrate spinal cord disks (80% water), eliminate toxins, regulate body temperature, and increase circulation. I suggest at least ¾ liter of water per 50 pounds daily. It's helpful to take three or four ozs. of water before bedtime because the disks structurally regenerate during sleep. Caffeine increases liquid elimination and dehydration, and requires water in addition to the ¾ liter/50 lb. rule.
- Take 15-minute walks in response to back pain because long-term sitting places stress on the lower back. Walking increases circulation. A pillow on the lower back of the chair improves the spinal curve and may reduce back pain. [Uncommon Cures, 2009, 69, 72]
- Breathe deeply to (1) increase circulation and drive nutrients (e.g., oxygen) into cells during any exercise and (2) make you more alert. Coffee may make you more alert, but it will not provide movement of muscles and ligaments or drive nutrients into your cells and organs like exercise.

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- Assure adequate calcium and magnesium; magnesium is necessary to process calcium, which is crucial for bone health.
- Don't over exercise to avoid injury to muscles, tendons, etc. But a bit of discomfort will occur as you begin a new sport. Generally, do not perform an exercise in excess of a ten-percent increase over your last periodic exercise.
- Avoid bad fats because they add weight, increase the vertical load on your back, and are **direct causes of inflammation**. Bad fats include high ratio Omega 6s to Omega 3s and all heat-altered fats found in French fries, potato chips, baked goods, etc.
- Avoid wheat. Wheat in this country was genetically engineered many years ago and is believed to be the cause of many physical conditions. Italian Durum wheat is probably OK.
- Minimize sugar and do not consume artificial sweeteners, colors, and flavors.
- Increase full color-range, fresh organic fruits and vegetables, spirulina, corella, and grass mixes to assure adequate vitamins and minerals.
- Perform about 60-90 minutes of exercise daily some of which should be symmetric. Remember the 90/10 rule [see Exercise]. I'm in my early 80s and I get a minimum of about 90 minutes of moderate exercise daily including 60 minutes of swimming on alternate days, 60 minutes of hiking about two days a week, 40 minutes of bicycle riding on alternate days before breakfast, walking, and about 30-45 minutes at 24-Hour Fitness at least two days a week.
- Reduce negative thoughts because they deform and interrupt communications between and among cells and organs.
- Manage fibrin (protein scar tissue) as you age because proteolytic enzymes, which digest fibrin, decline with age. Consider taking Wobenzym-N, which digests fibrin and is an anti-inflammatory supplement, and the second most popular pain killer in Germany.
- I know of one person who injured his back performing resistance training and was nearly immobilized from discomfort. A few days later, he began taking Wobenzym-N at the starting rate of five capsules four times daily before meals. In four days, the pain was 100% gone unless he missed a dose. In a week, he reduced the dosage to 16 (4x4), then 12 (4x3), then 8 (2x2) per day. In about two months, he was pain free if he maintained the lower dosage. In this case, earthing did not work and made it a bit worse.
- Avoid non-steroidal anti-inflammatory pain killers drugs (NSAIDs); they affect adversely the kidneys and liver and may cause ulcers and intestinal bleeding.
- Consider far infrared heat for its penetrating healing effects.
- Sit in a manner that is posture friendly including the angle of your arms in reference to your computer. To avoid carpal tunnel syndrome, use a Microsoft Office or similar external keyboard which reduces unnatural wrist bending.
[Cannone, 2009]
- Jonathan V. Wright, M.D. reported in "The Best of Nutrition & Healing Volume XIII" page 1 that the Tahoma Clinic has developed a massage technique call the Kaufman Pain

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Neutralization Technique that has been successful in relieving pain not only in the back but in other places as well.

- Take willow bark, a natural source of aspirin-like salicylates which reduce pain. [Baker 2007, 69]

Pain management: Earthing

- The earth contains excess electrons caused in part by lightning strikes, solar storms, etc. and these flow into the body when we have direct contact with the earth.
- Earthing or grounding refers to being attached to the earth permitting excess electrons in the earth to flow into the body. Many hundreds of years ago, when man did not wear shoes, walk on carpets, and drive cars, they lived in direct contact with the earth by walking barefooted and sleeping on the ground. Today, man is largely insulated from the earth in all activities and from the beneficial flow of excess electrons.
- Earthing reduces the electrical voltage in our bodies from about one volt to zero. There are indications that chronic illnesses increased as we changed from leather-soled shoes in the 1960s to rubber-soled shoes, which insulate us from the earth, thus increasing free radicals.
- Earthing has three general benefits: (1) Completes free radicals and reduces oxidative stress from the supply of excess electrons--earthing is probably the best of all antioxidants and there is no damaged donor molecule, (2) reduces inflammation, and (3) improves sleep. Indeed, I have seen thermal images indicating dramatic reductions of severe inflammation from four consecutive days of nightly earthing.
- In a study of 12 individuals reporting sleep dysfunction, pain, and stress, it was found that earthing during night sleep reduced cortisol, the stress hormone, reduced reported stress and pain, and improved sleep. [Ghaly 2004, Abstract]
- If you have arthritis that is inflammation-based, earthing may offer a reduction in pain. This can be effected by earthing at night for say four to eight days to determine if there is a reduction in discomfort.
- As an anti-oxidant, earthing for perhaps 15 minutes a day may provide excellent protection against free radicals that will be electron recipients or electron donees.
- Earthing is believed to reduce stress and pain. Cortisol, the stress hormone, is better balanced by being reduced at the beginning of earthing, followed by elevation later. Inflammation may be associated with a lack of electrons in the affected area, which are increased with earthing, thus diminishing discomfort. Earthing may be helpful to improve sleep and relieve pain in joints and structural soft tissues.
- There is evidence that 40 minutes of earthing reduces the size and number of blood clumps associated with cardiovascular disease and thereby thins blood. [Going Organic Guide, p.7]
- One type of earthing is direct contact to the earth by walking barefooted and another is to use special earthing equipment to facilitate direct contact and the flow of electrons. This

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equipment includes seating pads, sheets, and bracelets that have electrical wires that utilize the third plug of a three-pronged electrical outlet or are attached directly to the earth. It is important to assure that the third plug is properly grounded; earthing.com has a circuit tester to assure proper grounding.

- It is also advantageous to lower the man-made voltage-induced electric field exposure levels in proximity of the bed (within 6-8 feet). This is due to voltage present in plastic-jacketed Romex circuits in walls, as well as plastic AC power cords plugged into outlets near the bed, powering lamps and clock radios. These electrons from man-made voltage can flow into your body and down into the ground along the earthing pad and wire connected to the grounded outlet or directly to the earth. It is best to reduce these man-made electric fields by shutting off the circuit(s) to the bedroom outlets near the bed at night. Then you will have the benefits of sleeping in an electric field-free sleeping environment plus the inflammation-reducing benefits of sleeping on an earthing pad. [Miller]
- I have used earthing during sleep to heal shoulder, knee, and spinal cord injuries. The first time I used earthing for a serious knee injury incurred when I fell off my bike, I went to sleep immediately. The next night, I went to sleep with the earthing, woke up, went to the washroom, came back, and forgot to replace my earthing bracelet. I was unable to sleep because of pain, replaced the earthing bracelet, and immediately went to sleep pain free--proof that earthing worked. Within two weeks the knee healed and was pain free without earthing.

Pain management: joint (e.g., knee) discomfort

The following are a few ideas that may relieve joint discomfort, which includes feet, ankles, knees, hips, shoulders, etc.

- Keep the joint warm at night when sleeping. Tube socks with the foot portion removed may be placed over the knees and socks may be worn at night to keep ankles warm. If the socks are too warm, use tube socks with the lower portion cutout so the toes are uncovered. For athletic socks, I recommend Therlos (888.846.7567), which have very thick padding on the foot and make excellent cutoffs, if the original sock is over-the-calf.
- Eat fresh organic fruits and vegetables, fish, and grass-fed beef; grain-fed beef has high levels of Omega 6s, which are inflammatory; grass fed beef is rich in Omega 3s.
- Fasting on fruit and vegetable juices may help joint pain by reducing toxins in kidneys, colon, bladder, skin, sinuses, and lungs. [Uncommon Cures, 2009, 69] The logic is that fasting requires the body to consume toxic substances for energy and metabolism.
- Assure high levels of vitamins D and E, plus C, K, B, and A from food and supplements. Vitamin D is a common deficiency and most people would probably benefit from taking

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Vitamin D supplements (e.g., 2,000 mg daily). Vitamin D reduces pain from arthritis. [Uncommon Cures, 2009, 31-2]

- Take anti-inflammatory supplements including boswellia, cayenne, celery seed, fish oil, ginger, resveratrol, turmeric/black pepper, devil's claw root, and Wobenzym-N. Turmeric is particularly helpful for rheumatoid arthritis, and the combination of turmeric (with black pepper) and selenium may be helpful for osteoarthritis. Turmeric is one of the most important food supplements and should be included in every diet. Wobenzym-N is the second most popular pain killer sold in Germany. Cayenne contains capsaicin which blocks pain impulses traveling to the brain; cayenne also produces endorphins, which are natural pain killers produced after exercise. [Uncommon Cures, 2009, 31, 172] Celery seed contains 12 anti-inflammatory compounds that reduce arthritis discomfort; four stalks of celery daily should reduce arthritis discomfort. [Uncommon Cures, 2009, 31]
- Magnetic therapy may help by stimulating joint fluids into a healing mode. [Uncommon Cures 2009, 174]
- Take supplements that target joint improvement. These include:
 - Glucosamine sulfate, chondroitin, methylsulfonymethane (MSM), collagen, hyaluronic acid, etc. MSM is a natural joint anti-inflammatory and pain killer and may build new cartilage. MSM also reduced pain in arthritis sufferers by up to 80 percent. [Stengler, Healing Yourself Naturally, 3-6]
 - Glucosamine sulfate appears to create healthy cartilage and maintains normal joint space; Dr. David Williams (August 2013) suggests a dosage of 1,500 mg daily.
 - Some of the better brand name joint supplements are: Doctor's BEST Glucosamine sulfate (750 mg), Chondroitin sulfate (600 mg), and MSM (500 mg).
 - Flexmend vegetarian (regensure) glucosamine HCl (1,500 mg) with other ingredients.
 - NEM natural eggshell membrane, which contains glucosamine, collagen, chondroitin sulfate, and hyaluronic acid and may be one of the best supplements for joint discomfort.
 - It may be helpful to take Doctor's BEST with Flexmend in some combination daily or on alternate days perhaps adding NEM natural eggshell membrane within the 1,500 mg limits suggested by Dr. Williams.
- Use earthing at night (See Pain management: Earthing), with an earthing bracelet from earthing.com.
- Excess weight is one of most common causes of joint pain in the skeletal structure (e.g., hips, knees, ankles). Thus, it is important to lose weight.
- A second factor in joint pain is excess leptin. Fat cells produce leptin, a hormone to reduce appetite and boost metabolism. But individuals with high body mass index (BMI) may have leptin resistance which means they produce more leptin but do not reduce

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apatite or boost metabolism causing leptin overload. Leptin overload causes (1) thin and weak cartilage, (2) high levels of inflammation, (3) additional joint discomfort, and (4) metabolic syndrome—four of five people with joint pain also have metabolic syndrome. Supplements may be available that reduce leptin overload. [LHA December 2015, 7-12]

Pain management: Muscle discomfort

- Magnetic therapy consisting of small magnets imbedded in a mattress or other applications may help. [Uncommon Cures 2009, 179]

Pain Management: Supplements

- Curcumin in doses of 1,000 mg twice daily. [BLYB 2016, 24]
- Fish oil in doses of 2,000 mg daily. [BLYB 2016, 24]
- Boswellia on doses of 300 to 400 mg three times daily. [BLYB 2016, 24]
- Vitamin D, if present blood levels are deficient.
- Wobenzym-N; see below.
- PEA (palmitoylethanolamide), a fatty acid produced by the body to reduce inflammation and turn off the pain signal and honokiol from the Magnolia tree reduces the perception of pain. These work together to reduce chronic pain. [Life Extension, Winter Edition 2017-2018, 6]

Pain Management: Wobenzym-N

- Wobenzym-N is the second most popular pain killer sold in Germany. It is a proteolytic or systematic protein digesting enzyme that is intended to be taken about an hour before meals, enter the blood stream to digest fibrin, amyloid β plaque, and tau tangles and act as an anti-inflammatory.
- Wobenzym-N dosage may be as high as 20 tablets per day taken four times and five tables every six hours.

Parasites, intestinal

- Intestinal parasites are bugs and worms usually found in the small intestine, not the large intestine causing gas bloating constipation, diarrhea, rectal itching and other health problems throughout the body. These bugs can lay thousands of eggs a day. They are often misdiagnosed as Irritable Bowel Syndrome. [Dr. Glenn S. Rothchild, M.D. “The Best of nutritional & Healing Volumen XV, 1-3]
- The sources of intestinal parasites are animals, (kissing your dog), raw seafood, undercooked meats, unfiltered water, raw unwashed vegetables, and toilets.
- Testing is often inadequate because the parasites die before testing is completed, the life cycle of the parasites vary and testing may not be done when the parasites are active, and they are active in the small intestine.
- Alternative medicine offers many foods that defeat intestinal parasites. These include:
 - Raw garlic

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- Carrot
- Beets
- Coconut and coconut oil
- Honey
- Pumpkin seeds
- Papaya seeds
- Cloves
- Pomegranate
- Mixtures of papaya and honey is very effective

Parkinson's Disease (PD)

- Parkinson's disease is caused at least in part by inadequate levels of dopamine, a neurotransmitter in the brain caused by a loss of cells in a selected portion of the brain. The symptoms are tremors of the hands, difficulty walking, speech and visual problems. Diagnosis is difficult and may not be accurate until 80 percent of the dopamine is lost. And about 25 percent of cases diagnosed as Parkinson's Disease have been shown not to be Parkinson's by postmortem study. [Null 2008, 399-403]
- Niacin (see Vitamin B3) is a common deficiency in PD and is necessary in the production of dopamine. Thus, it may be necessary to eat niacin-rich foods or supplement with niacin. It has also been found that for those who ate a niacin-rich diet, the odds ratio of getting Parkinson's was 0.3. [Waked 2014, 34-38]
- There appears to be a relationship between Parkinson's measured by shrinkage of the brain's hypothalamus and a reduction in melatonin. The hypothalamus controls the production of all hormones of which melatonin is one. And low levels of melatonin, which is the most powerful antioxidant in the body, adversely affect sleep. Thus, it may be helpful to take 20-100 mg of melatonin about 60 minutes before bedtime to improve sleep and perhaps arrest the development of Parkinson's. [Shallenberger Second, 12(58), May 16, 2016 citing a study by Breen and Nombela]
- Nutritional treatment of Parkinson's Disease—and prevention—include the following: [Null 2008, 399-403]
 - Organic and alkaline fruits and vegetables.
 - Red beets, carrots, spinach, green beans, and red onions.
 - Alkaline greens such as grasses, chlorella, spirulina, spinach, and other green vegetables.
 - Filtered water (reverse osmosis, distilled, bottled); no tap water.
 - No sugar because of a link between sugar and PD.
- Supplements [Null 2008, 399-403]
 - Antioxidants to reduce free radicals that damage the brain such as Vitamin C, extracts of grape seed, and white pine bark.

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- Dr. Frank Shallenberger recommends 1,000 mg of Vitamin C, 800 IU of Vitamin E daily and curcumin daily to defeat the adverse influence of pesticides. [Second Opinion Newsletter, 13(4) January 8, 2016]
- Nervines to rebuild the nervous system such as skullcap, valerian, hops, and lady's slipper.
- Dopamine precursors tyrosine and phenylalanine.
- N-acetyl-cysteine or L-cysteine to elevate glutathione.
- CoQ10 (1,200 mg per day).
- Chelation therapy to eliminate iron and other toxins from the brain.
- Ceylon cinnamon may prevent the tremors, slow jerky movements, stiffness, and loss of balance from Parkinson's disease. It works because its antioxidant effects counteract nitric oxide that reduces dopamine. [BL Mega 2016, 70-71.]
- Exercise increases dopamine. [Null 2008, 399-403]
- Parkinson's may be caused by: [Null 2008, 399-403]
 - Antipsychotic drugs such as Haldol, Thorazine, Mellaril, and Stelazine. Elimination of these drugs may eliminate Parkinson's symptoms.
 - Pesticides and other toxic elements. Make sure that indoor air quality is not a source of chemicals.
 - Aluminum in cookware, amalgam dental fillings, and cigarette smoke.
- The analysis of hair may show toxic compounds. [Null 2008, 399-403]
- Medical treatment #1
 - Dr. Frank Shallenberger reported in Second Opinion, January 2016, p. 1-5 that he uses sulfur-containing amino acid therapy with dopamine and weekly blood tests to reverse Parkinson's Disease. The treatment prevents the death of dopamine-producing cells. The protocol is more fully described in The Parkinson's Miracle, which lists treatment centers. The treatment also may be used for all neurotransmitter imbalances such as obesity, depression, insomnia, anxiety and panic attacks, and ADHD.

Perfluorooctanoic acid (PFOA)

- PFOA is believed to be a carcinogen and has been linked to cardiovascular illnesses, heart disease, and chronic kidney disease.
- It is found in nonstick cookware, food wrappers (e.g., popcorn bags), and furniture.
- The EPA has partnered with manufacturers to eliminate PFOA from all manufactured products by 2015.
- [FoxNews.com 05.12.2013]

Poison ivy, oak, and sumac

- Apple cider vinegar may reduce and defeat poison ivy, oak and sumac by soaking a brown paper bag in apple cider vinegar and laying it on the rash. It will draw out the toxins very quickly. [Baker 2014, 314]

Post-Traumatic Stress Disorder

- See Appendix B for “Recommendations to Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel.”

Proteins, harmful

- There are three proteins that are harmful to body processes and which have greater adverse effects as we age because their antithesis, systemic, proteolytic enzymes, decline as we age. The three harmful proteins are fibrin, amyloid β plaque, and tau tangles. Fibrin results from an injury and accumulates to protect the damaged area. Two examples of the damage caused by excess fibrin are fibrin accumulating in arteries (which results from arterial damage), and fibrin surrounding cancer cells, which protects them from the white NK cells that would ordinarily defeat the cancer.
- Amyloid β plaque and tau tangles accumulate in the brain and are believed to be influential in Alzheimer’s disease.
- As we age, proteolytic enzymes decline dramatically. Proteolytic or systemic enzymes are excess protein digesting enzymes that work outside the digestive processes in the digestive tract. Proteolytic enzymes function to “digest” fibrin and A β plaque (assuming they cross the blood-brain barrier) and to reduce inflammation generally. Wobenzym-N is one brand of proteolytic enzyme and should be taken about one hour before meals to assure they are not used in the food digestive process. One of the better times to take a dosage is very early morning (e.g., 4:00 AM). [Taussig 1988, 193; www.anticancerinfo.co.uk/enzymes.htm; Howenstine 2009, 3/7]]

Radiation from medical tests

- In the 1980s, about 15 percent of a typical person’s exposure to radiation came from medical tests. Now, about 50 percent of a typical person’s life time radiation comes from medical testing because doctors are prescribing more imaging tests, there are newer tests, and the new testing equipment has more radiation. CT scans have increased 20-fold in the last 25 years. There is evidence that radiation causes leukemia and malignancies of the breast, thyroid, and bladder. [BLYB 2017, 40]
- Environmental radiation from cosmic rays, radon gas, and radioactive minerals in the soil totals about 3 millisieverts (3 mSv) per year. In comparison, a spinal X-ray has 1.5 mSv, a pelvic CT scan has 6 mSv, and a whole-body positron emission tomography has about 20 mSv or about seven times the total annual radiation from environmental sources. [BLYB 2017, 40]
- Do not accept a doctor’s opinion that these tests are necessary. If a medical specialist has several years’ experience in treating a specific symptom, he can probably predict with a high degree of accuracy the cause of symptoms without the tests. Thus, a patient should carefully inquire from his or her doctor about the probability of accuracy of a diagnosis

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without taking the test and avoid the excess radiation that may not marginally improve the diagnosis. One should also inquire if ultra sound testing is available or if there is a lower radiation alternative. [BLYB 2017, 40]

- Supplements may protect you from radiation. These include ginkgo extract (Egb 761) and hesperidin from citrus fruits. [BLYB 2017, 40-41]

Reactive oxygen species

- Reactive oxygen species (ROS) are radicals, ions, or molecules that have a single unpaired electron in their outermost shell of electrons. The absence of this electron makes them highly reactive and they strip electrons from donor molecules causing a chain reaction of damaged molecules, including DNA. [Liou 2010, 479]
- ROS are in two groups: [Liou 2010, 479]
 - Free oxygen radicals
Free oxygen radicals include superoxide, hydroxyl radical, nitric oxide, organic radicals, peroxy radicals, alkoxy radicals, thiyl radicals, sulphonyl radicals, thiyl peroxy radicals, and disulphides.
 - Non-radical ROS.
Non-radical ROS include hydrogen peroxide, singlet oxygen ozone/trioxygen, organic hydroperoxides, hypochloride, peroxy nitrite, nitrosoperoxycarbonate anion, nitrocarbonate anion, dinitrogen dioxide, nitronium, and highly reactive lipid- or carbohydrate-derived carbonyl compounds. [Liou 2010, 480]
- Cancer research has emphasized superoxide, hydrogen peroxide, and hydroxyl radicals. [Liou 2010, 480]
- Elevated levels of reactive oxygen species have been detected in almost all cancers and are believed to promote tumor development and progression. Antioxidants act to detoxify ROS and defeat cancer, but there is a delicate balance between ROS and antioxidants. [Liou 2010, Abstract]

Refined carbohydrates, defined

- Refined carbohydrates are whole foods that have been stripped of about 65 percent of their fiber and nutrients leaving mostly highly digestible starches or sugars. [Wikipedia] Digestion results in a rapid spike in blood sugar and insulin.
- Refined carbohydrates include sugar, high-fructose corn syrup, white bread, white rice, ice cream, brown sugar, honey, waffles, pancakes, pies, candy, chocolate, sweetened breakfast cereals, bagels, pizza, potatoes and corn chips, tortillas, sweetened sodas, etc.
- Refined carbohydrates are believed to be the cause of many illnesses including cancer. The preferred alternative foods are made with sprouted-grain flours (e.g., sprouted grain breads)

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Shingles

- Those who have had chicken pox as a child always harbor the herpes zoster virus that caused it.
- Bathing the area with Epson salts containing magnesium may help.

Silver, colloidal (CS)

- Colloidal silver is very small particles of silver (e.g., 0.8 nm; a nanometer is one billionth of a meter) suspended in very pure water.
- CS may be used to treat about 650 infectious microbes including flu viruses, gram positive bacteria (which has an extra protective layer that blocks out antibiotics), gram negative bacteria (which has a thinner membrane), fungus, yeasts, MRSA (methicillin-resistant staphylococcus aureus), SARS, malaria, influenzae, e. coli, salmonella, etc. [Cagan Nov 2014, 1; Barwick 2008, 76]
- Colloidal silver was used extensively before antibiotics became popular in about 1940. But antibiotics have their drawbacks. First, they only attack bacteria, not viruses or other types of pathogens. Second, bacteria can become resistant to antibiotics, but they cannot become resistant to CS. Third, fluoroquinolone antibiotics (the most powerful antibiotics such as Cipro, Avelox, and Levaquin) have serious side effects that include tendon ruptures, irregular heartbeat, kidney failure, c. diff. (Clostridium difficile) infection, phototoxicity, retinal detachment, etc. and all antibiotics may have some side effect. With normal doses of CS, the old side effect of skin discoloring is eliminated and there are no systematic side effects presently known. [Cagan 2014, 6]
- It is believed that adding silver to antibiotic treatment makes the drugs much more effective. If your antibiotic does not contain silver, it may be wise to take CS to improve dramatically the effectiveness of the antibiotic. Further, if the antibiotic is not working, try CS without the antibiotic. [Cagan 2014, 6]
- Colloidal silver may be taken daily in small doses to prevent and destroy many pathogens.
- Colloidal silver containing the smallest particles of silver defeat mycoplasmas, a stealth pathogen. [Health Over 40 Newsletter, Special Information, February 2017, 1-4]

Skin Sun Spots

- Skin sun spots—dark spots on the back of hands or face—can be minimized by the use of a natural sun screen applied in the morning while the sun spots are severe; later, as they are reduced to near zero, the frequency of sun screen use can be reduced, but sunscreen should still be used if one is planning to be in the sun for an extended time.
- Many years ago, I went to a skin doctor every two years or so to have sunspots removed from my face. I then began using a bit of sunscreen on my face and I have not been to a skin doctor since because I eliminated all sun spots with the use of a natural sunscreen.

Sleep improvement

- The objective of this section on sleep improvements is to suggest some ideas to improve sleep so that one (1) awakes refreshed when the alarm rings, (2) does not have periods of wakefulness during the night which may continue until the alarm rings, and (3) does not degrade health from too much or too little sleep.
- Sixty-four percent (64%) of Americans report sleep problems. Of these, 20 percent take sleeping pills. [BL Sleep 2014, 1] Further, 50-percent of older American have sleep problems [Abbasi 2012]
- Determine how much sleep you need and adjust your sleeping hours accordingly through experimentation and evaluating your daily activities. As you shorten your sleeping period, you should have less problem sleeping.
- Sleep disruptions can have very serious health consequences. “Sleep disruptions” are variances from a sleep model that contributes to good health. They include too little or too much sleep, sleeping irregular hours from period-to period (e.g., day-to-day or week-to-week), and sleeping in the presence of environmental contaminants (e.g., electromagnetic fields)

- The optimum amount of sleep is about seven to eight hours.
- Based upon 18 studies and 75,657 participants, too little sleep increases the likelihood of the metabolic syndrome as follows: [LHA Dec 2015, 2]

Sleep hours	Percent increase in likelihood of metabolic syndrome
Less than 7 hours	16% increase
Less than 6 hours	28% increase
Less than 5 hours	51% increase

- Inadequate sleep or sleeping irregular hours affects DNA, raises blood sugar and cortisol levels, and affects gut bacteria adversely. [LHA Dec 2015, 2,3,4]
- The brain repairs itself while sleeping. Poor sleep shrinks the right frontal lobe of the brain that is used for problem solving and memory. [Shallenberger, MD. Natural Health Journal, August 2016, 1]
- Get suitable exercise during the day. If you are a high-energy person that may mean up to 90 to 120 minutes of moderate exercise per day. In order to determine the correct amount of exercise if you are not presently sleeping correctly, add ten minutes of exercise per day every several days (e.g., add ten minutes to your existing 30 minutes per day for 40 minutes of exercise per day for say five days.) The exercise may be as simple as walking at a moderate pace perhaps on the grass to weight lifting or other more strenuous exercise. Avoid heavy exercise because of injury, production of stress hormones, and increases in reactive oxygen species.

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- The targeted amount of sleep is six to eight hours per night. Too little sleep increases the risk of stroke. Sleeping in excess of eight hours per night increases the risk of stroke by 40 percent. [BLYB 2017, 11]
- Get 3,000 to 5,000 lux of illumination during the day to maintain a proper sleep-wake cycle. Bed-ridden hospital patients often get less than 200 lux per day. [BLYB 2015, 49]
Lux is defined as:

$\text{Lux} = \text{Lumens}/4\pi d^2$ d is measured in meters

- Don't take sleeping pills, which can lead to breathing difficulties, pounding heart-beat, chest pain, blurred vision, and addiction. Read the material in this section and have the self-discipline to execute a plan from your readings.
- Avoid all caffeine for eight hours before bedtime. [BL Sleep 2014, 3, 26] Better yet, eliminate all caffeine. If you must have a bit of chocolate, do not consume any after about 1:00 PM assuming you go to bed at about 10:00 PM.
- Avoid refined carbohydrates particularly late in the day.
- Avoid eating fats before bedtime because fat requires much longer digestion. [BLYB 2016, 66]
- Avoid excessive exposure to artificial light in the evening.
- Sleep in a very dark room with NO visible source of light and no electrical appliances. Darkness at night increases production of melatonin (sleep hormone) and reduces cortisol; more melatonin and less cortisol improve sleep.
- Terminate the use of Wi-Fi and install a hard-wired router and an Ethernet cable in your home. EMF/RFs are stimulants and penetrate dry wall. Turn your cell phone off when you are not using it, and do not use a cordless phone in a home. Electric clocks and other electrical appliances create magnetic fields and one should use a battery powered clock in the bedroom.
- Keep a cool room at 68 degrees or lower [BL Sleep 2014, 3].
- Sleep with an open window, if the outdoor air quality is good. Secure the window for safety purposes. Indoor air quality never has as good quality as good outdoor air and this principle holds throughout the day. During the day, it's important to keep windows open with a cross draft for ventilation. This is particularly important for very large homes (e.g., over 3,000 sq. ft.) because of the large amount of personal property that may off gas—and remember, carpets must be washed every six months for good air quality.
- Don't watch TV immediately before bedtime. Turn off TV early and go for a moderate 15-minute walk before bedtime. And do not watch TV every evening. Rather spend more time on meditation and other peaceful pursuits some evenings.
- Permit the body to cool down before bedtime.

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- Do not take long naps during the day. If you get very tired in the afternoon, nap for only a few minutes. And don't nap after dinner. [BL Sleep 2014, 25] Daily naps of an hour or more per day increase the likelihood of dying from a respiratory disease by 32 percent. [BLYB 2016]
- Meditate in the evening for at least 15 minutes but avoid finishing your medication with a nap. Build medication models that promote peace and relaxation for the rest of the evening and during sleep. If you awake in the middle of the night, perform model exercises that promote peace. If you have relationship problems, improve your thoughts of the other person. Remember he or she is not losing sleep because of your adverse thoughts...you are!
- Avoid or take early in the day the following stimulants: Ginseng, ginkgo, St. John's wort, alpha lipoic acid and Sam-e. [BL Sleep 2014, 12]
- Minimize vitamin Bs or take them only early in the morning because they are stimulants.
- Take 100 mg Magnesium L-Thornate daily. Magnesium promotes relaxation and sleep and helps bodily functions in many other ways. It is one of the most frequently deficient minerals. [Hyman 2015; BL Sleep 2014, 9] In one study, 500 mg of magnesium daily clearly improved sleep time, sleep efficiency, increased renin and melatonin, and decreased cortisol. [Abbasi 2012]
- Take adequate calcium because calcium calms the nervous system. [BL Sleep 2014, 10]
- Take Vitamin D which assists with the utilization of calcium and magnesium and modulates the circadian rhythm. [BL Sleep 2014, 11]
- Tart cherry juice contains many phytochemicals and antioxidants and improves sleep because it also contains melatonin; but it also contains large amounts of sugar which may be simulative. A tart cherry supplement may contain less sugar. [BL Sleep 2014, 13]
- Chamomile, hops, and nutmeg tea promote sleep. [BL Sleep 2014, 12, 14, 15]
- Consider taking melatonin, but only as a last resort and only under a doctor's supervision, up to six hours before your intended sleep begins. [BL Sleep 2014, 22]
- Consider earthing with an earthing bracelet from earthing.com. But use it judiciously for portions of the night and not every night, unless you are treating an inflammatory injury. Earthing is an anti-inflammatory, an anti-oxidant, and promotes zero body voltage by passing electrons from the earth into your body. Earthing bracelets reduce joint pain. One person I know has healed knee, shoulder, spinal cord, and tailbone injuries in a few weeks sleeping overnight with an earthing bracelet.
- Differential body temperature is important for good sleep. The hands and feet should be warm and the core of the body cooler. [BL Sleep 2014, 15-16]
- Sleep on your sides or back, but not on the stomach which strains the lower back. [BL Sleep 2014, 17]
- Replace your mattress, if is old and sunken. Turn it frequently. In selecting a mattress, avoid pillow-top mattresses because they do not retain their form; rather purchase a plush top mattress that is built into the mattress and will last much longer. Mattresses with

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independent coils will do a better job of conforming to your body form than continuous strand wires. [BL Sleep 2014, 45-47]

- If you purchase a new mattress, air it out for up to a month using box fans lying on the mattress pointing upward; be sure to keep your windows open to permit fresh air to enter the mattress as the box fans are operating.
- Pillows should be high enough so that your head is parallel to the mattress. [BL Sleep 2014, 42]
- Beta blockers for high blood pressure may disrupt sleep.
- Weekly acupuncture treatments may help. Results should occur between the third and 12th session. If there are no results after the eighth session, nutrients or herbs may be added. [BL Sleep 2014, 28]. In my opinion, the other ideas I list in this section should be considered before acupuncture.
- Obstructive sleep apnea (OSA), caused by a hanging uvula from the soft palate plugging the airway and stopping breathing causes a lack of oxygen, and thereby daytime sleepiness, high blood pressure, heart attack, stroke, congestive heart failure, type 2 diabetes, Alzheimer's, erectile dysfunction, depression, anxiety and gastroesophageal reflux disease plus a massive increase in dying. Continuous positive airway pressure (CPAP) masks can be worn during sleep, but more modern alternatives are Provent (patches fitting over each nostril), a customized oral appliance (moves the lower jaw forward opening the throat). Sleeping on the side (vs. back sleeping) helps keep airways open, losing weight reduces extra tissue in the throat (e.g., 10% loss in weight may result in a 25% reduction in extra throat tissue), and no alcohol three hours before bedtime prevents relaxation of the airways. [BL Sleep 2014, 30-33]
- Depending upon how heavy your dinner is with meats and proteins, one should wait up to four hours after dinner before bedtime. Lighter food such as salads reduce the mealtime-bedtime lag.
- Poor sleep contributes to amyloid plaque, a biomarker for Alzheimer's.

Stem cell therapy

- *Stem cells are biological cells that can become other cells as other specific cells are needed in the body and continue to divide into the specific necessary cells.*
- *Stem cell therapy may increase beta cells necessary for insulin production and stabilization of blood sugar. Dr. Al Sears, MD, indicates that supplementing with turmeric, Ceylon cinnamon, berberine, Egyptian black seed (nigella sativa), bitter melon, gymnema sylvestre, and chromium create new pluripotent stem cells which convert to new beta cells. [Sears, Special Report Spring/Summer 2018, 1-15] It appears that turmeric by itself may create new pluripotent stem cells which convert to new beta cells.*
- *Stem cells may be used to rebuild cartilage in joints. Stem cells are harvested from other parts of the body, spin the collection to get a higher concentration of stem cells, and*

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inject the concentration in a joint with no cartilage. The stem cells become chondrocytes (new cartilage), fibroblasts (repair soft tissue), or osteoblasts (new bone).

- *Stem cell therapy may also treat arthritis in the hips, knees, shoulders, ankles, and thumbs and chronic tension pain such as tennis or golfers elbow and Achilles tendon pain. [Bottom Line Health, Special Issue, 2-3]*

Stimulants

- It is wise to avoid stimulants and rely on exercise to remain alert. Caffeine and other stimulants have been linked to anxiety, panic attacks, and even PTSD. Exercise has many benefits including natural alertness, mobility of joints, and improvement in other body structural elements.
- The following is a list of stimulants that can cause anxiety and disturb sleep:
 - Caffeine found in coffee, energy drinks, and chocolate.
 - Excess Vitamin B.
 - Theobromine which is found in chocolate.
- Electromagnetic fields and particularly RFFR caused by cell phones, Wi-Fi, and cordless phones are stimulants and should be eliminated from the environment.

Stroke

- There are two types of stroke: [Brain 2011, 287]
 - Ischemic stroke which is when a blood clot or other particle blocks an artery in your brain.
 - Hemorrhagic stroke which is caused by the rupture of an artery in your brain. Only about 20 percent of strokes are hemorrhagic.
- Strokes immediately impair the movement of nutrients to and waste from your brain, causing damage to brain cells, death of neurons, loss of speech, memory, and other bodily functions.
- Tactics to avoid strokes are the following: [Brain 2011, 289-90]
 - Reduce high blood pressure because it can cause a hemorrhage. Further, the high blood pressure can cause damage to artery walls which causes cholesterol and plaque to build up as sources of clots which cause ischemic strokes. High blood pressure increases the likelihood of a stroke by a multiple of five.
 - Reduce cholesterol because they are a source of clots. The most vulnerable arteries are the two carotid arteries in the neck. Notably, there are food supplements which clean the arteries and may be preferred to cholesterol reduction to achieve a more taste eating plan (Pillar 5 “Artery cleaners”)
 - Irregular heartbeat (e.g., atrial fibrillation) causes blood to collect in the heart where it may cause clots that travel to the brain. Blood thinners, including Omega 3s, reduce the likelihood of clots.

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- Reduce inflammation measured by C-reactive protein produced by the liver.
- Lower blood sugar, because elevated blood sugar increases the likelihood of stroke by a multiple of three. [Brain 2011, 291]
- Shingles around the eyes or on the forehead increase the likelihood of stroke by a multiple of four. [Brain 2011, 292]
- Engage in Tai Chi, a Chinese movement exercise to promote relaxation and reduced stress. [Brain 2011, 292]
- Assure adequate levels of Vitamin C. [Brain 2011, 322-3]

Superbugs: Drug-resistant bacterial infections

- “Superbugs” refer to drug-resistant bacterial infections. These infections could be defeated with antibiotics but as time passed, infectious agent became resistant to the formerly effective antibiotic. Unfortunately, deaths are not recorded to identify the attributes of the superbug infection. If the cause of death is not listed as a superbug, money is not allocated to defeat these illnesses. It is estimated that 23,000 people die each year from 17 types of antibiotic-resistant infections and that an additional 15,000 die from *Clostridium difficile*, a pathogen linked to long-term antibiotic use. [McNeil 2010]
- These infections often occur during hospitalization for other illnesses.
- The two principal causes of superbugs are over-prescription of antibiotics and the use of antibiotics in the animals we eat. [McNeil 2010]
- Types of drug-resistant bacterial infection:
 - MRSA (Methicillin-resistant *Staphylococcus aureus*)
- One effective alternative to treat antibiotic resistant bacteria is colloidal silver described in the *Colloidal Silver Manual* as being effective against *Staphylococcus aureus* (p. 79) and many other bacterial agents. I have used it to treat flus and other bacteria and have learned it is essential to use it until the bacteria has been defeated; stopping its use before the bacteria has been defeated will result in the bacteria returning and then restarting the dosage. The brand I have used for viruses and infections without side effects for up to five weeks is Sovereign Silver 10 PPM.
- Keith Scott-Mumby MD has written a book “How to Survive in a World Without Antibiotics” (2011) This 215-page book is too complex to summarize in Six Pillar Tips.

Telomeres

- Telomeres are the caps at the end of each strand of DNA. As the telomeres shorten, one ages at an accelerating rate. [Shallenberger Natural Healing, January 2016]

Testosterone therapy for men

- Testosterone is manufactured by the body and begins to decline at age 30 at about one percent per year. Thus a 60-year old male has about 70 percent of the testosterone he had at age 30. [BLYB 2016, 122-3]

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- Low levels of testosterone cause fatigue, reduced sex drive, and increases in fat and decreases in muscle, increased heart attacks and diabetes, [BLYB 2016, 122-3]
- In one study, there were indications that testosterone therapy resulted in a one-third increase in heart attacks and stroke. While this increased risk could be caused by increases in exercise and sex, it does suggest a note of caution in testosterone supplementation. [BLYB 2016, 122-3]
- Testosterone levels vary from 300 to 1,000 nanograms per deciliter (ng/dL) and treatment should only begin when T-levels are below 300 ng/dL. They should not target T-levels higher than 750 ng/dL. Further, T-supplementation should not begin until other medical conditions have been addressed and improved. In other words, T-therapy may be dangerous in the presence of other medical conditions. [BLYB 2016, 122-3]
- Lower T-levels can be caused by age, chronic diseases, painkillers, obesity, lack of exercise, and stress. [BLYB 2016, 122-3]
- There are indications that testosterone therapy increases the likelihood of blood clots, heart attacks, strokes, and death. A safer treatment plan is supplements with red bush and dandelion. Further, hormone treatment plans in general are dangerous and should be avoided. [Miccozzi, August 2014 with 12 citations]

Thrombosis

- Arterial thrombosis is caused by platelet aggregation forming around a clogged/jagged point in the arterial system, response to irregular heartbeat, or an artificial heart valve. Nutrients that help protect against arterial thrombosis are green tea, fish oil, French maritime pine bark (rich in polyphenols), olive polyphenols, quercetin, resveratrol, grape seed extract, lycopene, pomegranate, garlic, flax seed oil, ginger, and curcumin. [Life Extension, Faloon, Jan 2017, 8, 10]
- Venous thrombosis is the formation of a blood clot inside a vein that obstructs blood flow to nearby organs. Veins have valves (arteries do not have valves) which prevent backflow of the blood and these cause special problems. The causes are (1) hemostasis (reduction in venous blood flow), (2) hypercoagulability (clots caused by genetic, cancer, or life style factors), and/or (3) fibrinogen converting to a fibrin mesh that traps red blood cells. Nattokinase and Wobenzym-N may decrease this mesh. [Life Extension, Faloon, Jan 2017, 8, 10-11].
- Venous thromboembolism is a blood clot that dislodges from its primary location and travels to block circulation to another body part. Venous thromboembolisms affect about 900,000 Americans annually and kills about 30 percent within one month. [Life Extension, Faloon, Jan 2017, 8]
- Pulmonary embolism is a blood clot that dislodges and travels to the lungs and blocks blood supply there and results in the immediate death of about 25 percent of patients. [Life Extension, Faloon, Jan 2017, 8]
- The major risk factors for thrombosis are [Life Extension, Faloon, Jan 2017, 8-9]

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- Inflammation. Blood markers that identify inflammation are homocysteine, C-reactive protein, and fibrinogen. Fish oils, vitamin D, curcumin, pomegranates, and plant polyphenols inhibit inflammation and platelet formation on the walls of arteries and veins.
 - Elevated LDL that is deposited as arterial plaque.
 - Hypertension which increases blood velocity and pressure. Higher blood pressure forces platelets to aggregate on the arterial/vein surfaces.
 - Hemostasis, which reduces blood flow.
 - Hypercoagulability, which is the likelihood of blood to clot inside veins caused by lifestyle, cancer, or genetics.
- There are also blood test panels that test for thrombotic risk. [Life Extension, Jan 2017, 13]
 - Healthy inner artery walls, the endothelial lining, is crucial to defeating arterial plaque. When the endothelial lining is lost, it is more likely that platelets attach to the remaining walls. Pomegranate and other plant polyphenols are important to prevent the build-up of arterial plaque. [Life Extension, Faloon, Jan 2017, 9]
 - Long periods of sitting at a desk, in a car, airline, sofa, etc. increases the risk of deep vein thrombosis, a clot that forms in a deep vein of the leg, or a pulmonary embolism the latter of which may be fatal. The reason is that long periods of inactivity causes the blood to pool in the legs. Nattokinase and French maritime pine bark may prevent deep vein thrombosis. [Life Extension, Downey, Jan 2017, 37-43].

Thrombophlebitis

- Thrombophlebitis is inflammation of the veins caused by blood clotting.
- Wobenzym-N may be effective in decreasing the pain and ulcers associated with this symptom. [www2.systemicenzymesupport.org/conditions/thrombophlebitis.htm]

Toothpaste

- In my opinion, the best toothpaste is Celtic sea salt or bicarbonate of soda (i.e., baking soda). Each of these is a cleaning agent and have, to the best of my knowledge, no toxic materials. Avoid swallowing bicarbonate of soda because it will reduce stomach acids. [Sears House, 02.17.2017]
- Harmful products in many toothpastes are:
 - Triclosan, used in toothpaste, has been banned for soaps. While it reduces plaque and gingivitis and is an anti-microbial, it has the following adverse properties:
 - Scrambles hormones in children and promotes drug resistant infections. [Sears House, 02.21.2017, 1]
 - Increases antibiotic resistance. [Sears, House 02.21.2017]
 - Disrupts the endocrine system. [Sears, House, 02.21.2017]
 - Disrupts thyroid hormones. A medium dose of triclosan may decrease the thyroid hormone T4 by 47 percent and a larger dose 81 percent which can

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lead to hypothyroidism. Untreated, hypothyroidism can lead to heart problems, mental health issues, goiter, and nerve damage. [Sears House, 02.21.2017]

- Sodium Lauryl Sulfate (SLS) is a foaming ingredient that is a registered insecticide that's linked to cancer. [Sears House, 02.21.2017]
- Aspartame is an artificial sweetener that converts to formaldehyde in the body causing tissue damage. [Sears House, 02.21.2017]
- Fluoride lowers IQ, increases mouth and throat cancer and causes tooth discoloration. [Sears House, 02.21.2017]
- Microbeads are plastic beads that get trapped under the gums. [Sears House, 02.21.2017]-

Triglycerides

- Triglycerides are a type of fat resulting from excess calories converted to triglycerides that are stored in fat cells.
- High triglycerides cause heart attacks and ischemic stroke.
- The FDA acknowledges that blood concentrations of over 500 MG/dL are dangerous, but The American Heart Association and Life Extension agree that optimal concentration of triglycerides should be under 100 mg/dL.
- High triglycerides are associated with low HDL, inflammation, abnormal blood clotting, insulin resistance, obesity, type 2 diabetes, small density LDL particles, very low-density lipoproteins, and remnant lipoprotein particles; some of these promote atherosclerosis.
- The most beneficial supplement to reduce triglycerides is Omega 3 fish oils. Every 1,000 mg of EPA/DHA results in a 5% to 10% reduction in triglycerides. 4,000 mg of fish oils may reduce triglycerides by 25% to 30%. [Life Extension, May 2016, 8-12]
- There are medical indications that the blood test for triglycerides (and sucrose) should be within 2-6 hours of the meal, not fasting for 8-12 hours after a meal. The reason is that fasting for 8-12 hours after meals produce artificially low results. Some individuals have very high levels of sucrose soon after a meal and blood testing during that early period does not represent the normal levels of triglycerides (and sucrose). These high levels are more indicative of the risk of heart attack and ischemic stroke risk. [Life Extension May 2017, 7-9]
- High triglycerides and low HDL are also a cause of diabetic kidney disease. [Life Extension, May 2017, 19]

Ulcerative colitis

- Ulcerative colitis is a symptom which causes painful inflammation and sores in the colon and rectum.
- Resveratrol may be used to treat ulcerative colitis. The treatment results in the reduction of malondialdehyde, a marker of oxidative stress, and antioxidant capacity and

superoxide dismutase higher. These conclusions are based upon a study of 56 individuals treated with 500 mg of resveratrol daily for six weeks. [Life Extension May 2017, 21]

Viral infections

- Keith Scott Mumby, MD, PhD in “10 Alternative Remedies for Viral Infections” (2009) discusses protocols that he believes defeat a viral infection. He describes a virus as a package of DNA lacking a reproductive capability without assistance from a captured complete living cell. The virus enters the living cell nucleus and forces the cell to reproduce the virus’ DNA. The cell dies and produces more virus particles. The most common viruses are colds, influenza, mumps, measles, German measles rubella, glandular fever, hepatitis, chicken pox, genital herpes, shingles, cytomegalovirus, Ebola, Marburg, Nipah, Viruses can live on a surface for months without food or water. They may be injected through the mouth, nose from another’s sneezing, and through sex. Antibiotics have no effect on viruses and they can cause cancer.
- Mumby suggests the following therapies for viral infections. I suggest you read his book for more expansive explanation of his treatment protocols.
 - Vitamin C, high doses intravenously. [13]
 - Eupatorium perfoliatum or Boneset. Potential of overnight cures. [15]
 - Peroxide (H_2O_2) and other oxygen therapies. This requires 35% food grade H_2O_2 diluted 1:12 and taken three drops three times a day and increasing by one drop three times a day up to about 25 drops three times a day. The drops are placed in a liquid but not chlorinated water because the chlorine neutralizes the H_2O_2 . It is essential to have medical advice in using H_2O_2 because it is very dangerous used improperly. [16]
 - Chlorine dioxide. It acts by ripping off the electrons of the pathogen/virus. Alkaline tissue is unharmed. The recovery period is very short. See Mumby’s book for more detail. [17]
 - Scenar. This a Russian invention/device that cures viral and other infections very quickly by stimulating the immune system. See Mumby for more detailed information. [20]
 - Complex Homeopathy. See Mumby for more detailed information. [22]
 - Vitamin D. 2,000 IU to 5,000 IU daily. [24]
 - Oregano Oil. Has anti-fungal, anti-parasitic, anti-viral, anti-bacterial properties. Use only *Origanum vulgare* with 70% carvacrol with the recommended dosage. [25]
 - Licorice. *Glycyrrhiza glabra*. Good for latent viruses including the herpesvirus, Epstein-Barr, HIV, SARS coronavirus, viral hepatitis, and herpes simplex viral particles. [26]
 - White tea extract. Destroys in vitro organism-causing diseases. See Mumby for greater detail [27]

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- Intravenous hydrogen peroxide is believed to treat successfully viral infections (e.g., viral pneumonia, flu), but it must be delivered by a practitioner experienced with its use. A list is provided in Dr. Frank Shallenberger's Second Opinion Healing Series Volume 1. Soundview Communications 2014: 32-36.
- I have used colloidal silver to defeat viruses and bacterial infections successfully.

Weight control

- The principal problem with dietary management is that western affluence has increased refined carbohydrates (which refine out 65-percent of nutrients), processed foods, an unhealthy mix of fats and oils, and reductions in fresh organic fruits and vegetables. The demand for meat has increased so much that (1) Omega 3-intensive grass-fed cattle have been replaced by Omega 6-intensive, grain-fed beef, (2) acid-based, animal-protein-intensive diets have displaced alkaline-based fresh organic fruits and vegetables, (3) grains and beans, excellent sources of vitamins, minerals, and fiber, are avoided, and (4) processed foods with heat-altered oils are a more frequent part of the diet.
- Excess body weight causes inflammation and is thereby viewed as the cause of many illnesses including cancer, diabetes, etc. Each of the rules which follow is crucial to maintaining correct body weight—violation of one may well defeat your adherence to all of the rest. Remember, if you have excess weight, one of four things will happen:
 - You will have a terminal attack and then you will not need to lose weight.
 - You will survive a heart attack, get diabetes, cancer, etc. and then be forced to lose weight and go through the agony of the illness.
 - You will have other illnesses associated with excess body weight and then be forced to lose weight.
 - You will pass from some other illness unrelated to excess body weight.
- It is obviously best to lose weight when you are still feeling good and delay or eliminate access to these problems.
- The FIRST RULE in weight control is to weight yourself first thing in the AM in your skinnies. Daily weighting at the same time will tell you of your accomplishments and failures of the day before and provide the discipline for today. When you are thinking about a 10:00 AM pastry, vision your scale as increasing one pound the next morning.
- Weight control depends upon a combination of a proper mind set, dietary management, exercise, and sleep.
 - There are two basic emotional reasons for eating. The first is to satisfy tummy hunger and the second reason is to satisfy emotional hunger when you are bored, frustrated, etc. If you manage to eat only when you are tummy hungry, then you are in a state of homeostasis and the tendency to gain weight is much lower. It is crucial for weight control to refrain from eating because of emotional hunger. [BLYB 2015, 70]

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- Metaphysical (spiritual) modeling may be helpful to eliminate emotional hunger and reduce stress. Metaphysical modeling means that you meditate using models to terminate the link between boredom, frustration, and eating.
- Dietary management means having a preconceived nutritional plan. For example, eating the Mediterranean diet with fresh organic fruits and vegetables, fish, turkey, chicken, and grass-fed meat, soluble fiber, distilled water, etc. An alternative diet is a protein-rich oriental diet in which proteins are substituted for carbohydrates. Neither diet contains processed foods which are nutrient deficient (e.g., 65 percent nutrients removed) which convert to glucose and fat. [BLYB 2015, 71]
- Avoid sugar intensive drinks including colas, other soft drinks, and fruit juices. Diet sodas add to weight and should also be avoided.
- Exercise is obviously crucial, but the ideal exercise starts with a morning breakfast (Yes! Eating breakfast is perhaps the most important exercise of the day), limited ten-minute exercise every 90 minutes during the work day, and additional exercise after work.
- *It has been found that probiotics reduce weight. [Bottom Line Health Special Report, 2017, 4]*
- Beans and bean mixes are among the best of foods for weight loss and nutrition and make an excellent breakfast for glucose reduction. [BLYB 2016, 75-76]
- Too much sleep is a weight gainer. It's best to get up before 6:00 AM and go to bed at least (not sooner than) four hours after a heavy dinner.
- Adhere to the Mediterranean diet with plenty of wild fish and fresh, organic, multicolored fruits and vegetables. Color is a measure of the vitamin and mineral content and “multicolored” means a variety of colors.
- Use ten inch diameter dishes rather than 12” diameter dishes—in other words, eat less.[BLHB 2017, 115]
- Probiotics reverse obesity, lowers body mass index, and attenuates fatty liver disease due to a high fat diet.]Downey Probiotics 2015, 28-29]
- Arise before 6:00 AM, assuming that you are able to go to bed before 11:00 PM, and eat breakfast immediately or immediately after morning exercise; reducing sleep to the minimum amount required for good health is one of the best ways to lose weight. Breakfast, which drives the digestive system into action and burns calories, should consist of cooked whole grain cereals (not smashed grains like oatmeal, which lose a portion of their nourishment as a result of the crushing and evaporation processes), eggs several times a week (to reduce carb consumption), fruit, beans (an incomplete protein), etc.
- Quinoa is a complete protein but contains 17 grams of net carbohydrates per ½ cooked cup). Quinoa has a coating of saponin, which is a natural bug repellent. It is essential to wash quinoa because the saponin can cause stomach upset and damage intestinal linings.

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- Go to bed at least four hours after eating dinner consisting of meat or cheese, or within at least three hours of eating a salad. If you go to bed within say two hours of dinner, you are guaranteed of gaining weight and undermining any other weight loss program in which you engage. In a study of 420 Spanish participants in a weight loss study, those eating lunch (the main meal) before 3:00 PM lost more weight than those eating lunch after 3:00 P.M. Those eating lunch after 3:00 P.M. were more likely to skip breakfast and, if they did eat breakfast, ate a less energetic breakfast. The rules from this study: Eat early and eat a good breakfast. [Garavley 2014]
- Manage bread, pastries, and bagels carefully. Eat bread only at breakfast and lunch so the carb-to-sugar conversion takes place before bedtime. Limit pastries to about one per week and then with lunch to assure you do not overeat at lunch. NEVER eat pastries, bread, or bagels between meals. The preferred between meal snacks are fresh, organic, multicolored fruits and vegetables.
- Substitute wild fish for meat several times a week. Fish is a sure weight loser.
- Conjugated linolenic acid (CLA) promotes weight reduction (about three pounds in several weeks) and it also reduces blood sugar up to five times. [Baker 2007, 83]
- White kidney bean extract block carbohydrates by reducing alpha amylase, an enzyme that breaks down the starch in carbs into sugar. Without alpha amylase, the starches pass out of your body before being converted to sugar and then fat. The dosage of white kidney bean extract is 445 mg a day before a carb-rich meal. [Sears House]
- Get exercise regularly during the day. One of the best ways is to take a ten to fifteen-minute walk every 90 minutes of the workday. [Baker 2007, 82]

Pillar 6: Dietary management including food supplements

Apples

- Apples are a rich source of soluble and insoluble fiber [see “insoluble fiber” and “soluble fiber”] and pectin. Pectin is a natural fiber that controls diarrhea, decreases the likelihood of colon cancer, reduces high blood pressure, helps prevent and dissolve gallstones, and slows the absorption of nutrients into the bloodstream thereby controlling sugar. [Baker 2014, 2] Apples contain quercetin, which reduces brain cell death by reducing oxidative stress and inflammation. High doses of flavonoids (of which quercetin is a part) from supplements may cause nausea, headache, and tingling of the extremities [Brain 2011, 96]
- Apples also prevent or reduce the incidence of asthma, cardiovascular disease, colds, coronary heart disease, seasonal allergies, and stroke. [Baker 2014, 3]
- Arterial plaque can be defeated with a glass of apple cider boiled with a clove of garlic. [Baker 2014, 4]
- Apples also contain boron which is helpful for stimulating brain cells, easing joint pain, and lowering blood pressure. [Baker 2014, 5]
- Apples are known to cool hot flashes. [Baker 2014, 7]
- To conclude, apples are a candidate for the most important of all foods to prevent and cure many illnesses.

Astaxanthin

- Astaxanthin is a carotenoid, a super antioxidant, and anti-inflammatory (e.g., pain reliever) that has 60 times the antioxidant power of Vitamin C, 54 times the antioxidant power of beta carotene, and 14 times the antioxidant power of Vitamin E.
- Astaxanthin may be helpful for rheumatoid arthritis and carpal tunnel syndrome.
- Astaxanthin suppresses the production of nitric oxide. Nitric oxide is (1) an anti-inflammatory at normal levels, (2) a pro-inflammatory in abnormally high amounts, and (3) reduces blood pressure by relaxing arteries and veins. Thus, if you have high blood pressure it may not be wise to take Astaxanthin, because it may reduce further the production of nitric oxide. Mouthwashes containing chlorhexidine also reduce nitric oxide production, which may increase blood pressure.
- Only natural-source Astaxanthin should be taken in supplement form. It has been shown in research that BioAstin Astaxanthin lowered C-reactive proteins, a marker for inflammation, after about eight weeks of daily use. [Spiller, 2006]

Pillar 6: Dietary management including food supplements

- I do not favor Astaxanthin because it suppresses the production of nitric oxide which supports healthy blood pressure

Avocado

- Avocados contain a variety of phytonutrients including the following: [Meteljan]
 - Phytosterols
 - Beta-sitosterol,
 - Stigmasterol
 - Campesterol
 - Carotenoids
 - Beta-carotene.
 - Alpha carotene
 - Lutein
 - Neochrome
 - Neoxanthin.
 - Chrysanthemaxanthin.
 - Beta-cryptoxanthin, zeaxanthin.
 - Violaxathin.
 - Flavonoids
 - Epicatechin.
 - Epigallocatechin 3.0 gallate.
 - Alpha linolenic acid (Omega 3 fatty acid)
 - Oleic acid
 - Pantothenic acid
 - Dietary fiber
 - Vitamin K
 - Copper
 - Folate
 - Vitamin B6
 - Potassium.
 - Vitamin E
 - Vitamin C
- Avocados are rich in fats. One cup (about one avocado) contains 22 grams of fat in a ratio of 1 Omega 3 to 10 Omega 6s. Fifteen of the 22 grams of fat are from monounsaturated fats including oleic acid. Three of the 15 grams come from polyunsaturated fats. A ratio of 1 Omega 3:10 Omega 6s is not a good ratio, but all of the nutrients including the fats in avocados reduce heart disease, improve blood levels of LDL and lower levels of oxidative stress after meals. [Meteljan]
- Most of the nutrients in the pulp are found at the skin so make sure you remove all pulp from the skin. [Meteljan]

Pillar 6: Dietary management including food supplements

- An ingredient in the avocado, *Persea Americana*, contains d-mannoheptulose which inhibits the ability of cancer cells to burn carbohydrates for energy by up to 79 percent thereby limiting the growth rate of cancer cells. D-mannoheptulose is available in supplements. [Shallenberger, *Foods that Heal* 2014, 1-2]

Artichoke leaf

- Artichoke leaf may cure irritable bowel syndrome with a dosage of 200-400 mg three times daily for about a month and decrease dosage as you improve. [Shallenberger, *Second Opinion Healing Series*, Volume 2, 42]
- Artichoke leaf also protects the liver as an alternative to milk thistle. [Shallenberger, *Second Opinion Healing Series*, Volume 2, 42]

Basil

- Basil's four healing ingredients are the antioxidants orientin and vicenin plus the volatile oils eugenol and apigenin. [BLYB 2016, 84]
- Adding basil three times a day to meals can dramatically reduce blood sugar—perhaps over 50 percent! [BLYB 2016, 84]
- Sweet basil (*Ocimum basilicum*) is used in cooking.
- Holy basil (*Ocimum sanctum*) is an anti-oxidant.

Beverages

- The best beverage of all is good quality water such as reverse osmosis and re-mineralized distilled water with lemon, lime, a mineral supplement, or wheatgrass or an equivalent thereof. If you collect the distilled water in an open pot, retained VOCs during distillation may evaporate out. It is particularly helpful to drink good quality water between meals—at least a half-liter between breakfast and lunch and another half-liter between lunch and dinner. It's probably best to avoid large amounts of beverage with meals because it dilutes digestive enzymes and adds to stomach pressure and acid reflux. [Shallenberger *Potpourri* 2014, 6]
- The next best set of beverages is plant beverages such as unsweetened coconut, almond, and mixed beverages with coconut and nuts (e.g., cashew).
- Milk is not a desirable drink for adults in part because milk is sugar intensive (11 grams/glass) and unhealthy for adults.
- Coffee is not the best of beverages because it causes anxiety-related illnesses, and may be an alternative to exercise because it gives a false energy boost; morning coffee gives an energy boost because it overcomes overnight withdrawal symptoms.
- Avoid colas, soft drinks, and energy drinks. Colas contain large amounts of high fructose corn syrup, caffeine (about 55mg); energy drinks have even more caffeine some of which is unreported in other ingredients. Soft drinks contain massive amounts of sugar (about ten teaspoons per 330 ml can). They also contain large

Pillar 6: Dietary management including food supplements

amounts of phosphoric acid (phytic acid) that binds with minerals including calcium leading to osteoporosis. Aspartame, an artificial sweetener, has serious adverse side effects. Soft drinks are very acidic which contributes to a number of serious illnesses; cancer loves acidity. One cola per day may increase the risk of diabetes by up to 85 percent. [Energise Ross 05.06.2013]

- Limit small children to two glasses of milk per day for Vitamin D, which helps in absorbing calcium. But more than two glasses of milk per day may reduce iron, which is necessary for physical and mental prowess.

Breakfast

- Breakfast is the most important meal and exercise of the day because it activates the body's entire drive train from the digestive system to all cells, ligaments, organs, brain, etc. It improves mood, memory, and energy levels after a night of fasting.
- Among obese individuals, those who allocated most of their caloric intake to breakfast vs. lunch and dinner had the highest weight loss—17.8 lbs. vs 7.3 lbs. for calorie intensive dinners over a 12-week period. [BLYB 2016, 75]
- Failure to eat breakfast increases the likelihood of diabetes by 21 percent because it is believed breakfast stabilizes blood sugar throughout the day.
- For a non-diabetic, the best breakfast foods are cooked whole grain cereals including oats, barley, quinoa, Kashi, etc., eggs several times a week, waffles or pancakes with fruit once a week, and bean mixes. Oatmeal is crushed oats and thereby may lose some of its nutrient value; further, oats are phatic acid-intensive and may contribute to loss of bone mass. [see Physic acid]
- For those with high blood sugar, the best breakfast combinations are eggs and bean mixes. Whole grain cereals are complex carbohydrate intensive and, if you have high blood sugar, should be avoided. Quinoa, which is gluten free, contains a complete protein, fiber, carbohydrates, many minerals, and a few of the B-vitamins.
- Gallstones are more prevalent among those who do not eat breakfast. [Uncommon Cures 2009, 137]

Caffeinated products

- Increasingly, caffeine is being added to processed foods as an energy stimulant. As a result, there are more visits to emergency hospital facilities for heart palpitations and other side effects. Increasingly, local government authorities are considering legislation and regulations controlling the addition of caffeine to food products.
- Caffeine is being added to snacks such as candy, potato chips, waffles, chewing gum, alcoholic beverages, etc. Wrigley's is presently marketing a gum called Alert which has 320 mg of caffeine in the eight-piece pack. That's about four cups of coffee or a half cup of coffee per piece. [WSJ 05.01.2013, p B8]

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- Coffee is one of the most acidic food products in a world where alkalinity is favored for good health; cancer thrives in acidic conditions and cancer increases acidity.
- Caffeine contributes to anxiety. Further, caffeine and refined carbohydrates (e.g., table sugar) work in tandem to increase anxiety.
- If you want true energy, avoid stimulants and perform exercises that require motion and deep breathing such as fast walking. Walks on hills are excellent because they require deep breathing.

Calcium

- Calcium is necessary for bone growth, heart health, weight management, and protects against colorectal and prostate cancer [Micozzi Insider May 2014, 3]. Inadequate calcium may also result in osteoporosis, bone fractures, hypertension, and loss of jawbone.
- Dosage: Calcium from all sources should be in the range of 600 to 1,400 milligrams per day. Amounts outside this range can contribute to cardiovascular disease and death. Women age 50 or older have higher requirements of about 1,000 to 1,400 mg daily and men have needs of about 1,000 mg daily. Dr. Frank Shallenberger recommends taking no more than 500 mg daily from supplements because excess calcium can damage the cardiovascular system and increase the risk of heart attacks. [Second Opinion, July 2016, 1]
- Don't overdose on calcium. In one study, men who took more than 1,000 mg daily were 19 percent more likely to die from heart disease because calcium narrows and hardens coronary arteries. [BLYB 2015, 7]
- Excess calcium supplementation over 800 mg daily can double the risk of age related macular degeneration. [BLYB 2017, 24]
- In my opinion, one should not supplement with calcium, unless there is a unique need; one of these is to accelerate healing of a broken bone. It is also helpful to add vitamins C, D3, K1, and K2 to draw the calcium into bones and bone fractured areas.
- It is preferred to get calcium from food to minimize arterial calcification. One of the better sources may be almond beverage which has about 45% of the daily requirements from an eight oz. glass.
- Vitamin K1 and K2 prevent calcification of soft tissue and arteries [Life Extension Health Digest, 4]

Chocolate

- Natural and healthy antioxidant flavonoids are largely removed during processing.
- "...the added sugar and fat make chocolate—even chocolate that is marketed as good for you—a nutritional loser." [Healing, 2013, 14]
- Dark chocolate is caffeine intensive while milk chocolate has considerably less caffeine.

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- Chocolate has many natural ingredients about which medical science knows little about their effect on health and bodily processes.

Chlorophyll

- Chlorophyll is the green color in plants and is a plant's plasma converting the blue and red spectrums in light to plant energy. Chlorophyll molecules are near identical to human blood plasma except chlorophyll contains a magnesium atom for the iron atom in human blood plasma.
- Chlorophyll delivers oxygen to cells, reduces the binding of carcinogens to DNA preventing cellular damage and cancer, breaks down calcium stones, etc.
- The best source of chlorophyll is grasses (e.g., barley grass, wheatgrass, oat grass, dog grass, kamut grass, lemongrass, and shave grass), spirulina, corella, and green vegetables. Wheatgrass contains over 100 food elements including vitamins, minerals, and proteins (25%); barley grass has seven times more Vitamin C than oranges. Green grasses are also easily digestible and protein intensive. [Robert O. Young, The pH Miracle, July 2010] In my opinion, grasses, spirulina, and corella are the most nutrient dense foods available furnishing many vitamins and minerals and chlorophyll.
- Chlorophyll defeats bad breath.

Cinnamon

- Blood sugar levels may be controlled with about ½ to one teaspoon of cinnamon daily the total of which should be spread out throughout the day. [Baker 2014, 113]
- Cinnamon may be used to defeat cancer. Cinnamon works to defeat the addition of new blood vessels to feed a cancer through procyanidins.
- The cinnamon used in one study was Ceylon "true" cinnamon (*Cinnamomum zeylanicum*) rather than Chinese or Saigon cinnamon (*Cinnamomum cassia*). [Super 2012, 66]
- Too much cinnamon may be harmful.

Coenzyme Q 10 (CoQ10)

- CoQ10 is an antioxidant in the Quinone chemical group with ten isoprenyl chemical subunits in its tail. It is fat soluble and resembles vitamins. It participates in aerobic cellular respiration which generates ATP energy in the mitochondria. It has the highest concentration in organs that use the most energy such as the heart, liver, and kidneys. It is synthesized by the body.
- While CoQ10 produces brain energy and thereby improves memory, it has many side effects. The side effects of CoQ10 supplements include: [Mayo Clinic "Drugs and Supplements Safety Coenzyme Q10"]
 - Adverse effect on liver enzymes.
 - Reduces the benefits of warfarin.
 - Increases bile duct blockage.
 - Increases the risk of bleeding.

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- Causes skin itching and rashes.
- Causes stomach upset, nausea, and vomiting.
- Worsens mitochondrial disorders.
- Causes headaches.
- Causes low blood pressure.
- Affects thyroid problems.
- Affects heart rate.
- Causes abnormal breathing, back pain, bronchitis, changes in attention, changes in sperm mobility, cholesterol, chest pain constipation, coughing, diarrhea, dizziness, fainting, falling fatigue, flu-like symptoms, fungal skin infection, gas, head pressure, hearing loss, heart attack, heartburn, heart dysfunction, indigestion, insomnia, irritability, light sensitivity, loss of appetite, low energy, lung inflammation, muscle pain, night sweats, reduced g-force tolerance, respiratory tract infection, runny nose, sinus inflammation, sore throat, stomach pain, trembling, urinary infection and viral infection.
- With this list of adverse effects, it may be best to avoid CoQ10 as a food supplement and get it from foods such as salmon, herring, beef, chicken, and eggs.

Cruciferous vegetables

- Cruciferous vegetables, and broccoli in particular, contain glucosinolates which convert to isothiocyanates (two of which are sulforaphane and erucin which have strong anti-carcinogenic attributes). They inhibit carcinogen-activating enzymes and induce carcinogen-detoxifying enzymes, differentiation, cell cycle arrest, and cancer cell apoptosis. [Park 2014, 157; Matusheski 2004, abstract; BLYB 2015,81]
- Broccoli sprouts have the highest density of sulforaphane. [Donaldson 2004]
- Erucin, a isothiocyanates in argula, inhibits the proliferation of breast cancer cells. [Azarenko 2014, Abstract]
- Cauliflower is rich in purines which convert to uric acid and cause gout the latter of which can be defeated with Bragg's Apple Cider Vinegar. Broccoli provides about the same nutritious benefits.

Dairy products

- Dairy products, including milk and ice cream, have adverse consequences for adults as we note in the following sections. It's best for adults to avoid milk in favor of unsweetened plant beverages such as almond, cashew, quinoa, coconut, and rice beverages. Avoid soy. [Uncommon Cures 2009, 119]
- In a Swedish questionnaire study of 61,433 women and 45,339 men, it was found that "High milk intake [three or more glasses per day vs. less than one glass per day] was associated with higher mortality in one cohort of women and another cohort of men, and

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with higher fracture incidence in women.” [Michaelsson 2014] While the study conclusions indicated caution in interpreting the results, in my opinion, adults should replace milk with unsweetened plant beverages.

- Milk contains D-galactose, a sugar that causes aging in animals, shortened life span caused by oxidative stress damage, chronic inflammation, neurodegeneration, decreased immune response and gene transcriptional changes.” [Michaelsson 2014]
- Dairy products contain difficult to digest proteins that affect adversely the stomach, intestines, and lymph systems. [Uncommon Cures 2009, 119]
- It is believed that over time, dairy products impair the lymphatic vessels which filter proteins, bacteria, fats and dead cells. [Uncommon Cures 2009, 119]

Dosage of supplements:

- Don't take mega doses of any supplement without a doctor's approval because they may be harmful.
- Do not take individual Vitamin B supplements. If you need one Vitamin B, its best to take complex Vitamin B with all vitamin Bs because they interact together.

Enzyme management

- Of all the material presented in “Six Pillar Tips for Health Management,” enzyme management is perhaps the most important because (1) metabolic enzymes are the drive force for substantially all body functions at the cellular level, which are integrated into organ operation, (2) enzymes are catalysts that create an environment to accomplish chemical processes in the body, (3) enzymes are necessary for food digestion, and (4) protein digesting enzymes (i.e., systematic or proteolytic enzymes) eliminate fibrin in arteries, reduce the fibrin coating protecting cancer cells, and may digest the A β plaque and tau tangles in the brain to defeat Alzheimer's.
- There are three basic types of operational enzymes: Metabolic, digestive, and systematic. There are about 3,000 metabolic enzymes that control cellular energy production and detoxification.
- There are five principle types of digestive enzymes [LHA October 2015, 4-5]
 - Cellulase:
 - Breaks down fiber, which cleans the colon, accelerates elimination.
 - Protease or proteolytic: Papain, bromelain, and lactase
 - Breaks down (digests) protein from meat, eggs, fish, etc.
 - Bromalein and papain are powerful anti- inflammatories, which can help fight osteoarthritis.
 - Papain can help break down gluten.

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- Lactase breaks down lactose, the sugars in milk products.
- Lipase
 - Digests fats
 - Releases the fat-soluble vitamins D and K and Omega 3 fatty acids and lutein. Thus, inadequate lipase can prevent these vitamins, oils, and nutrients from activity.
- Amylase
 - Breaks down sugar and carbohydrates.
 - Reduces the likelihood of having energy spikes and crashes.
- Gelatinase
 - Breaks down collagen and gelatin.
- The digestive tract includes the mouth (where saliva begins to digest starches), esophagus (connecting the mouth with the stomach), stomach, small intestine (which absorbs nutrients), large intestine, and anus. Sources of digestive enzymes are the mucosa (a lining in the mouth, stomach, and small intestine), liver, and pancreas. Exogenous sources of digestive enzymes are uncooked fruits and vegetables and food supplements.
- Systematic or proteolytic enzymes are the excess protein-digesting enzymes, not necessary for food digestion, that digest proteins beyond the digestive tract that keep arteries clean, prevent and treat cancer, and perform many other important functions. For example, fibrin, a protein that attaches to arteries, can be broken down by protein digesting enzymes (e.g., nattokinase, plasmin) reducing the likelihood of blood clots.
- The sources for enzymes depend upon the type of enzyme. Metabolic enzymes are produced by cells and by the liver, pancreas (which also makes digestive enzymes), and the gallbladder. Systematic enzymes are also anti-inflammatory and may be used as pain killers for sport injuries. In one case, an individual suffered a serious back injury weight lifting, and had 100% pain relief taking 20 Wobenzym-N supplements daily for four days. Over the next two months, he reduced the dosage to 16, 12, and 8, and had complete healing with no further pain. He continued taking five Wobenzym-N's daily for digestion of the three bad proteins.
- The benefits from enzymes are improvements in food tolerance, digestion, sleep, cognitive awareness, memory and decreases in anxiety, acid reflux, autoimmune problems, chronic pain, chronic viral-related problems, C-reactive protein, and harmful bacteria and yeast problems. [Stumpf]
- Enzymes are crucial in age-related diseases because the pancreas produces less as one ages. [DeFelice, 37] For example, amyloid beta plaque is a protein that may be reduced by a protein digesting enzyme.
- Cancer cells are believed to be coated with a layer of fibrin up to 15 times thicker than normal cells. The thick layer of fibrin, a protein, insulates the cancer cells from the body's normal defenses to destroy the cancer cell. Systemic enzymes may digest some of

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the fibrin to permit the body's normal defenses to destroy the cancer cells.

[anticancerinfo.co.uk/enzymes.htm; Taussio 1988,193; Howensteine]

- It may also be helpful to take two to five systematic enzymes daily (e.g., Wobenzym-N;) about an hour before meals that pass the tummy intact, reduce cholesterol, clean arteries by digesting the fibrin deposits, reduce inflammation (inflammation is one of the principal sources of most illnesses), increases the effectiveness of antibiotics, digest A β plaque and tau particles, etc. [Collins; see Casey Adams, "Probiotics Protection Against Infection," p. 27 and Karen DeFelice, "Enzymes in Health and Disease"]
- Since enzymes decline after age 27, older folks should consider enzyme supplements at mealtime. It may be helpful to take a complete food digestive enzyme with meat and fat-intensive meals (e.g., Omega Ω -Zyme) as one ages.
- Eat raw organic fruits and vegetables because cooking over 120 degrees kills all enzymes. Cooked tomatoes are the exception; cooking tomatoes, including spaghetti sauce, greatly enhances lycopene, which is believed to reduce the likelihood of prostate cancer.
- The preferred source for enzyme supplements is microbial, not animal-derived enzymes, because the latter are effective over only a narrow pH range; thus, animal derived enzymes may be invalidated by stomach acid which may have a pH of only 2.0. A microbial enzyme will pass the stomach acid and remain active in the gastrointestinal tract. [DeFelice, 43]

Fasting

- Fasting refers to reducing caloric intake. This means eating less. The easiest way to fast is to eat an early dinner before 6:00 PM and eating nothing before breakfast. However, it is important to continue to drink water during this period to assure adequate water for cells and the large intestine. Its particularly to reduce the consumption of carbohydrates throughout the day. [BLHB 2018, 40]
- The benefits from fasting are:
 - Digest toxic materials and rogue cells for energy and nutrition.
 - Increase the production of ketones from stored fat as a source of energy. Some individual's brains cannot process sucrose into brain energy, but their brains can process ketones into energy. Thus, cognitive abilities are improved.
 - Reduce inflammation.
 - Improve metabolic efficiency.
 - Improve insulin sensitivity.
 - Lower cholesterol and triglycerides
 - Reduce amyloid β plaque.

Fats and oils excluding saturated fats

- We have separated fats and oils into two sections: The first deals with fats and oils other than saturated fats and the second with saturated fats. The reason for this division is because of conflicts in studies and medical opinion regarding harm from saturated fats.
- The Fluid Mosaic Model suggests that cell membranes are composed of oils and cholesterol; cell membranes govern the entry of nutrients and oxygen and the elimination of wastes. When man lived off the land, he ate an Omega 3-intensive diet with grass-fed meat and wild fish, and the ratio of Omega 3s to Omega 6s was about 1:2; now it is more likely to be 1:20 or worse; notably cholesterol is part of a cell's good membrane structure. High-ratio Omega 6s and heat-affected oils trash a cell membrane's ability to admit nutrients and eliminate waste.
- The importance of **good** fats is that they (1) improve the ability of cell membranes to permit entry of nutrients and elimination of waste, (2) prevent inflammation (3) permit absorption of fat-soluble vitamins (A, D, E, and K), (4) control blood pressure, (5) prevent blood clots, (6) fight infection and disease (diabetes, memory loss, cancer, joint pain, and heart disease), (7) prevent liver damage, (8) kill cancer cells and prevent metastasis of tumors, (8) slow or stop the progress of multiple sclerosis, etc.
- Eat healthy fats such as monounsaturated fats from olive oil (but remember olive oil is Omega 6 intensive so limit your consumption), coconut oil rich in saturated fats, and Omega 3 fats from grass-fed meats, eggs from free range chickens, and free-range chickens. Avoid low fat diets because they are refined-carbohydrate intensive and because fats are necessary to produce vital hormones. [Holman 2014] Further, fats may be the preferred source of energy, cell membranes are made of fat, the nervous system and brains are fat-intensive, and fat is the building block for cortisol, DHEA, and the sex hormones. Prostaglandins, which are crucial for proper immune function, the cardiovascular system and healing from an injury, are composed of fats.
- Fish oils (Omega 3s) have many benefits. They include:
 - Lower cholesterol, triglycerides, LDLs, and blood pressure.
 - Reduce inflammation, a major cause of chronic disease and aging. [Schllenberger Second December 2015, 2]
 - Reduce blood clots.
 - Improve memory.
 - Increase the length of **telomeres**, which protect the ends of chromosomes containing DNA, which normally decrease in length with age. The longer the chromosome telomeres, the longer one will live because of the protection they accord to the chromosomes/DNA. In one study, those with the lowest Omega 3 Index had a 300 percent reduction in telomeres length compared with those with the highest Omega 3 Index. [Schllenberger Second December 2015, 2]

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- A higher Omega 3 Index (EPA and DHA) contributes to increased brain volume, lower white-matter hyperintensities (less damage to the brain's white matter), and increased cognitive function. [Schlenger Second December 2015, 3]
- Home testing for the Omega 3 Index and trans fats based upon red blood cell analysis is available at OmegaQuant for \$79.95 (888.202.6102). Other sources may also be available for the Omega 3 Index. The target Index is eight percent. [Schlenger Second December 2015, 5]
- Reduce depression perhaps better than prescription drugs. The suggested dose is 1,050 mg of EPA. [Hush, 2014, 15]
- Maximize Omega 3s vs. Omega 6s in your food choices.
 - Eat Omega 3 eggs.
 - Eat grass-fed beef vs. grain-fed beef. Grass-fed meat contains more omega 3s than salmon; be sure your red meat source uses grass in the feed lot. Grass-fed cattle raised on the range but grain fed at the feed lot soon lose their Omega 3 oil advantages at about one percent per day with the substitution of more Omega 6s. Grass-fed beef may be tougher to chew unless it is aged properly.
 - Eat wild cold-water fish including salmon, anchovies, and sardines. Grain-fed farm fish have little Omega 3s and are inflammatory because grain feed increases Omega 6s.
 - Walnuts contain Omega 3s.
 - Flax seed oil is rich in alpha-linolenic acid (ALA) which must be converted to DHA and EPA Omega 3s. Cows can make the ALA conversion to Omega 3s from the grass they eat efficiently because they have multiple stomachs, but humans have a conversion rate of about ten percent.
 - The best new source of Omega 3s is marine plankton, often grown in freshwater tanks, which are free of pollution. [Heilbron 2013, 80]
- The original oils were monounsaturated and saturated. With the advent of refined vegetable oils, polyunsaturated oils came into being. Trans-fatty acids are very unhealthy oils and are created when hydrogen is added to vegetable oils. [Brain 2011, 201]
- Lard, a rendered fat from pork, is a mostly monounsaturated fat and is rich in nutrients and Vitamin D if the pig was free range and not corn fed; do not consume lard from corn-fed pigs. Poultry fat is also healthy fat, if it is free range. [Heilbron 2013, 78]
- Avoid polyunsaturated vegetable oils such as corn, soybean, safflower, or canola because they are refined and heated to very high temperatures, placed under pressure that increases the heat, and contain residual hexane solvent used to extract the last ten percent of the oils. [Heilbron 2013, 71-73] All vegetable oils contain trans-fats even if they are not hydrogenated and are expeller-pressed. All refined vegetable oils also contain oxidized fats because of the refining process. [Geary 09.30.2014]

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- When corn oil is used to replace saturated fats, it reduces cholesterol, but increases the risk of death from heart disease. [Life Extension, Downey, September 2016, 29]
- Do not use artificial butter. It may contain diacetyl, which promotes protein clumps associated with Alzheimer's. [BLYB 2015, 25]
- Dr. Catherine Shanahan, author of Deep Nutrition, discovered that every patient that had just had a heart attack had eaten vegetable oils with their latest meal. [Geary 09.30.2014]
- Use extra-virgin, cold processed olive oil (perhaps unfiltered) as a food add-on. Olive oil reduces joint inflammation (e.g., arthritis), blood sugar, cholesterol, and blood pressure, contains anti-oxidants, normalizes blood fats, and makes arteries resistant to plaque formation. Pick olive oil with the latest data stamp and a dark bottle to preserve the quality of the olive oil. But use olive oil sparingly because it is Omega 6 intensive. [Heilbron 2013, 78]:
- Trans-fats are artificial fats produced by adding hydrogen to liquid vegetable oil to make them more solid. Trans-fats raise LDL, the bad cholesterol and lower HDL, the good cholesterol. Relatively small amounts of trans fats increase the likelihood of heart disease, diabetes, cancer, and Alzheimer's substantially. They are found in deep fried fast foods (French fries, doughnuts), cookies, potato chips, crackers, etc. The term "partially hydrogenated vegetable oil" means the presence of trans fats. [Healing, 2013, 20; Brain 2011, 201] Once I asked a doctor how many donuts I could eat. He responded "One." I asked "One a day?" No he replied, "One a year."
- Do not use canola oil unless it is "unrefined" and "expeller pressed." Canola Oil is obtained from the rapeseed plant and is produced by heat and pressure using hexane, a solvent. It is bleached (with clay), degummed, deodorized (with steam distillation), and hydrogenated (hydrogen atoms added). The production processes damage the Omega 3s and 6s, and create trans fats. Further, small amounts of erucic acid remain (about two percent), which may be toxic. It may create a vitamin D deficiency and heart lesions in a diet low in saturated fats and may contain BHT and BH preservatives. [Steven Sinatra, M.D., Bottom Line's The Healing Kitchen, 2012, p. 196]
- For salad dressings, use olive oil with balsamic vinegar; do not use commercially prepared dressings because they are Omega 6 and heat-extracted-oil intensive and damage cell membranes.
- Plant-based sources of Omega 3s include flax, hemp, walnut, and soybean, but these are medium chain Omega 3s which the body must convert to long-chain Omega 3s; the conversion requires energy and is inefficient because only about ten percent of the medium-chain Omega 3s are converted to long chain Omega 3s— notable, cattle have a very high conversion ratio of medium-chain Omega 3s to long chains as they eat grass because they have multiple stomachs, and that's the benefit of eating grass-fed beef. [Young July 2010]

Fats and oils: Saturated fats

- Because of conflicts among research articles and medical doctors regarding the harm or lack of harm from saturated fats, I have separated saturated fats from other fats and oils. Many years ago, medical opinion hypothesized that saturated fats were harmful which led to increased refined carbohydrates which caused diabetes and led to reduced nutrition because vital nutrients were refined out of grains. Later, some medical practitioners concluded the lack of scientific research on saturated fats reversed unsupported opinion and suggested lack of harm from saturated fats. Additional research showed that substitution of saturated fats with non-saturated fats reduced cholesterol and implied reduced mortality (i.e., longer life). There are other indications that lower cholesterol may lead to increased mortality (shorter life span). The following material in this section adds additional research to show that substitution of saturated fats with non-saturated fats does lead to lower cholesterol, but that lower cholesterol does not necessarily lead to reduced mortality. At the end of this section we offer tips to reduce the harm from saturated fats if, indeed, there is harm from saturated fats.
- Consume reasonable amounts of high-quality saturated fat. Saturated fats make up 50 percent of cell membranes, provide cells (and the heart muscle) with stiffness and integrity, assist bones in the absorption of calcium, lower apolipoprotein-B a cause of heart disease, protect the liver from toxins including alcohol, fortify the immune system, and are necessary for the utilization of essential fatty acids (e.g., Omega 3s). [Heilbron 2013, 69-70] Sources for good quality saturated fats include grass-fed meat and coconut oil.
- In my opinion, one should limit consumption of red meat to under 18 oz. per week.
- Group 1 Saturated fats: Scientific evidence that saturated fats are harmful:
 - Based upon a study of 83,349 women and 42,884 men, it was found that substituting polyunsaturated fats and monounsaturated fats for saturated fats reduced total mortality (increased life span) by 27% and 13%, respectively. [Wang 07.05.2016]
 - A panel of dietary experts meeting at The University of Copenhagen, Denmark on May 28-29, 2010 concluded that a 1% reduction of saturated fatty acids with polyunsaturated fatty acids reduces LDL cholesterol and leads to a 2-3% reduction in the incidence of coronary heart disease (CHD). There are no benefits from substituting refined carbohydrates for saturated fats but there may be CHD benefits by substituting unrefined carbohydrates for saturated fats. [Astrup 2011; Mensink 2003 Abstract] The panel did not specify how intervention would affect total mortality.
 - A study of 12,763 men from 1958 and 1964 ages 40-49 years indicated strong positive associations between death rates from coronary heart disease and four

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major saturated fats (i.e., lauric, myristic, palmitic, and stearic acids), trans-fatty acid (elaidic), and dietary cholesterol. [Kromhout 1995]

- Group 2 Saturated fats: Scientific evidence that saturated fats are not harmful:
 - Health Alert and Bottom Line Yearbook 2016 indicate that saturated fat does not increase heart risk. The “bad saturated fat” theory of heart disease has injured hormone health and set the foundation for increased consumption of processed foods and refined carbohydrates which contribute to weight gain and diabetes. [Health Alert, February 2015, 5; BLYB 2016, 1]
 - “An analysis of about 80 studies that involved more than 500,000 people found that saturated fat does not increase heart disease risk.” [BLYB 2016, 1]
 - “There is no significant evidence for concluding that dietary saturated fat is associated with an increased risk of CHD (coronary heart disease) or CVD (cardiovascular disease).” [Siri-Tarino 2010]
 - “There is growing evidence that SFAs [saturated fatty acids] in the context of daily foods, particularly fermented dairy products, have neutral or inverse associations with CVD [cardiovascular disease]. “Inverse” means larger amounts of fermented dairy products lead to reduced cardiovascular disease. [Siri-Tarino 2015, Abstract]
 - “Results and conclusions about saturated fat intake in relationship to cardiovascular disease, from leading advisory committees, do not reflect the available scientific evidence.” [Hornsellar 2012]. Baked goods, French fries, potato chips, etc. are fat, sugar, and salt-intensive and should be avoided.
- Consume one or more teaspoons of organic, extra virgin coconut oil per day to improve memory. Cognitive impairment may be caused by the brain not being able to process glucose (created from carbohydrates) into energy, thereby restricting the creation of new brain cells and causing memory problems. Coconut oil contains 2/3 medium chain triglycerides (the remainder of the saturated fats are belly fat) which are converted into ketones, and the brain can process ketones directly into energy, thereby permitting new brain cell formation. Thus, taking daily coconut oil supplies energy to the brain that builds new brain cells, thereby improving memory. Other sources of ketones are high quality fatty acids generally which are converted to ketones in the liver. [Heilbron 2103, 95] [See also Vitamin B.]
- I would now like to offer tips to reduce or eliminate the harmful effects of saturated fats if indeed, there is harm from saturated fats. The objective of these tips is in part to keep arteries free of cholesterol.
 - Take about five Wobenzym-N protein digesting enzymes between meals to pass the tummy intact and digest fibrin in the arteries (and amyloid β plaque and tau tangles in the brain). Take this dosage of five once a day.

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- Take Vitamin E tocotrienol to help keep arteries clean.
- Take resveratrol and perhaps red wine or grape juice to reduce heart disease and live within the French paradox (i.e., high cholesterol and low incidence of heart disease).
- Take a complete digestive enzyme (e.g., Garden of Life Ω -Zyme) before meals that are fat intensive.

Fats and oils: Olive oil

- Extra virgin olive oil is the only oil that is high in monounsaturated fatty acids and polyphenols.
- Polyphenols are natural compounds that:
 - Are the principal reason for the health benefits of olive oil,
 - Are anti-inflammatory,
 - Are free radical scavengers,
 - Inhibit oxidation,
 - Increase the availability of nitric oxide which improves blood vessel lining.
 - Reduce LDL, increase HDL, reduce LDL oxidation, and reduce blood clotting.
 - Extend shelf-life without heat altering the oil.
- Polyphenols are also found in fruits, vegetables, tea, wine, and cocoa.
- Polyphenol content varies widely—up to five times in comparison tests. One brand with high polyphenol content is California Estate Extra Virgin Olive Oil perhaps available only by special order. [Life Extension, Downey, September 2016, 27]
- There is evidence that about 75 percent of extra virgin olive oil has been subject to adulteration or diluted. [Life Extension, Downey, September 2016, 28]
- Olive oil protects against diabetes, cancer, rheumatoid arthritis, Alzheimer's, osteoporosis, neurodegenerative disease, skin aging, and premature death. [Life Extension, Downey, September 2016, 24]

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Fiber, Insoluble

- All fiber is a carbohydrate that does not get digested in the intestinal tract.
- Insoluble fiber does not dissolve in water. It adds bulk to the intestinal tract and speeds elimination thereby preventing constipation. It is not digested or absorbed. [Web MD, 07.04.2015; Brain 2011, 159]
- Insoluble fiber absorbs bile and cholesterol in your intestines and eliminates them after absorption. Thus, insoluble fiber is one way of reducing cholesterol naturally. [Baker 2014, 1]
- Insoluble fiber protects against heart disease, stroke, diabetes, cancer, diverticulosis, improves mental health, and is anti-inflammatory. One study found that a ten-gram increase in fiber reduced the risk of stroke by 41 percent in men with high blood pressure. The enteric nervous system, composed of neurons, lies in both the brain and the gut and fosters communication between the brain, gut, and spinal cord. Both the brain and the gut need serotonin for good mood. High fiber cereals promote good mood, but some contain gluten. [Brain 2011, 160-1]
- Sources of insoluble fiber include whole grains, wheat bran, seeds, nuts, barley, carrots, brown rice, zucchini, celery, broccoli, cabbage, onions, tomatoes, carrots, cucumber, green beans, dark leafy vegetables, raisins, grapes, oranges and apples (whole, not juice because of the absence of fiber and juice's sugar intensity), fruit, quinoa, and root vegetable skins, [Web MD, 07.04.2015].

Fiber: Soluble

- Soluble fiber dissolves in and attracts water and combines with other substances to form a gel-like material in the stomach that prevents fats, sugars, and cholesterol from being absorbed thereby controlling blood sugar, and lowering LDL (bad) cholesterol. [Baker 2014, 1]
- Sources of soluble fiber include black beans, kidney beans, navy beans, oatmeal, whole grain oats (germ, endosperm, and bran), oat bran, apricots, apples, grapefruit, mangos, oranges, Brussels sprouts, turnips, sweet potatoes asparagus, and flaxseeds.

Foods Banned in Other Countries, but not in the United States

- Farm raised salmon
 - Farm raised salmon is fed grain (higher Omega 6s), toxic antibiotics to kill bacteria from poop in the water, vitamins, drugs, and chemicals unsafe for humans. It has at least 50 percent less Omega3s than wild salmon, may contain higher levels of PCBs, dioxins, toxaphene, and dieldrin than wild salmon, and has more toxic fish viruses.
 - Farm raised salmon is banned in Australia (1975), New Zealand (2006), and Russia (2006).
- Genetically engineered papaya

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- Genetically engineered foods may be harmful to human health
- GE papaya is banned in the European Union.
- Ractopamine/Paylean/Optaflaxx
 - Beta agonist drug for grain-fed cattle livestock; 45 percent of pigs, 30 percent of cattle, and an unknown percentage of turkeys; avoided for grass-fed livestock.
 - Causes hyperactivity, chromosomal abnormalities, and behavioral changes in humans
 - Banned in Russia, China, and Taiwan.
- Brominated vegetable oil
 - Originally developed as a flame retardant.
 - Now used in citrus-flavored sodas and sport drinks; good reason to drink purified water.
 - Creates many health problems including cancer, organ damage, leads to iodine deficiency, etc.
 - Banned throughout Europe and Japan.
- Food dyes
 - Includes Red 40, Yellow 5, Yellow 6, Blue 2, etc.
 - Causes behavioral problems, birth defects, allergy-like hypersensitivity in children.
 - Banned in Norway and Austria
 - *SPT rule: Do not consume foods with food dyes.*
- Arsenic-laced chicken
 - Chicken feed contains arsenic to speed growth and improve color of chickens.
 - Causes kidney damage, low IQ, etc.
 - In 2007, about 70% of chickens were fed arsenic feed; one company has discontinued use of arsenic feed.
 - Banned in European Union.
- Potassium Bromate
 - Used in breads and associated foods
 - Causes kidney and nervous system damage, thyroid problems, cancer, etc.
 - Banned in Canada, China, European Union.
- Olestra/Olean
 - Cholesterol-free fat substitute.
 - Causes weight gain, digestive tract disorders, depletion of carotene and fat soluble vitamins (ADEK)
 - Banned in United Kingdom and Canada.
- BHA and BHT preservatives
 - Found in beer, breakfast cereals, nut mixes, butter spread, meats.
 - Causes cancer, hyperactivity, etc.
 - Banned in European Union and Japan.

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- rBGH
 - Synthetic version of natural bovine somatotropin (BST); increases milk production.
 - Causes colorectal, prostate, and breast cancer.
 - Banned in Australia, New Zealand, Israel, European Union, Canada.
- International ban on all US milk production [Mercola]

Free radicals and antioxidants

- Free radicals (reactive oxygen species) are oxygen molecules (e.g., O₂⁻, H₂O₂, OONO⁻) with one or more missing electrons (termed “unpaired”). The unpaired, or missing electron, is often caused by oxidation and causes a chain reaction in which the molecule with the missing electron steals an electron from DNA or cell membrane setting up the potential for cell damage, cancer, and other illnesses.
- Antioxidants are compounds (e.g., Vitamin E, Vitamin C, carotenoids) that donate electrons to unpaired molecules to prevent cellular damage from free radicals. While the missing electron in an antioxidant is desirable from the viewpoint of the electron donee, the electron donor is still missing an electron and is a damaged molecule. Earthing is a better source of electrons because there are no damaged molecules.
- Vitamins C and E, carotenoids, and selenium are four primary sources of antioxidants. Vitamin C and E act synergistically as antioxidants and neither act well as an antioxidant on its own. Vitamin E is the better antioxidant, but Vitamin C is an electron donor to the Vitamin E radical (Vitamin E with one or more missing electrons) and, thereby, reconstitutes Vitamin E as a continuous antioxidant. Therefore, it is necessary to have adequate Vitamin C and E to perform antioxidant activity. [Nature, Vol. 278, April 1979, page 737-8]. Carotenoids include beta-, alpha- and gamma-carotene, lutein, astaxanthin, zeaxanthin, lycopene, etc.
- Food source **rankings** of antioxidants depend upon the category of ingredients as follows: [Protegente 2002]
 - Anthocyanins: Strawberries, raspberries, and red plum.
 - Flavanones: Oranges and grapefruits.
 - Flavonols: Onions, leeks, spinach, and green cabbage.
 - Hydroxycinnamates: apples, tomato, pears and peaches.
- Blueberries and prunes are very high in antioxidants. [Baker 2014, 15]
- There is a counter argument that antioxidants may not be effective and perhaps harmful to defeat cancer. This viewpoint explains that antioxidants do not have accessibility to mitochondria, the cellular energy portion of the cell where tumor promoting reactive oxygen species (ROS) are produced. Some researchers believe that antioxidants may support cancer growth while oxidants kill cancer; radiation therapy kills cells with oxidants. [Primister 2014]

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- While there is a correlation between anti-oxidants and the reduced incidence of cancer because they defeat reactive oxygen species, excess reactive oxygen species are necessary to activate internal cell programming that cause cancer cell apoptosis and defeat metastasis. [Zeisel 2004 Expanded abstract] Synthetic antioxidants damage this protective mechanism, actually encouraging cancer cell growth. Oxygen free radicals or pro-oxidants, which antioxidant supplements mop up and destroy, are critical in cancer treatment because they are used by the immune system to activate programs for cancer cell suicide.” Further, “...antioxidants increased cancer cell metastasis (spread).” “...cancer should be treated with pro-oxidants and that cancer patients should NOT supplement their diet with large doses of anti-oxidants.” [Health Alert 33(1), 1-3] “Antioxidants promoted distant metastasis in NSG Mice.” [Piskounova 2015, Abstract]
- “Large doses of antioxidants may be harmful to neural stem cells.” [Wartiovaara 11 June 2015]

Garlic

- Garlic contains allicin, a Sulphur compound, that has many benefits.
- Aged garlic extract, an alternative to garlic cloves, protects brain nerve cells from toxins and acts as an antioxidant. [Bottom Line 100, 80-81]
- Reduces the severity and likelihood of Alzheimer’s; one recent study from India indicated that aged garlic extract may delay or prevent Alzheimer’s. by keeping amyloid plaques from forming. [Brain 2011, 107-110]
- Reduces blood pressure by increasing nitric oxide.
- Reduces blood clots that cause heart attacks.
- Modestly lowers cholesterol.
- Fights both bacterial and virus infections.
- Reduces cholesterol and triglycerides.
- Reduces systolic blood pressure (pumping) by 8 mmHg to 16 mm Hg and diastolic blood pressure (resting) by 7 to 9 mm Hg.
- Reduces stomach, intestinal, and esophageal cancer.
- Increases effectiveness with onions.
- Has antibacterial effects.
- Garlic supplements may be dangerous if you are taking a prescription blood thinner (e.g., warfarin/Coumadim), because it reduces clotting and may increase the likelihood of uncontrolled bleeding. [Brain 2011, 111]

General health and dietary rules

- One of the problems with the healthcare system in the United States is that doctors can be sued or lose their license if they “stray from standard treatment protocol,” which generally do not include alternative and complementary medical practices the likes of

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which are contained in Six Pillar Tips. [Heilbron 2013, 8] Thus, your awareness of alternative and complimentary medicine is crucial to your well being.

- When you visit your doctor's office or emergency room, be prepared to provide a complete and accurate description of your symptoms and their chronology. **That means writing down the symptoms and timing before you see the doctor.** If you do not write them down, it is highly likely that your description will leave out important details and increases the likelihood of the doctor not making a correct diagnosis. Be sure to ask questions about the doctor's reasoning that links your statements with his diagnosis and treatment. If he is unwilling to explain, consider another doctor. [BLYB 2015, 34]
- Eat about 1 ¼ pounds of fresh, organic fruits and vegetable daily.
- Minimize processed and fast foods which contain heat altered oils (which damage cell membrane structure) and high concentrations of salt and refined carbohydrates.
- Do not drink sugar-intensive soft drinks and fruit juices, the latter of which probably have added sugar and no fiber to reduce the glycemic index. [Shallenbergter, Foods that Heal 2014, 7]
- Do not eat white bread, white potatoes, or white rice which rapidly convert to glucose.
- Avoid caffeine as a stimulant; rather exercise throughout the day which is the preferred stimulant.
- Never eat cooked foods that were left out overnight even if it is reheated. There is too great a chance of bacteria forming. [BLYB 2015, 31] In my opinion, it is also unwise to take home food from a restaurant because of the absence of refrigeration during transportation.
- Do not use wipes to clean grocery store cart handles. The disinfectants are absorbed by the skin, are unhealthy for cells and organs, and may be carcinogenic. It is better to avoid hand/mouth/ear/eye contact and wash hands when you arrive home.
- As a general rule, purchase refrigerated foods from the back of the rack to assure their temperature has remained cold. [BLYB 2015, 30]
- Best to use two cutting boards in the kitchen: One for poultry/meat and the other for produce. Wash each with soap and water before each use. [BLYB 2015, 31]
- Unpasteurized milk (raw milk) has a 150 times chance of being contaminated than pasteurized milk. [BLYB 2015, 31]
- Kitchen faucet handles are sources of bacteria so wash them frequently. [BLYB 2015, 31]
- Constant use of aspirin may cause severe kidney problems and you won't know if it does until you get the kidney problem, so avoid the constant use of aspirin.
- Do not use your fingers to transfer chemicals (oils, greases, paint, etc.) or to test for paint color. The skin absorbs these chemicals, which may lead to serious illness. This rule particularly applies to mechanics who frequently come into direct contact with these chemicals.

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Glycemic Index

- The Glycemic Index is a measure of how much blood glucose rises in two hours for a test food compared with the rise in blood glucose from pure glucose (or white bread) in two hours. Since white bread is equivalent to glucose for the test, it means that white bread is pure glucose from the insulin point of view. The lower the ratio, the lower the insulin response; the objective is to reduce the speed of the insulin response, so lower GI foods are preferred (e.g., 55 percent).
- Cherries have a glycemic index of 22 making them the lowest glycemic of fruits and very low among all carbohydrates. [BioTrust Nutrition, April 29, 2016]

Grains, whole

- Cooked whole grains are excellent sources of many vitamins, minerals, and fiber.
- Whole grains are carbohydrates that convert into glucose, although the glycemic index may be much lower than sugar.
- Increasingly, I am finding that alternative medicine practitioners are recommending avoiding or minimizing whole grains because of the carbohydrate-to-sugar conversion, and the need to reduce sugar.
- Protein intensive breakfast alternatives are eggs and beans.

Iodine

- A clinical study has indicated that 1/3 of pregnant women are iodine deficient; the cause may be that iodine is not added to salt in processed foods. An iodine deficiency may impede brain development in the infant, and it is wise to be tested and take a supplement of potassium iodide, the preferred form of iodine over sodium iodide. [Pediatrics June 2014; Health Day Reporter, May 26, 2014]

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Iron

- Iron comes in two forms:
 - Heme iron, which is found in meats, fish, and poultry and is easily absorbed.
 - Nonheme iron, which is found in dried fruits, vegetables, grains, and nuts and is less easily absorbed. [Brain 2011, 167]
- Iron deficiencies cause anemia, low energy, memory loss, low oxygen levels, etc. [Brain 2011, 169]
- Do not take too much iron. Iron can cause hardening of the arteries, prompt heart attacks, constipation, and memory loss. [Baker 2007, 21]
- One should not get more than 20 milligrams of iron supplements daily. It should be taken on a full stomach with 250 mg of Vitamin C to boost absorption. [Baker 2007, 21-22]
- Iron rich foods include meat poultry, salmon, broccoli, asparagus, Brussels sprouts, and dried beans and lentils. [Baker 2007, 21-22]
- Cast iron frying pans add iron to the diet which may cause iron overload. Enameled frying pans (e.g., Le Cruset) are believed to be safer. Non-stick frying pans may emit carcinogenic compounds when they overheat.

Ketogenic Diet

- The ketogenic diet contains moderate proteins, very low carbohydrates, and very high amounts of fat. Energy comes from ketones produced in the liver. The ketogenic diet began in the 1920s to treat intractable epilepsy providing a 90 percent reduction in 1/3 of the cases. [Retelny 2016, 17]
- The ketogenic diet reduces carbohydrates to as little as 20 grams/day and forces the body to use fat for energy through ketosis rather than from carbs-to-glucose. Thus, the ketogenic diet may result in weight loss. [Retelny 2016, 17]
- Since cancer thrives on sucrose from carbohydrates, the reduced carbs in the Ketogenic Diet help in defeating cancer.
- The disadvantages of the ketogenic diet are increased lipids (e.g., LDL-C), kidney stones, bone fractures from inadequate calcium and vitamin D. [Retelny 2016, 17]

Lemons

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- Lemons assist in cleansing your body of toxins, boost your immune system, improve your mood, increase energy levels, prevent kidney stones, reduce acid reflux, and speed weight loss. [Baker 2014, 185]
- Lemons, while acidic prior to eating, become alkaline after digestion and alkalinity defeats cancer and colds and flu.
- Lemons and limes added to distilled water assist in re-mineralizing the water with good minerals.
- Lemons reduce cravings for cigarettes, alcohol, and junk food. [Baker 2014, 185]

Licorice

- *Black licorice contains glycyrrhizin, which causes potassium levels to fall leading to irregular heartbeat, high blood pressure, lethargy, and congestive heart failure for older individuals if taken 2 ozs per day for at least two weeks. [Dr. Crandall's Heart Healthy Report, 12.30.2017]*

Magnesium

- Magnesium is a mineral that is crucial for many body functions and is the nucleus of the chlorophyll molecule. [Dean 2007]
- A few of the functions of magnesium are to:
 - Bind with the enzyme ATP, the main source of energy in our cells. This may be the most important function of magnesium.
 - Bind with many other enzymes for the enzymes to perform their protective role in our bodies.
 - Decrease the excitation of nerves and contraction of muscle cell membranes.
 - Contribute to structural integrity of many proteins
 - Increase the structural integrity of RNA and DNA nucleic acids
 - Contribute to intercellular signaling.
 - Improve muscle function.
- Soils are increasingly magnesium deficient. I suspect that organically raised crops may be better because of greater diversity in natural fertilizers containing minerals and enzymes.
- There has been a decline in dietary magnesium from 500 mg/day at the 'turn of the century to 175-225 mg/day today.
- 28 atoms of magnesium are required to breakdown one molecule of glucose and 56 atoms of Mg are necessary to breakdown one molecule of fructose. Thus, it takes massive amount of Mg to digest sugar and fructose.
- There are 56 symptoms associated with a Mg deficiency. These include acid reflux, adrenal fatigue, Alzheimer's, angina, anxiety and panic attacks, arthritis, asthma, atherosclerosis with calcium deposits, blood clots, bowel disease, brain dysfunction,

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cholesterol elevation, cystitis, depression, detoxification, diabetes, eye blinking, fatigue, headaches, heart disease, hypertension, hypoglycemia, indigestion, inflammation, insomnia, IBS, kidney disease, kidney stones, leg cramps, migraines, musculoskeletal condition, nerve problems, obstetrical and gynecological problems, osteoporosis, Parkinson's disease, Raynaud's syndrome, sports injuries, sports recovery, and tooth decay.

- Higher levels of magnesium and Vitamins K1 and K2 contribute to reduced coronary artery calcification. [Life Extension, "In The News," September 2016, 17]
- Magnesium is required to control yeast formation because of excess acetaldehyde.
- It is estimated that up to 50% of migraines could be reduced with additional Mg.
- Dr. Dean suggests that sensitivity to EMFs may be caused by an Mg deficiency
- The best currently available test may be the RBC test until the Ionized Mg Test becomes more readily available.
- The target range of Mg is 6.0 to 6.5 mg/dl. It may take up to one year to achieve these targeted levels.
- Mg supplementation is not easy because some products act as a laxative and Mg has a very low absorption rate; 20 percent is probably the maximum. Mg water sprays are available that may be more effective. Mg thornate is the most popular supplement at one vitamin store.
- Supplementing with calcium without adding Mg may increase the risk of heart disease and inflammation
- High dose Vitamin D requires additional Mg.
- The intercell microcurrents of electricity are governed by calcium channels that are governed by Mg, which must have concentrations 10,000 times that of calcium. Thus, inadequacies of Mg affect adversely intercell microcurrents.
- Magnesium absorption depends upon adequate stomach acid.
- A high protein diet increases the need for Mg.
- Phytic acid binds with Mg to render it not-digestible.
- Magnesium deficiencies aggravate asthma. It may be helpful to take 400 mg each of magnesium gluconate and calcium citrate twice a day under medical supervision. [Baker 2007, 48]

Meat

- Eat grass-fed beef for their (1) high Omega 3 (anti-inflammatory) and low Omega 6 concentrations (inflammatory), (2) increased enzymes from natural field fertilizers including cow poop and dead grass, (3) healthy concentrations of fats including saturated fats, and (4) lower total fat content.
- Grass-fed beef and bison have less than 50% (perhaps as little as 30 percent) of the total fat as grain-fed cattle, they are Omega 3 intensive—some have more Omega 3s than wild salmon. It's a good idea to eat a bit of grass-fed red meat—maybe six to ten ozs. per

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week. But it's also a good idea to avoid grain-fed red meat because it is Omega 6, inflammatory intensive.

- Grass fed beef is naturally lean and one major chain that sells grass-fed-to-slaughter [(GFTS); termed “organic” meat] does not age its GFTS beef because they claim it cannot be done successfully; beef that is not aged is much tougher than non-aged meats and is a real task to chew. I have, however, observed on-line sellers of GFTS beef being dry-aged.
- Omega 3 fats contribute to low blood pressure, regular heartbeat, improve brain function in old age, reduce the chance of a heart attack by 50 percent, reduce the likelihood of cancer, and reduce the likelihood of depression, Alzheimer's, and attention deficit disorder (hyperactivity [Johnson 2010]
- Eat butter from grass fed cows for its Omega 3s, vitamins and minerals, and good saturated fat.
- Eat eggs from grass-fed, free range chickens for their Omega 3 concentrations and other nutritional benefits. Eggs from grass fed, free range chickens may have as much as 20 times more Omega 3s as factory chickens raised in cages. [Johnson 2010]
- 20 percent of Americans have undetectable amounts of Omega 3s. [Johnson 2010]
- Grass-fed cattle also are rich in conjugated linolenic acid (CLA), which is important to prevent cancer. In a Finnish study, women who had the highest levels of CLA in their diet had a 60 percent lower risk of breast cancer than those with the lowest amount of CLA. [Johnson, 2010]
- Grass-fed beef has four times the amount of Vitamin E found in grain-fed cattle. [Johnson 2010].
- Do not eat grain-fed cattle (or grass-fed and then grain-fed in the feed lot) because of their high concentrations of Omega 6s, which are inflammatory.
- About 25 percent of meat is now being mechanically tenderized by inserting hundreds of tiny blades in the meat to break down muscle fibers. If E. coli is present on the surface of the meat, it will be driven deep into the meat where cooking rare or medium may not kill them. It is now necessary to cook meat to a temperature of 160 degrees to kill E coli. [BLYB 2015, 30]
- Chicken and ground beef have the highest risk for food borne illnesses. Pork, roast beef, most deli meats and barbequed beef or pork have medium risk. [BLYB 2015, 32]
- It has long been believed that the cholesterol and saturated fat in red meat contributes to atherosclerosis (i.e., heart disease). But recent research by the Cleveland Clinic reported in Nature Medicine on April 7, 2013 that a chemical called TMAO is the principal cause. TMAO is produced in the liver from intestinal bacteria found only in red meat eaters acting on L-carnitine. Thus, vegetarians and those on antibiotics do not have the necessary intestinal bacteria to process L-carnitine into TMAO. In Request # 890342, I asked Cleveland Clinic if probiotics defeated the intestinal bacteria that later produces TMAO, and they replied: “We don't have a probiotic that does this yet...of all we have

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screened-but we are hoping to find a potential therapeutic approach to suppress TMAO production.”

- Cooking at high temperatures affect adversely illnesses caused by meat preparation. Cooking meat at high temperature generates heterocyclic amines (HCAs) that can cause cancer. HCAs cause the protein in beef, pork (bacon), poultry, and fish to interact with creatine Well done meats are more harmful. Thus, folks who eat the most meat are twice as likely to get bladder cancer and other cancers as well. [Super 2012, 38]
- Grilling meat over hot charcoal (or over electric coils) releases chemicals that are carcinogenic because the smoke from any type of grilling (e.g., charcoal, electric burners) is carcinogenic. [Uncommon Cures 2009, 80]
- Dietary fat and protein thickens the blood for several hours after eating. [Shallenberger Healing 2015, 11]

Mediterranean diet defined

- Life Extension, April 2017, p. 29 defined the Mediterranean diet as a plant-based diet resulting in a 37 percent lower mortality, as follows:
 - Olive oil: At least 4 tbsp./day.
 - Tree nuts and peanuts: At least three servings per week. I believe one serving is about one ounce.
 - Fresh fruits, organic: At least three servings /day
 - Vegetables, organic: At least two servings per day.
 - Fish (especially fatty fish) and seafood: At least three servings per week.
 - Legumes (beans): At least three servings per week.
 - White meat: Instead of red meat.
 - Wine with meals (optional): At least seven glasses per week. In my opinion, supplementing with resveratrol or Kadem Sparkling Concord Grape Juice may be suitable alternatives.
 - The benefits of the Mediterranean diet come from polyphenols which are anti-inflammatory.
 - Foods to be discouraged are:
 - Soda drinks: Less than one per day. My recommendation is zero because of sugar and caffeine.
 - Commercial baked goods, sweets, pastries: Less than three servings per week.
 - Spreadable fats (butter, etc.): Less than one servings per day.
 - Red and processed meats: Less than one servings per day. In my opinion, grass fed red meats are more acceptable while processed meats are less acceptable.

Modified citrus pectin (MCP)

- Modified citrus pectin is a dietary supplement derived from the inner white pulp of citrus peels used to chelate (bind and remove) heavy metals from the body. It is a complex polysaccharide that is soluble fiber. D-galacturonic acid is the principal monosaccharide in pectin. Unmodified pectin is indigestible. There is no evidence of harmful side effects from MCP. [Zhao 2008, 35]
- Citrus pectin is modified by pH and temperature to break down pectin's long, branched chains of polysaccharides into shorter unbranched lengths of soluble fiber molecules which are digestible. [Nicholas 2009]
- MCP inhibits cancer metastasis, reduces tumor growth, reduces cholesterol, and is a safe heavy metal chelator for lead, mercury, cadmium, and arsenic. During a period of four to ten months, Dr. Eliaz found that mercury was reduced by between 38 and 74 percent. [Eliaz] In other research, it was found that a six-day treatment with Pectasol MCP increased urine arsenic by 130%, mercury by 150%, cadmium by 230%, and lead by 560%. MCP does not affect other mineral concentrations and has no side effects. [Phytother 20, 2006, 859-864 reported in the Journal of Natural Healing February 2017, 4]
- MCP is an effective chelator of lead in children with over 50 percent reduction in a clinical study. [Zhao 2008, 36]
- MCP inhibits carbohydrate-mediated tumor (cancer) growth, angiogenesis, and metastasis in vivo and prostate cancer metastasis. [Nangia-Makker 2002; Pienta 1995]

Mushrooms, *Cordyceps sinensis*

- Wild cordyceps sinensis mushrooms are a very precious Chinese fungus medicine used for over 2000 years. They grow wild inside of caterpillars and have been produced by fermentation to meet growing demand. [Chen 2006, 2742]
- The polysaccharides found in cordyceps sinensis are anti-oxidants, modulate the immune system, and are anti-tumor/cancer through the anti-oxidant activity [Chen 2006, 2748]

Mushrooms, *Cordyceps militaris*

- There is evidence that *C. militaris* are beneficial for pro-sexual, anti-inflammatory, anti-oxidant, anti-aging, anti-tumor, anti-cancer, anti-leukemia, anti-proliferative, anti-metastatic, immunomodulatory, anti-microbial, anti-bacterial, anti-viral, anti-fungal, anti-protozoal, insecticidal, larvicidal, anti-fibrotic, steroidogenic, hypolipidaemic, anti-angiogenetic, anti-diabetic, anti-HIV, anti-malarial, anti-fatigue, neuroprotective, liver protective, reno-protective and pneumo-protective. [Das 2010, Abstract]
- Fermented *C. militaris* effected apoptosis (cell death) of cultured brain or spinal cancer cells. [Yang 2012, Abstract]
- *Cordyceps militaris* water extract (*C. militaris* is a second line of cordyceps mushrooms) improves insulin utilization by increasing the glucose disposal rate. [Choi 2004, 2264]

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Niacinamide

- Niacinamide in the form of NAD (nicotinamide adenine dinucleotide) is important for the metabolism of fat and glucose and inhibits the breakdown of DNA. It may also be used to treat type 2 diabetes, but it is essential to take niacinamide under the care of a medical practitioner because it can be harmful in large doses. Niacinamide in large doses (e.g., 2-3 gms/day) can cause liver damage, stomach ulcers, irregular heartbeat, gout, loss of vision, and high blood glucose.

Nitric oxide

- Nitric oxide has the following benefits:
 - Increases delivery of oxygen and nutrients to cells and organs.
 - Activates the learning center of the brain.
 - Helps the brain receive and send messages more quickly.
- By age 40, nitric oxide begins to decline, and it becomes necessary to take supplements and eat special foods. L-arginine is somewhat effective when you are young, but as you age, it becomes ineffective in increasing nitric oxide. A preferred supplement is L-citrulline which is found in melon.
 - Food and supplements to increase oxygen and nitric oxide to cells are the following: [Sears, Confidential Cures, V(11), 4-5]
 - ◆ L-Arginine, an amino acid, which creates nitric oxide. Dosages is 500 mg per day.
 - ◆ Beets. Beets increase the production of nitric oxide. The benefits are available in preferably organic beet juice, beet fruit, beet leaves, and beet root. Hawthorn extract increases the benefit of beets: 250 ml of beet juice and 15 drops of Hawthorne extract.
 - ◆ Omega 3 fatty acids makes red blood cells more flexible to deliver oxygen and remove carbon dioxide.
 - ◆ Cordyceps sinensis mushrooms furnishes oxygen rich polysaccharides. Dosage is two to five grams daily. It has been shown that these mushrooms increase cellular oxygen by 40 percent.
 - ◆ Rhodiola rosea increases oxygen intake with a dosage of 200 mg daily.

Nuts

- The term “nuts” includes almonds, cashews, hazelnuts (filberts), macadamia, peanuts, pine nuts, pistachios, and walnuts. Peanuts are really in the lentil family but are included in nuts because of their similarity to nuts generally. [Ibarrola 2013, 2]
- Nuts are composed of 45-75 percent fat, high quality vegetable protein, fiber, antioxidant vitamins, and minerals such as calcium, magnesium, copper, selenium, potassium, little sodium unless salted, phytosterols, and polyphenols. The fats are mono- and polyunsaturated which are a good source of energy; It is wise to increase consumption of

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fats and reduce consumption of refined carbohydrates. The polyphenols include flavonoids and proanthocyanidins. [Ibarrola 2013, 2; HarvardM 2012, 6; O’Neil 2015, 1] Nuts are rich in the amino acid arginine, which builds nitric acid that relaxes blood vessels and prevents clotting. Walnuts are rich in alpha linolenic acid, and Omega 3 fatty acids. [EnvirNutr 2013, 5] Nuts do not contain cholesterol. [O’Neil 2015,

- Nuts are believed to be a rich source of nutrients that may reduce the likelihood of cardiometabolic risk factors, some elements in the Metabolic Syndrome, diabetes, oxidation, inflammation, and endothelial function The Metabolic Syndrome (MetS) includes abdominal obesity, insulin resistance, fasting hyperglycemia, diabetes, high triglycerides, low HDL-cholesterol, and high blood pressure, affects about 1/3 of the world’s population, and is increasing rapidly. [Ibarrola, 2013, 2] The MetS is a major risk factor for cardiovascular disease and Type 2 diabetes. [O’Neil 2015, 5]
- The PREDIMED Study (Preveccion Con Dieta Metiterrnea) indicated that individuals consuming more than three servings of nuts per week vs. those consuming less than one serving per week had less obesity, lower MetS, and reduced diabetes. The PREMIMED study is very complex, cites many other studies, and requires full reading of the article to discern its content. [Ibarrola 2013, Abstract]
- In a study of 567 new cases of MetS, it was discovered that there was a 32 percent reduction of MetS for those consuming equal to or more than two servings of tree nuts per week. [Montero 2013, Abstract].
- A review of four studies indicated that one ounce of nuts at least five times per week reduces the likelihood of heart disease by 30-50 percent. [Yates 2012, 70]
- In a study of 3,038,853 person-years of follow-up, it was determined that nut consumption reduced mortality based upon the following consumption pattern; the complement of the hazard ratio is the percentage increase in life expectancy (e.g., for seven or more times per week the increase in mortality is $1 - 0.80 = 20$ percent increase in life expectancy). There was also an inverse relationship between nut consumption and deaths from cancer, heart disease, and respiratory disease. [Bao 2013, Abstract]

Weekly consumption	Hazzard ratio
-----	-----
None	1.00
Less than once per week	0.93
Once per week per week	0.89
Two to four times per week	0.87
Five to six times per week	0.85
Seven or more times per week	0.80

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- In the Nurses' Health Study II, it was found that there was a 31 percent reduced risk of weight gain for those consuming two or more servings of nuts per week vs. those who rarely or never consumed nuts. [NurHealSt 2009]
- "The available data demonstrates that nuts as replacements for carbohydrates have beneficial effects on diabetes risk and management." Nuts perform this function because they are rich in magnesium (regulates blood sugar levels and metabolism), dietary fiber (slows digestion and glucose absorption), L-arginine (improves vascular function), reduces metabolic syndrome, ect. [Kamil 2012,323- 325]
- Calories, fats and proteins in one ounce of various tree nuts are as follows: [HarvardM 2012, 6]

Nut	Calories	Fat (grams)	Protein (grams)
Almond	168	15	6.2
Brazil	184	18.6	4
Cashew	161	13	4.3
Hazelnut	182	17.5	4.2
Macademia	201	21.4	2.2
Pecan	200	20.1	2.6
Pistachio	160	13	6
Walnut	184	18.3	4.3

- The following are the recommended ways of consuming nuts in your diet that eliminates additional weight from the intense fats. [HarvardM 2012, 6]
 - Substitute nuts for other foods rather than adding them to an already calorie-complete diet. This rule will provide the excellent nutrition that nuts provide without weight gain.
 - Limit portions to up to about one ounce which contains about 175 grams of fat.
 - Substitute nuts for red and processed meats, but not ounce for ounce; four ounces of lean chicken is 100 calories, but four ounces of walnuts is 740 calories!.
 - Add nuts to salads so the greens are more satisfying and fills one up to the next meal.
 - Add nuts to breakfast cereals or yogurt so one remains full longer and reduces snacks.

Olive oil

- Often "extra virgin olive oil is not extra virgin (i.e., minimal processing and fresh high quality olives).

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- Brands which are “extra virgin” are California Olive Ranch, Cobram Estate, Whole Foods 365, and Oro Bailen. Good importers are Oliviers & Co. and Zinhgerman’s [BLHB 2018, 79]

Omega 7

- Omega 7 (palmitoleic acid) is a fatty acid that can increase fat breakdown, increase enzymes involved in fat burning, reduce high blood sugar, reduce C-reactive protein, reduce elevated lipid levels, reduce inflammation, reduce excess fat, enhance insulin sensitivity, reduce the likelihood of the metabolic syndrome, and reduce the likelihood of Type II diabetes, cardiovascular disease, obesity, and cancer. [Life Extension, May 2016, 31]
- Natural sources are fatty fish (salmon, tuna, sardines, mackerel, trout), macadamia nuts, and sea buckthorn berries.
- Taking 220 mg of Omega 7 daily for 30 days has been shown to reduce C-reactive protein, a marker for inflammation, 44 percent. In this study, C-reactive protein was reduced from 4.3 (high risk for cardiovascular disease) to 2.1 mg/L. [Life Extension May 2016, 32]
- Omega 7 reduces body fat. Body fat has been shown to increase inflammation and increase insulin resistance (“insulin resistance” means that the body does not respond to rising blood insulin levels). Omega 7 acts as a natural fat/sugar regulating compound. [Life Extension May 2016, 32]
- Omega 7 supplementation also reduces triglycerides and LDL cholesterol and increases HDL. [Life Extension May 2016, 32]

Oregano

- Oregano reduces LDL cholesterol and C-reactive protein, a biomarker of arterial inflammation with use at each meal.
- Oregano stops the oxidation of LDL cholesterol which drives arterial plaque. [BLYB 2016, 84]
- Oregano stops the activation of cytokines that acts on oxidized cholesterol that increases inflammation. [BLYB 2016, 84]
- Oregano is an antimicrobial and can be used as an alternative to Echinacea to increase immunity to colds and flu and relieve sore throats.

Organic foods: benefits of

- The fundamental objectives of organic foods is to use natural fertilizers and eliminate pesticides, although the rules in Title 7, BIM Part 205 of the USDA National Organic Program are very complex. Originally, “organic” referred to using natural vs. synthetic fertilizer, but has been defined to include “pesticide free.” Natural fertilizer includes

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manure (which is rich in enzymes), slurry, worm castings, peat, seaweed, humic acid, guano, etc. Processed natural fertilizer includes compost, bloodmeal, bone meal, amino acids, decomposing crop residue, etc. The use of synthetic fertilizers, sewage sludge, irradiation, and genetic engineering is prohibited. [Wikipedia, “Natural fertilizer”]

- The benefits of organic food are (1) reduced use of synthetic products in the production of food (e.g., pesticides) and (2) increased use of natural fertilizers which are enzyme rich unlike synthetic fertilizers which have no enzymes. See Enzyme Management for the importance of metabolic, digestive, and systematic enzymes.

Pepper, Black

- Black pepper contains piperine which is an alkaloid (nitrogenous compound). Piperine is an anti-oxidant, anti-inflammatory, immunomodulatory, anti-asthmatic, anti-convulsant, anti-mutagenic anti-mycobacterial, anti-amoebic and anti-cancer. [Rather 2018, Abstract]
- Piperine has the ability to create reactive oxygen species in cancer cells, thereby destroying them.
- Spice your foods with black pepper by grinding black peppercorns immediately before using. These peppers contain piperine which kills cancer cells associated with breast, prostate, colorectal, lung, cervical, liver, and stomach cancer. Piperine also increases the bioavailability of curcumin in turmeric by 2,000 percent in humans.
- Black pepper stops damage to cartilage cells and piperine is an anti-inflammatory which reduces the discomfort from osteoarthritis. [BLYB 2016, 83; Wikipedia]

Phytic acid

- [see Ramiel Nagel, “Living with Phytic Acid,” March 26, 2010; Egli 2002], “The Influence of Soaking and Germination on the Phytase Activity and Phytic Acid Content of Grains and Seeds Potentially Useful for Complementary Feeding,” *Journal of Food Science*, Vol. 67, No. 9, 2002, p. 3484-3488; Pallauf, “Nutritional Influence of Phytic Acid and (Enzyme) Phytase,” *Institute of Nutrition and Nutritional Physiology*, 1996, p. 301-19]
- Phytic acid has a simple definition but is an extraordinarily complex topic because of (1) its demineralizing effects, (2) the many types of food containing phytic acid, (3) the variance in quantities of phytic acid and the enzyme phytase, and (4) the difficulty of removing phytic acid from foods. Thus, whatever I say here is inherently deficient particularly concerning ways to avoid the phytic acid demineralization process. Second, if you have a mineral deficiency (e.g., calcium, iron) and if you consume phytic acid-intensive foods which contain minimum levels of enzyme phytase, phytic acid may well be the cause of demineralization and you should set up a strategic plan to reduce consumption of phytic acid or increase enzyme phytase which defeats phytic acid. So, with these caveats, I continue my discussion of phytic acid in the following paragraphs.

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- Phytic acid is a negatively charged molecule of phosphorus, the main storage form of phosphorous found in several food groups, and is not absorbable. It is a strong antioxidant and has benefits for that reason.
- The benefits of phytic acid are it (1) reduces the likelihood of colonic cancer, (2) delays glucose absorption and thereby the risk of diabetes, (3) may lower the level of cholesterol and triglycerides, and (4) may be the partial explanatory reason for the absence of “civilization illnesses” (e.g., high blood pressure, diabetes) in developing countries.
- The problems with phytic acid are that (1) the negatively charged ion of phosphorous attaches to positively charged minerals like calcium, copper, iron, magnesium, manganese, and zinc (the cleation salts of phytic acid are termed “phytates” e.g.,” iron phytate”) and render them not absorbable, thus, demineralizing the body of calcium, copper, iron, magnesium, manganese, zinc,...and phosphorus, (2) its presence results in bone loss from the demineralization of calcium as the body tries to compensate for acidic pH, (3) it renders the enzymes pepsin and amylase ineffective thus impeding digestion, (4) it interrupts Vitamin D metabolism, and (5) it may result in mental retardation due to demineralization.
- Of all phytates, demineralization of zinc is most adversely affected by phytic acid. [Pallauf, “Nutritional Significance of Phytic Acid and Phytase,” Institute of Animal Nutrition and Nutrition Physiology, 1966, p. 301-319.]
- The enzyme phytase, which occurs in foods with phytic acid, defeats phytic acid by hydrolysis (adding water) that degrades the phytic acid permitting absorption of phosphorous and other minerals. The problem is that many foods with phytic acid have inadequate enzyme phytase to degrade all of the phytic acid to absorbable phosphorous and prevent chelation (binding) with other minerals.
- Vitamin D may also improve the digestibility of phytates in the absence of enzyme phytase and probiotics.
- The principal food groups containing phytic acid are grains (rice is a grain and has very low levels of enzyme phytase, so soaking is useless), legumes (beans, lentils, peas, peanuts, soybeans), seeds, and nuts. Most of the phytic acid in grains is found in the bran or outer hull. If there is little bran, there is little phytic acid, but much of the nutrition is found in the bran.
- The amounts of the enzyme phytase and phytic acid and their ratios⁸ for several foods are shown in Table 1 based upon research by Egli, 2002, 3484-3488. Based upon this data, the only cereals with adequate enzyme phytase are rye, triticale, wheat, barley, and buckwheat. Oats (0.14), which is often eaten for soluble fiber to excrete cholesterol, has

⁸⁸ This ratio does not determine excess enzyme phytase to inactivate phytic acid per se, but is offered as an indicator of grains that have excess enzyme phytase, the latter of which are mentioned in the article. Excess enzyme phytase means phosphorous and other minerals are digestible.

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grossly inadequate enzyme phytase to inactivate phytic acid and is certainly a candidate for the cause of mineral deficiencies (e.g., calcium, iron, magnesium, zinc).

Table 1

Enzyme Phytase and phytic acid in cereals, legumes and oilseeds

[see Egli, et.al. "The Influence of Soaking and Germination on the Phytase Activity and Phytic Acid Content of Grains and Seeds Potentially Useful for Complementary Feeding Journal of Food Science, Vol. 67, No. 9, 2002; Table 1 and Table 2]

Cereal	Enzyme Phytase(1) Untreated	Phytic acid(2) Untreated	Ratio:Enzyme Phytase to Phytic acid
-----	-----	-----	-----
Rye	6.92	0.79	8.76
Triticale	4.82	1.29	3.74
Wheat	3.08	1.03	2.99
Barley	1.83	1.01	1.81
Millet	0.24	0.83	0.29
Sweet maize	0.36	1.63	0.22
Rice	0.19	0.88	0.22
Oats	0.14	0.88	0.16
Maize	0.13	1.15	0.11
Sorghum	0.11	1.08	0.10
Pseudocereals			

Buckwheat	2.9	1.42	2.04
Armaranth	1.27	1.39	0.91
Quinoa	0.62	0.97	0.64
Legumes			

Cowpea	0.4	0.66	0.61
Lucerne	0.81	1.36	0.60
Chickpeas	0.25	0.48	0.52
Blackeyed beans	0.39	0.86	0.45
Lupin	0.24	0.67	0.36
Mungbean	0.27	0.83	0.33
Pea	0.2	0.63	0.32

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Dwarf beans	0.28	1.13	0.25
Soybean	0.34	1.40	0.24
Lentils	0.26	1.15	0.23
White beans	0.23	1.08	0.21

Oilseeds

Rapeseed	0.3	1.52	0.20
Sunflower seeds	0.13	1.52	0.09

Footnotes

(1) PU a/g dry matter

(2) g/100g dry matter

- The methods to reduce phytic acid in foods are (1) soak the food in water for varying temperatures and varying periods (if there is little or no enzyme phytase present, soaking is useless; the Egli et.al. research indicated that reduction of phytates by soaking is very limited; reduction of phytates by soaking depends upon temperature-- 140 degrees is best--and duration, but as a vague general rule, one should not expect more than 50% reduction of phytates by optimal soaking), (2) germinating or sprouting increases enzyme phytase, (3) roasting, (4) fermenting (sourdough bread--particular sourdough rye--is the best of all breads in the sense of reducing phytates), and (5) probiotics containing lactobacilli, which create the enzyme phytase. Reducing phytic acid in grains, beans, legumes, seeds, and nuts is very complex because (1) each food reacts differently to these methods, and (2) some foods require a combination of two or more methods (e.g., sprouting and fermenting). I think that the simplest methods of reducing phytic acid are (1) soaking (2) taking a lactobacilli probiotic supplement with the meal, and (3) sprouting or fermenting the phytic acid/minimum enzyme phytase -intensive food.
- Oats, one of the most common cereals, contains little enzyme phytase and overnight soaking has no effect on the phytic acid content. Rolled oats (oatmeal) has some of the bran removed and much of the phytic acid resides in the bran so oatmeal may be better than whole grain oats, but then you lose nutrients in the bran.
- Tentative conclusions:
 - In order to reduce the phytic acid in cereals, eat rye, triticale, wheat, barley and buckwheat. Exercise caution with modern hybrid wheat because it may cause intestinal problems.
 - Take a lactobacilli probiotic (e.g., Digestive Bliss Probiotic) with any other grain and all legumes and beans to avoid demineralization.
 - Soaking beans and grains overnight may help, but the percentage reduction in phytates may be small (e.g., 15 percent).
 - Eat sprouted or fermented phytic acid-intensive foods.

Pomegranates

- Pomegranates are fruits that contain a peel that includes the interior seed separation, arils (fruit and seeds), and seeds around the fruit. The weight of the fruit is partitioned by three percent seeds, 30-percent juice, and 67-percent peel that includes the interior peel. The seed oil contains conjugated linolenic acid and punicic acid. The anti-oxidant attributes of the juice are more potent than red wine and green tea. There are many other chemical components that are highly complex. [Syed 2013, 1149]
- Pomegranates are known for their anti-oxidant and anti-inflammatory attributes, which come from the polyphenols. But the polyphenols are concentrated in the peel and the pericarp so pressing the entire pomegranate is necessary to maximize the polyphenols. Pressing the aril alone provides little polyphenols compounds. [Syed 2013, 1150]
- Extracts from the pomegranate fruit seed and peel inhibit the growth of prostate, lung skin, colon, and breast cancer cells. [Syed 2013]

Probiotics, Attributes

- Probiotics are colonies of beneficial microorganisms that live in the gastrointestinal tract which aid in digestion, absorption of food nutrients, contribute to the production of vitamins and enzymes, destroy non-beneficial bacteria and yeast, and work with the immune system located in the gastrointestinal tract to prevent toxins and pathogens from harming the body. They adapt to and destroy new harmful microorganisms. It is a rather formidable task because we consume about 20 tons of food during our lifetime, Probiotics must be coated so that they are not subject to stomach acid and arrive intact in the intestines. [Altshuler 2004, 441; Adams, Probiotics, p. 37; BLHB 2009, 229; Downey Probiotics 2015, 29]
- 70 percent of the immune system is located in the mucous membrane of the digestive tract. Probiotics are absolutely crucial to maintain a clean digestive tract and immune system. [Sinatra 2012, 133; BLHB 2009, 229-30; Downey Probiotics 2015, 27]]
- Probiotics stimulate the production of white blood cells called T-cells, which fight inflammation throughout the body. [BLHB 2009, 230]
- Gut microbiota contribute to metabolism and development of the immune system. Gut microbiota affect brain chemistry, brain function, and behavior; poor quality gut microbiota is associated with psychiatric disorders, depression, and anxiety and may be associated with irritable bowel syndrome. Greater diversity of gut microbiota is positively related to good health and reduced diversity of gut microbiota is related to symptoms of frailty, obesity, and inflammatory diseases particularly among the elderly. Exercise, combined with special athletic proteins, leads to greater gut microbiota diversity and improved health. [Clare 2014; Claesson 2012; Dinan 2013] Probiotics improve gut microbiota and contribute to improved intestinal and mental health.

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- Probiotics manufacture B vitamins, Vitamin K , lactic acid, and increase the availability of calcium. They are anti-bacterial, anti-fungal, anti-viral, anti-pathogen, anti-tumor, anti-cancer, anti-yeast, regulate cholesterol and triglycerides, and live within all parts of the digestive channel.
- Natural sources of probiotics include yogurt, buttermilk, goat's milk, coconut water, soy milk, miso, kim chi, and sauerkraut. [Yeager 2007, 348]
- I have found that there are three excellent probiotics: (1) Garden of Life Raw Probiotic (refrigerated) with about 32 different strains (which is available at most health foods stores), (2) Renew Life Ultimate Flora, and (3) Nature's Secret Digestive Bliss Probiotic.
- The greater the number of probiotic strains, the greater the number of bad bacteria that can be defeated.
- It is important to take probiotics during antibiotic treatment and more important to take probiotics after antibiotic treatment has ended to restore good bacteria to the intestinal tract. Failure to restore good bacteria may lead to many illnesses in parts of the body unassociated with the intestinal tract.

Probiotics, illnesses prevented with or cured by

- Digestive problems are often caused by bacterial imbalance. Bad bacteria in the gut can cause colitis, diarrhea, irritable bowel syndrome, and candida. [Cleary 2007, 214; see Pillar 5 Candida] Further, probiotics reduce the risk of colon cancer because they reduce DNA damage and malignant cell development. [Downey Probiotics 2015, 27]
- IT IS CRUCIAL TO TAKE PROBIOTICS AFTER ANTIBIOTICS IN ORDER TO PREVENT CANDIDA YEAST TURNING INTO CANDIDA FUNGUS. IF CANDIDA FUNGUS GROWS ROOTS INTO A DEEP TISSUE ORGAN YOU'VE GOT ONE HELL OF PROBLEM IN DEFEATING THE INGROWN CANDIDA. [SEE PILLAR 5 CANDIDA]
- Probiotics help by restoring intestinal balance by manufacturing the digestive enzymes lactase, lipase, and protease. Since most probiotics live in the colon, probiotic supplements have the most beneficial effects there. Physicians from the earliest of times have said "Death begins in the colon" and it is there that probiotics really demonstrate their effectiveness.
- Ulcers may be both healed and prevented with probiotics. [Cleary 2007, 278]
- Probiotics help defeat candidiasis, a disorder caused by too much yeast. But candidiasis also requires substantial modifications in the diet including elimination of all sugar and sweeteners, and fermented, yeast, and mold related foods (e.g., refined carbohydrates) [Null 2008, 128]
- ADHD may be relieved with probiotics because bad bacteria in the intestines may damage the intestinal lining resulting in undigested foods entering the blood stream and

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causing an immune response or allergic reaction. Probiotics may also be helpful for allergies. [Cleary 2007, 109, 90; Williams Probiotics FEB 2014, 4]

- Eczema, a skin condition, may result from incomplete digestion of proteins which affects adversely the immune system to cause an allergic reaction to certain foods. The first step is to take digestive enzymes to digest foods better. The second step is to take probiotics which assure the intestinal tract has beneficial bacteria and not bad bacteria. [Cleary 2007, 152; Altschuler 2004, 203]
- Food allergies generally may be solved with (1) eliminating certain foods, (2) taking digestive enzymes supplements to assure better digestion of foods, and (3) taking probiotics which assure good bacteria in the intestinal tract. [Altschuler 2004, 211]
- Heartburn is caused by a weakness in the muscular valve between the stomach and esophagus resulting in stomach acid leaking into the esophagus, overeating, improper digestion, an hiatal hernia, etc. One solution is a combination of digestive enzymes and probiotics.
- Food allergies may contribute to rheumatoid arthritis and a combination of digestive enzymes and probiotics may digest better the food and assure beneficial bacteria in the intestinal tract. [Altschuler 2004, 346]
- Don't rely on the probiotics in yogurt to clean your intestinal tract. The probiotics in yogurt are not the most important or the most potent. Further, some yogurts are pasteurized which kills most of the beneficial probiotics. [Altschuler 2004, 261]
- Beneficial gut bacteria are reduced by the western diet. There is an overuse of antibiotics, chlorine in drinking water, and chemicals designed to stop bacteria growth. Probiotics help restore good gut bacteria. [Williams, February 2014, 2]
- Probiotics may be helpful for mood and depression because of the bad bacteria and yeast in the intestines. [Williams, February 2014, 4]
- Autistic children often have lower levels of three critical beneficial bacteria in their guts suggesting the use of probiotics. They also have higher levels of mercury in their teeth and hair and mercury is used as a preservative in many vaccinations. [Williams, February 2014, 2]
- Probiotics may be helpful for children with attention deficit hyperactivity disorder (ADHD). [Williams, February 2014, 3]
- If you have intestinal flu (diarrhea), probiotics may be used to cure the condition. The correct dosage is difficult to assess because each bout is different. But, one suggested dosage is one capsule immediately, one about two hours later, a third about six hours later, and then two capsules daily for about two additional days, and one capsule for the remainder of the week. The first two capsules usually stop the intestinal flu, but you must continue the dosage, or it will return. If two capsules do not relieve the condition, see a doctor. Thus, one should always carry several probiotics to overcome the harmful bacteria causing intestinal flu. It is likely that one can avoid the dehydration associated with intestinal flu with supplemental probiotics. [Cleary 2007, 149; BLHB 2009, 230]

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- Probiotics reduce cholesterol along with fish oils, Wobenzym-N, and tocotrienol (one type of Vitamin E). Thus, combinations of these may be used as alternatives to statins, the latter of which may have very serious side effects.
- Probiotics may be helpful for ulcers, irritable bowel syndrome, Crohn's kidney stones, ear infections, glucose control, decrease C-reactive protein, and reduce toxicity of bad microorganisms in the liver.
- The probiotic *L reuteri* may help in reducing cholesterol up to about ten percent. [BLHB 2014, 33]
- In some cases, probiotics can cause allergic reactions, increase the risk for colitis, diverticulitis, IBS and other disorders. Thus, be sensitive to your condition after beginning to use them. [BLHB 2014, 169]
- Probiotics increase insulin resistance and lower blood sugar. [Downey Probiotics 2015, 28]
- Mood and depression are often caused by an improper mix of intestinal flora.
- Probiotics should always be taken after a course of antibiotics because antibiotics kill both beneficial and harmful bacteria and probiotics restore good bacteria in the digestive tract. One source recommends taking the probiotic about four to five hours after taking the antibiotic to avoid the antibiotic killing the good bacteria, and then continuing with the probiotic for one week after the end of the antibiotic. [BLHB 2014, 160]
- Probiotics are helpful for vaginal yeast infections and urinary tract infections. [Null 2008, 210]
- Probiotics are helpful in reducing phytic acid (a bound molecule of phosphorous, which binds with other minerals rendering all of them not digestible). Thus, taking a probiotic with cooked grains, beans, and legumes in conjunction with soaking, helps improve digestibility of many minerals.
- Chronic pelvic pain can be caused by an infection that may be treated with probiotics. [BLHB 2014, 340]
- Probiotics interact with the Peyer's patches in the mucosa of the small intestine that stimulates the immune system to be vigilant. [Yeager 2007, 348]
- Prebiotics are non-digestible food components that stimulate the growth of good bacteria in the intestinal tract. They include dandelion greens, spinach, kale, artichokes, legumes, onions, leeks, garlic, oatmeal, flaxseed, barley and soy yogurt. [Yeager 2007, 348]
- Probiotics are helpful to treat constipation, but should be taken with digestive enzymes, which help break down food into its nutrients. Probiotics act to kill harmful bacteria and may cause gas, bloating and cramping for up to ten days. If this occurs, you may wish to reduce the amount of the probiotics until these conditions end. [Altshuler, 2004, 179]

Resveratrol

- Resveratrol is a polyphenol ingredient found in the skin of grapes and red wine.
- Its benefits are to:

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- Prevent heart disease and stroke by reducing inflammation.
- Clean arteries.
- Inhibit cancer.
- Normalize blood sugar levels by moving glucose into cells from blood.
- Remove amyloid-beta plaque from the brain which is associated with Alzheimer's Disease.

Rosemary

- Rosemary, *rosmarinus officinalis*, is a herb with many important anti-aging effects. [Al Sears, Doctor's House Call, May 17, 2016, with citations]
- Rosemary contains iron, calcium, vitamin B6, and four anti-inflammatories.
- It increases the activity of superoxide dismutase, an enzyme that removes superoxide a strong free radical associated with chronic inflammation.
- Rosemary contains ingredients that work like steroids without the side effects and relieves arthritis symptoms in clinical trials.
- Rosemary contains caffeic, rosmarinic, and carnolic acids which defeat free radicals in the brain and thereby Alzheimer's.
- Rosemary protects the eyes from macular degeneration.

Sage

- Memory may improve in as short as one hour after consuming sage. [BLYB 2016, 85]
- Sage also reduces anxiety. [BLYB 2016, 85]
- Sage contains many antioxidants. [Brain 2011]
- The best sage for memory improvement are garden sage (*salvia officinalis*) and Spanish sage (*salvia lavandulifolia*)

Salt

- In many sections of Six Pillar Tips, there are precautions about excess salt intake because it may contribute to high blood pressure and heart disease. Guideline consumption is limited to 2,400 mg of sodium daily. Interestingly, Koreans consume 4,000 mg daily and they have among the lowest rates of high blood pressure and heart disease in the world.
- Inadequate salt is a cause of kidney and thyroid functional damage, weight gain, insulin resistance, and heart disease. [Miccozzi's Insider Cures, August 2017 VIII(8), 1]
- Current actual consumption is about 1.5 teaspoons daily (3,600 mg) which is about 50% over the recommended daily amount.
- Perhaps one way of managing salt intake is by measuring blood pressure. If yours is normal, then the amount of salt you are taking is not excess and it may be beneficial to take more. See your doctor after blood tests.
- In the summer, body salt inventories decline because of sweat. I take extra salt after testing for sweat concentrations.

Selenium

- Selenium is a mineral that is extraordinarily important to avoid many illnesses and extend life.
- The amount of selenium found in foods such as Brazil nuts and pinto beans depends upon the amount of selenium in the soil, which is geographically highly uneven. Many areas such as Texas, the Southwest, lower southeast, and northwestern states have selenium deficient soils. [Life Extension January 2017, Lewis, 58-64.]
- Selenium deficiencies cause colorectal, liver, prostate, and gall bladder cancers. [Life Extension January 2017, Lewis, 58-64.]
- Research has shown that supplementing with selenium-enriched yeast had a 50% reduction in the risk of mortality of all cancers.
- The preferred dosage is 200 mg daily from selenium enriched yeast which has been shown to reduce colorectal cancer by 58 percent, prostate cancer by 63%, and lung cancer by 46 percent. [Life Extension January 2017, Lewis, 58-64.]
- The three forms of selenium are the following; it is important to supplement with all three because they synergistically destroy malignant cells before they fully develop and get beyond the control of the body's defenses.: [Langstrom Selenium 2015, 64]
 - Sodium selenite. [Langstrom Selenium 2015, 64; Life Extension January 2017, Lewis, 58-64.]
 - L-selenomethionine. [Langstrom Selenium 2015, 64]
 - Selenium –methyl L-selenocysteine. [Langstrom Selenium 2015, 64; Life Extension January 2017, Lewis, 58-64.]
 - Selenium from yeast. [Life Extension January 2017, Lewis, 58-64.]
- In a Chinese study of 208 individuals over 100 and 238 people between 90 and 100, it was found that the oldest individuals had the highest concentration of selenium and other minerals like zinc. [Langstrom Selenium 2015, 64]
- Selenium protects against some cancers including bladder, esophagus, stomach, lung, colorectal, and prostate cancers, and has been shown to reduce the incidence of all cancers by 24 percent. [Langstrom Selenium 2015, 64;] You need about 80-95 mg of selenium to maximize its cancer fighting power. [Super 2012, 37]
- Selenium is effective against cancer by protecting the integrity of DNA the damage of which converts to malignant cells, increasing natural killer cells, increasing the effectiveness of white blood cells, and generally improving immune function. [Langstrom Selenium 2015, 66]
- Selenium also fights infections and is crucial for cardiovascular and brain health. [Langstrom Selenium 2015, 66-69]
- It appears that supplementation with about 200 mg (micrograms) of each of the three forms of selenium is an adequate daily dosage.

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Sesame seeds

- Sesame seeds contain copper, calcium, and lignans.

Soy

- Unfermented soy contains natural toxins that are increased during processing. It also contains trypsin inhibitors that interfere with amino acid digestion and have been linked to pancreatic problems. Soy has been genetically modified to be herbicide tolerant, which increases the use of herbicides in soy farming. Soy may also contribute to an underactive thyroid (hypothyroidism).
- Fermented soy is healthier because it overcomes many of the problems noted above with soy. But it should be used sparingly—less than two teaspoons daily (8 to 9 grams daily)—and should not be used in larger quantities as an alternative source for protein. In these small quantities, it may be useful during menopause to reduce hot flashes, but it may be necessary for women to be monitored for endometrial hyperplasia. [Williams April 2014, 1-3]

Sweeteners, artificial

- Splenda:
 - Splenda is comprised of the high-potency artificial sweetener sucralose and the fillers maltodextrin and glucose.
 - In a study of rats, it was found that Splenda had numerous adverse effects including (1) reduction of beneficial fecal microflora, (2) increased fecal pH, and (3) enhanced levels of substances that inhibit the bioavailability of orally administered drugs. [Abou-Donia 2008, abstract]
- Artificial sweeteners may cause unique changes in gut bacteria that may increase the chance of diabetes. [BLYB 2016,13]

Turmeric

- Turmeric (*curcuma longa*) is a rhizome spice that is a member of the ginger family. The roots are bulbs which are boiled and dried into the yellow powder, curcumin, which is a powerful antioxidant. But there are over a hundred ingredients in turmeric about which little is known. Most turmeric is grown in India and is used in curry; India has the highest per capita consumption of turmeric and the lowest rate of cognitive decline in the world. [Corn Tumeric].
- Turmeric has very limited bioavailable in its natural consumable state irrespective of serving size because it is metabolized in the liver and intestinal wall before it enters the blood stream, cells, or urine. Recent research has indicated that piperine in black pepper inhibits this metabolic activity and increases the bioavailability of turmeric by up to 2000%; be careful in interpreting the 2000% increase, because the bioavailability of turmeric without piperine is very, very small. Supplements are available to increase the bioavailability of turmeric that offer alternatives to raw piperine. Healthy fats eaten with

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turmeric may achieve the same purpose of increasing bioavailability. [Shoba 1998, Abstract ;www.healthy-holistic-living.com/3-simple-tricks-to-effectively-optimize-turmeric]

- Heating turmeric in an oil saute increases its bioavailability substantially.
- The benefits of turmeric/curcumin are:
 - Eliminates amyloid beta plaques in the brain by encouraging the immune system to send out macrophages [white blood cells] that engulf and digest cellular debris, foreign substances, microbes, cancer cells, and other substances with irregular proteins (e.g., A β plaque).. Absent this process, cognitive decline occurs. [Corn Turmeric Brain]
 - Acts as an antibacterial, antifungal, antiviral, anti-inflammatory, and antioxidant.
 - Reduces joint pain discomfort by switching off the body's most powerful inflammatory chemical, Nf-kappa beta and inflammatory enzymes. [Corn Turmeric Joint]
 - Reduces depression.
 - Fights cancer. [www.lifestyleextension.com]
 - Fights cystic fibrosis. [www.lifestyleextension.com]
 - Reduces effects of Alzheimer's and Parkinson's disease. [www.lifestyleextension.com]
 - Reduces effects of multiple sclerosis.
 - Reduces effects of cataracts.
 - Reverses damage from high blood sugar.
 - Provides arthritis pain relief. [Healing 2013, 28]

Vegetarian diets: Nutritional deficiencies

- Vegetarian diets have at least three categories: (1) No animal products except dairy and eggs, (2) No animal products except for dairy, and (3) no animal products (vegan diet); a strict vegan diet may be expanded to the vegan lifestyle where one does not consume any animal products in food, clothing, furniture, or any other phase of life.
- The fat-soluble Vitamins A and D are common deficiencies because they are found in animal foods. See "Vitamin A" and "Vitamin D" for a discussion of the benefits of these vitamins
- Plant-based diets are deficient in Omega 3 essential fatty acids, EPA and DHA. Plants do contain linolenic acid (Omega 6) and alpha-linolenic acid (ALA) which can be converted into EPA and DHA with the help of vitamin B6 and zinc and in the digestive tract, but the conversion rate is about ten percent for humans; that's why cows have several stomachs because multiple stomachs permit them to convert ALA into EPA and DHA efficiently. Studies have shown that vegetarians have 37 percent lower levels of DHA and 52 percent lower levels of EPA compared to meat eaters—and vegans have 65 percent lower levels of DHA and EPA. [Micozzi Insider May 2014, 3]

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- Calcium and zinc are common deficiencies in vegetarian diets because some natural phytochemicals in plants such as kale and spinach act as anti-nutrients in that they prevent absorption of calcium and zinc. [Micozzi Insider May 2014, 3]
- Vitamin B12 is a common deficiency in vegetarian diets. Studies have shown that 68 percent of vegetarians and 83 percent of vegans are deficient in vitamin B12, which is abundant in animal foods. Vitamin B12 is necessary for fluid intelligence (reasoning, solve complex problems, abstract thinking, and ability to learn), spatial memory, and short-term memory. [Micozzi Insider May 2014, 3]

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Vinegar

- Vinegar is produced in a two-stage process. First, crushed apples are exposed to yeast, which ferments the sugar into alcohol. Second, bacteria are added which converts the alcohol to acetic acid, the main active ingredient of apple cider vinegar.
- Unfiltered apple cider vinegar like Braggs contains proteins, a bit of potassium, amino acids, antioxidants, enzymes and friendly bacteria, malic acid, and has about three calories per tablespoon. Apple cider vinegar is believed to cure allergies, acne, high cholesterol, joint pain, weight loss, rheumatism, arthritis, gout, dandruff, chronic fatigue, candida, sore throat, gum infection, sinus infection, flu, acid reflux, leg cramps and ear infections. It may also dissolve kidney stones, lower high blood pressure and reduce type 2 diabetes by improving insulin sensitivity. [“Benefits of Apple Cider Vinegar,” on line, November 30, 2016; BLHB 2014, 269; BLHS 2009, 533-4]
- Vinegar kills pathogens and bacteria and adds additional acid to assist the elderly, who may be stomach-acid deficient, in digesting food. [Bottom Line Super Healing Unlimited 2007, 380-1]
- Vinegar may be a natural antibiotic and stimulates the immune system. [More Ultimate Healing 2010, 153]
- Rice vinegar may kill cancer cells and shrink tumors.
- Unfiltered apple cider vinegar (Bragg’s) may reduce the inflammation caused by gout by defeating uric acid crystals in the joints. The daily dosage to cure gout using for apple cider vinegar is one table spoon in a glass of water twice daily until the gout recedes. Then once daily instead of twice daily. I know of one case that Bragg defeated gout in both ankles and knees.
- Avoid undiluted apple cider vinegar because it may damage tooth enamel and the tissues of the mouth and throat. Do not take vinegar capsules because they may damage permanently the esophagus if they stick in the throat. [“Benefits of Apple Cider Vinegar,” on line, November 30, 2016]

Vitamin A

- Vitamin A is a fat-soluble vitamin like Vitamins D, E, and K, is stored in the body, and is an antioxidant furnishing electrons to unpaired molecules.
- Vitamin A contributes to good vision, immune function, reproductive function, skin health, neurological development, solid bone structure, and fights inflammation,
- Vitamin A is found in animals (retinol), and plants (beta carotene). Plant sourced Vitamin A (beta carotene) is converted to retinol during digestion.

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- Sources of Vitamin A are kidneys, liver, carrots, dairy products such as cheese and milk, cod, halibut, eggs, broccoli, dark green leafy vegetables, and yellow and orange vegetables.
- Excess Vitamin A causes dizziness, nausea, vomiting, sleepiness, coma, liver damage, confusion, eye damage, and suppresses healthy bone growth. It may also lead to miscarriages and birth defects.
- Deficiencies in Vitamin A cause blindness.
- It is highly preferred to get Vitamin A from natural sources of organ meats and plants because supplements may lead to excess Vitamin A symptoms, which are very harmful.
- The recommended dosage is 900 micrograms for men and 700 micrograms for women (1 mcg = $1/e-6 = 1/1,000,000$ grams) daily.

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Vitamin B

- The first rule with Vitamin B consumption is to take always a Vitamin B complex containing all Vitamin B's. One should not take individual Vitamin B's because they act synergistically together. Taking individual Vitamin B's could create a harmful imbalance.
- Take individual Vitamin b's only if prescribed by a medical practitioner.
- If your elimination water is clear, it is an indication that you are deficient in Vitamin B complex. Vitamin B deficiencies impair memory, particularly for the elderly.

Vitamin B1 (Thiamin)

- Vitamin B1 turns fats and carbs into energy, breaks down glucose, helps the brain use glucose as fuel and produces red blood cells. Generally, but with exceptions, it is a water-soluble vitamin, which cannot be stored in the body as fat-soluble vitamins are stored in the body.
- Vitamin B1 may be used to treat poor appetite, heart disease, canker sores, eye problems including cataracts and glaucoma, alcohol withdrawal, AIDS, metabolic illnesses, improve mental function, stress cerebellar syndrome and painful menstruation.
- Fresh water fish and shellfish may reduce Vitamin B1.
- Dosage for adults is 1-2 mg daily.
- Vitamin B1 deficiencies can increase beta amyloid plaque in the brain. Thiamin comes in different forms one of which is fat soluble. Tea and coffee prevent thiamin absorption. Horsetail, a supplement used for incontinence, destroys thiamin. [Brain 2011, 303-8]. VB1 is necessary to metabolize alcohol. Excess alcohol leads to VB1 deficiencies.

Vitamin B2 (Riboflavin)

- Increases energy to brain and thereby reduces migraines; I have a relative who wrote an article in a newspaper indicating she had healed her cataracts with VB2 supplements.
- Cataracts may be caused by a Vitamin B2 deficiency. There appears to be evidence that increasing Vitamin B2 (in a balanced Vitamin B supplement) may eliminate cataracts.

Vitamin B3

- Vitamin B3 comes in three primary forms: [University of Maryland Medical Center]
 - *Niacin (Nicotinic acid).*
 - *Niacinamide (Nicotinamide)*
 - *Inositol hexanicotinate*

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- Vitamin B3 improves the cardiovascular system, brain function, digestion, lowers cholesterol and inflammation, and may reduce arthritis symptoms.
- The side effects of Vitamin B3 are increases in blood sugar, may produce an irregular heartbeat, headaches, dizziness and allergies. These symptoms can be severe and one should not take Vitamin B3 without medical supervision.
- All niacin therapy should be avoided by individuals with liver abnormalities, peptic ulcer disease, and gout. [MacKay 2012, 359]
- Since Six Pillar Tips for Health Management is predicated on the Zero Tolerance Rule and because (1) one may not know of liver abnormalities, peptic ulcer disease, and/or gout, and (2) niacin could conceivably cause these *and other problems*, I think it may be best to avoid all niacin supplement therapy unless one has a known niacin deficiency and is under the care of a medical professional. For example, Parkinson's Disease is associated with a niacin deficiency the latter of which is used in the production of dopamine. [Wakada 2014]
- High cholesterol can also be treated with niacin, but the dosage is 500 mg or higher per day when the normal niacin daily requirement is about 250 mg daily. [MedlinePlus "Niacin and niacinamide"].

Vitamin B5

- Vitamin B5 may reduce fatigue and allergic symptom. VB5 is necessary to produce stress hormones such as cortisol to deal better with stress. Pantethine, a form of VB5, may lower total cholesterol, LDL, and triglycerides and increase HDL.

Vitamin B6 (Pyridoxine)

- Vitamin B6 affects many proteins and your heart, nervous system, and blood cell production. VB6 Assists with amino acid (i.e., protein) metabolism.
- Deficiencies in Vitamin B6 lead to weakness, confusion, diabetes, kidney stones, inflammation, etc.
- Vitamin B6 assists with amino acid (i.e., protein) metabolism. Deficiencies lead to weakness, confusion, diabetes, kidney stones, inflammation, etc.
- Too much VB6 may lead to nerve damage.
- VB6 is crucial to remove homocysteine, an amino acid that damages blood cells, increases the risk of dangerous clots, dementia, and heart disease. VB6 prevents macular degeneration, lowers the risk of diabetes, obesity, metabolic syndrome, Alzheimer's and Parkinson's disease, the last of these by reducing homocysteine levels that reduce dopamine.
- Vitamin B6 is lost from cooking and freezing foods. Raw organic celery and bell peppers are rich in B6.[Brain 2011, 315-20]

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Vitamin B7 (Biotin)

- Biotin, sometimes termed vitamin H, is rarely deficient and is available in milk, bananas, eggs, fish, fruit, swiss chard, and almonds.
- Biotin is necessary to digest carbohydrates and fats.
- Rare deficiencies, for which there are no tests, cause diabetes, depression, nerve damage, and exhaustion. Medications may cause deficiencies.
-

Vitamin B9 (Folate)

- Folate is the natural form of Vitamin B9. Folic acid is the synthetic form of Vitamin B9.
- Vitamin B9 (Folate) is important for cell division, brain health, and memory, and prevents buildup of homocysteine, the cause of several diseases.
- Folic acid is the synthetic form of Vitamin B9 and is slow to metabolize. It is added to flour, cereals, and other foods. As a result of its inefficient metabolism, unmetabolized Folic Acid is found in the blood and is believed to cause cancer.
- Vitamin B9 supplements (600mg/day minimum) taken in the first month of pregnancy reduce chances of autism by about 40 percent [J.AMA, 02.2013].
- Folate is one of the most common deficiencies worldwide (iron, vitamin D3, and magnesium are others).
- Folate is found in green leafy vegetables such as spinach, chard, kale, and whole grains.
- Vitamin B complex supplements always contain Folic Acid.

Vitamin B12

- Vitamin B12 works closely with folate building red blood cells and preserving the sheaths surrounding nerve fibers; promotes energy; lowers homocysteine.
- About 20 percent of seniors are deficient in Vitamin B12. Deficiencies cause forgetfulness, depression, dementia, brain shrinkage, insufficient blood flow to the brain, and various neurological system damage such as weakness, numbness, tingling, or paralysis.
- High risk categories for B12 deficiencies are vegetarians, and those with atrophic gastritis and pernicious anemia. Some medications block stomach acid (Prilosec, Zantac) and make it difficult to get enough B12 from food. Other medications make it difficult to absorb B12 (e.g., colchicine for gout, oral diabetes drugs such as metformin, phenformin, and slow-release potassium supplements).
- Folic acid supplements may cause several B12 deficiencies.
- Dosage is difficult to determine: It is generally believed that those over 50 need 2.4 mcg, but others argue that 6 mcg or more is necessary to avoid a deficiency. Individuals with

high folate and low B12 are more likely to suffer from cognitive impairment. [Brain 2011, 309-11]

Vitamin C Complex

- **Vitamin C Complex** is a “nutritional complex comprised of hundreds of biochemical parts, which include bioflavonoids, vitamin P, a host of phytochemicals and phytonutrients, and natural ascorbic acid. The role of ascorbic acid, which is the antioxidant portion of the vitamin C complex, is to protect all the other phytochemicals in the plant from damage.” The healing portion of the Vitamin C complex are the phytochemicals like vitamin P and bioflavonoids (e.g., rutin), not the ascorbic acid. Vitamin P refers to paprika. [Health Alert 33(1)] Thus, it is essential to take **Vitamin C Complex**, not simply ascorbic acid.
- Vitamin C is a fragile, water soluble vitamin which cannot be stored in the body and must be replenished daily. Cooking reduces and eventually destroys Vitamin C just as cooking destroys food enzymes; Vitamin C leaches into the water during cooking, so it is best to consume the water with the cooked food. Better yet, eat fresh, organic, multi-colored fruits and vegetables to avoid cooking impairment of Vitamin C, other vitamins, and enzymes.
- Vitamin C assists in preventing or improving the following symptoms:
 - Alzheimer’s: Vitamin C and E act as antioxidants to prevent and reduce the severity of Alzheimer’s because it reduces the oxidative stress in the brain [Bottom Line Breakthroughs 2009, 8]. Vitamin C can reduce the likelihood of Alzheimer’s by 78% [More Ultimate Healing 2010, 174]. In a study of 91 sample participants, none who took Vitamin C (23) and none who took Vitamin E (27) supplements had Alzheimer’s vs. predictions of about three in each group. General purpose vitamins with lower dosages had no effect on the rates of Alzheimer’s. [Morris 1998, 124-5]
 - Allergies: Vitamin C is a natural antihistamine, which neutralizes histamines in the blood that cause allergic reactions to foods. It may be necessary to include the bioflavonoids quercetin and pycnogenol.
 - Anti-oxidant: Vitamin C is a strong anti-oxidant that reduces cellular damage from free radicals, molecules that are missing an electron in the outer ring. [Brain 2011, 321]. *But remember that free radicals trigger cells that defeat cancer and no free radicals, no cells to defeat cancer.*
 - Arthritis: Vitamin C, an anti-inflammatory, reduces the speed of progression of arthritis of the knee by a multiple of three. Vitamin C is also necessary for the production of cartilage. Vitamin C and E may relieve arthritis pain as effectively as ibuprofen or other pain relievers without the side effects.
 - Arteries: Protects coronary arteries against injury, which draw plaque for scar tissue or repair; Vitamin C also helps keep arteries clean along with Vitamin E

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tocotrienol and Wobenzym-N. Poor leg circulation may be caused by inadequate Vitamin C Complex. [Health Alert 33(8), 1 (August 2016)]

- Asthma: Vitamin C reduces allergenic response from asthma.
- Atrial fibrillation and irregular heart beat. Post-operative atrial fibrillation was reduced 44% with Vitamin C supplication. Length of hospital stay was reduced by 12% and time spent in the intensive care unit reduced by 8%. [Life Extension Nov 2017, 20]
- Blood pressure: Vitamin C lowers blood pressure and relaxes hardened arteries. High blood pressure may damage the brain's white matter, the network of nerve fibers that promote communication between brain cells. Damage to the brain's white matter is linked to Alzheimer's [Brain 2011, 322]
- Blood vessels: Vitamin C improves the availability of nitric oxide to support the membrane lining the inside of the blood vessels (endothelial function), and, thereby, reduce blood pressure. Nitric oxide is created from nitrates in foods such as beets. The rule is to avoid foods or mouth wash (e.g., chlorhexidine) that impede the formation of nitric oxide from food nitrates, and to eat foods that contain nitrates. Free radicals degrade nitric oxide. All of this means that if you have high blood pressure, *you should* eat nitrate-intensive foods and do not use a mouthwash that contains chlorhexidine. Moreover, reduced nitric oxide lead to ED in men.
- Brain function: The brain contains high levels of Vitamin C to promote brain function. [Brain 2011, 321]
- Cataracts: Vitamins C, E, B2 and zinc prevent and may reverse cataracts because of their antioxidant features in defeating free radicals. It's estimated that up to 80 percent of cataracts and macular degeneration could be defeated with diets high in antioxidants. There is 60 times more Vitamin C is in the cornea and retina than in the blood. [Healing Kitchen, 150]. For cataract prevention and elimination also take lutein, blueberry, bilberry, and Bluebonnet Zeaxanthin.
- Vitamin C from food may be preferred to supplements, but one Vitamin C supplement by Alive contains Vitamin C from four fruits and comes in 125 mg capsules, which permits taking the daily requirement with one capsule.
- Cancer: The antioxidant activity of Vitamin C and Vitamin E protect the DNA genetic material in cells and thereby protect against cancer. Damage to DNA may be the principal cause of cancer. In studies, Vitamin C has been found to rob tumors of their power source, and act as a potent prostate anticancer agent.
- Cholesterol: Vitamin C controls cholesterol by reducing the oxidation of LDL cholesterol and raising good HDL cholesterol thereby contributing to artery health.
- Collagen: Vitamin C is necessary for synthesis of collagen, the protein connective tissue totaling 30% of body protein and essential to skin, gums, arterial walls,

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bones ligaments and tendons. Inadequate collagen leads to uncontrolled bleeding and painful joints and wounds that won't heal. [More Ultimate Healing 2010, 175]

- Diabetes: Vitamin E reduces the likelihood of diabetes by about 30% and Vitamin C improves greatly the utilization of Vitamin E, although Vitamin C by itself has no effect on diabetes. [Food Cures, 142] Individuals with diabetes are often low in both Vitamin C and Vitamin E.
- Energy: Vitamin C is necessary to produce carnitine, which oxidizes (burns) fat, the main fuel for exercise and daily life; inadequate Vitamin C means fatigue.
- Gallstones are 39% less likely with Vitamin C.
- Glaucoma: Vitamin C reduces pressure within the eye and thereby reduces the likelihood of glaucoma.
- Heart disease: Adequate levels of Vitamin C reduces the likelihood of heart disease, heart attacks, peripheral artery disease, and artery damage by free radicals. [Brain 2011, 323]
- Immune system: Vitamin C activates immune system to defeat cancer with its antiviral and antibacterial properties.
- Iron absorption: Vitamin C aids in iron absorption.
- Immune system: Vitamin C is crucial in the operation of the immune system. This may be the reason to take extra Vitamin C when one has a cold or flu. [Brain 2011, 321]
- L-carnitine: Vitamin C is important in the body's manufacture of L-carnitine, a compound that converts fat into energy. [Brain 2011, 321]
- Macular degeneration: Vitamin C, Vitamin E, beta-carotene, and zinc lower the risk of macular degeneration and contribute to general eye health.
- Memory: Neurons in the brain are very susceptible to damage by free radicals for which Vitamin C, Vitamin E, and selenium are electron donors.
- Parkinson's: Vitamin C reduces symptoms of Parkinson's disease.
- Prostate cancer: Vitamin C, selenium, copper and magnesium help to remove heavy metals and permit the body to repair itself. These four supplements should be taken as part of a package to defeat prostate cancer.
- Red blood cells: Vitamin C helps to produce red blood cells and thereby increase energy.
- Skin: Reduces harm of sun on skin by taking it internally and topically.
- Stress: Helps the body cope with stress by producing stress hormones in the adrenal glands.
- Sunburn: Vitamin C and Vitamin E help to prevent sunburn.
- White Cells: Helps normal functions of white blood cells and thereby fights infections.

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- Dosage: The recommended daily allowance (RDA) for Vitamin C is 200 mg.⁹ Continuous dosage over 200 mg daily may create kidney stones and intestinal problems. [Bottom Line Health Breakthroughs, 2009, 163; BLYB 2015, 18]. Daily doses of over 400 mg have no evident value. Continuous dosage over 500 mg per day may create pro-oxidants, which are harmful substances [Podmore 1998, 559], and dosages over 1,000 mg. may create stomach problems, and interfere with iron metabolism. Thus, it's probably best to take no more than about 400 mg of Vitamin C daily including food sources.
- Ascorbic acid can irritate the stomach, so it's best to use buffered Vitamin C composed of calcium ascorbate or magnesium ascorbate.
- Alive C contains dosage of 125 mg per capsule and is sourced from organic berries and fruit (i.e., acerola, goji, kiwi, and amla). It may be one of the best Vitamin C supplements because its dosage is low, it is naturally buffered, and it comes from natural sources.
- Vitamin C and Vitamin E act synergistically as antioxidants. See "Free Radicals and Antioxidants" for a more complete discussion.
- Vitamin C may be used to treat a cold. [Uncommon Cures 2009, 87]
- The best sources of vitamin C are red and green hot chili peppers, guavas, bell peppers, dark leafy greens such as kale, mustard greens, garden cress, broccoli, cauliflower, Brussels sprouts, kiwi, papayas, oranges, tangerines, strawberries, pineapple, sun-dried tomatoes, cantaloupe, tomatoes, red cabbage, cayenne, etc.
- Too much Vitamin C has the following drawbacks: [Brain 2011, 325-6]
 - High doses of Vitamin C can interfere with lab tests so tell your doctor about all supplements you take.
 - Disclose your Vitamin C supplement dosage if you take NSAIDs (e.g., aspirin, ibuprofen), aluminum-based antacids, acetaminophen, chemotherapy drugs, nitrate medications for heart disease, tetracycline, or blood thinners like warfarin.
 - Too much vitamin C may prevent B12 absorption.
 - Chewable Vitamin C can cause tooth erosion.
 - Too much Vitamin C can cause diarrhea, heartburn, gas, and other digestive problems. Buffered versions of Vitamin C (e.g., sodium ascorbate, calcium ascorbate) rather than ascorbic acid may avoid these problems.

Vitamin D

- Vitamin D is a nuclear steroid hormone produced by the skin from sunlight. But even though you get in the sun, you are probably D deficient. In a study of 93 Hawaiians who spent an average of 1.5 hours in the sun without sunscreen, 50% had deficient levels of Vitamin D. [Shallenberger, Potpourri, 2014, 1]

⁹ The RDA of 200 mg for Vitamin C is subject to further research and the correct amount may be a bit lower.

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- There are two types of Vitamin D: D₂ (ergocalciferol) and D₃ (cholecalciferol). If you supplement, it is best to use VD₃ because [Moyad 2009, 27]
 - Vitamin D₃ (VD₃) is available in most fish and sunlight produces D₃; thus, D₃ is considered to be the most natural form of Vitamin D.
 - VD₃ binds better to Vitamin D receptors and may be less toxic than VD₂.
 - VD₃ is more potent than VD₂.
 - VD₃ has greater shelf-life stability.
 - VD₃ is more effective at raising and maintaining vitamin D levels in the 25 OH Vitamin D blood test.
 - Cod liver oil contains VD₃.
- The correct amount of VD₃ in the blood is based upon the amount necessary to prevent hyperparathyroidism (high levels of parathyroid hormone or PTH), which increases bone loss—that means that increases in PTH induces more calcium loss from the bones. [Moyad 2009, 28]
- You should assume you are deficient in Vitamin D because “To the best of my knowledge, no group in the world consistently carries a higher than normal vitamin D blood level.” [Moyad 2009, 28]
- Vitamin D undergoes at least two changes in the body. The first is conversion to 25-hydroxyvitamin D₃ (i.e., 25(OH)D in the liver. The second conversion is in the kidneys that results in the active form of Vitamin D called 1,25-dihydroxyvitamin D (i.e., 1,25(OH)₂D). The most common Vitamin D test is for 25(OH)D; the best time to take the 25 (OH) D test is in the winter when the sun is not available to create Vitamin D. [Moyad 2009, 28; Brain 2011, 327]. Flu peaks in late February and March and may be explained in part by deficiencies in Vitamin D from lack of sunlight.
- The standard for Vitamin D is 60 ng/ml in the blood. Less than 30 ng/ml is considered to be deficient. It has been found that women who have less than 52 ng/ml have twice the risk of getting breast cancer. Based upon evidence from his medical practice, Dr. Frank Shallenberger has found it is rare to find anyone with Vitamin D levels greater than 40 ng/ml. [Shallenberger, Potpourri, 2014, 1] Another study indicated that one-third of all Americans have inadequate Vitamin D and eight percent are outright deficient [CDC/NCHS Data Brief, Number 59, March 2011] While the results of the latter study indicated less of a problem than the first, it’s a good idea to assume you are deficient, get tested, and start supplementation.
- The reasons for vitamin D deficiencies are age, belly fat, cholesterol lowering medications, inadequate diet, skin pigmentation, inadequate sunlight, use of sunscreen, and protective clothing, Age reduces the body’s ability to manufacture Vitamin D. Overweight individuals’ fat absorbs Vitamin D and release is slow. Lowering cholesterol may lower Vitamin D production. Plant-based diets are deficient of fish and other seafood. Dark skin blocks UVB. [Moyad 2009, 26] The presence of Crohn’s

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disease, cystic fibrosis, and celiac disease prevent the intestines from absorbing Vitamin D.

- Food sources of vitamin D are milk, fatty fish (e.g., salmon, herring, mackerel, sardines, tuna), meat, mushrooms, fish liver oil (the best single food source), egg yolks, cheese, beef liver, and fortified dairy and grain products. I do not recommend milk for adults because it is sugar intensive (11 grams per glass) and the sugars are not healthy. Low fat milk is even worse because the absence of fat increases the glycemic index. Unsweetened coconut and nut beverages and purified water (e.g., reverse osmosis, distilled) are superior. Vegetarian diets have little vitamin D. [Brain 2011, 327]
- Cod liver oil (CLO) has been a historical source of Vitamin D along with Vitamin A. and long-chain Omega 3 fish oils. Originally, cod liver oil was cold pressed; one teaspoon of CLO contained about 400 IU of Vitamin D. But extraction processes have changed over time and now substantially all vitamins have been removed. If they are not added back or "fortified" the CLO may contain little or no vitamin D unless Vitamin D is specifically added to the supplement. You must read the labels of any CLO to assure it contains the ingredients that you wish. [Lindsay 2010, 1]
- Symptoms of Vitamin D deficiency are bone pain, muscle weakness, cardiovascular disease, cognitive impairment in the elderly, depression, severe asthma in children, cancer (i.e., breast, colon, prostate, ovaries, esophagus, lymphatic system), Type 1 and Type 2 diabetes, hypertension, glucose intolerance, high blood pressure, rheumatoid arthritis, Parkinson's disease, etc. [Brain 2011, 329]
- Benefits of Vitamin D
 - Prevents cognitive decline and enhances hippocampal synaptic function (has a role in memory and anxiety) [Latimer 2014]. Amyloid- β ($A\beta$) plaque triggers neurodegeneration; Vitamin D protects brain neurons by preventing neuron cytotoxicity and apoptosis (prevents neuron cell death). Thus, Vitamin D may be useful in the prevention and treatment of Alzheimer's. [Dursum 2011, Abstract].
 - Vitamin D is an anti-inflammatory and improves the immune system.
 - Induces cancer cell apoptosis (cancer cell death) and reduces blood supply to tumors [Hushed, 2014, 6]. There is evidence of reduced cancer rates of over a dozen different cancers in sun intensive climates. Further, colon and breast cancer rates are 50 percent lower in individuals with high concentrations of Vitamin D. Low concentrations of vitamin D double the risk of aggressive prostate cancer. [Uncommon Cures, 2009, 79] Since vitamin D is a common deficiency, it is wise to take a daily supplement; this is a must in northern climates. Based upon my present knowledge, 1,000 to 2,000 mg pure Vitamin D dosage may be helpful ("pure" means no other vitamins in the supplement).
 - Essential for absorption of calcium for bone growth and retention. [Altbacker 2014, 1; Brain 2011, 326]

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- Reduces bone loss for those taking estrogen and testosterone supplements. [Moyad 2009, 28]
- Essential for cardiovascular health and optimal glucose metabolism,. [Altbacker 2014, 1]
- Vitamin D, in conjunction with Vitamin A, is crucial for immune system health. [Health Alert27(7); Altbacker 2014, 1]
- Defeats bacteria, viruses, and fungi. [Health Alert27(7)]
- Vitamin D is important to defeat chronic sinus, nasal, and breathing problems. [Health Alert27(7)].
- Individuals with rheumatoid arthritis (RA) have lower levels of Vitamin D and increased Vitamin D may prevent and perhaps treat RA. [LoGullo 2015, Abstract]
- TB can be treated with Vitamin D and antibiotics, and adequate level of Vitamin D will reduce the likelihood that infection will develop into TB. This is important because of the increase in totally drug resistant TB caused in part by treatment deficiencies.
- May be helpful for pain management.
- Dosage of about 1,000 IU often in the form of Vitamin D3 is helpful to assure adequate Vitamin D. [Dr. David Williams, Alternatives, Vol. 16, No. 4, April 2013] But other medical authority suggests 5,000 IU. [Shallenberger, Potpourri 2014, 1] My thought is to start with 1,000 IU, get blood tests, and then make adjustments to the dosage. But again, you should assume that you are Vitamin D deficient and supplement accordingly.
- Conversion ratios: [Moyad 2009, 29]

2.5 mcg	100 IU
5.0 mcg	200 IU
10 mcg	400 IU
15 mcg	600 IU
20 mcg	800 IU

- Vitamin D can be toxic in large doses. High doses of Vitamin D can dangerously increase calcium levels that damage the kidneys, blood vessels, lungs, heart, calcified atherosclerotic plaque in the aorta and carotid arteries. Rats perished from overdoses from calcification of coronary blood vessels. [[Kocher 2010, Abstract; Brain 2011, 333]

Vitamin E

- Types of Vitamin E:
 - Alpha (α) tocopherol or tocotrienol.
 - Beta (β) tocopherol or tocotrienol.
 - Delta (δ) tocopherol or tocotrienol
 - Gamma (γ) tocopherol or tocotrienol.

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- Vitamin E comes in natural (e.g., d-alpha tocopherol) or synthetic (e.g., dl-alpha tocopherol) forms, but natural is about two to three times more bioactive. Be sure to check your multi-vitamin to assure it is natural (i.e., "d" not "dl") Vitamin E..
- The many forms of Vitamin E mean that research has been limited to only a few and it is important to take supplements with a variety of the different types of Vitamin E, which should include tocotrienol.
- D-alpha tocopherol is the most biologically active, which is improved when Vitamin C acts as an electron donor to Vitamin E missing an electron in its work as an antioxidant.
- Tocotrienol
 - Tocotrienol, has about 60 times the anti-oxidant power of tocopherol, and dissolves arterial plaque. [Healthy Ways Newsletter, 4-2, Dr. Bruce Fife, p. 4-8 with references]
 - Cancer cells may be immortal in the sense they do not die, but tocotrienol can stimulate cancer cell death and terminate their malignant potential. Tocotrienols induce mitochondrial damage which starves cancer cells of energy in addition to reversing cancer cell immortality and inducing cancer cell apoptosis. [Life Extension, Oppenheimer, October 2016, 50-51]
 - In healthy tissue, adding quercetin supports tocotrienol in cancer cell apoptosis. [Life Extension, Oppenheimer, October 2016, 50-51]
 - Tocotrienols can slow aging changes in healthy cells, promote normal cell division and prevent normal cells from their damaging final stage in which they add to inflammation and, thereby, cancer. [Life Extension, Oppenheimer, October 2016, 50-51]
 - Gamma tocotrienols blocks the formation of new blood vessels (angiogenesis) and inhibit inflammation. [Life Extension, Oppenheimer, October 2016, 52]
- D-alpha tocopherol Vitamin E inhibits allergic inflammation in the lungs, while d-gamma contributes to allergic lung inflammation. Therefore, d-alpha tocopherol improves lung function. Olive, safflower, and sunflower are rich in d-alpha tocopherol and deficient in d-gamma tocopherol. Canola, soy, and corn oils are richer in d-gamma tocopherol and contribute to allergic lung function. [BLHB 2016, 1-2]
- Vitamin E is a blood thinner.
- Sources of Vitamin E are whole grains, legumes, seeds, dark green leafy vegetables, brans, and vegetable oils. But be careful about oils as a source of Vitamin E, because the oils are often heat altered, which kills the Vitamin E, and they are Omega 6 intensive (with the exception of fish and flax seed oils).
- Dosage: The problems with Vitamin E dosage are (1) there are so many different types (see #1), (2) that research studies do not always specify the type that is used rather stating "Vitamin E," (3) that most Vitamin E's do not contain all eight natural types, and (4) it's difficult to get adequate Vitamin E from diet. The Dietary

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- Reference Intake of the IMNA is 15 mg/day (1.49IU/mg) for alpha-tocopherol with no recommendations for other types of Vitamin E; supplements are typically much larger. There are additional issues of whether to take d-alpha tocopherol (the most biologically active), a combination of d-alpha tocopherol with some tocotrienols, or to take a supplement that contains all of the eight basic types of Vitamin E. Carlson's E Gem Elite (400 IU; available at Mothers Market, Jamboree and Michaelson, Irvine) contains all eight natural Vitamin E types and could be taken about four times a week since Vitamin E is oil soluble. It's a good idea to consult with your doctor before taking dosages higher than about 250 IU per day for special problems mentioned elsewhere in Six Pillars. Further, dosages greater than 400 IU appear to increase mortality (reduce life span) although the results are statistically not significant. [Miller, et. Al., "High-Dosage Vitamin E Supplementation May Increase All-Cause Mortality," *Annals of Internal Medicine*, January 2005, p. 37-48.]
- The benefits of Vitamin E for various symptoms: [Mark Stengler, *Natural Physician's Healing Therapies*, 2001, p. 471-473]
 - Alzheimer's: Vitamin E is an electron donor to damaged brain cells.
 - Artery cleaner: Tocotrienols clean arteries and are helpful for carotid stenosis, the buildup of plaque in brain arteries and veins.
 - Cataracts: The anti-oxidant power of Vitamin E prevent and may heal cataracts along with Vitamins B2, and zinc.
 - Cancer: Helpful to prevent cancer, and with selenium may prevent prostate cancer. One should take both tocopherols and tocotrienols.
 - Cholesterol: High cholesterol may respond to high doses of tocotrienols (400IU and above). It prevents oxidation of LDL and increases HDL. [Mark Stengler, *The Natural Physician's Healing Therapies*, 2001, p. 470] However, large doses of Vitamin E may increase LDL because the liver is induced to create excess LDL. Up to 400 IU of Vitamin E probably alright. [More Ultimate Healing 2010, 237-8]
 - Diabetes: Improves glucose tolerance.
 - Eczema: Taken internally and topically helps with eczema.
 - Fibrocystic breast syndrome: 800 IU of Vitamin E may help but subject to the 400 IU limit mentioned above.
 - Heart disease: Prevents the oxidation of cholesterol which contributes to plaque buildup in the arteries. In a study of 11,000 seniors over nine years, 400 IU daily of Vitamin E reduced heart disease 41 percent, and in another study of 2,000 people with heart trouble there was a 75% reduction using d-alpha tocopherol.
 - Immune system: Strengthens the immune system and helps with chronic infections.
 - Inflammation: Natural anti-inflammatory, and may be particularly helpful for rheumatoid arthritis.

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- Macular degeneration: Prevents and improves effects of macular degeneration.
- Memory: Vitamin E and Vitamin C act as synergistic antioxidants to defeat free radicals in the brain to improve memory.
- Menopause: Reduces hot flashers dryness taken in doses of 400 to 800 IU.
- Multiple sclerosis: Helps prevents relapses.
- Parkinson's: Anti-oxidants reduce damage form free radicals.
- Vascular disease: Improves blood flow to hands and feet because it is a blood thinner.

Vitamin K

- Vitamin K is a fat-soluble vitamin (the other fat-soluble vitamins are A, D, and E) helpful to prevent/treat blood clotting, osteoarthritis, calcium buildup in the arteries (e.g., aorta), liver cancer, and osteoporosis (helps calcium bind to bone).
- Vitamin K is a strong anti-oxidant.
- Vitamin K reduces arterial stiffness. A daily dose of 180 mg of the MK-7 version of vitamin K2 reduced arterial stiffness in healthy postmenopausal women over the course of a three-year study. It also protects against soft tissue calcification and calcium accumulating in arteries. [Life Extension April 2017, 15 November 2017, 7] This means that Vitamin K can reduce, perhaps significantly, arterial stiffness. And Vitamin K can reverse arterial stiffness caused by calcium. There is a correlation between low calcium in arteries and low risk of heart attacks.
- Best sources are leafy green vegetables; kale, collard greens, spinach, beet greens, and Swiss chard.
- If you take warfarin, you should be careful about the intake of leafy green vegetables because of the large variations in Vitamin K (up to three-fold in the same vegetable). [See Sarah Booth, PhD, Bottom Line's Healing Kitchen Library, 2012, p.83-84]

Water

- Pure water is essential to (1) provide water for cells and organs and particularly the brain, and (2) remove impurities from cells and organs, thus reducing the likelihood of many illnesses including cancer. Other beverages (coffee, tea, soft drinks, fruit juices, milk) are not substitutes for pure water—because they aren't pure and may be harmful to health because of caffeine, sugar, high fructose corn sugar, etc.
- Dehydration causes water to be extracted from cells and from the large intestine. Cellular damage leads to cancer and dehydration of the large intestine leads to constipation.
- I recommend about $\frac{3}{4}$ liter per 50 lbs. daily. Massive amounts of water will flush away valuable vitamins, minerals, and other nutrients. [Heilbron 2013, 19]
- It is important to drink three to four ounces of water before bedtime to regenerate the water in the spinal disks—one portion of the disks is 80 percent water--that is lost during the day. If you fail to replenish spinal disk water, the result is disk failure from lifting or

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exercise. Generally, spinal disk injuries are not caused by lifting or exercise; the injuries are caused by weakened disks over many years of water deficiency.

- Dehydration can lead to constipation because the body draws water from the large intestine, the stool becomes hard, and loses its mobility. It's important to drink at least ½ liter of water between meals and reduce liquids at dinner to avoid dilution of digestive enzymes.
- In the holistic literature, distilled water, produced by boiling and collecting the steam, is considered the best because harmful minerals are left behind. However, all minerals are left behind including the beneficial minerals, so it is necessary re-mineralize with trace minerals or lemon/lime juice squeezed from organic fruit added to the distilled water. One way of telling the characteristics of the minerals being removed in distilled water is to taste the residue after distillation—it tastes terrible. Distilled water does not remove VOCs but they may be reduced if the distilled water is discharged into an open container.
- The next best water is reverse osmosis. If you distill reverse osmosis water the residue does not have a very bad taste indicating its effectiveness at removing minerals, but suggests the importance of re-mineralizing reverse osmosis water before drinking.
- Do not drink tap water because of fluorides, chlorine, and unintended contaminants that cannot be removed in municipal water supplies. See “Fluoride” for the harmful effects of fluoride.

Wheat

- See also “Gluten Intolerance.”
- Wheat contributes to the aging process because it gives massive spikes in blood sugar. In one test, two pieces of whole wheat bread increased blood sugar from 86 fasting to 155 45 minutes after consumption. In general, avoid wheat products. Oatmeal increased blood sugar from 86 to 112. [Geary 09.27.2014]
- Wheat products, along with French fries, muffins, and browned starchy food, contain carcinogenic chemicals in the browned portions called acrylamides. [Geary 09.27.2014]

Zinc

- Zinc is necessary for immunity, wound healing, and preventing macular degeneration. [Micozzi Insider May 2014]

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About the Author

Herman Kelting was born in Chicago and raised around East Los Angeles. When he graduated from Whittier High School in 1953, he entered a machinist apprenticeship which resulted in termination after a short time because of the end of the Korean War. A few months later he began his freshman year at Stanford University majoring in industrial engineering with an emphasis in engineering economic and capital budgeting. Upon graduation in 1958, he returned to Chicago to begin a career as a manufacturing engineer and began the evening-division MBA program at Northwestern University.

Following his college dream of employment in capital budgeting, he commenced employment as an engineer with the Internal Revenue Service in Chicago in 1962. The scope of this work was asset valuations and present-value, financial analysis. Functionally, he integrated accounting, finance, federal and state law, economics, statistics, and business valuation. These academic areas were important to Six Pillar Tips for Health Management because it was necessary to identify issues and perform research quickly and efficiently using a variety of technical resources, interact with many other professionals, make oral recommendations, and write integrated professional reports.

In 1969, he entered the PhD program in real estate and urban land economics under Professor Jim Graaskamp at the University of Wisconsin. Later, he spent ten years in academic life and then returned to the Internal Revenue Service in San Francisco and Plantation, Florida. After retirement at age 73 in 2009, he began advertising an indoor air quality business with the Century City News in West Los Angeles and was asked to write articles on IAQ. He expanded this publication request to Six Pillars Tips for Health Management and later began publishing a continuous column for the Newport Beach Sunrise Rotary Club. The Club worked with Camp Pendleton Wounded Warrior Battalion West, and he began to research PTSD at the request of the office of Senator Diane Feinstein and published "Recommendation to Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel." This research alerted him to the dangers of stimulants in general and PTSD in particular.


During retirement, he also performed stock pricing research from data gathered at the Stanford Graduate School of Business Library and published "Statistical models Applied to A Log-Normally Distributed Asset/Pricing Statistic: the Asset Gross Revenue Multiplier (AGRM)" with co-author Dr. Sadri Kahlessi; he discovered the AGRM stock pricing model in 1988. This research supported a gross revenue multiplier as the principal stock pricing statistic used by professional investors in the public market for stocks, which was never before published. In essence, stock share prices may be estimated from the market capitalization value of total assets (MCVTA) less total liabilities divided by number of outstanding shares of common stock; MCVTA is equal to the AGRM derived from comparable sales perhaps using multiple regression times gross revenue.

He found health management research stimulating and very rewarding; he has defeated pain and *healed* knee, shoulder, and spinal cord injuries with earthing and a serious back injury from resistance training with Wobenzym-N. He has also defeated gout with Bragg's Apple Cider vinegar. He begins his day with a 40-minute hilly bicycle ride before breakfast, swims about an hour on alternate days, and combines hiking in Red Rock Canyon with resistance training on alternate days for a minimum of about 90 minutes of moderate exercise a day at age 82. He also performs residential electromagnetic field home inspections.

Appendix A

Kelting, Herman. "Recommendations to Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel." *Indian Journal of Applied Research* 6(9) (September 2016): 510-519.

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Recommendations To Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel

KEYWORDS Stress, Traumatic Stress Disorder, Military Personnel

Herman Kelting
PhD,

ABSTRACT The hypotheses of this article are that (1) caffeine, refined carbohydrates, lack of sleep, the absence of stress-reduction modeling, and poor air quality combine with a traumatic event to increase the incidence of post traumatic stress disorder, (2) that substantial reduction of caffeine and refined carbohydrates, increased sleep, metaphysical modeling to reduce stress, and improved air quality, would help prevent PTSD, and (3) treatment of those afflicted should include prevention options plus earthing and inspection of homes and automobiles to improve air quality and reduce electromagnetic fields.

Prevention of PTSD requires elimination of non-medical caffeine and reduction of refined carbohydrates. Caffeine is an addictive drug, causes overnight withdrawal symptoms which are "corrected" with the day's coffee, is crisis elastic, raises blood pressure particularly when one is under stress, may adversely affect cortisol, increases the fight or flight mode, is correlated with smoking, alcohol, and cocaine use, causes hallucinations and coffee allergies, exacerbates psychotic symptoms, abolishes threat-related mPFC wall activation associated with post-traumatic stress disorder, etc. Refined carbohydrates increase stress, anxiety, hyperactivity, and blood pressure. Sleep must be increased because lack thereof contributes to hallucination, headaches, confusion, anxiety disorders, irritability, seizures, mania, and high blood pressure. Metaphysical modeling would be helpful to reduce stress. Indoor and outdoor air quality should be reviewed for improvement. All Department of Defense (DOD) personnel who follow the No Caffeine Rule should be required to take exercise breaks at least every ten minutes in every-two hour period at work to increase alertness and productivity.

Treatment of PTSD requires dietary intervention to improve the overall diet including eliminating caffeine and reducing refined carbohydrates, managing sleep, engaging in earthing to normalize body functions, swimming with a face mask and snorkel, and inspecting homes and automobiles for poor air quality and electromagnetic fields.

Hypotheses

The hypotheses of this article are that (1) caffeine, refined carbohydrates, lack of sleep, the absence of stress-reduction modeling, and poor air quality combine with a traumatic event to increase the incidence of post-traumatic stress disorder, (2) that substantial reduction of caffeine and refined carbohydrates, increased sleep, metaphysical modeling to reduce stress, and improved air quality, would substantially reduce the incidence of PTSD by Department of Defense personnel, and (3) treatment of those afflicted should include prevention options plus earthing and inspection of homes and automobiles to improve air quality and reduce electromagnetic fields.

The approach we use to support these hypotheses is to review the literature of prevention options and the literature and our knowledge of a healthier life style from our research in creating Six Pillar Tips for Health Management.

Part I: The nature and prevalence of PTSD

Posttraumatic stress disorder

PTSD Defined

PTSD is defined as a trauma- and stressor-related disorder in the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5); in DSM-4, it was classified as an anxiety disorder. Now, DMS-5 indicates that PTSD can be understood in the context of anxiety and fear-based context in some cases, but in other cases PTSD resembles additional symptoms such as anhedonic (i.e., inability to experience pleasure) or dysphoric mood states (i.e., unhappiness, discontentment, anxiety), arousal and reactive-externalizing symptoms, dissociative symptoms, or combinations of

these symptoms. - [1, 2]

PTSD is always associated with a traumatic or stressful event and usually develops from an unexpected traumatic event such as violent personal assault, confinement, terrorist attack, severe automobile accident, explosion, etc. [1] Great danger is usually present and one is fearful of his or her life and for the lives of others. The results are four clusters of symptoms which are disruptive of normal life including intrusion, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity [1] During the first month after the traumatic event (excepting the first three days), the feelings are categorized as Acute Stress Disorder (ASD), up to three months it is termed acute PTSD, and in subsequent months, chronic PTSD. If the symptoms begin at least six months after the traumatic event, the condition is referred to as delayed-onset PTSD. [3] Direct exposure to violence is the single greatest directly measured cause.

Prevalence of PTSD

The lifetime prevalence of PTSD in the United States has been estimated from studies at between eight to 12 percent with the incidence rate for woman being about twice that of men. The PTSD life time prevalence rates in foreign countries are much lower with the highest rate outside the United States being 4.8 percent in the Ukraine. [4] DSM-5, 276 indicates the lifetime risk for PTSD is 8.7 percent. In Europe, and most Asian, African, and Latin American countries the rates vary from about 0.5 to 1.0 percent. [1]

The PTSD lifetime prevalence rate for Vietnam veterans is estimated at 31 percent for men and 27 percent for

Appendix B

Kelting, Herman. "United States Congressional Research and Legislative Proposals to Educate the American People About the Power Density Safety of Wireless Communications ($\mu\text{W}/\text{m}^2$)" *Indian Journal of Applied Research* 8(1) (January 2018): 263-271. [Conversion of pdf to Word document follows; see original publication for the original article.]

Original Research Paper

Engineering

UNITED STATES CONGRESSIONAL RESEARCH AND LEGISLATIVE
PROPOSALS TO EDUCATE THE AMERICAN PEOPLE ABOUT THE POWER
DENSITY SAFETY OF WIRELESS COMMUNICATIONS ($\mu\text{W}/\text{M}^2$)

Herman Kelting

ABSTRACT The purposes of this article are to provide research and legislative recommendations to the United States Congress to increase education of and protection from adverse health conditions associated with wireless communications. I discuss 48 adverse health conditions caused by radio frequency field radiation (RFFR) and hypothesize that the decline in labor force productivity and increases in depression and contemplation of suicide rates of college students may be caused by RFFR. I offer 11 research suggestions including determining if an RFFR source is more dangerous indoors than outdoors, whether RFFR interfere with the Schumann Resonance and/or human brain waves, and if there is a natural limitation of RFFR beyond which an individual becomes electromagnetic hypersensitive. I propose seven legislative activities including creation of a new federal agency to support research of and protection from RFFR-emitting equipment, and notices of RFFR power densities expressed in $\mu\text{W}/\text{m}^2$ on RFFR-emitting equipment and in enclosed public spaces housing Wi-Fi. **KEYWORDS** : Radio frequency harm to humans, Wi-Fi and cell phones adverse health conditions, Research and legislative

protection from cell phones

I. Introduction

During the past five years I have been engaged in research of health management literature to produce Six Pillar Tips for Health Management (SPT) the latest edition of which is Edition 25, June-July

2017 [1]. The principal objective of SPT is to provide readers with a Six-Pillar classified set of health recommendations to guide their life style from strategic planning and vision building through reduction of stress and pollution to symptom relief using alternative and complimentary medicine, and dietary planning.

In June 2014, I began to research the literature of electromagnetic fields (EMFs), which include magnetic fields and electric fields, radio frequency field radiation (RFFR), and dirty electricity; my principal interest in EMF research became radio frequency field radiation because of the explosive growth of RFFR-emitting cell phone base stations, cell phones, Wi-Fi, smart meters, and cordless phones. My initial research findings were published in SPT October 2014 and updated continuously since then. In my research of the literature and occasional home inspections of EMFs, I have become deeply concerned with the potentially catastrophic health consequences of wireless technology. I have found what appears to be overwhelming evidence that RFFRs cause cellular changes, symptoms, and illnesses in humans and rats which I call “adverse health conditions.” Further, there is inferential evidence that RFFRs are causing injury to broad classes of Americans so severe that it

could lead to the decline in human health and economic productivity of our civilization—which appears to have already begun.

I have reached these conclusions from a broad background in academic fields of engineering and business, and business experience in accounting, business valuation, engineering, engineering economics, finance, law, statistics, real estate appraisal and investment, and history. Indeed, my PhD dissertation, *The Great Bong Bungle*, was a historical analysis of a 15-year land use problem caused by United States Air Force abandonment of the partial construction of a joint intercontinental bomber-fighter interceptor base in southeast Wisconsin. This PhD research, in conjunction with five history courses I took at Stanford University, has made me uniquely sensitive to the importance of evaluating present events in the context of their future environmental effects, and building hypotheses predicting the future from present statistical data.

The scope of this article is to offer evidence supporting the probable harm to humans from radio frequency field radiation, offer U.S. Congressional proposals for research issues which should lend support to the safety of or harm from RFFR, and Congressional legislative proposals to educate and protect the American people from the harm from RFFR, if such harm exists based upon medical evidence. This article began with an unsolicited report I sent to Senator Catherine Cortez-Masto on November 9, 2017, which has been article-revised to internalize citations and expand ideas.

II. Evidence linking 48 adverse health conditions in humans and rats to RFFR wireless equipment

- A. **Scope of research selections for the 48 symptoms** The scope of the research of the literature in this section are from medical studies showing a causal relationship between electromagnetic fields (generally RFFR but a few examples of magnetic fields) and adverse health conditions of cellular damage, adverse symptoms, and/or illnesses in humans or rats induced mostly by RFFR. I would estimate that at least 80 percent of the medical research articles I have read concluded there were causal links between RFFRs and adverse health conditions, but these are not necessarily a random sample of all medical research articles relating adverse health conditions to RFFR.

Indeed, not all would agree with my selection of the medical research articles in this section. In their 2004 “International Workshop on EMF Hypersensitivity,” the World Health Organization reported that the symptoms of electromagnetic hypersensitivity are “certainly real” but that “...there presently is no scientific basis to link EHS with EMF exposure.” Further, WHO recommended treatment options focusing on “health symptoms” including “...assessment... of indoor air pollution, excessive noise, poor lighting (flickering light) or ergonomic factors” and psychiatric causes. [2]

In their 2005 summary of the 2004 workshop, WHO stated that “The collection of symptoms is not part of any recognized syndrome.” and “Treatment of affected individuals should focus on the health symptoms and the clinical picture, and not on the person's perceived need for reducing or

eliminating EMF in the workplace or home.” [3] In 2014, WHO stated “To date, research does not suggest any consistent evidence of adverse health effects from exposure to radio frequency fields at levels below those that cause tissue heating.” [4]

In my opinion, the level of evidence to support a causal relationship between RFFR and adverse health conditions for public health organizations to inform the public of a health hazard from wireless personal property is not a *global* body of “consistent evidence” but rather evidence from a measurable *subset* of medical research evidence *within* the global body that provides a consistent causal link between EMFs and adverse health conditions. “Subset” refers to those medical research studies that show a causal link between any adverse health condition and RFFR for a variety of adverse health conditions. Indeed, it is a sample of these subsets showing a causal relationship between EMFs—principally radio frequencies—and adverse human health that I am providing in the material which follows in this section.

- B. **The 48 adverse health conditions caused by RFFR** In my research of the literature linking RFFR emissions from wireless equipment to adverse health conditions, I have found 48 adverse health conditions in humans and rats that have been shown to be caused by wireless equipment (e.g., cell phone base stations, cell phones, Wi-Fi, smart meters, cordless phones). The sources for the 48 adverse conditions are clinical research studies and the opinions of medical professionals with references for each provided at the end of this report.

The list of 48 (20 listed under “Adverse human health conditions from RFFR-emitting sources” plus 28 (29-1=28) numbered adverse health conditions) are listed in the order of importance, understandability, and category association.

Adverse human health conditions from RFFR-emitting sources: Questionnaire research has indicated about 20 adverse human health conditions from RFFR-emitting sources including sleep disturbances (1), headache (2), depression (3), fatigue (4), dysesthesia (5), concentration dysfunction (6), memory changes (7), dizziness (8), irritability (9), anxiety (10), nausea (11) skin buffing or warming (12), EEG changes (13) and others. [5] In one study of 25 individuals exposed to radio and TV broadcasting transmitters, it was found they suffered from somatization (multiple symptoms with no discernable organic cause) (14), obsession-compulsion (15), paranoid states (16), and sleeping disturbances (17). [6] In a study of 17,000 individuals, 31% of respondents in Norway and 13% in Sweden reported at least one symptom from cell phone use of warmth on the ear, burning sensation on the face, and/or headaches. [7] In a Spanish study, it was found that those living near a cell phone base station suffered from discomfort, irritability, appetite loss (18), fatigue, headache, difficulty concentrating, and sleep disturbances. [8]. In a review of ten studies, reviewers found increased incidence of adverse neurobehavioral symptoms or cancer for individuals living less than 500 meters from cell phone base stations; power output of all were within international guidelines indicating guidelines are inadequate. [9] Thirty-seven individuals living under a mobile phone base station and 48 opposite the station reported a significantly higher prevalence of neuropsychiatric symptoms such as headache (23.5%), memory

restriction, and delayed puberty. [19] In a study of children and adolescents exposed to radio frequencies for 24 hours, 7% of the children and 5% of the adolescents showed abnormal behavior. [20]

Children, myelin sheath, damage to: The myelin shield protects the electrical activity of brain neurons and develops from midgestation to two years of age and through adolescence. It is adversely affected by radio frequency fields. [21][22]

Children: Dry eye disease. Up to 9.1% of children had dry eye disease which improved when smartphone use discontinued for four weeks. [23]

Brain damage: Brain neuronal damage was found in the cortex, hippocampus, and basal ganglia in rats exposed to two hours of GSM. [24] Rat brain exposed to 15 minutes of 900 MHz RF induced glial (cells which surround neurons) and neuronal damage and changes in the dopamine transporters. [25] Rats exposed to 900 MHz RF for one hour per day for 28 days showed reduced number of Purkinje cells in the cerebellum. [26] Oxidative stress in the brain increased from cell phone use and reduced by melatonin; oxidative stress continued for 40 and 60 days after end of exposure. [27] Humans exposed to a GSM 900 cell phone for 45 minutes showed intracordal excitability in the brain near the cell phone. [28]

Cancer, brain tumors: Glioma and acoustic neuroma. Research of the Hardell group of studies found odds ratios of 1.71 for cancer of the temporal lobe, 1.81 for acoustic neuroma, and 2.29 for Ipsilateral cumulative use. Cordless phone use increased the odds ratios for glioma and acoustic neuroma. [29]

0. Cancer, leukemia: Radio frequencies of 2.48 GHz increase lipid peroxidation and proliferation of leukemia cancer cells. [30]
1. Cancer, parotid (salivary) gland. Mobile phones have a causal relationship with

changes 28.2%), dizziness (18.8%), tremors (9.4%; 19), depressive symptoms (21.7%), and sleep disturbances (23.5%) than controls. [10] In a questionnaire survey of EHS individuals in Japan, symptoms reported were fatigue/tiredness (85%) and headache-concentration-memorythinking (81%). Sixty-five percent (65%) experienced health problems due to radiation from other passengers' mobile phones in trains or busses and 12% reported they could not use public transportation. Fifty-three percent (53%) had a job before the onset of EHS, but most had lost their job or had reduced income. [11] In a questionnaire study of 206 EMH individuals, it was found that the most common symptoms were nervous system related disorders of stress (60.3%), sleeping disorders 59.3%), and fatigue (57.2%). Seventy-six percent (76%) reported reduction or removal of the sources helped in full or partial recovery. [12] Mobile phones caused marked changes in the C-fiber nerves in the scalp. [13; #20]

Fetuses: Increased risk of brain damage. Pregnant rats were exposed to 900 MHz radio frequency 60 minutes per day during gestation (carrying of embryo). Four weeks after birth it was found that there was a decrease in the number of granule cells in the dentate gyrus in the rats' brain hippocampus. [14]

Fetuses: Miscariages In an occupational setting, mothers exposed to microwaves were more likely to have miscarriages and the rate was dose dependent. [15]

Children, Attention Deficit Hyperactive Disorder (ADHD): About 3-7% of school aged children suffer from ADHD and the rate is growing about three percent per year since 1997. ADHD children have deficiencies in working memory controlled by neurons in the prefrontal cortex. In a study of in-utero (pregnant) rats exposed to radiofrequencies similar to cell phones/Wi-Fi, it was found that after birth

parotid gland tumors for regular cell phone users or high-power density conditions with odds ratios of about 1.50. [31]

2. Cancer, various organs: Radar technicians exposed to high levels of RFFR for long periods are candidates for cancer if various organs including melanoma of the eye, testicular cancer, nasopharyngioma, non-Hodgkin's lymphoma, and breast cancer. [32]
3. Cancer: heat shock proteins: Chronic expression of heat shock proteins are a known cause of oncogenesis, metastasis, and/or resistance to anti-cancer drugs. The hypothesis is that cell phone radiation triggers repetitive stress leading to heat shock proteins and, thereby, cancer. Heat shock protein HSP 70 increased after 4 hours of 1800 MHz exposure suggesting that cell phones may cause cancer from extended cell phone use. [33][34]
4. Calcium ion changes: Exposure to 2.48 MHz radio frequency field led to an increase in calcium ion efflux and ornithine decarboxylase activity with a decrease in calcium-dependent protein kinase. These changes promote cell proliferation and differentiation leading to tumors. [35]
5. Melatonin reduction: There is evidence that EMFs disrupt and reduce melatonin perhaps because the pineal gland interprets EMFs as light. Melatonin is a very powerful anti-oxidant, is believed to defeat several types of cancer, and enhances sleep. [36][37]
6. Blood brain barrier, increased permeability of. After one, nonthermal GSM exposure of two hours increases in the BBB was found seven days later, and dark and damaged neurons after 14 days. [38][39]
7. DNA damage: In a study of 900 MHz, 1800 MHz, and 2450 MHz radio frequencies applied to rats for 30 days, it was found that brain DNA strands were broken indicating damage to brain DNA from radio

the rats were hyperactive and had impaired memory caused by altered neuronal development in the prefrontal cortex. Thus, there appears to be a causal link between ADHD and exposure to radio frequencies from cell phones, Wi-Fi, cordless phones, and other sources of radio frequencies during pregnancy. [16] Children, behavioral difficulties: In a study of 13,159 children exposed before or after birth to cell phones, the odds ratio was 1.80 the children had behavioral difficulties or were hyperactive at the beginning of school. Since this study was completed in 2006 before extensive cell phone use, the present odds ratio may be much higher. [17] Children living near a radio station in Latvia were found to have reduced developed memory, attention, reaction time, and neuromuscular apparatus vs. control group. [18] Exposure to 2450 MHz radio frequency field for prenatal and postnatal rats resulted in increased total oxidant stress and oxidative stress indicating chronic stress, postnatal growth

frequencies similar to cell phones and Wi-Fi. [40][41]

8. Eye damage: Rats were exposed to Wi-Fi for one hour per day for 30 days resulting in statistically significant lower glutathione peroxidase (GSH-Px), an enzyme family that protects the eye from oxidative damage. Melatonin supplementation reversed the damage, but radio frequency radiation reduces natural melatonin and if you do not take melatonin supplements the lens damage may be permanent. [42]
9. Cataracts: Mobile telephone radiation leads to oxidative stress in the corneal and lens tissues and Vitamin C may help to correct. [43]
0. Stress, sleep disturbances, and depression: A one-year follow up study of 4,156 young adults (20-24 years of age) found a correlation between mobile phone exposure (frequency of use, availability, awakened at night, personal overuse) and stress, sleep

- disturbances, and symptoms of depression for men and women. [44]
21. Heart, adverse influence on: It was found that 2.48 GHz radio frequency for 60 minutes per day for 28 days increased lipid peroxidation (*i.e.*, free radicals steal electrons from lipids such as fats and fat-soluble vitamins leading to damaged molecules) in the heart and decreased concentrations of Vitamins A, C, and E. Improvements were shown by supplementation with selenium and L-carnitine. [45] RFFRs increased oxidative stress in the heart. [46]
 22. Sperm damage. Study of 361 men in fertility clinic had reduced sperm count, motility (moving properly through the female reproductive tract), viability, and normal morphology (size and shape of sperm under microscope; >14% normal) as daily cell phone usage increased from zero, <2 hours daily, 2-4 hours daily, and to >4 hours daily usage. [47]
 23. Testes damage: Rats were exposed to 2.437 GHz Wi-Fi for 24 hours per day for 20 weeks resulting in a significant increase in serum 8-hydroxy-2-deoxyguanosine levels and 8hydroxguanosine staining indicating DNA damage in the testes due to Wi-Fi exposure. [48] The exposure in this experiment for 24/7 may be similar to anyone living at home with the WiFi on 24/7.
 24. Thyroid hormones: A 2480 MHz radiofrequency field decreased thyroid hormone T3, increased T4, and caused hyperactive and aggressive behavior after 16-21 days. [49]
 25. Electromagnetic hypersensitivity (EMH): EMH is a collection of symptoms including redness, tingling, burning sensations, fatigue, tiredness, concentration difficulties, dizziness, headaches, nausea, heart palpitations, digestive disturbances, etc. [2] In October 2014, the World Health Organization of the United Nations stated, "To date, no adverse health effects have been established as being caused by mobile phone use...Further research has not been able to provide support for a causal relationship between exposure to electromagnetic fields and selfreported symptoms or 'electromagnetic hypersensitivity'." [4] In a study of 23 individuals claiming EHS it was demonstrated that transcranial magnetic stimulation resulted in alternations to the central nervous system from altered cortical excitability showing that there ARE objective measures of a causal relationship between EMH claims and changes in body function indicating that EMH is a real, not imagined illness. [50]
 26. Autoimmune processes: In a study of the effect of 2.450 GHz on autoimmune processes, it was found that there was a non-thermal effect on autoimmune processes measured by increases in formation of antibodies in the brain, which did not appear to be pathological, and possible adverse effects of blood serum affecting pregnancy and fetal development. [51]
 27. Inflammation: Radio frequency radiation of 2.48 GHz significantly increased lung multinucleated giant cells associated with inflammation formed by fusion of macrophages as a measure of pulmonary stress. [52]
 28. Internet addiction disorder: Research indicated that internet addiction disorder results in multiple structural changes in the brain. [53]
 29. Gene expression, changes in. It was found that a radio frequency field of 2.48 GHz changed 221 genes in two hours of exposure and 759 in six hours for human

cultured HL-60 cell genes through a non-thermal mechanism. [54]

This list of 48 adverse health conditions in humans and rats is the first set of data I provide in this report to support the research and legislative proposals I offer in Sections VI and VII.

III. Evidence supporting my ability to specify and support medical hypotheses: Prevention and treatment of Post-Traumatic Stress Disorder

As a result of my membership in the Newport Beach Sunrise Rotary Club (NBSRC), their association with Wounded Warrior Battalion West at Camp Pendleton, and my publishing *Six Pillar Tips for Health*

Management [1] on the NBSRC web site for 19 editions starting in January 2013, I hypothesized that excess stimulants (e.g., caffeine, refined carbohydrates, electromagnetic fields) were contributing to Post-Traumatic Stress Disorder (PTSD). Because I had access problems to Camp Pendleton personnel after I objected to their not providing dietary intervention for PTSD victims to reduce stimulants, I contacted the office of Senator Diane Feinstein and had a meeting with one of her staff members; he asked me to write a report to support my stimulants/PTSD hypothesis. This led to "Recommendations to Prevent and Treat Post-Traumatic Stress Disorder for Military Personnel" [55] Notably, one research article ["Strom in a Coffee Cup."] linked caffeine to PTSD.

I recommended elimination of caffeine, reduction of refined carbohydrates, increased

sleep, metaphysical modeling, improved indoor air quality, and reduction of electromagnetic fields to prevent and treat PTSD for military personnel.

I am offering this PTSD hypothesis-based research article as evidence that I have the ability and training to develop medical hypotheses with supportive research in the absence of academic or career medical training. Indeed, I have found that interest, focus, and concentrated research are the keys to developing and supporting new ideas to solve business and societal problems. Further, in my research as an engineer with the Internal Revenue Service for 30 years, I frequently worked financial issues that had unique intellectual components and utilized principles of accounting, business valuation, economics, federal (for rules and economic models) and state (for rights in property) statutory and case law, finance, and statistics.

IV. Hypothesis: Wireless technology may be causing potentially catastrophic harm to humans

As I began to research the literature linking wireless equipment in June 2014 for the October 2014 issue of *Six Pillars Tips for Health Management*, I began to build the following hypotheses or predictions of future harm to humans from wireless equipment:

1. There would be a decline in the Labor Force Productivity annual growth rate because proven damage to rat brains probably applied to humans.
2. There may be a similarity between the delayed symptoms from brain damage from contact-sport concussions (Chronic Traumatic Encephalopathy, CTE, or nerve

damage) and delayed symptoms from brain damage from wireless technology estimated by some medical professional at about ten years. Presently, I have no evidence linking concussion brain damage to RFFR brain damage, but there is evidence of delayed-onset brain damage from RFFR.

3. Human depression rates would increase. I provide evidence of this below.
4. Human suicides and suicide contemplation rates would increase. I provide evidence of this below.
5. Drug use would increase because of adverse changes in mental condition from depression, contemplation of suicide, and other mental problems. The epidemic in opiate use may support this hypothesis, but I expect increases in recreational drug use.
6. There may be increases in violent crime. Presently, I have no specific evidence this is occurring, but I am suspicious that some of the mass shootings may be influenced by RFFRs from wireless equipment.
7. Working lives would decline from the mid-60s to the mid-50s and perhaps even lower because of damage to human cells and organs. Presently, I have no evidence this is occurring.

V. Statistical evidence supporting my hypothesis that wireless equipment is causing potentially catastrophic harm to humans in

the United States

A. Declines in Labor Productivity: 2011-2016

Table 1 shows Labor Productivity for 2000-2016. Based upon this data and other older data not shown, I have concluded that the expected labor productivity is about 3.0% coming out of a recession compared with average labor productivity of 0.5% from 2011

to 2016 when wireless technology had been used extensively for many years. This is a decrease of over 80%. Labor productivity is the key to increasing incomes and if the decline in Labor Productivity continues, our standard of living will stagnate and perhaps decline.

Table 1: Decline in Labor Productivity 2000 to 2016

"Bureau of Labor Statistics" "Major Sector Productivity and Costs" "Original Data Value" "Labor productivity (Output per hour)"			
Year	Increase	Year span	Av Prod
-----	-----	----- ---	----- ---
2000	3		
2001	2.7		

References

2002	4.4		
2003	3.7		
2004	3.1		
2005	2.1	2000-5	3.2
2006	0.9		
2007	1.6		
2008	0.8	2006-8	1.1
2009	3.1		
2010	3.3	2009-10	3.2
2011	0.1		
2012	0.9		
2013	0.3		
2014	0.8		
2015	0.9		
2016	0.2	2011-16	0.5

B. Increases in depression and suicide contemplation rates for college students

Table 2 Percentage of respondents who “Felt so depressed that it was difficult to function at any time in the last 12 months.” and who ”Seriously considered suicide.”

	Depression	Suicide
	-----	-----
Fall 2008	30.6%	6.4%

References

Spring 2009	30.7	6.0
Fall 2010	28.4	6.0
Spring 2010	30.7	6.2
Fall 2010	28.4	6.0
Spring 2011	31.1	6.4
Fall 2011	30.3	6.6
Spring 2012	31.3	7.1
Fall 2012	29.5	6.9
Spring 2013	31.3	7.4
Fall 2013	30.9	7.5
Spring 2014	32.6	8.1
Fall 2014	33.5	8.7
Fall 2015	35.3	9.6
Spring 2016	36.7	9.8
Fall 2016	38.2	10.4

Table 2 data is taken from the semi-annual survey of about 33,500 college students by The American College Health Association National College Health Assessment. The questions were “Felt so depressed that it was difficult to function at any time in the last 12 months” and “Seriously considered suicide.” The percentages shown are for males and females combined. Depression rates have increased from 30.6% in the Fall of 2008 to 38.2% in the Fall of 2016 for an average increase of about one percent per year. But most of the increase has been from Fall 2013 (30.9%) to Fall 2016 (38.2%), a three-year span, for an average rate of increase of 2.4%. If these rates of increase continue, the adverse health effects on college students and their aging cohort groups will be catastrophic.

References

Table 2 also indicates that suicide contemplation rates have increased steadily from 6.0% in Spring 2009 to 10.4% in Fall 2016, or 0.6% per year. The suicide contemplation rates in conjunction with the increases in depression and 48 adverse health conditions discussed elsewhere indicate potentially catastrophic health problems in the future.

Notably, Jenny Fry, a UK teenager, committed suicide because of Wi-

Fi at school. [56]

VI. Proposed research issues for the RFFR-oversight/education/ protection federal agency

A. Research Issue #1: The institutional setting for research—a proposed RFFR-oversight/education/protection agency

In June 1994, the United States Air Force's Rome Laboratory published a report summarizing harm to humans from radio frequencies and microwaves. [57] The report listed a number of known adverse biological effects mostly attributable to the nonthermal effects shown in medical studies cited in the report. These biological effects included radiation burns on dogs visibly appearing weeks after exposure (p. 3), hyperthermia (4), disruption of blood vessel integrity in the brain (4), fever (4), fatigue (4), injury to the blood brain barrier

(4), increases in cancer rates (5, 8), cellular mutagenic effects (5), damage to chromosomes (6) lymphoblastoid transformations (6), aberrations in the cardiovascular system (e.g., increase in heart rate) (7-8), changes in the heart rate (7), changes in bone marrow (8), damages to the central nervous system (8-9), behavioral changes (9) damages to the immune system (11), cataracts and other damage to the eye that can result in loss of vision (11-12), buzzing noise emanating from the head (13), etc.

Given that harm from wireless communications was known in June 1994, the federal government should have commenced research, education, and protection activities prior to the extensive proliferation of cell phones. Having failed that, it is now essential to (1) confirm my research findings of adverse health conditions from RFFRs in the literature with independent research findings, (2) educate and inform the American people of the potential harm to humans from wireless technology if the medical research findings of adverse health conditions is correct, and (3) protect the American people by controlling the use of wireless equipment. To accomplish these tasks, I recommend creating a new federal agency because the Environmental Protection Agency has contributed to the present problems of grossly excessive power density standards and no education to the American people of potential harm from RFFR.

Presently, the federal government does not appear to be conducting any research studies to support the safety or show harm from RFFRemitting equipment. Further, the FCC/RCRF has such high limits of dangerous power densities—up to 10,000,000 $\mu\text{W}/\text{m}^2$ – in contrast to IIBBE

References

safety limits of well less than $1000 \mu\text{W}/\text{m}^2$ that it is essential for Congress to review scientific data with a view to lowering these limits through the NCRF, a Congressional corporation.

The strategic objectives of this oversight/education/protection agency would be to:

1. Review and set power density standards for RFFR emitting equipment and facilities based upon $\mu\text{W}/\text{m}^2$ to assure the long run safety of the American people.
2. Fund research to determine if there is a casual link between RFFR and adverse health conditions and assure that foreign research groups are included in the funding activity.
3. Set standards to notify the public of RFFR power densities associated with wireless equipment at point-of-sale and in enclosed spaces (e.g., buildings including spill-over space in buildings, automobiles, busses, aircraft).
4. Set and implement standards for environmental impact statements for RFFR-emitting equipment.
5. Suggest and implement assistance to those suffering from electromagnetic hypertension.
6. Work with Congress in the safe use of wireless communications.
7. Manage strictly the integrity of its funded and internalized research.

B. Research issue #2: Fund general research to test hypothesizes that a causal relationship exists between RFFRs and potential adverse health conditions.

I have provided a list of 48 adverse human health conditions caused by RFFRs from medical research articles and opinions of experts. I recommend that the RFFR-federal oversight/education/protection agency review these adverse health conditions and others and fund integrated research to test whether there are causal relationships between varying power density RFFRs and adverse human conditions.

The power densities should emulate those emitted by cell phones, WiFi, cordless phones, cell phone base stations, and other RF emitting equipment being sensitive to emissions that are a function of signal strength—as signal strength declines, cell phone search power densities increase dramatically. I have metered RFFRs up to $25,000 \mu\text{W}/\text{m}^2$ from RFFR-emitting equipment including Wi-Fi, cell phones, cordless phones, and cell phone base stations.

c. Research issue #3: Do RFFRs decrease melatonin in the body of individuals in the radiation field?

One important and relatively simple research issue is whether melatonin is reduced in the bodies of individuals in the presence of the radiation field, which has been found in existing research. Melatonin reduction by RFFRs is important because (1) melatonin is an extraordinarily important nutrient as a super anti-oxidant and as a contributor to good sleep—it is very important to sleep in a very dark room to generate melatonin, (2) adequate levels of melatonin are believed to prevent and defeat cancer, (3) research suggests melatonin interprets RFFRs as light and shuts down, (4) the melatonin/RFFR relationship can be *quickly* tested for the precise relationship to various power densities of RFFRs to melatonin reduction, and (5) if there is a strong negative

References

relationship (i.e., high power density/low levels of melatonin), it would lend support for further research linking RFFRs to harm to humans.

D. Research issue #4: Does RFFR-emitting wireless equipment in enclosed spaces (e.g., buildings, automobiles, trucks, busses, aircraft) cause more human harm than the same power density (measured in $\mu\text{W}/\text{m}^2$) equipment in open spaces?

Faraday Cages are metal enclosures designed to keep RFFRs *outside* the Cage. When RFFR-emitting equipment is placed *inside* an enclosure of metal, glass, stone, metal-reinforced concrete, painted dry wall, etc., I believe the power density fields measured in $\mu\text{W}/\text{m}^2$ (micro watts per square meter) are magnified because they bounce off the enclosed space walls just as RFFRs bounce off the outside enclosure of a Faraday cage. In essence, these enclosed spaces become reverse Faraday cages by *containing* RFFRs within the enclosure. I have found no RFFR research literature that has mentioned or addressed the issue of increased harm to humans inside an enclosure vs. the same power density outdoors.

In my opinion, there is a near 100% chance that equal power density RFFR-emitting equipment magnifies harm to humans in enclosed spaces vs. outdoors. It is important to understand the magnitude of this additional harm from endogenous RFFRs because of the extensive use of cell phones and Wi-Fi in buildings, automobiles, busses, and aircraft occupied by pregnant women, children, and adults. For example, busses with Wi-Fi may have power densities of 12,500 $\mu\text{W}/\text{m}^2$ (12.5 times an extreme anomaly by IIBBE and less than one percent of maximum FCC/NCRF safety standards) net of exogeneous (e.g., cell phone base stations) and other endogenous sources (e.g., passenger/driver cell phones) of RFFR emissions.

E. Research issue #5: Do recommended power densities set by the Institut fur Baubiologie + Okologie IBN and accepted by the International Institute of Building Biology and Ecology provide more reliable limits of safe exposure to RFFRs than the FCC/NCRP limits?

The radio frequency guidelines for sleeping areas set by the Institut fur

Baubiologie + Okologie IBN (German) and accepted by the International Institute of Building Biology and Ecology (IIBBE) in $\mu\text{W}/\text{m}^2$ (micro watts per square meter) are as follows:

Table 3: Building Biology Evaluation Guidelines for RFFRs in sleeping areas

Radio-frequency

radiation	No	Slight	Severe	Extreme
-----------	----	--------	--------	---------

Anomaly	Anomaly	Anomaly	Anomaly
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$\mu\text{W}/\text{m}^2$

(micro watts per

square meter)	<0.1	0.1 – 10	10-1000	>1000
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References

“Anomaly,” in the context of RFFRs, refers to a power density that is in excess of the power densities that would exist were wireless equipment RFFRs not present. It is an unsatisfactory abnormality that is interpreted by building biologists as a concern for human health but is not referenced to a specific adverse human condition.

The data in FCC OET Bulletin 65 (August 1997) [58] indicates that the safety limit for radio frequencies of 1000 MHz (a common frequency of cell phones) is a power density of 0.67 mW/cm² (a nice small number...) which translates to 6,666,667 μW/m² (...until you translate it to μW/m²) and for 1500 MHz is 1.00 mW/cm² which translates to 10,000,000 μW/m². These FCC power density safety limits compare with an IIBBE Extreme Anomaly of 1,000 μW/m². Thus, the FCC safety limits for 1000 MHz are 6,666 times the IIBBE Extreme Anomaly and for 1,500 MHz are 10,000 times the IIBBE Extreme Anomaly based upon the Institut für Baubiologie + Ökologie IBN accepted by the International Institute of Building Biology and Ecology (IIBBE). The safety limits for IIBBE is based upon the opinions of a panel of ten experts (nine German and one American) from its German counterpart organization, Institut für Baubiologie + Ökologie IBN. The German standards are reviewed by IIBBE annually. Hereinafter, the term “IIBBE” in reference to RFFR power density standards refers to Institut für Baubiologie + Ökologie IBN (German) power density standards accepted after annual review by the International Institute of Building Biology and Ecology (United States).

The FCC/NCRP standard recognizes cellular damage from heat but does not recognize cellular damage from any other RFFR adverse attribute or differential damage to fetuses, children, and adults even though the Bolen/Rome report indicated non-thermal damage to cell and organs in 1994. [57] Fetuses and children absorb much more radiation because of their thinner skulls.

The last time the FCC/NCRP standard was reviewed was in August 1997 before the vast increase in wireless equipment. Thus, the time has come for Congress to review the FCC/NCRP RFFR power density standards in the light of (1) the explosive growth of wireless equipment since August 1997, (2) the lack of government-funded research on the adverse health effects of radio frequency field radiation, (3) 48 adverse health conditions caused by RFFRs I have found in medical research literature (4) scientific support I offer for my hypotheses that wireless equipment may be causing the decline in Labor Force Productivity from about three percent to 0.5 percent and increasing depression and suicide contemplation rates of college students, and (5) the failure of the FCC/NCRP standard to consider harm to humans from other than cellular damage from heat, (6) the failure of the FCC/NCRP standard to consider the differential damage

Indeed, Congress should investigate the qualifications and criteria of the ten-member German committee that sets RFFR standards with a view to accepting the German standard used by its American counterpart, IIBBE, unless Congress finds flaws in the German standard-setting procedures. The FCC/NCRP standard of up to 10,000 times the IIBBE Extreme Anomaly

References

standard (i.e., 10,000,000 $\mu\text{W}/\text{m}^2$ for FCC/NCRP vs 1,000 $\mu\text{W}/\text{m}^2$ for IIBBE) is preposterous for the immediate human environment.

For further comments on excess FCC/NCRP safety limits see Legislative Proposal #1.

F. Research issue #6: Is there a link between delayed onset CTE brain damage from concussions and delayed onset symptoms of brain cancer and other brain damage from RFFRs.

It is well known that symptoms from CTE from concussions generally do not occur during contact-sport playing years but occur after retirement from the sport. It is further believed, based upon limited evidence, that symptoms from damage to the brain from cell phone use most typically begins many years later—ten years later is the commonly predicted guideline time period. Thus, the ten-year delayed onset to symptoms of brain damage from cell phone use may be related directly to the recent growth in college students' depression rates starting in 2013, about ten years after the beginning of heavy cell phone usage.

The research issue is whether there is similarity in brain damage between concussions and cell phone use; indeed, there is scientific evidence of neuronal brain damage to rats from cell phones. If there is similarity between brain damage from concussions and cell phone use, it would lend support to the serious long-term harm from wireless equipment. Concussion brain damage research has generally found that athletes with at least ten years of contact sports have an approximate 95 percent chance of suffering from CTE later in life. [59]

G. Research issue #7: Does Wi-Fi damage plant seeds from growing?

Several Danish teenagers, who were having sleep problems with WiFi, experimented with plant seeds placed in water in two rooms, one with Wi-Fi and the other with no Wi-Fi. They discovered the seeds in the room with Wi-Fi died while the plant seeds in the room without WiFi grew normally. [60] This research must be conducted in a controlled scientific experiment funded by the RFFR-oversight agency to determine if the results of the Danish teenagers can be replicated. If they are, it would be partial evidence that Wi-Fi is harmful to living cells and organs.

H. Research issue #8: Is there a causal link between the Schumann Resonance (SR) and human brain waves, and do RFFRs from cell phone base stations, cell phones, Wi-Fi, smart meters, and/or cordless phones interfere with the Schumann Resonance or human brain waves independent of the SR thus destabilizing the human brain?

The Schumann Resonance is generated in the Ionosphere from lightning strikes, has a principal frequency of 7.83 Hz (7.83 cycles per second), additive harmonics at about 5-6 Hz (1st harmonic at 13 Hz), and a range up to about 60 Hz although some sources indicate a somewhat higher frequency. Human brain waves have a range of up to about 60 Hz as well. Some have hypothesized that the RFFRs of human brain waves are derived from the SR, and indeed if the

References

SR were removed, life on our planet would become unbearable because of harm to humans. [61]

There is evidence that humans, separated from the Schumann Resonance (e.g., underground bunkers and perhaps outer space in enclosed capsules), may become ill until the SR is restored to their environment. [62] I have tried to trace the original article on the underground bunker experiments of Rutger Wever at the Max Planck Institute in Germany without success (phone calls at 4:00 AM to

Germany), and NASA and the Russian space agency to determine if the SR is added to United States or Russian space craft. NASA sent me articles on the SR, but neither they nor the Russian space agency has answered my e-mail inquiry regarding adding the SR to space craft to promote human health in space. Since neither has responded to my question regarding adding the SR to space craft, I assume it is secret and that it is probably added to space craft. If true, this would affirm the importance of the SR to support human life.

The extended importance of having continuous human access to the SR is two-fold. First, if high-energy, RFFR emitting equipment interferes with the reception of the SR by the human brain, RFFRs may be harmful to the brain and other organs as indicated in the alleged bunker experiments of Rutger Wever. Second, independent of the SRhuman brain frequencies interdependency, RFFR emitting equipment may interfere directly with human brain RFFRs, and perhaps other RFFRs in the human body. This may demonstrate human cell and organ damage from non-heat (SAR) sources of RFFRs and undermine dramatically the FCC/NCRP safety standards protection which disregards non-heat harm to humans.

Indeed, research describing the relationship of the SR to human life could unleash a treasure of information about human existence and our interdependency with the NATURAL environment—an environment free of massive, additive RFFRs from wireless equipment.

i. Research Issue #9: Issue: Does EMF radiation have a cap for each person beyond which a person is more likely to be afflicted with EMH and are there functional relationships that affect the cap?

To the best of my present knowledge, there has been no research linking non-ionizing radio frequencies with a maximum amount beyond which a person enters EMH. But as research proceeds in these other areas, it would be wise to be alert to the amount of non-ionizing radiation different individuals may sustain before they become EMH. Indeed, there may be a relationship between the total RFFR and other unique human attributes. [63]

j. Research Issue #10: Are there objective bodily changes that occur when individuals who claim to be Electromagnetic Hypersensitive (EMH) are in the presence of a measurably high

References

RFFR?

The World Health Organization states that “To date, no adverse health effects have been established as being caused by mobile phone use.” [4] I have provided 48 adverse health conditions shown by clinical research to be caused by RFFRs and Langrebe [50] has shown altered nervous system function by those claiming EMH.

Thus, I propose research of potential bodily changes suffered by EMH claimants thus showing that EMH is an actual illness and providing these individuals special protection in the law and rights to claim financial damages as appropriate.

k. Research Issue #11: What can be done to accommodate individuals who suffer from electromagnetic hypersensitivity (EMH)?

It is generally accepted that at least three percent of the population has EMH and is suffering from one or more symptoms they believe are caused by RFFRs. In one case, Jenny Fry, a UK teenager committed suicide because of Wi-Fi in her school. [56] Further, I have identified 48 adverse health conditions caused by RFFRs and a hypothesis inferentially linking the decline in labor productivity and increases in depression and contemplation of suicide to RFFRs. EMH individuals could also influence adversely the labor force participation rate.

The issue is what is being done to accommodate individuals with EMH under current RFFRs and how this will change when wireless 5G is placed on telephones poles on every urban block. A few ideas follow:

1. Recognize that the percentage of EMH individuals will increase, but we will not know the expansion of these percentages unless there is medical monitoring and reporting to a central federal health agency.
2. Set aside areas in every city which are RFFR-free to accommodate those with EMH. Unfortunately, these people must work and travel to areas which may not be RFFR-free.
3. Set aside specific cities and geographical areas that are RFFRfree. One of these already exists on the east coast.
4. Disregard EMH-sensitive individuals and face the consequences of more homeless, more violent crime, more poverty, and other degenerate processes to further weaken our society to assure money flows to those producing RFFRs in the form of more cell phone base stations, cell phones, Wi-Fi, smart meters, and cordless phones with no regard for their adverse consequences to human life.
5. Reign in the expansion of wireless technology.
6. Expand federal legislation to prohibit the expansion of cell phone base stations until there has been at least five years of federal RFFR-oversight agency monitoring of present and future RFFR systems and finding all, including wireless 5G, are safe. It is my understanding that wireless 5G will expand the broadband from about 6 GHz now to 100 GHz. Presently, RFFR meters measuring over 10 GHz are rare and expensive.

VII. Proposed legislation for the United States Congress

A. Strategic objectives of U.S. Congressional legislative proposals

References

The federal legislative proposals I suggest in this section are intended to educate, inform, and protect the American people from the potential danger from wireless technology and have the following strategic objectives:

1. Understand the scope of human harm from (1) wireless equipment emissions based upon the 48 adverse health conditions supported by medical research in this report, (2) my hypotheses related to declines in labor force productivity and increases in depression and contemplation of suicide by college students, and (3) any other scientific evidence uncovered by the oversight/education/protection agency.
2. Correct the natural inertia that exists when one uses technology believed to be safe and gives so much personal pleasure when the technology is harmful.
3. Increase the education of all Americans regarding the metered measurement of power densities in $\mu\text{W}/\text{m}^2$ as a negative attribute of wireless equipment.
4. Further the education of Americans by labeling all products sold with wireless communications at point-of-sale with near (i.e., MF, EF) and far field (i.e., power densities in $\mu\text{W}/\text{m}^2$) EMF/RFFR strength. These labels will assist purchasers of equipment or devices with wireless communications to become aware of the radiation power intensity of this equipment in $\mu\text{W}/\text{m}^2$.
5. Further the education of Americans by demonstrating how RFFR emitting equipment spills over into adjacent housing units in multifamily housing. In one case, I discovered a $900 \mu\text{W}/\text{m}^2$ power density in an apartment bedroom when the outside power density was about $200 \mu\text{W}/\text{m}^2$ and the Wi-Fi and cell phones were turned off in the subject apartment. This indicated the likelihood of neighboring Wi-Fi (horizontally and/or vertically) broadcasting a $700 \mu\text{W}/\text{m}^2$ power density into the subject apartment. The intrusion of a power density into another's real estate constitutes a probable trespass violation under state law¹, acts as a stimulant to disturb sleep, and may injure cells and organs in the spillover housing unit. While education of spillover RFFRs is a portion of the solution for multifamily housing safety, prohibitions against spillover RFFRs should be included in the solution. Remember, fetuses and young children have very thin skulls and absorb much higher amounts of RFFRs and must be accorded special protection from spill-over RFFR under trespass law. Notably, the FCC/NPRC SAR safety standard has no provision recognizing non-heat injury to cells and organs or the thinner skulls of fetuses and children.
6. Set standards for environmental impact statements for selected sources of RFFRs in urban areas.
7. Demonstrate how hard-wired routers and Ethernet cables (connecting the land line telephone with the computer) may be used as substitutes for Wi-Fi and reduce substantially power densities in enclosed spaces. This could reduce power densities up to $5,000 \mu\text{W}/\text{m}^2$ (and perhaps more) from Wi-Fi in the source and spillover apartment—I have measured $4,000 \mu\text{W}/\text{m}^2$ 12 feet from a Wi-Fi and $25,000 \mu\text{W}/\text{m}^2$ in the chair serving a computer.

¹Corpus Juris Secundum defines trespass in part as "...any misfeasance, transgression or offence that damages another's person, health, reputation, or property;" It is a "...wrong against the right of possession...any invasion of the interest in exclusive possession of property...an unauthorized entry on another's property." [Footnotes 6, 7, 8, 10, p. 711-712] There is, however, a distinction between a willful trespasser and an innocent trespasser, which illustrates the importance of educating the public of the nature and seriousness of spillover RFFRs. For

References

example, one victim may be EMH and would be immediately and seriously harmed while other victims may simply lose sleep and not know the cause and suffer immediate cell or organ damage and have no immediate symptoms. Trespass is a very complex concept in law and the material I present here is obviously incomplete.

B. Legislative Proposal #1: Congress should critically review RFFR safety limits set by the FCC/NCRP and recommendations by IIBBE with a view to rejecting the former and accepting the latter to reduce human harm from radio frequency radiation fields.

The FCC/NCRP has set RFFR safety limits which are taken from the FCC, Office of Engineering & Technology, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01 (August 1997), Appendix A, Table 1.* [58] This FCC safety standard was taken from the National Council on Radiation Protection and Measurements (NCRP), "...a non-profit corporation chartered by the U.S. Congress to develop information and recommendations concerning radiation protection." [58, p. 7] NCRP developed the standard from the Institute of Electrical and Electronics Engineers, and adopted by the American Standards Institute. The FCC also considered comments by the Environmental Protection Agency, Food and Drug Administration, and "...other federal health and safety agencies..." [58, p. 7-8]. The sole criteria used in judging harm to humans is the "averaged SAR." [58, p. 8] The SAR refers to the Specific Absorption Rate, a measure of heat absorption in watts per kilogram/gram (W/kg, mW/gm) [58, p. 5, 10]. Use of the SAR, a thermal measure, as a measure of harm to humans is disputed by many scientists. One research article stated "...the vast majority of the recorded biological effects from man-made

non-ionizing environmental radiation are non-thermal." [64]

Thus, the FCC/NCRP radiation standards disregard all damage to human organs caused by radio frequency fields not measured by heat absorption, disregard the higher RFFR absorption rates by fetuses and children, and assume that SAR safety standards are correct, which is a false assumption.

The FCC/NCRP standards often seem to be associated with antennas with an implied association with human spatial fields; "human spatial fields" are RFFR that directly influence the space around a person. My recommendations in this report disregard antenna standards *per se* and set safety standards exclusively for the space around a human even though they are transmitted by an antenna.

IIBBE sets its safety standards from standards set by a committee of ten members of Institut für Baubiologie + Ökologie IBN (German) which are reviewed annually by IIBBE experts. These experts set the anomaly standards based upon harm they have perceived from their experience

References

of harm to humans from heat and non-heat electromagnetic energy in their RFFR inspections and other sources. Further, substantially all RFFR inspectors use $\mu\text{W}/\text{m}^2$ not mW/cm^2 . Obviously, the RFFR industry prefers $1 \text{ mW}/\text{cm}^2$ to its equivalent, $10,000,000 \mu\text{W}/\text{m}^2$ because $1 \text{ mW}/\text{cm}^2$ is so much smaller than $10,000,000 \mu\text{W}/\text{m}^2$.

Since NCRP is a chartered corporation of the United States Congress, it should be a simple and direct process of holding Congressional hearings to form opinions about RFFR safety limits and have NCRP conform to those set by IIBBE unless Congress finds clear evidence the IIBBE standards are too low. Since EPA has participated in acceptance of FCC/NCRF RFFR safety standards, it may be best for Congress to rely on an alternate RFFR-oversight/education/protection agency, medical authorities who have treated EMH-sensitive individuals, and others with RFFR symptoms and illnesses.

C. Legislative Proposal #2: Execute enabling legislation to create a new federal agency to have jurisdiction to fund research, set integrity standards governing research, provide public education of the potential harm to humans from RFFR, and warn the public of harmful power densities from RFFR-emitting equipment.

Since the preceding section has shown that FCC/NCRF, with the input of EPA, disregard all human injury other than that from heat using the SAR, has preposterously high safety limits, and disregards the higher RFFR absorption rates of children and fetuses, there is no federal agency that has oversight control over wireless equipment safety from radio frequency field radiation. In essence, the FCC/NCRP have accepted safety limits derived from other government and private entities in its primary mission of disseminating and allocating broadcasting band widths. There are indications that wireless 5G may expand the band widths from about 6GHz currently to 100 GHz and thereby increase greatly band width energy. This may require Environmental Impact Statements for cell phone base stations measured by increases in power densities for line-of-sight buildings.

I have provided substantial evidence that radio frequency field radiation is linked to at least 48 adverse health conditions and possibly to the decline in labor force productivity and increases in depression and suicide contemplation rates for college students. Thus, it is crucial that Congress empower a federal RFFR-oversight agency independent of any agency which has participated in the current FCC/NCRP safety standards. Since EPA has participated in the current FCC/NCRP standards, it is necessary to create a new agency. And this must be done immediately to assure the American people are protected from a potentially catastrophic health crisis.

D. Legislative Proposal #3: Require point-of-sale notices on all personal property (e.g., cell phones, Wi-Fi, cordless phones, automobiles) containing wireless transmission equipment indicating the near-field magnetic (A/m) and/or electrical fields (V/m), the far-field power densities ($\mu\text{W}/\text{m}^2$) at prescribed distances, and warning of dangers found from funded and nonfunded research.

References

Presently, wireless equipment including cell phones, Wi-Fi, cordless phones, and automobiles are sold with no notice to consumers of the strength of the power density of the RFFR or warnings of harm. Since RFFR has both near- and far-field components, the strength of each should be shown on point-of-purchase materials. The near-field consists of an independent magnetic (MF) and electrical field (EF) beginning at the antenna and extending about three wave lengths or about three feet depending upon frequency. The far field begins when the MF and EF join after about three feet to form an integrated far-field RFFR.

The posted notice on automobiles should be on the MSRP sticker and may be reduced to only the far field to simplify reporting. Since cars are similar to a Faraday Cage, their internal RFFR may be more harmful particularly to fetuses and young children, if the windows are closed.

The principal objective of showing the near- and far-field antenna outputs is to begin an educational campaign to inform the public of these two measures of EMF/RFFR power. In the longer run with greater public knowledge, equipment may adapt to serve better the health needs of all Americans. It is essential that any standard for farfield power densities be in **micro Watts per square meter** ($\mu\text{W}/\text{m}^2$) because the numbers are large enough to have meaning and because $\mu\text{W}/\text{m}^2$ is used by EMF inspectors in the United States and Canada.

The notice could also provide a measure of IIBBE safety standards I show in Table 3.

E. Legislative Proposal #4: Require posted notice of power densities from radio frequencies in enclosed public spaces containing Wi-Fi.

In order to educate the public about harmful power densities from RFFR emitting equipment, notices of power densities should be posted in all public enclosed spaces containing Wi-Fi including buildings, busses, trains, and aircraft. The posted power densities should be periodically updated.

For enclosed building space containing Wi-Fi, public notices of power densities should provide the power density at times of approximate peak occupancy, which would include RFFRs from endogenous WiFi, spillover RFFRs from other space, customer and staff cell phones, and exogeneous sources.

Busses and trains containing Wi-Fi should report the power density inside the bus/train with approximately peak occupancy and include Wi-Fi and cell phones. I measured one city bus at 12,500 $\mu\text{W}/\text{m}^2$ attributable to Wi-Fi excluding exogenous sources of RFFR (e.g., cell phone base stations) and cell phones inside the bus.

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Aircraft containing Wi-Fi should report the power density inside the aircraft at approximately peak occupancy and include Wi-Fi and cell phones.

F. **Legislative Proposal #5: Require medical doctors to report illnesses caused by RFFRs to the United States Department of Health and Human Services.**

Presently, there is no knowledge of the percentage of EMH individuals or others who have symptoms (e.g., headaches, anxiety, unable to sleep) or illnesses (e.g., EMH, brain tumors) attributable to RFFRs. In order to evaluate the safety of the present system and on-coming wireless 5G, it is crucial to understand the medical conditions, if any, caused by wireless technology.

All doctors should report the names of individuals with illness with a high probability caused by RFFR to the U. S. Department of Health and Human Services. This should include those that have a high probability of being Electromagnetic Hypersensitive, having same side brain tumors, low sperm count, etc. where there is a high probability that RFFR emitting equipment is the cause. While I am aware that it may be difficult to assign a high probability of cause of a specific illness to RFFR, this must be done to have a measure of safety of RFFR-emitting devices. Reporting standards could be written by the oversight/education/protection agency with the input of the American Medical Association and other medical associations.

G. **Legislative Proposal #6: Measure far-field RFFR in $\mu\text{W}/\text{m}^2$ (micro watts per square meter) not $\mu\text{W}/\text{cm}^2$ (micro watts per square centimeter).**

It is important to measure far-field RFFR in $\mu\text{W}/\text{m}^2$ (micro watts per square meter) not $\mu\text{W}/\text{cm}^2$ (micro watts per square centimeter) because substantially all EMF/RFFR inspection personnel use $\mu\text{W}/\text{m}^2$, and (2) $\mu\text{W}/\text{cm}^2$ is a very small number that seems inherently safe and is favored by manufacturers and installers of wireless equipment for that reason.

H. **Legislative Proposal #7: Establish a plan to accommodate EMH individuals**

It is necessary for Congress to hold hearings to determine the problems faced by EMH sensitive individuals and from this evidence establish a plan to accommodate them with reduced RFFR geographical areas, special transportation accommodations, living spaces free of spill over RFFRs from Wi-Fi and cell phones, and other accommodations

VIII. Discussion

This article (1) provides a list of 48 adverse health conditions in humans and rats having a causal link to radio frequency field radiation (RFFR) supported by medical research, (2) supports my hypothesis that the decline in labor force productivity from about three percent to 0.5 percent from 2011 to 2016 and the increases in college student depression and contemplation of suicide rates may be caused by wireless communications, (3) suggests creation of a new federal oversight/education/protection agency to fund research to determine if there are causal linkages between wireless devices and adverse human conditions, and inform and protect the public from harmful power densities from wireless devices, (4) offers 11 research suggestions for the

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oversight/education/protection agency, and (5) offers seven U.S. Congressional legislative proposals to educate and protect the American people from the adverse health effects of uncontrolled and unbounded expansions of wireless communications. The electromagnetic field scope of this article emphasizes principally radio frequency field radiation and secondarily magnetic fields from electrical current.

The 11 federally funded research issues I offer include the following:

1. Discussion of the institutional setting to create a new federal oversight/education/protection agency to fund research providing scientific evidence which asserts or denies a causal link between RFFR and adverse health conditions, and to educate and inform the American people of the potential harm from wireless communications.
2. Fund general research to develop scientific evidence which asserts or denies a causal link between RFFR and adverse health conditions.
3. Assert or deny a causal link between RFFR and reduction of melatonin.
4. Determine if adverse health conditions from RFFR are increased in enclosed spaces.
5. Determine if the lower power density standards set by IIBBE provide more reliable exposure limits than FCC/NCRP the latter of which are about 7,000 times or more greater than the former.
6. Determine if there is a medical link between delayed onset brain damage from concussions and delayed onset brain damage from RFFRs.
7. Determine if Wi-Fi damages plant seeds from growing.
8. Determine if RFFR interferes with the Schumann Resonance (SR) in combination with human brain radio frequency waves or interferes with human radio frequency brain waves separately and independent of the Schumann Resonance.
9. Determine if there is a natural cap of RFFR for each person based upon their body's functional relationships beyond which they become afflicted with electromagnetic hypersensitivity (EMH).
10. Do EMH individuals exhibit objective bodily changes when they are exposed to RFFR proving that EMH is a diagnosable illness?
11. Provide a reasonable accommodation model for those with EMH.

The seven legislative proposals I offer to assure the safety of the American people from wireless communications are:

1. Congressional review of RFFR power density safety standards through the National Council on Radiation Protection and Measurement, a non-profit corporation chartered by the United States Congress.
2. Pass enabling legislation to fund a new federal oversight/education/protection agency to fund research providing scientific evidence which asserts or denies a causal link between RFFR and adverse health conditions, and to educate and inform the American people of the potential harm from wireless communications..
3. Require point-of-sale notice of the strength of near field and power density of the far field for all personal property emitting RFFR, if it is shown that RFFR causes adverse health conditions.
4. Require posted notice of power densities from RFFR in any public enclosed space containing Wi-Fi, if it is shown that RFFR cause adverse health conditions.
5. Require medical doctors to report RFFR illnesses to the United States Department of Health and Human Services, if it is shown that RFFR cause adverse health conditions.

References

6. Require far-field RFFR to be measured in micro watts per square meter ($\mu\text{W}/\text{m}^2$), not milli Watts per square centimeter (mW/cm^2).
7. Establish a plan to accommodate EMH individuals.

The emphasis of these recommendations is to educate, inform, and protect the American people from the adverse health conditions from RFFRs supported by RFFR agency research, if, in fact, scientific evidence shows that RFFR causes significant adverse health conditions.

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