

Your Health's
5 Worst Enemies
and
6 Best Friends
or
**Winning the Game
for Your Health**



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HEALTH AND ROULETTE

Much of your life is random walk. You can't really control what will happen with your love, friendships, job, family or health. Your very existence could end at any moment. Just like the ball on a spinning roulette wheel, you don't know what the next moment brings.

But there is a fragile, yet persistent trail of regularity in even total chaos. In quantum mechanic, it is called *probability*. It is woven throughout the fabric of life as well - and we can take advantage of it. Gamblers routinely do; the good ones, anyway.

In roulette, any of the 38 numbers on the wheel has the same 1 in 38 probability to come out at each spin; the chances that one same number comes out twice in a row are 1 in 38x38, or 1 in 1,444. But so it is for any pair of different numbers as well. Any series of 10 numbers have identical probability of happening, including one same number coming out in all ten spins in a row. In a short-term window, with small number of repetitions, anything is equally probable.

But if you play it long enough, another, higher-order probability law kicks in: the *law of large numbers*. After large number of repetitions, frequency for all numbers tends to even up. In other words, probability in longer term favors the numbers that had come out the least. So, by betting on these numbers, you substantially increase your chances of winning.

Oddly - or not - there is a clear parallel between roulette and your health. For a little while, you can get away pretty much any with any combination of unhealthy habits - short of taking cyanide - without significantly affecting your wellbeing. Longer-term, there are lucky numbers you should bet on, and bad-luck numbers to avoid, if you want to give to yourself the best chance of

winning the game for your health.

The lucky numbers are your health's best friends; the unlucky ones, its worst enemies. Let's meet them both in person - enemies first...

Your Health's 5 Worst Enemies

How do you determine which are the bad-luck numbers for your health? Easily. Those are the "numbers" commonly associated with those we see losing it. The five worst enemies of your health are:

#1 - poor (unbalanced) diet

#2 - faulty digestion

#3 - toxins

#4 - negative emotions

#5 - insufficient rest

If you want to remain in this game for a longer period of time, and not have it cut short, or spoiled by the misery of a disease, you don't want to play these "numbers":

THE WORST HEALTH ENEMY #1: POOR DIET

Poor diet does not equate lack of food. To the contrary, in developed countries, the problem is food over-consumption and excesses, combined with low nutrient level and high level of chemical additives and other contaminants found in food. Table bellow summarizes major traits of poor diet and its adverse health effects; it is expanded on in text that follows.

POOR DIET TRAITS	SOME POSSIBLE ADVERSE HEALTH EFFECTS
OVERCONSUMPTION	- undermines body's functional integrity, promotes obesity, aging and diseases
NUTRITIONALLY INFERIOR	- causes nutritional deficiencies, harming feeling of wellbeing and contributing to or causing diseases
NUTRITIONALLY IMBALANCED	- excesses in consumption of macronutrients (typically proteins, fats and/or sugars) and/or some micronutrients (minerals, vitamins, accessory nutrients); harms wellbeing and contributes to, or causes diseases
POOR EATING HABITS	- undermine body's functional integrity, promote obesity, accelerated aging and diseases
TOXIC CONTENTS	- natural food toxins and toxic additives interfere with body functions, harming wellbeing and contributing to or causing diseases

Food overconsumption **shortens life** - it's as simple as that. Scientists know for quite a while that the only experimentally confirmed method of significantly prolonging life span is the reduction in caloric intake. It worked every time on any mammalian specie tested. Most simply, the body burns slower, and lasts longer. Food over-consumption does exactly the opposite.

Since it is notoriously combined with poor dietary choices and addictions, it also produces **gross metabolic disturbances** in the process. Diabetes, dyslipidemia (disturbance in fat metabolism/accumulation) and resulting cardiovascular diseases are a constant remainder of this side-effect of this major enemy of your health.

But there's more to it. Poor diet of mainly processed, nutritionally depleted foods combined with high animal, low plant food intake, will leave you with chronic **nutritional deficiencies** or, just as bad, gross **nutritional imbalances**, undermining your health. They are likely to be worsened, not bettered, by self-styled random supplementation of specific nutrients (that includes misguided official and semi-official recommendations, such as those fueling the decades long calcium craze).

Among typical deficiencies of processed foods diet is **low antioxidant level**, combined with excessive metabolism- and toxin-produced oxidation, accelerating dyslipidemia, cardiovascular diseases and aging. Lack of dietary fiber results in significant slow down of bowel movement, increasing intestinal putrefaction and toxicity, setting you up for intestinal dysbiosis, leaky gut, and a variety of symptoms and chronic health conditions they can cause.

On the other hand, typical poor diet constantly burdens the body with excesses, such as protein, fat and sugar excesses. **Protein excess** puts toll on the kidneys, accelerating water outflow from the body, thus also loss of important minerals such as calcium and magnesium. It makes body more acidic, forcing it to struggle to stay within the healthy range - which it may, or may not be able to accomplish.

Fat excesses are typically those of saturated and polyunsaturated fats. Fats in poor diet, being mainly of animal origin, are accompanied by animal-made unsaturated acid called arachidonic acid, stimulating production of pro-inflammatory prostaglandins and leucotrienes (hormon-like substances that, depending on type, have either beneficial or damaging effect), also promoting blood clotting. Excess fat intake forces the body to store more fats, promoting obesity.

Over-consumption of polyunsaturated oils - corn, safflower,

sunflower, etc. - also promotes production of bad prostaglandins and leucotrienes. These oils, often perceived as "healthy", may not be any better than saturated fats when over-consumed, and can be even worse if partly hydrogenated (containing trans-fatty acids) and/or heavily refined (usually the case).

Sugar over-consumption - and that pretty much extends to processed flour - also rises body acidity, robs the body (the brain is prime target) of B vitamins (giving you the "Sugar Blues"), chromium (making you crave sugar even more), and other nutrients needed for its metabolism, puts strain on the pancreas that often leads into development of diabetes 2, and elevates blood level of triglycerides, contributing to dyslipidemia and heart disease development.

Elevated glucose level resulting from sugar over-consumption increases the rate of glucose binding to body proteins and nucleic acids, which has wide range of negative consequences, from interfering with enzyme activity and function of regulatory proteins, to altering nucleic acid function and immune response (auto-immune diseases, allergies, etc.).

Poor eating habits - overeating, eating late or during bedtime, rushing, without sufficient chewing and mere concentration on food consumed - are wearing out the body in a number of ways. Overeating, of course, invites obesity and all the health negatives that come with it. In addition, it makes the body work harder for the nutrients it gets from food. This results directly from body's absorption rate generally declining with the increase of nutrient intake. Absorption rate is at its maximum for intake below the maintenance level; for double the maintenance level intake, it could be only half as high, or even lower (it varies with the nutrient, and also individually).

As a simplified illustration, if you ingest the amount of food containing twice the nutrient level it needs, the body may not absorb significantly more of it than from half as much food, but will work twice as hard to have the food digested, metabolized and eliminated. It is not hard to see that the ratio of absorbed antioxidant nutrients vs. metabolism-created free radicals also drops, making your body more exposed to oxidative damage.

Eating late and/or during bedtime uses body's resources for digestion, directly taking away from the efficiency of body maintenance and regeneration that takes place during sleep. Hectic eating without sufficient chewing and truly enjoying food makes digestion harder and assimilation lower, the more so the more pronounced its stress factor.

Poor eating habits continuously feed the destructive forces in the body, while taking from constructive ones. Longer term, it significantly weakens the body, reducing its viability as a complex living system, and accelerating its arrival at a point of failure.

Yet another form of poor diet over-consumption are many **chemical additives** regularly used in processed foods: coloring agents, preservatives, taste/odor enhancers, texture modifiers and various processing agents. Many of them have pharmacological effect, capable of causing mood and behavior disturbances, gastro-intestinal symptoms or allergic reactions in vulnerable individuals. Some, like nitrites and nitrates added to cured foods (hot dogs, salami, bacon, some cheeses, etc.), or synthetic antioxidant BHA, are positively associated with significantly increased odds of developing cancer.

Food additives adversely affecting health belong under the general category of *toxins*. They will be addressed in more details as the worst health enemy #3.

Once the food is consumed, it needs to be efficiently digested in order to make nutrients available to the body. If that doesn't work well, it will likely start a bunch of bad things rolling. That takes us to the next major health enemy.

THE WORST HEALTH ENEMY #2: FAULTY DIGESTION

Poor diet alone is bad enough; when combined with faulty digestion, or any other major health enemy - as it usually is - it can be disastrous to your health. And, just like any of them, faulty digestion is rather common. About 40% of Americans - well over 100 million people - suffer from some form of faulty digestion, with excessive gas, bloating, burping, heartburn, cramps, diarrhea, constipation, nausea, vomiting, or other chronic symptoms.

If it gets bad enough that you turn to a doctor, you are likely to end up with meaningless labels as "irritable bowel syndrome" (IBS), inflammatory bowel disease (IBD), gastro-esophageal reflux, gastritis, spastic colitis, Crohn's disease, or alike. These merely mean that the doctor hasn't found pathological changes in your digestive tract, like ulcer, hiatus hernia, gallbladder disease or cancer. Conventional medicine makes no attempt to go beyond that, and determine the cause of your gut symptoms. It has a chest full of pills to try to medicate them.

That does it quite well for the organized medicine, and even more so for the pill makers, but you are likely to be left on the short end of

the bargain. Not only that medicating will do nothing to address the cause of your problem, it is likely to add to your burden by interfering with your gut's function.

Leaving the cause unaddressed will often result in worsening of your problems, crippling some portion of your gut. Then surgery is suggested as your "best option", and the "problem" part of your gut is cut out. You may end up with colostomy bag, or not, but your chances to ever get well again are nearly non-existent.

Danger, Danger 💣 Lower nutrient uptake due to faulty digestion, as bad as it can be, is only the beginning of the downward spiral of your health. Incomplete digestion fosters growth of bad intestinal bugs, turning your gut into toxic environment. The slower food moves through intestines - due to the lack of fiber - the more so. That burdens both your detox and immune system, increasing demand for vital nutrients needed for fulfilling their protective role; if they are not available, so much the worse. Gut toxins irritate and damage its lining, causing it to become permeable, allowing toxins, bad bugs and undigested food molecules to enter your bloodstream. This condition is called **leaky (hyperpermeable) gut**.

Now your body needs even more of protective nutrients to fend off this invasion, and it is getting less. It is all but certain that your wellbeing is negatively affected - chances are, in more than one way.

So, don't take indigestion lightly. If you don't take care of it, you are becoming a time-bomb. You may think that heartburn and indigestion are not really hurting you. The truth is very much different. For instance, studies show that heartburn increases your risk from deadly esophageal cancer a whopping 43 times (Lagergren et al, 1999). No gut disturbance is small enough to neglect, or allow to be part of your life.

The common cause of digestion problems is the bacteria contaminating tap water and foods, **Helicobacter pylori**, or *H. pylori* for short. Not everyone is equally vulnerable to it; in those unlucky enough that the bacterium finds their stomach to be good breeding ground, it can cause symptoms of upset stomach, acid indigestion, gastritis and ulcer. Medications used to suppress these symptoms - antacids and acid secretion inhibitors (Mylanta, Zantac, Pepcid, Tagamet, Prilosec, Prevacid) - lower stomach acid level and, in addition to compromising digestion, actually help the bug flourish. Left long enough - a year suffices for one out of two on gastric medications (Zucca et al 1998) - it can initiate gastric atrophy (degeneration of the stomach lining) that will go on to cripple your digestion, shatter the protective barrier that the stomach acid is, causing accelerated health

deterioration, aging and premature death by "unexplainable" diseases.

Helicobacter pylori is also positively linked to stomach cancer and gastric MALT lymphoma, estimated at 1-2% and less than 1% lifetime risk (Kusters et al, 2006). In about 1/3 of those experiencing gut problems, *H. pylori* is either a major, or the main culprit. Another bug, inhabiting mainly small intestine, is the most common cause of gut malfunction and disease: it is ***Candida yeast***. Digestive disturbance caused by poor diet, deficiency of digestive enzymes, and or use of antibiotics (which kill off friendly bacteria keeping yeast population in balance) cause intestinal dysbiosis, marked with *Candida* (and other bad bugs) overgrowth. Excessive level of toxic metabolites produced by this microbial yeast - such as acetaldehyde - overwhelms the detox capacity of intestinal cells, causing inflammation of intestinal lining. If let go, it leads to its degeneration, malabsorption and leaky gut.

Combination of toxic, leaky gut and malabsorption can cause any symptom, anywhere in the body. Digestive disturbances are only the beginning, and the warning signal, leading into digestive tract conditions like ulcers, constipation, low gastric acid, alternating constipation/diarrhea, colitis, diverticulitis, or gallbladder disease, as well as any of a number of full-blown chronic diseases than get labeled as arthritis, fibromyalgia, food and chemical sensitivities, allergies, brain fog (toxic encephalopathy), depression, tissue and organ infections, disorders resulting from mineral deficiency, autoimmune disorders like lupus, multiple sclerosis, rheumatoid arthritis or myocarditis, and many others.

Looking at how much damage the overgrowth of a single bacterial strain can cause, one has to realize how important it is to keep the gut well functioning. Any disturbance in proper functioning not only compromises all other body functions, but also makes it vulnerable to microbial infections, causing further worsening in a vicious circle.

And such disturbances in proper gut functioning are all too common, most of them resulting from the worst health enemy #1, poor diet:

- ✓ rush eating,
- ✓ overeating,
- ✓ eating too many different foods in one meal,
- ✓ eating stressed (it reduces blood supply blood supply to the gut and inhibits secretion of digestive juices, including stomach acid),
 - ✓ chronic dehydration (water is needed for digestion)
 - ✓ sugar overconsumption,
- ✓ overconsumption of highly processed foods low in dietary fiber - causing increase in gut toxicity due to constipation - and nutrients, while high in chemical additives that can be toxic for sensitive

individuals

- ✓ overconsumption of alcohol and/or caffeine
- ✓ use of medications, like Candida-inviting antibiotics, or gastritis-causing pain medications (non-steroidal anti-inflammatory drugs, like Motrin and Advil), which is then treated with acid-lowering drugs,
 - ✓ enzyme deficiency, most often *lactase* (secreted in intestinal mucosa, needed to break down milk sugar, lactose), *sucrase* (mucosa enzyme needed to break down sucrose), *maltase* (needed for breakdown of maltose, a sugar formed during breakdown of starches), as well as *chymotrypsin* (one of pancreatic enzyme needed for breakdown of proteins) and/or intestinal mucosa enzymes like *enteropeptidase* (needed for activation of pancreatic protein enzymes), the usual culprit beyond gluten sensitivity and potentially crippling gut deterioration it can cause.

We could say that all of the factors listed are widespread in the general population. Is it wonder, then, that nearly one in every two Americans, at any given time, has some form of gut problem? There is no way around it: you can chose either good digestion, or poor habits and choices, ignoring - or medicating - the warning signs. But, remember - there is no health without healthy gut.

THE WORST HEALTH ENEMY #3: TOXINS

What is a *toxin*? "Toxin" could be defined as a "substance whose accumulation in the body harms its integrity", but that leaves us with rather vague distinction. Even essential nutrients, if over-consumed, do become toxic. Also, there are substance-less phenomena that still can be harmful to the body, such as electromagnetic field, or emotions.

Narrowing the definition to potentially harmful factors having no useful function in the body at any time, we arrive at the concept of *xenobiotic*, or "foreign to life". Still, even xenobiotics are not necessarily toxic in any dose, or to any individual. So, when it comes to body's toxic exposure, everything is pretty much like uncle Albert said - relative. The only absolute rule is that *anything* can be toxic, which directly implies that nothing is unconditionally healthy to the body. But some substances are more toxic, or encountered more often at toxic levels. These are the focus of this chapter.

Danger, Danger  Nowadays, toxins are everywhere. In the soil beneath your feet, in the air you inhale, water you drink, food you eat, clothes you wear, chances are - implanted in your mouth as well. There was no time since the human race exists in which the human body was exposed to anywhere nearly as many toxins, day in and day out. Your detox system can only do so much, even if fully functional -

something you can't count on. It is your detox system that prevents toxin accumulation from bringing body functions to a collapse. If it falls behind - or, worse yet, crashes under the load - your health will suffer, and it can suffer greatly. Hence, the unlucky number to play here is to keep ignoring your exposure to this avalanche of toxins.

Unfortunately, it is all too easy to do just that. You are faced with an enemy that often has no shape, no color, smell, voice, or any other means of identifying. You can avoid it only by knowing where it hides.

The list is long: indoor and outdoor air, tap water, foods, medical implants (particularly silver/mercury amalgams) and drugs, electromagnetic fields (EMF), as well as the two familiar and still quite widespread habits: smoking and consumption of alcoholic beverages. Table below lists main toxin channels, sources of toxins channeled and some of their possible adverse health effects. Text that follows expands on the table in more details.

TOXIN CHANNEL	MAIN TOXIN SOURCES	SOME POSSIBLE ADVERSE HEALTH EFFECTS
AIR	<ul style="list-style-type: none"> ▪ fossil fuels emission <ul style="list-style-type: none"> ▪ VOC* ▪ particulate matter <ul style="list-style-type: none"> ▪ ozone/smog ▪ bio-contaminants 	heart diseases, respiratory system diseases, immunosuppression, detox system overload, allergies, cancer...
WATER	<ul style="list-style-type: none"> ▪ industrial pollutants ▪ agricultural pollutants <ul style="list-style-type: none"> ▪ chlorine ▪ fluoride ▪ bio-contaminants 	cancer, low sperm count/infertility, immunosuppression, detox system overload, acidosis...
FOOD	<ul style="list-style-type: none"> ▪ natural food toxins <ul style="list-style-type: none"> ▪ additives ▪ contaminants 	body pains, neurological symptoms, food sensitivities, allergies, leaky gut, cancer...
SMOKING HABIT	<ul style="list-style-type: none"> ▪ cigarette smoke <ul style="list-style-type: none"> ▪ tobacco 	nutrient depletion, toxic and oxidative damage, cancer...
DRINKING HABIT	<ul style="list-style-type: none"> ▪ alcohol content 	detox system overload, nutrient depletion, increased oxidative damage...
MEDICAL/DENTAL TREATMENTS	<ul style="list-style-type: none"> ▪ medications ▪ medical implant materials 	detox system overload, nutrient depletion, liver damage, intestinal dysbiosis, leaky gut, heart malfunction...
EM* FIELD/CURRENTS	<ul style="list-style-type: none"> ▪ electrical power <ul style="list-style-type: none"> ▪ mobile phones ▪ EMF* screening/medical <ul style="list-style-type: none"> ▪ sunshine 	interfering with body bioelectricity, altered cellular homeostasis, electromagnetic-hypersensitivity-related symptoms and diseases, leukemia, cancer...
<p>VOC=Volatile Organic Compounds EM=electromagnetic EMF=electromagnetic field</p>		

TOXINS: _____ **Air contaminants** _____

The main **outdoor air contaminants** - major air pollutants, nitrogen oxides, carbon monoxide, ozone, sulfur dioxide, coarse and fine particulate matter (produced mainly by industrial and vehicular emission) - kill some 100,000 Americans each year (Stieb et al, 2002). Among the main diseases they cause or aggravate are heart disease, cancer, stroke and respiratory ailments.

Indoor air contamination is significantly worse, because it adds indoor air contaminants to those created by outside sources. Indoor air contaminants are many, from microscopic particles (dust, combustion ash) contaminated by household pesticides, insecticides, lead and mercury (from old paints), arsenic (from chemically treated lumber), to gaseous contaminants (volatile organic compounds from carpets, furniture, particle board, cleaning agents and household items, combustion gasses, cigarette smoke, radon), and to bio-contaminants like bacteria, viruses, mold, dust mites and animal dander.

There is no figure on how many Americans develop diseases or die due to exposure to indoor air contaminants. It is hard to separate the effects of indoor and outdoor air contaminants, but the above estimate for outdoor pollution alone illustrate quite well how efficient killer air pollutants have become. The number of those suffering from symptoms and diseases inflicted or aggravated by them is certainly much larger.

TOXINS: _____ **Water contaminants** _____

Most everyone knows that average **tap water** contains hundreds of chemicals and other contaminants, none of which you need, or want in your body. The list begins, of course, with chlorine and fluoride added to municipal water for disinfection and "stronger" bone/teeth, respectively. Chlorine reacts with other chemicals in water, promoting creation of carcinogenic substances (chlorinated carbohydrons, hypochlorite ions, and others); in males it can also cause lower sperm count and infertility.

Fluoride in water is linked to much higher incidence of bone cancer; while it constitutes an essential nutrient, it is toxic after a certain level (varying individually), and its intake from other foods (including baby formulas) and products (toothpaste, mouthwash, etc.) may double or triple what you get from drinking water. No one can guarantee you that it will not hurt your health. In addition, fluoride can increase

many times your absorption of aluminum, another toxic metal to which many are highly exposed.

The list of tap water contaminants extends to pesticides, toxic metals, plasticizers, radioactive particles, traces of medications (yes, from users' urine and feces), volatile organic compounds, lead, copper, water treatment chemical residues, bacteria, viruses, parasites, amoebae, etc.

TOXINS: _____ **Food toxins** _____

Food toxins further add to this load. They include natural food toxins, most important of which are *glycoalkaloids* from nightshade family (potatoes, tomatoes, peppers, eggplant, cayenne, chili, curry, MSG and tobacco), very often significant or main cause of arthritic and other "unexplained" body pains, and *bioactive amines*, which can have either vasoactive (tyramine, histamine) or psychoactive effect (caffeine), causing vascular and psychological disturbances in sensitive individuals, respectively.

Another form of naturally occurring food toxins - although not inherently part of the food itself - are toxins produced by fungi, called *mycotoxins* (aflatoxin, ochratoxin A, patulin, fusarium). They contaminate both, unprotected plant and animal-origin foods, more so the less fresh they are. They can also penetrate food chain through fungi-infected feed crops. These potent toxins are capable of damaging liver, kidneys, or nervous system;

Among man-made food toxins are *pesticides* (both in plant and animal-origin foods), *herbicides*, *fungicides*, *toxic metals* (mercury in predatory fish, aluminum in anything from aluminum canes and baking powders to antacids and baby formulas, arsenic from pesticides, herbicides and fungicides), *dioxins* (among the most potent toxins known to man, highest in fish, meat and dairy), *phthalates* (or plasticizers, hormonally active chemicals used in production of plastics, including plastic food containers and wraps, leaching into foods on contact), *antibiotics* and *synthetic hormones* (meat, dairy), and *food additives*.

_____  **focus: Food additives** _____

We were sort of scrolling down the list fast, but let's focus a bit more on food additives. They are widely used in the food industry, their number running in thousands (FDA-approved), yet their effects on health is only partly known by regulating bodies, and even less by the average consumer. The regulators are generally biased toward

economic interest, not consumer safety. As long as people don't start dropping dead or seriously ill immediately after consuming foods laden with chemical additives, they assume it is safe. For suspected less obviously linked and longer-term adverse health effects, they require multiple proofs of harm (consistent results of well controlled large-scale study, in vitro, in vivo, animal research). The problem is - no one is doing such studies, and small studies and research results are pretty much ignored. If needed, a "damage control study" is financed by special interest and thrown into media to counter effect occasional more widely publicized indications of additive-related adverse health effects.

In short, we are pretty much in dark, but what we do know about food additives, and the politics of food, commands caution.

Consider, for instance, the recent addition to food additives, **Olestra**. This zero-calorie fat substitute (Procter&Gamble) tastes like fat, but its large molecule cannot be absorbed by the body. Most of the studies on its effects - some 150, scattered over 25 years since early 1960s - were conducted by P&G.

Major Olestra related problems identified - and in one or another way belittled or brushed aside - in animal studies include significant increase in mortality, liver lesions, mononuclear cell leukemia, pituitary adenoma and long cancer. In human studies, a very high rate - up to 50%, and over - of mild to severe digestive disturbances. No long-term studies on humans have been conducted, despite well known fact that Olestra inhibits absorption of fat soluble vitamins, A, E, D, K, beta carotene and other carotenoids, as well as tocotrienols.

Regardless, the FDA approves Olestra in 1996, for food snacks, requiring warning label that reads: "*This Product Contains Olestra. Olestra may cause abdominal cramping and loose stools. Olestra inhibits the absorption of some vitamins and other nutrients. Vitamins A, D, E, and K have been added.*". In June 2000, the official Canada's health agency (Health Canada), bans Olestra for use in foods, because it concluded that P&G cannot prove the product's safety. It was followed by Great Britain and, reportedly, some other countries. FDA's moves to exactly the opposite direction: in 2003, as if sympathizing with disappointingly (for P&G) low sales of Olestra-containing products, it drops the label requirement as "no longer warranted", despite receiving more written consumer complaints for Olestra than for all other food additives combined.

Subsequently, Olestra-containing products are rehashed and given another chance.

What could be the FDA's reason to approve and promote an anti-nutrient, seen as unsafe by other countries, for use in foods? The sorest point of the Olestra story is that its effects on health have never been adequately evaluated with children and adolescents, who are among the major segments of Olestra-products' market - and the most vulnerable one. Can we reasonably feel safe with this kind of official "oversight"? Of course not.

The feeling of safety doesn't get to become less shaky looking at some of food additives in much more widespread use, for much longer periods of time.

Danger, Danger  Many are aware of **nitrites** and **nitrites** - added to cured foods like hot dogs, salami, bacon, smoked fish, some cheeses, etc., with the primary role to protect against toxic *clostridium botulinum* bacteria, and also as color enhancers - being known carcinogens. For that reason, the government has set requirement for the manufacturers to show that it won't exceed "hazardous levels". Does that make you safe is an entirely different question. National Academy of Sciences' estimate of the lethal human dose of sodium nitrate is 1g. A tip of the teaspoon of it can kill you.

Despite being listed by the Pesticide Action Network (PAN, www.pesticideinfo.org) as rodenticide (lethal to rodents), there is no conclusive evidence (read: adequate research) to determine its acute toxicity, or possible causative link with cancer, endocrine disruption, reproductive, developmental or environmental toxicity.

For its cousin, sodium nitrite, also lethal to humans in a dose as low as 1g, PAN has found sufficient evidence to list it as acutely toxic, as well as reproductive/developmental toxin. U.S. National Toxicology Program has found it moderately toxic in rodents when consumed orally in the range of 85-186mg/kg food concentration. Compare that to the governments "safe limit" requirement for smoked fish, of no more than 200 parts per million (same as mg/kg) of sodium nitrite content. Since the official lethal dose for sodium nitrite is 22-23mg per kg of body weight, the amount of it contained in 8kg of such "safe" food would kill a 70kg person. Despite this, it is not listed as acutely toxic neither by EPA, nor World Health Organization.

And such strangely nonchalant attitude when it comes to food additives toxicity is far from being exception. Just look at **sulfites**. These inorganic sulfur compounds are the salts of sulfurous acid, which is created by dissolving sulfur dioxide in water. As age-old "safe" food preservatives, sulfites were on the official GRAS (Generally Recognized As Safe) list from 1958 to 1986, when FDA banned their use on fresh fruits and vegetables (except potatoes). The ban ensued after over a dozen deaths have been linked to their use, mainly by restaurants.

The following year, FDA extended ban to the use of sulfites on fresh (peeled) potato, but it was court voided in 1990 on procedural grounds. The FDA never attempted extending the ban again, neither to cover fresh potatoes - despite four deaths being linked to sulfite-treated potatoes prior to the voided ban - nor other foods, despite nearly half a dozen of the deaths being linked to other sulfite-treated foods (wine, frozen pizza, lemon juice).

Danger, Danger ☠️ The problem is certainly much bigger than two or three dozens deaths (which is very likely only a fraction of the actual number). Up to 20% of Americans with asthma - and there is some 20 million of them - are at the risk of suffering anything from wheezing and asthma attack to coma, brain damage or death from anaphylactic shock as a result of sulfite-containing foods. In addition, according to FDA's statement back in 1980s - when sulfites as food additives were more in the public spotlight - about 30% of reported sulfites-related complaints were from those having neither asthma nor known allergy. Based on these figures - which are rough approximation at best - up to 6 million Americans, every single day, are at the risk from serious adverse health effects caused by sulfites added to foods.

The only warning they get is a mandatory "Contains sulfites" on the label for foods having 10ppm (parts per million) or more of added sulfites. Aside that quite a few foods consumed are not accompanied with food label, it is all but certain that many individuals potentially sensitive to sulfites are not aware of it.

And nearly anyone can, at some point in life, be "potentially sensitive" to sulfites. Although individual mechanism producing symptoms of sulfite toxicity can be complex, and vary widely, it significantly depends on the efficiency of *sulfite oxidize*, a molybdenum-dependant enzyme system converting sulfite and bisulfite into sulfate, the form in which sulfur enters cells to be used for supporting their processes. Efficiency of this enzyme is compromised by molybdenum deficiency - rather common - and presence of heavy metals, disabling the enzyme by binding to it in place of molybdenum (mother's status in this respect affects efficiency/maturation of this enzyme system in the baby). It results in formation of higher levels of toxic metabolites, like sulphur dioxide.

The effect is also greatly influenced by the acidity of sulfite-containing medium (food, drink, stomach juice), with acidity stimulating formation of sulfur dioxide (as little as 1ppm of gaseous sulfur dioxide can induce bronchospasm in resting asthmatics, 6ppm in non-asthmatics).

Danger, Danger  It is well known that sulfur dioxide inactivates vitamin B1; to some extent, it probably inhibits vitamin B2, folic acid (B9), some flavo-enzymes and vitamin K. Thus constant exposure to sulfites can negatively affect one's status with respect to these important nutrients, adversely affecting health. Not being organic (i.e. carbon-bonded) sulfur form, sulfites are foreign to the body; inorganic sulfur forms, in general, are known to intensify carcinogenic effect of polyaromatic hydrocarbons, and seem to be among contributing factors in chemical sensitivity.

But the story of possible sulfite toxicities is far from over. Exposing rabbits to sulfites and/or sulfur dioxide resulted in altered carbohydrate metabolism, possibly caused by damage to the insulin molecule. Similar type of damage by sulfur dioxide to another type of protein molecule, that of immunoglobulins, resulted in reduced rate of antibody formation. On top of that, microbial experiments showed sulfur dioxide interfering with DNA and RNA function, indicating that similar effects are possible in humans (on the IARC - International Agency for Research on Cancer - list of carcinogens sulfites are in "Group 3", described as "unclassifiable because the data are incomplete or ambiguous").

In all, what we do know about sulfites is already enough to list them as undesirable, unsafe food additives. What we have a good reason to suspect, alone, would be enough to apply the precautionary principle, and ban their use in foods. The reality is quite different: officially, neither WHO nor EPA list them as acute toxicity hazard. Between listing them as potentially acutely toxic and, consequently, eliminating them from use in foods on one side, and not listing them as such and keep using them as food additives, they opted for the latter.

Yes, consuming sulfites with food can make you seriously ill, even kill you, but this doesn't seem to be counting. This is probably why the mandatory label warning "Contains sulfites" is not accompanied with specifying the purpose of placing it there in the first place, which is to inform the consumer that they can be toxic, even deadly, to vulnerable individuals. Obviously, the officials are sympathetic to the producer/marketer, and don't want to scare their customers away. But don't we have the right to know?

Such official attitude certainly don't make you feel safe, neither with food additives nor any other consumer-good safety regulations. Less so knowing that sulfites are still used as preservatives in many medications, including those for allergy and asthma sufferers.

It is no different if we turn to, say, **MSG** (monosodium glutamate),

but it illustrates well the complexity of the problem. This sodium salt of a non-essential amino acid - glutamic acid - common to all animal and vegetable proteins, is added to foods to enhance flavor (MSG also occurs naturally in soybeans, sugar beets and seaweed). Since this amino acid is naturally synthesized by our body, also making about 20% of dietary protein intake, MSG was considered safe until late 1960s, when it was implicated in "Chinese Restaurant Syndrome", and experiments begun to unveil its dark side. In susceptible individuals, it could cause anything from a variety of digestive disturbances, warmth in the face, burning skin sensation, palpitations, headache or light-headedness to breathing difficulties, asthma attack or symptoms of myocardial infraction. The symptoms can occur anywhere from within hour or two, and up to two days after ingesting MSG-containing meal (this, of course, makes it difficult to track it down to MSG).

Studies on animals from that time showed that it can cause brain lesions, as well as retardation in young chicken fed with the equivalent of average dietary MSG intake by humans.

Not all studies were consistent, one of the reasons being that vulnerability to MSG depends on a number of factors, other than possible genetic predisposition. Low level of nutrients such as vitamin B6, B12, molybdenum and magnesium can impair body's ability to metabolize MSG, resulting in toxicity. For instance, vitamin B6 is necessary for proper functioning of *glutamate oxalacetate transaminase* enzyme, needed for MSG metabolism; vitamin B6 supplementation alone is often capable of alleviating MSG-related symptoms.

But the origins of MSG intolerance can be much more complex; the fact is that many are unaware of their vulnerability. Of particular concern is MSG vulnerability of a developing fetus, as well as in infants and small children, due to immature enzyme systems and less efficient blood/brain barrier.

Danger, Danger ☠ More recent independent research does not make concerns go away - to the contrary. MSG consumption in humans was linked to nerve deterioration through hyperstimulation - particularly in the hypothalamic area of the brain (the one least protected by the blood-brain barrier) and in the retina - addictive eating, variety of digestive and neurological symptoms, possibly extending to dementia, Alzheimer's, Parkinson's, amyotrophic lateral sclerosis (Lou Gehrig's disease), stroke and seizures (Blaylock, 1994).

Mentioning studies, you may have noticed the attribute "independent". Seems that this factor - whether study authors have affiliations with mighty food corporations and its agents, backing MSG

as safe additive, or not - pretty much determines study outcome. The "affiliated scientists" tend to present evidence of MSG toxicity mainly as "anecdotal". Such view is highly publicized, including, for instance, better part of MSG-related contents in Wikipedia. In fact, there is a solid scientific evidence that MSG can be toxic to both, humans and animals. The FDA, as per usual scenario, maintains MSG safety based mainly on decades old industry-generated studies on monkeys, while dismissing mounting of evidence pointing to the opposite.

It is both, saddening and eye-opening to read personal recollections of the pioneer in the area of MSG neurotoxicity, Dr. John Olney, how the results of his studies have been proclaimed invalid by a "special" FDA committee, most of which - including the chairmen - had financial ties with the food industry, or how the very studies on monkeys that FDA uses for its "safe MSG" assessment were, in fact, designed to produce desired result. These, and many other details on the subject of MSG safety can be found on www.truthinlabeling.org .

If you wonder why is it so important for the industry to keep using MSG as food additive, the answer is not hard to come by. It makes foods appetizing to consumers, and that directly translates into profits. The "taste" that MSG adds, though, is not a real taste originating at the taste buds. Glutamic acid itself has very weak, non-palatable sour taste. If it wouldn't be for its direct excitotoxic effect on nerves, the only significant taste-related effect of MSG would be coming from its sodium content. Unlike its organically bound form, glutamate, which shows no toxicity, free glutamate - or glutamic acid - in MSG is absorbed very quickly, hence has the capacity to create abnormally high blood concentrations.

From that point on, everything is in God's hands; you can hope that your body will be able to handle that, but certainly can't be assured of it. The effect can be acute, or develop after a period of time. What makes the problem worse is that free glutamate can form in foods irrespectively of MSG use, as a result of processing (fermentation, boiling, etc.). This makes total exposure to free glutamate - and the risk - higher.

Needless to say, it is wise to minimize your exposure to MSG. Easier said than done, not only because the FDA ruled MSG labeling is pretty much meaningless, but also due to many cover names under which it comes: glutamate, monopotassium glutamate, glutamic acid, calcium caseinate, sodium caseinate, gelatin, textured protein, hydrolyzed protein, hydrolyzed plant protein, plant protein extract, yeast extract, etc.

We could go on to other food additives, like **benzoates** (benzoic

acid, parabens, none of which can be ruled out as non-toxic, with butyl paraben, for instance, found to be capable of injuring the cell, and a potential endocrine disruptor found in high concentration in breast tumors), **colorings** (*tartrazine*, also FD&C Yellow No. 5, Food Yellow 4, inhibiting vitamin B6, stimulating production of inflammatory leucotrienes, linked to hyperactivity in children, allergic reactions, and others), synthetic phenolic antioxidants like BHT (*Butylated hydroxytoluene*), with no definitive evidence of non-toxicity to humans, but with noted toxicity to aquatic population, or BHA (*Butylated hydroxyanisole*), another synthetic antioxidant, listed as known carcinogen by California Proposition 65 and as possible carcinogen by IARC, as well as endocrine disruptor by Colborn and EU (also toxic to aquatic population), but still widely in use, and so on.

Danger, Danger ☠ The list of FDA approved food additives is thousands long, and the fact is that most of them haven't been tested for safety other than acute toxic reaction for their intended doses. The problem is not only that individual sensitivities vary widely, but also that these additives are not consumed alone, in a single product. An average consumer can easily consume dozens of different additives, or more, some of them from multiple sources. This fact has never been weighed in determining the official safe dose for particular additives which, just applying simple arithmetic, should be roughly as much lower than for the imaginary isolated single-product additive as there is different additives and sources of consumption in the average diet.

The reason for this focus on food additives is to illustrate how disarranged, heavily manipulated by special interests is the official oversight of public safety when it comes to toxic exposures. If it is so compromised with the very essential - our food - can we expect safety in the areas of secondary importance, such as environmental pollution, including EMF (electromagnetic field) pollution or material and product safety. The only logical answer is: No, we can't.

This is why it is so important to find out what the facts are; it is the only way to protect one's health and wellbeing.

TOXINS: _____ **EMF fields and currents** _____

At first, it sounds odd seeing word "toxic" next to a substance-less phenomenon such as electromagnetic field (EMF). But, then, since bioelectricity is a vital part of cellular function, anything interfering with it can also negatively interfere with basic body processes acting, in effect, as a toxin.

It's been known for a while that high energy radiation - so called *ionizing radiation*, from ultraviolet to nuclear radiation and cosmic rays - can inflict direct damage to living tissues by breaking their molecules. It has been also thought for long time that **non-ionizing electromagnetic radiation**, from visible light all the way down to extremely low radio frequency fields produced by electricity, can negatively affect living organisms only in two ways: either by raising tissue temperature, or by direct nerve irritation. All public exposure safety standards are based on that assumption.

That idea begun to crumble in 1979, when Wertheimer and Leeper discovered link between exposure to power-frequency fields and the rate of incidence of childhood leukemia. Ever since, scientific evidence has been mounting, proving that all forms of radiation, including those of lowest frequencies and energies, are capable of negatively interfering with cellular processes. More specifically, EMF penetrating the body interferes with cellular membrane potential, ion channel function and electron transfer, all vital part of cellular homeostasis, energy production and communication.

Such effect is not surprising, considering very low energy levels of bioelectricity. For instance, cellular membrane resting potential of -40 to -80mV (millivolt) is thousands of times weaker than the average power field we are exposed to. Intense electrification of living environment, particularly since the 1950s, brought on spreading of mysterious symptoms associated with EMF exposure, coined as *electromagnetic hypersensitivity* (EHS). It has been recognized as a real affliction by the WHO, although the organization does not consider the evidence of it being EMF-related sufficient.

But there we have powerful special interests - including those of governments themselves - exercising their influence, again. They don't want restrictions in the energy field, that would inevitably have negative economic impact, and almost certainly wouldn't be fully enforceable anyway, in order to remedy what could be relatively minor threat for public health. As a result, the grossly inadequate safety standards for public EMF exposure remain unchanged.

But the threat may not be minor for affected individuals. The effects range from higher incidence of childhood leukemia at common exposure levels to power fields, higher incidence of cancer and leukemia as a result of occupational exposure (still well within the official "safety limits"), to persistent symptoms of EHS - anything from sensory and dermatologic skin effects, dizziness, fatigue, or headache, to sleep, cognitive and cardiovascular disturbances whenever close to an EMF source - and worsened chronic health conditions. In Sweden, common-level EMF exposure is recognized as a legitimate cause of

debilitating diseases.

The truth is, there is no reliable diagnostic technique at present, capable of positively and specifically determining the immediate or long-term health effects of EMF exposure on an individual. But the existing scientific evidence overwhelmingly supports the basic assertion of non-ionizing radiation - from common-level power frequency fields to mobile phone radiation - being capable of significant interference with vital cellular functions far below the official safe levels. Probably the most complete review of this evidence is presented at the BioInitiative Web site, www.bioinitiative.org.

An indirect, but convincing proof of it is the therapeutic power of this form of energy, demonstrated by often spectacular results achieved by controlled application of *pulsating electromagnetic field* (also, Quantum Resonance System) and infrared light. Anything capable of affecting health positively, also has the power of affecting it in a negative way.

Another energy-related exposure that can negatively affect bioelectricity and health is so called **dirty electricity**, and stray voltage in general. Term "dirty electricity" refers to non-periodic high-frequency currents created in power circuits, that leak from the wiring and roam through conducting media like pipes, floors, metal objects or structures - and human body. Research is still limited, but clearly indicative of this type of toxic exposure being capable of causing EHS-like symptoms, as well as of significant worsening of chronic health conditions (M. Havas, *Dirty Electricity and Electrical Hypersensitivity: Five Case Studies*, presented to the 2004 WHO Workshop on EHS).

TOXINS: _____ **Tobacco smoke** _____

Tobacco smoke is probably the single most exposed enemy of health. Inhaling tobacco smoke is literally inhaling free radicals. They both, damage body cells and deplete body's antioxidant nutrients. Tobacco smoke contains over 4,000 chemicals, most of them toxic, including over 50 carcinogens. Obviously, it is the lungs taking a major hit, but the rest of the body is not spared. Tobacco smoke toxins are a burden to the detox system, depleting detox nutrients and enzymes as well. In addition to inflicting oxidative damage to endothelial lining of blood vessels, cigarette smoke also oxidizes ("bad") cholesterol. Both become contributing factors in the formation of arterial buildup, and the ensuing cardiovascular disease. In males, smoking negatively affects potency and fertility (sperm count and viability). In women, it nearly doubles the risk of early menopause.

Most often, smokers cannot avoid exposing others to toxins they create, including children. While much has been done in the last couple of decades to protect non-smokers from toxic exposure to tobacco smoke in public places, or at work, there is no law that protects family members and friends in the home setting.

TOXINS: _____ **Alcohol** _____

Another common source of toxic exposure is **alcohol** consumption. While alcohol is not inherently toxic, its health effect - like with most any other substance - is dose related. The problem is that where the unhealthy level begins varies widely from one individual to another. A good indicator is how does it make you feel: if it makes you feel unwell at any point during or after consumption, you went past your personal tolerance. But negative effects are quite possible before that point as well. In general, excess alcohol exerts negative effect on body function by burdening detox system, depleting nutrients, particularly antioxidants, hence also inflicting oxidative damage.

Alcohol is detoxified by conversion to *aldehydes*, which are then acidified and excreted in urine. If the first detox phase is inefficient, due to compromised enzyme action caused by nutritional deficiencies, pesticide exposure, toxic metals, etc., you are more susceptible to intoxication. But that is the lesser evil. If the second phase is inefficient - or overwhelmed either by overconsumption of alcohol, or exposure to formaldehyde, acetaldehydes produced by *Candida albicans*, natural gas, bioactive amines like caffeine, and many other chemicals that are detoxified by conversion to alcohols, i.e. through alcohol-aldehyde pathway - then you have a buildup of aldehydes, which can be much more toxic than alcohol itself.

Such disturbance in the pace of detox chemistry is very likely to result in the increased formation of even more toxic metabolites, such as *epoxides*, highly reactive and capable of inflicting damage to any body structure, including DNA.

The first alcohol detox phase (conversion to acetaldehyde) takes place in the liver, and generates free radicals as by-product. Excess alcohol drains the body - and the liver in particular - from both, nutrients needed for metabolizing it, as well as from nutrients that the body uses for antioxidative protection. At the same time, excess alcohol compromises the gut, making it more toxic by promoting intestinal dysbiosis, more permeable to toxins and contaminants, and less efficient in absorbing nutrients (particularly B vitamins, amino acids and fat-soluble vitamins).

Together with nutrient depletion through its metabolism (B vitamins, magnesium, molybdenum, iron...), toxic accumulation within the body, increased free radical formation and depressed level of antioxidants (vitamins C, E, A, zinc, selenium, glutathione, sulfur-containing amino acids...), the combined effect is more or less rapid destruction of health.

Danger, Danger  The prime target is the liver, which is ultimately seriously damaged or destroyed by accumulated toxins and oxidation, but literally all body functions are weakened and compromised, making it more vulnerable to any threat or malfunction.

How much of alcohol is excessive is highly individual. For individuals whose detox system is, for any of a number of possible reasons, compromised, it may be as little as half a glass of wine. Those regularly consuming alcohol often develop higher level of resistance to intoxication. That merely means that body adapted and became more efficient at converting alcohol to aldehydes (this may come at a price of compromising some other function, since those consuming alcohol in excess are usually thinly stretched nutritionally). But all other destructive effects of alcohol are still at work. The magnitude of their negative effect on health depends on both, level of intake and individual capacity to metabolically handle it, but no one should conclude it is insignificant just because of the absence of clear acute symptoms (feeling intoxicated). Moderation is very much advised.

TOXINS: _____ **Medical treatments** _____

Any interference with body's functioning is potentially harmful. Medical and dental treatments, although supposedly motivated by best intentions, are not exceptions to this rule. Without going into great variety of forms of these treatments, will only address the two biggest problems: general toxicity of legal drugs, and silver-mercury dental amalgams.

Most people know that both **prescription and over-the-counter drugs**, in general, are burden to the liver; in other words, toxic. But there's much more to it: drug toxicity can affect literally every single body function, often in a way that drug manufacturers know little - or nothing - about. It is no wonder that the evidence suggest adverse drug reactions to be #3 on the list of death causes in the U.S., after hearth diseases and cancer (Lazarou et al, *Incidence of adverse drug reactions in hospital patients*, 1998). Specifically, the study arrived at astounding - and horrifying - figure of over 106,000 deaths a year due to adverse drug reactions. And that includes only those that die in hospitals; the total figure is certainly higher.

Another study found that one out of ten patients admitted to intensive care units gets there due to iatrogenic cause, over 40% of those due to adverse drug reaction (Darchy et al, 1999). This number include only those whose health problem was immediately following drug administration and/or directly traceable to a drug; actual number is, again, likely to be higher.

Both studies relied on the conventional medical criteria, rather severely limited in their efficacy - and even very intent, in general - of establishing the true cause-effect relationship. That is another factor implying that true figures are significantly higher.

Of course, it is more than just these two studies. Books have been written, by competent authors, documenting the evidence of deadly toxicity of drugs (Angell: *The Truth About Drug Companies*; Moore: *Deadly Medicine and Prescription for Disaster*; Cohen: *The Case Against Drug Companies*, and others). The Lazarou et al study was published in the Journal of American Medical Association but, somehow, this life-and-death problem of grand proportions leaves the mainstream media cold. Have you heard of *Tambocor* (flecainide acetate), an arrhythmia drug that, based on the results of a random government post-marketing study, has caused over 50,000 deaths by 1995, some ten years after it was approved?

Chances are, you haven't. And *Tambocor* is still alive and well on the market, although stamped with black-box warnings.

Or how about Vioxx, a recent disaster drug? Estimates are that this painkiller killed 30,000-40,000 of its users as well. Despite numerous warnings in the course of years, it was voluntarily withdrawn by the manufacturer (Merck), instead of being recalled by the FDA much before the death toll went into tens of thousands.

Danger, Danger  In comparison, Bayer's super-expensive blood anti-clotting drug Trasylool may have killed "only" 22,000 patients, or so, before its *temporary suspension* by the FDA, without taking any action against Bayer, despite it caught the company in withholding key information on the drug. It is not possible that the government agency can be that incompetent, or plain not doing its job. The problem is that the mighty pharmaceutical business - a part of even mightier chemical industry - is practically controlling the agency that is supposed to oversee the market safety. How else to explain that drugs such as *Resulin* (diabetes), according to FDA's own expert increasing the risk of liver failure 1,200 times, ever get to be approved?

These few excerpts should illustrate how toxic are legal drugs, and

why it is so. It is possible that, all accounted for as it is, adverse reactions to legal drugs could be #1 cause of death in the U.S. Whether it is so, or not, it is good to know that you should fear legal drugs as much as you fear heart disease or cancer.

Silver-mercury amalgams are somewhat different variation of a dark story. It is hard to understand how it was possible that official medicine in general - and dentistry in particular - ever endorse practice of implanting toxic metal into people's mouths. When disposed of, scrape mercury-silver amalgams are officially a hazardous waste (EPA, 1988). Somehow it is O.K. to use it in dental fillings. Or is it? Of course not. Mercury was recognized as poison as far back as 16th century, and what we learned about it since only made its attribute change from *poisonous* to *extremely poisonous*. Mercury-silver amalgam content is about 50% mercury and only 25-30% silver, with the rest of constituents being tin, copper and trace of zinc. It is an unstable compound, and begins to corrode literally from the moment it is placed in the mouth.

ADA (American Dental Association) was denying it for decades, maintaining that "silver amalgams" - as it affectionately calls them - don't leak mercury, hence are safe. In 1987, ADA outlawed "premature" mercury amalgam replacement, declaring it unethical to remove "serviceable" fillings, and thus a violation of the code.

ADA did, though, indirectly, but very clearly acknowledge amalgam toxicity by laying down special safety guidelines (1999, updated 2003), aimed at protecting practicing dentists from amalgam toxicity. The guidelines instruct dentists practicing inserting mercury amalgams to adhere to so called "mercury hygiene", which include working in well ventilated area, avoiding contact with freshly mixed amalgam, as well as exposure to mercury vapor from leaky amalgam capsules, amalgam placement or removal, contaminated instruments, amalgam scrap and used capsules.

In 1989, in a Canadian study, radioactive mercury amalgams were implanted into sheep teeth; within 29 days mercury from the fillings has been detected throughout their bodies (Hahn et al, 1989).

Scientific evidence and research - including those within the World Health Organization - is solidly backing that mercury constantly leaks from the amalgams. No one disputes that mercury is a potent toxin, yet ADA continues to support the practice. Its motive is obvious - admitting that amalgams are toxic would make it mandatory to replace them for nearly the entire population (although in 1995 ADA declared no legal responsibility "to protect the public from allegedly dangerous products used by dentists", that doesn't make it not accountable).

Not only that many influential advocates of amalgams would have to take the blame, and the consequences; it would give to millions of Americans the legal basis to sue ADA and/or the government for damaged health. Neither wants that to happen - they prefer much more to keep mercury amalgams officially safe, while they are gradually replaced by newer dental cement types. They stick to the old guns of special interests when it comes to endangered public health: the worn out phrases of "benefits outweighing possible risks" and "insufficient evidence" (while smartly avoiding to test for those "possible risks", or do what it takes to establish facts).

Danger, Danger  So we are stuck with dentists using toxic dental material. Symptoms of mercury poisoning are many, varying greatly from one individual to another. According to the data on 1,569 patients that had mercury fillings removed, among the most frequent symptoms are fatigue, headaches, depression, dizziness, metallic taste, lack of concentration, memory loss, intestinal problems, allergies and insomnia (Goldberg, *Alternative Medicine*, p89). Longer-term, mercury circulating through your system can cause or contribute to development of many chronic diseases, from kidney, cardiac, respiratory and neurologic disorders to crippling sensitivities and life-threatening allergies, and to autoimmune disorders like multiple sclerosis or Lou Gehrig's disease.

Another dental restoration technique linked to serious negative health effect through creating toxin sources are **root canals**. Nearly all root canals result in residual infection due to imperfect seal, allowing bacteria to penetrate the tooth and flourish in the "safe haven" of root canal, out of reach of the immune system cells. Oxygen deprived environment of root canals may cause bacteria to undergo metabolic changes, resulting in production of especially potent toxins, leaking into the body. Former ADA director of research, Weston Price, has found out that removal of root canals in patients suffering from kidney and heart diseases most often will either improve their condition, or result in complete recovery.

Of course, it is not only mercury and dental amalgams. Turned out, just about any foreign material has the potential to damage health. From methylacrilates, **dental bonding glue** component (heart attacks) and titanium from **hip replacements** (cardiac arrhythmia), to silicone from **breast implants** (autoimmune disorders, chronic fatigue, fibromyalgia) and heavy metals from **hair dyes** (kidney damage), the list is long and growing. Before you let any foreign material be placed in your body, get all the information on its possible effects.

THE WORST HEALTH ENEMY #4: UNHEALTHY EMOTIONS

Can your emotions be toxic to your body? You bet. Body's psychological function is not a separate, isolated entity - it is a part of its physiological process, capable of a profound influence on its functioning. Perception of threat - whether realistic or not - triggers a broad spectrum of emotions, from fear to anger. These emotions dictate to the body to switch from its optimal mode of function toward an emergency mode, in which its sensory and response functions are prioritized over its metabolic, protective (on the cellular level) and regenerative functions. In fact, these emotions have developed as a vital instrument for physical survival in the inhospitable, dangerous world of our ancient predecessors.

But our world is very much different now, and so are the triggers of our perceptions of threat. Of course, we still respond to rudimentary, actual threats with some form of these "emergency mode" emotions. But much higher degree of social integration has brought on many new, more complex responsibilities, as well as much more frequent interactions with other people in much less coherent, much more alienated world. For many people, it builds up into often unrecognized but constantly present feeling of pressure and/or threat - psychological stress.

The degree of psychological stress can be very much intensified by a negative self-image. Its culprits are usually traumatic experiences from early childhood, often worsened - or even caused - by a lack of support structure, or direct negativity toward the child. Some common patterns that may initiate or intensify formation of a negative self-image are:

- the older child that feels less worthy because the parents are giving more attention to the younger one,
- a child feeling unworthy because the parents are neglecting it,
- a child lacking confidence because of over-controlling parents,
 - a child that becomes social failure during adolescence and adulthood, because the parents allowed it to adopt socially unacceptable behavior,
- a child of troubled, estranged or divorced parents feeling as a part of the problem,
- a child whose aggressiveness, lack of attention, hyperactivity, or other behavioral/learning deviations resulting from chemical or food

sensitivity make it feel as a social failure or sub-achiever,

and others. Less frequently, major traumas later in life can also lead to the creation of negative self-image, especially if some form of it has been experienced during early childhood.

Any feeling of inadequacy fuels psychological stress, making its toll on the body heavier. The underlying emotion of threat causes body's glandular function to shift toward the emergency response mode, stimulating sensory, respiratory, cardiovascular and motor (muscular) function. This, however, comes at a price of compromised metabolic function - digestion, absorption and assimilation of nutrients - cellular-level-protection (detox and immune systems) and regeneration (sleep pattern/efficiency).

In other words, psychological stress tends to increase body expenditure, while putting strain on its resources. Needless to say, forcing the body into such an inferior modus operandi for prolonged periods of time is destructive to health. More so if accompanied with the health negatives of poor diet, toxic exposure or existing chronic health condition.

THE WORST HEALTH ENEMY #5: INSUFFICIENT REST

Why do we need to take a rest when tired, and need to spend nearly third of the lifetime asleep, if we are to stay healthy? Simply put, your body operates on the energy it burns by digesting food. That has two consequences:

- energy expenditure is limited by available energy, and
- burning for energy at the cellular level, as highly regulated as it is, does produce certain level of damage

The body has to ration available energy: its priority is, of course, maintaining the basal functions keeping you alive: breathing, basal heart rate and other organ's - including nervous system - function. The excess energy can be supplied to (primarily) muscle cells, which use it to answer demands of body's motor functions. Getting tired is simply a signal by your body that your available energy over the level needed for maintaining basal functions is running low. You have to slow down, refuel, or at least let the body to make some more energy from what is available to burn.

Danger, Danger  What happens if you ignore that signal? Pretty much the same as if you put too much weight on a plank straddled

between supports at its ends. It will cause structural damage to the body and, beyond that, the body function will give up at its weakest point. You don't need to worry nearly as much about causing damage to your skeletal muscles, as about damaging that one pulsating muscle in your chest that you are forcing to take a load heavier than it can endure. That could inflict irreparable damage to the heart tissue, especially if it is already made more vulnerable by narrowed blood vessels (arteriosclerosis), respiratory constraint, nutritional deficiencies (heart running on too low magnesium - needed for muscle relaxation - can be stricken by cardiac arrest), or other factors.

Running low on energy negatively affects all body functions, including immune and detox systems. That makes the body more vulnerable to toxic and oxidative damages. It not only speeds up aging, it contributes to developing - or worsening - of chronic health conditions. It is mainly due to toxic and oxidative damage resulting from metabolism and toxic exposures, that your body needs to turn the steam down, every night, in order to repair all it can from the damage to its molecular structure accumulated during the day.

The main reason we need the shelter of sleep is probably that the body can effectively repair this damage only with its metabolic rate lowered to a minimum. Every cell has repair capabilities; it uses it to maintain its structural, hence also functional integrity. While all its structures are important, it is particularly important to maintain integrity of the DNA and its sequences. It is estimated that over twenty oxidative lesions, on the average, form on each cell's DNA molecule, each and every day. Most of them are repaired, but those that are not can be replicated during cellular divisions.

As more of DNA damage accumulates, it is only matter of time when it will cause disturbances in cellular homeostasis. Cellular function becomes less efficient, or ceases prematurely, promoting degenerative diseases; it can also alienate from the body, with the cell beginning to live and proliferate for itself, creating cancerous growth. DNA damage of the reproductive cells can also have mutagenic effect, causing unpredictable physiological changes and anomalies in generations to come.

Another vital function of sleep is to allow the brain to realign and recharge. It is not yet understood what is, specifically, taking place during this process, but anyone who skipped a night of sleep can testify how much of a difference - for the worse - it makes in the way one feels, thinks and reacts. And, just as the rest of body cells, brain cells can most efficiently repair their oxidative/toxic damage during sleep.

For the body, insufficient sleep is an adverse condition to which, if

persists, it will try to adapt the best it can. It means that you are likely to feel less the immediate symptoms of sleep deprivation, but also that your body chemistry will be shifted from normal - or optimal - in a number of ways. Specifics of these metabolic shifts depend on your body chemistry, but some may tend to have more general character.

For instance, there are indications that insufficient sleep may be affecting brain's appetite control mechanism, making you eat more. Another study has found link between decreased sleeping time and increased rate of arterial calcification, and so on. There is much more that can be compromised if body cells don't get sufficient time to repair and regenerate.

So, don't take it lightly: give to your body rest when it asks for it, and give to it enough sleep to rebound from its daily hardships. At the least, it will slow down aging; chances are, it will also give you a better hand to play against many health threats coming your way.



In conclusion, it is impossible to escape the downward spiral of health deterioration without taking excesses of these five worst enemies of health - poor diet, faulty digestion, toxic exposure, unhealthy emotions and insufficient rest - out of the picture. And the only way to accomplish this is to bet on the lucky health numbers - your health's best friends. Let's meet them in person.

Your Health's 6 Best Friends

Identifying your worst health enemies already gives pretty good idea of who your health's best friends are. They outnumber the enemies by one, but will take less time to go through. It is often quite obvious why are they your health's best friends. The reason so many people don't stick to them is either ignorance, or denial, or plain old habit.

Your health's six best friends are:

#1 - **healthful diet**

#2 - **efficient digestion**

#3 - **minimized toxic exposure**

#4 - **emotional wellbeing**

#5 - **adequate physical activity**

#6 - **needed rest**

They are all important, in that lack of any single friend can jeopardize your chances of preserving or regaining health. Let's meet with each of them in person...

YOUR HEALTH'S BEST FRIEND #1: **Healthful diet**

You've probably heard the saying: "You are what you ate". There is no way around it: the entire body structure and all its functions are built on food and water you consume. If they don't supply the body with all it needs, your health suffers. When, and how food is consumed, also matters; poor eating habits alone can cost you wellbeing. This pretty much outlines healthful diet as:

- ✓ balanced in macronutrients
- ✓ reach and balanced in micronutrients
- ✓ low in toxins
- ✓ consumed in healthful manner

Macronutrient balance

Diet balanced in macronutrients can mean very different thing to different people. While most of us need about 1.5 liter of pure, preferably alkaline (i.e. with mineral content) water daily, body's requirements for proteins, fats and carbohydrates vary significantly from one individual to another. Moreover, they can and often do vary significantly for any individual, with age, health status, environmental exposures and lifestyle. Body metabolism in general, and cellular metabolism in particular, are too complex and input-dependant for it to depend on the genetic inheritance alone (which itself is subject to epigenetic changes throughout the lifetime).

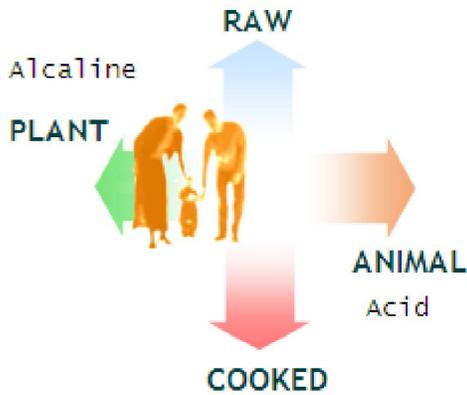
Directly related to it, what appears to be near-optimum proportion of protein, fat and carbohydrates in any given period, is always in part affected by micronutrients that particular foods supply, as well as their effect on body's metabolic environment. In other words, near-optimum macronutrient proportion is partly the consequence of body's micronutrient needs, and it is hard to separate the two. Likewise, metabolic disturbance may cause the body to favor pro-acidic environment, for a period of time, despite it being for most people sub-optimal, or even harmful.

It is fairly well established that the most healthful diet for majority of people, most of the time, breaks down to 15-20% of total calories coming from proteins, 20-25% from fats and 55-65% from carbohydrates - not more than 10% of that simple sugars in any form. But what matters even more than the mere proportion is the quality of foods consumed. There is also a factor of animal vs. plant foods, as well as cooked vs. raw foods proportion.

Foods of animal origin generally elevate protein/fat proportion, and so do - to somewhat smaller degree - cooked foods. For a variety of reasons, a relatively high proportion of these foods can be beneficial for some time but, again, for the majority of people it is the other way around: they'll do better on predominantly plant and raw foods. Benefits of the latter are obvious: wider range of nutrients, high fiber content, less denatured (by cooking) nutrients, higher enzyme content, lower contamination (so called *biomagnification* effect results in environmental toxins reaching the highest levels in animals, particularly predators).

Best bet ♥♥♥ It can get very complicated, but the first step is always very simple: it is the big picture of your macronutrient intake. Your best bet is to stay close to the above proportion. Any significant

deviation from the average ranges is a suspect worth paying attention to. More likely than not, it is caused by some type of metabolic imbalance, to which your body may, or may not adopt short-term, but long-term prospects are always questionable.



To complement this general "balanced diet diagnosis", you can use the concept of *metabolic cross*. On the top end of it are raw foods, cooked foods are at the bottom, animal-origin foods at the right, and plant foods at the left end. You want to be around the mid-area of this cross, preferably leaning toward plant/raw foods, which is also the side with alkaline bias. Any significant deviation toward any of the

extremes - and more so toward the cooked/animal-foods end - is a red flag signaling unhealthy imbalance, and possible underlying metabolic or health problem.

Healthy micronutrient level

Importance of macronutrients - particularly vitamins and minerals - for preserving health is probably the most widely known aspect of a healthful diet. Unfortunately, quite often also poorly understood. The three common misconceptions are: (1) adequate level of intake of individual micronutrients, (2) effect of random selective supplementation, and (3) protective power of higher overall micronutrient intake.

Adequate level of micronutrient intake is highly individual, which also means that it changes not only with age, but also with health condition, lifestyle (including diet) and environmental exposure. Many tend to think that the official recommendation for dietary intake of minerals and vitamins (Dietary Recommended Intakes, DRI) is a standardized measure that fits most everyone's shoe, including their own. The fact is that the DRI levels are both, only rough random average based on short-term observations (if any).

Assuming that a level of nutrients, or their estimated intakes, averaged in small healthy-looking samples, or shown to prevent obvious short-term/developmental health problems (such as scurvy due to vitamin C deficiency, or rickets due to insufficient vitamin D level) is your long-term optimum, is highly questionable. There is no evidence that it is a long-term optimum, or even sufficient for the very individuals used for obtaining the data, much less for anyone else. So

how do you know what is your individual optimum?

Best bet ♥♥♥ The fact is, you don't. The DRI levels are a general reference - corrected by the weight of evidence where available, such as, for instance, significantly higher optimum intake of vitamins C, D and E - but your best indicator is simply that you are feeling good. If you don't, checking on your nutrient status can give a valuable clue in which direction to go in order to feel better. Your best bet is:

- eating wide variety of foods, while
- not straying significantly from the above global macronutrient proportions, and
- having a diet with an overall alkaline bias.

This also provides a wide range of "non-essential" nutrient, such as plant antioxidants and immune-enhancers, not officially listed among essential nutrients, but likely to have significant health-supporting, or protective effect.

The second frequent misconception is that randomly taking selected micronutrients, either "just in case", "because they are good", because you think it might help with some particular symptom, or even because it has blanket recommendation from "credible" sources (such as the decades long calcium craze). Anyone that knows the ABC of nutrition, knows that longer-term favoring of intake of any single nutrient - or any small group of nutrients - is bound to cause nutritional imbalances, causing toxicity due to excessive level of one group of nutrients, deficiencies of nutrients suppressed by them, or both. The consequences can range anywhere from minor symptoms (to anyif you are lucky) to causing or significantly worsening major degenerative diseases.

Best bet ♥♥♥ Any significant long-term supplementation is safe only as long as it is controlled by periodic checkups of your nutritional status. Otherwise, your best bet is a broad, balanced nutritional supplementation.

The third common misconception - or wishful thinking - is that boosting one's micronutrient intake can compensate for unhealthy lifestyle: dietary excesses and imbalances, obesity, smoking, alcohol overconsumption, and alike. While broad balanced supplementation is likely to lessen the negative impact, the alternative of such supplementation *with* healthful diet and lifestyle is obviously preferable. Neither one guarantees health, but the chances are certainly better with the latter.

Low-toxin diet

The importance of minimizing toxic exposure for help preservations cannot be overemphasized. Toxins are literally pouring in our bodies with the air we inhale, water we drink, food we eat, from the cloths we're wearing, personal care products we are using, medications we are taking or dental implants put in our mouths. Toxins coming with foods can be significant portion of this toxic overload. They include naturally occurring food toxins, many food additives, environmental and agricultural toxins finding their way into the food chain, toxins originating from food processing, storage and transport, toxins from food containers and packaging, synthetic hormones, disinfectants and antibiotics used in growing livestock, and others.

Sure, it would be best to have a toxin-free diet, but that option is not available. Best you can do is to choose foods with lowest level of toxins you can find. However, this simple goal is not easily attainable. The problem is not only in identifying toxins and offending foods, it is as much in figuring out what is it that you are vulnerable to. Relatively low levels of even only potentially toxic substances may affect your health more than higher levels of some other substance generally recognized as toxic.

Good example are naturally occurring food toxins, particularly alkaloids of nightshade family of plants (potato, tomato, peppers, eggplant, tobacco, cayenne, chili and paprika). "Unexplained" arthritic and other body pains are very often caused by significantly aggravated by sensitivity to nightshade alkaloids (Childers). What is peculiar about their action is that you may be eating nightshades for decades without consequences, and then develop sensitivity. The mechanisms causing it are not yet understood, but it is known that nightshade alkaloids can interfere with function of important enzymes, like *acetylcholinesterase* (neuro-muscular function), or cause damage to cellular membranes in sensitive individuals.

Many other toxins contained in food, particularly those present in low levels - which means majority of them - follow similar pattern. It takes long term exposure to finally bring on symptoms, but it may as well never happen. On the other hand, some **other** food toxins, like certain food additives, salicylates, purines or bioactive amines, may cause symptoms shortly or immediately after consumption. Some are relatively easy to recognize as the culprit, others are not.

Best bet ♥♥♥ Not knowing your personal vulnerabilities, your best bet in minimizing exposure to food toxins is to steer as much as you can toward least processed foods, preferably organic. Avoid or minimize

consumption non-organic food from developing countries - most are still using toxic pesticides banned in U.S. - foods that have been stored (likely to be treated with fungicides), and foods that does not appear, or is not fresh. Such foods not only have lowered nutritional value, they are also more likely to be contaminated with fungi and their mycotoxins, as well as with other potentially harmful microorganisms.

Consumption of raw foods, with all its advantages, also exposes you to a higher risk of microbial contamination and contracting intestinal parasites. To minimize the risk, raw foods need to be carefully cleaned and washed before consumption.

Healthful eating habits

This one is easy: there is only a few simple rules, which can make a big difference in how you feel, both short and long term. These rules are:

- ✓ no overeating
- ✓ no eating when not hungry
- ✓ no eating within three hours before bedtime
- ✓ have a glass of water 15-30 minutes before meal
- ✓ relax, focus on and enjoy the food you eat
- ✓ thoroughly chew every bite

Just do it.

YOUR HEALTH'S BEST FRIEND #2: **Efficient Digestion**

You are what you ate, but only if what you ate gets properly digested. Before your body gets to put its hot little hands on the nutrients consumed with food, they have to be broken down and made available for absorption. Remember, digestion starts in your mouth, where food undergoes first transformation into - desirably - a homogeneous semi-liquid mix of food and saliva. That prepares food for the next phase - digestion in the stomach (saliva also contains starch enzymes, beginning to brake complex carbohydrates).

In the stomach, this initial mix blends with water, hydrochloric acid and pepsinogen, the latter being turned by the acid into pepsin - the enzyme needed to break down proteins into peptides (fragment of the protein molecule consisting of some of its amino acids).

As this partly digested mix passes from the stomach into small intestine, it blends with bile salts - emulsifying fats for more efficient enzyme action - and four pancreatic enzymes: fat-splitting *lipase*,

starch-breaking *amylase* and two *proteases* finishing the break-down of proteins (the two need the sixth small intestine's enzyme, *enterokinase*, for activation). It is the small intestine where complex carbohydrates are broken into simple sugars, like glucose, fats into fatty acids and glycerol, and proteins into amino acids - the final, digested forms of macronutrients that can be efficiently absorbed into the bloodstream through the intestinal wall. The wall is covered with small finger-like protrusions, called villi, containing blood vessel structure, and creating a huge surface area for nutrient absorption.

The final stage of digestion takes place in the large intestine (colon), where most of water, and salt, are absorbed. Remaining bulk forms feces, expelled out of the body by peristaltic movements of the colon.

Your body depends on the intestines not only to provide it with nutrients it needs to keep functioning - they also have a major detox/elimination role. All this has to work at least sufficiently well for the body to remain healthy. How do you ensure this?

Best bet ♥♥♥ The biggest favor you can do to your gut is simply putting through it what it was designed for - and keep everything else out, as much as you can. Since we are designed as omnivores with the plant bias - our digestive tract (length, level of stomach acid, set of enzymes), teeth configuration (indistinctive canines, large flat top area), sideways movement of the lower jaw (to grind plant food, instead or mainly swallowing meat, as carnivores do) and absence of claws are testament to it - your diet should include variety of foods, as natural as possible, with plant foods dominant - not the other way around.

What does not belong in your gut are foods highly denatured by processing, high temperatures, chemical additives, irradiation or genetic modifications.

What your gut hasn't been made for are medications, in particular antibiotics, non-steroidal anti-inflammatory drugs (aspirin, Tylenol, Motrin, etc.), steroids and antacids.

What does not belong to your gut is foods - even good, natural foods - that your digestive system does not tolerate. Main suspects are gluten (wheat, rye, barley and oats), lactose (milk sugar), fermented foods and sugars, but it can be any food that you have developed or inherited intolerance to.

Finally, what hurts your gut is too many bad bugs, such as *Candida (albicans)*, and other fungal strains) *H. pylori* or *bacteroides* (intestinal dysbiosis). This routinely comes as a consequence of sugar

overconsumption and/or even short term use of above mentioned medications. The former causes intestinal fermentation that fuels - in particular - fungal growth; the latter either directly promotes bad bug growth as well, or kills friendly bacteria (*bifidobacterium*, *lactobacillus*) you need for good digestion, freeing a room for the more resistant bad bugs. What comes next is intestinal inflammation and leaky gut, inefficient digestion, lowered absorption and toxic gut/blood.

So if you don't have sufficient bowel regularity (at least once, and no more than three times a day), normal stool appearance (well formed, dark brownish in color) and pretty much absence of any chronic digestive symptoms bothersome enough to make you notice them, check up on one of your health's best friends' condition, and fix what's broken. Your health will thank you for that.

YOUR HEALTH'S BEST FRIEND #3: **Minimizing toxic exposure**

What is common to Antarctic penguins, polar bears, and the breast milk of Inuit woman in the "pure" wilderness of North Canada? The answer: they all have measurable levels of pesticides and other major global pollutants. No need to wonder how those much closer to the "fire" fare - not good at all.

In 2005, a blood analysis of 10 randomly selected newborns from U.S. hospitals has identified a total of 287 chemicals. According to the authors (Environmental Working Group/Commonweal), among those 180 are known to cause cancer in humans or animals, 217 are toxic to the brain and nervous system, and 208 cause birth defects or abnormal fetal development in animal tests. Isn't that just a great way to start your life?

EPA estimates that one in six women of childbearing age has high enough mercury blood level to harm developing fetus.

But the rest of us isn't spared either. Today, toxins are everywhere: in the air you are inhaling, water you drink, food you are swallowing, soil you are standing on, cloths you wear, your skin and hair - and, of course, inside your body. Never before has human body been exposed to this level and number of chemicals. Number of registered chemicals has exceeded 100,000, and no one knows - or ever bothered attempting to determine - how many of them are typically present in our living environment. Some of them are present in controlled manner - which does not necessarily mean they are harmless - and many are not. Most of those 100,000 registered chemicals have never been adequately tested for safety, neither short- nor long-term, and are simply assumed

safe. Much less they've been tested for their combined effects on health.

Unfortunately, you can't rely on the government, neither in determining what chemicals are toxic, nor adequately testing them for long-term safety - not even when it comes to enforcing existing laws. Too many mighty special interest are involved, and the government itself is - should we say understandably? - very careful not to put too much strain on the economy. Mainly as a compromise in this game of Titans, the official safety levels for some of the most toxic chemicals are continuously shrinking. Also, since 1970's Clean Air/Water Act, most of major pollutants are under better control, and diminishing, but it is only a part of a bigger picture. Many other toxins and contaminants are not being monitored.

In Japan, the rate of complaints related to the typical pollution sources are downtrending from 1970s into 1990s, but complaints on atypical sources were raising, with the overall volume of complaints having an uptrend. An overall pollution level is probably on the increase in the U.S. as well. There is simple to little control. A random pilot study by USC and Texas A&M University team of scientist in the Huston Ship Channel area in 1997, found "severe inconsistencies between reported emissions and major sources" (e.g. out of four detected sources producing 65% of a measured organic gas, only one - contributing as little as 5% - was listed with the EPA).

But registered chemicals are only a part of the problem. Add toxic bio-contaminants, toxin-carrying particulate contaminants, medications (yes, they are toxic; so much so that they are among the top causes of death in the U.S.) and EMF contamination (power field, cell phone radiation, "dirty electricity", stray voltage), and you are beginning to see the big picture.

What can these do to you? The World Health Organization estimates that air pollution alone kills 3 million people worldwide; Stieb et al puts the number within the U.S. at 100,000 a year. And that is based only on the several major outdoor air contaminants that are known and monitored.

Make no mistake - the real top causes of death in this country are not heart diseases and strokes, cancers, and respiratory infections. Neglecting comparatively small role of inherited diseases,

there are only two major causes of disease-caused premature deaths :
poor diet choices and toxic exposure.

Vast majority of the deaths - whatever the "diagnosis label" happened to be - are due to these two causes, usually combined. They also cause most of health-related misery and suffering. Just taking care of your diet and nutritional intake may not be enough - and isn't likely to be.

Best bet ♥♥♥ Not knowing what your particular vulnerabilities to toxins are, it is wise to minimize your overall exposure as much as you can. And that means:

- ✓ filter your indoor air
- ✓ filter your water
- ✓ avoid processed foods and foods with chemical additives
 - ✓ avoid foods that don't agree with you
- ✓ avoid/eliminate offensive materials from your home (particularly bedroom)
- ✓ always look for alternatives to medications and dental/medical implants
- ✓ minimize your EMF exposure (power field, cell phone radiation, "dirty" electricity)

You are likely to be able to make significant difference in your exposure level, and it is all but certain to improve your chances to preserve or regain health.

YOUR HEALTH'S BEST FRIEND #4: Emotional wellbeing

Are you happy? Are you feeling good about your life and yourself? Do you love someone? Do you awake in a new day looking forward to it, and at the day's end wait for the new day with enthusiasm? If the answer to any of these few simple question is "no", your emotional wellbeing is compromised.

Each "no" means that you suffer deficiency of positive emotions, while at the same time being more vulnerable to those that are toxic and destructive: insecurity, depression, fear, anger. What makes them destructive is their effect on body functions. Your body is very quick and responsive to your perceptions - that was the key to survival in those dangerous, unforgiving times when humans were often just a fair game to elements and predators. In the core of negative emotions is a feeling of being threatened - and the body only has one answer to it.

Hormonal action causes it to switch from its optimum metabolic mode - prioritizing digestion, absorption and overall metabolic balance

- to some level of "emergency response mode", prioritizing its sensory/motor function (including respiratory and cardiac). These protective functions are intensified, at a cost of suppressed body-supporting functions - digestion, absorption, assimilation, repair and regeneration. While it makes perfect evolutionary sense, and usually won't hurt short term, it becomes your enemy if you let it become routine. Especially so, when combined with other major health enemies - unfortunately, all too common scenario.

Just as those other enemies, compromised emotional wellbeing may not be apparent: people just get used to their routines, habitual choices of feelings and reactions, everyday's stress and rush. It becomes "part" of who we are, and "what" the life is - but it is only so as long as we accept it as such. It takes will and a sustained conscious effort to change any habit, and this one is not exception. But it is well worth each and every minute of your time, and every heartbeat that you put into it.

Best bet ♥♥♥ If you need to change your emotional wellbeing for the better, here's your homework:

- ✓ get to feel good about yourself
- ✓ organize your time

Sounds very simple, but it really boils down to it. How do you get to feel good about yourself? Simply by *doing the right thing*. Whatever it happens to be in your particular case, there are two main ingredients to it:

- (1) getting what you want, or need for yourself, and
- (2) getting to others what they want, or need.

There is no way around it, and nothing else that you could substitute it with. Neither one alone will work - you have to keep those two at least roughly balanced. Of course, this "simple" task requires serious commitment, setting goals, changing old habits - and *yourself*.

It has to be continuous effort, because it builds momentum on successes - no matter how minor - but will easily slide back to your old you if don't keep pushing.

So - keep it up.

The key part of getting your heart to a better, more secure, happier place, is to organize your time, throwing out what doesn't help your cause, and then balance as best as you can getting it for yourself with giving to others. Planning and organizing not only make you much more efficient, more likely to succeed in what you are after, they can also

greatly reduce your stress level - a bonus that would make it worthwhile doing it all just for that reason.

So, if you want to feel better, be happier, it is all in your hands.
Just do it.

YOUR HEALTH'S BEST FRIEND #5: Adequate physical activity

The human body does best when routinely exposed to adequate physical activity. The body "model" that we have is still the one that hundreds of thousand of years of evolution have come up as the optimum for ever moving hunter/gatherer. Quite recently - relatively speaking - our fortune turned for the better, and we don't have to be nearly as physically active as our predecessors. With the good comes the bad: the newly acquired luxury is very likely to adversely affect our health, especially when leaning toward the extremes - little activity, and plenty of food consumed; wrong choice of diet only makes it worse.

If given another couple hundred of thousands years, we might succeed in evolving another optimum body model, that of a couch potato thriving on junk foods. But it would come at a price of enormous "collateral damage" in the process. For now - and for quite a while ahead - we are stuck with this body that needs to be active - or else...

You do have an option, though; you can do even better with very limited physical activity, if you are willing to reduce significantly your caloric intake. It is long established in scientific circles that the only thing positively proven to significantly extend lifespan is restricted caloric intake. This has been observed in numerous animal experiments, and indications are clear that we humans are no exception. By reducing your caloric intake by 1/3 to 2/3 of what is your ad lib consumption, you have good chances to extend your lifespan by up to 1/3, or even more.

That, unfortunately, is not for everyone. For one, we just love to eat. Second, such restriction not only allows, it requires minimized level of physical activity as well. Longer-term, it leads into significant loss of body mass, including bone mass.

Best bet ♥♥♥ If you don't like the idea of depriving yourself from food - and, chances are, you don't - you need to keep moving. There is a great variety of exercise forms, and they are all good as long as their intensity is commensurate to your endurance level, and are practiced regularly. You should make sure your level of antioxidants is

satisfactory, because intensified physical activity increases oxidative stress. Also, not to take unnecessary chances, check out how quickly your heart returns to its resting rate. If it is significantly longer than 20 beats per minute, you should resolve the underlying cause before you can safely commit yourself to exercising routine.

Exercise benefits your body in many ways: it strengthens muscle tissue, improves posture, stimulates metabolism, lymphatic system and elimination, strengthens cardiovascular and respiratory system, and so on. Exercise-induced sweating can greatly help detoxication, and running exercises will also increase your bone density.

Another bonus - it is a great way to relieve stress build up (which you may not even be aware of).

Or, put plainly, exercise moves your blood around faster, makes you breath deeper, feel more alive - and that *feels good*.

YOUR HEALTH'S BEST FRIEND #6: **Needed rest**

Why not giving to the body a chance to rest properly can have major negative effect on health is already covered under Your Health's Worst Enemy #5. What is left to outline is how to make sure that your body gets the rest it needs.

As mentioned before, if you subject the body to a prolonged routine of not allowing it to get all the rest it needs, it is likely to respond in a manner it does to any persistent unfavorable condition: it will try to adapt the best it can. The good side of it is that you will likely feel less the immediate symptoms of insufficient rest. The bad side is that, underneath that surface, that may force your body to switch from its optimum *modus operandi*; and it certainly will cause it to lag behind in its repair/regeneration success rate.

Longer-term, it will undermine its integrity, possibly significantly. How much it will actually hurt depends, like everything else when it comes to health, not only on the degree of rest deprivation, but as well on the degree of your genetic vulnerability and, even more so, the strength of the other four worst health enemies in your life.

Best bet ♥♥♥ So, how do you make sure that your body does get all the rest it needs? One rule to go by is: listen to your body. If you ignore its signals for long enough, they may stop coming, or may weaken enough to feel "normal" - and you don't want ignoring your body needs feel normal.

More rules:

- ✓ give to your body at least 6-7 hours of good sleep, every day
- ✓ maximize the efficiency of your sleep by not having a meal within three hours before bed time; if you can, don't have a meal early in the morning either
- ✓ give to your body chance to rest by not overeating during your day
- ✓ take a few minutes to close your eyes, relax, and breathe freely during prolonged periods of activity; if you can, make it routine
- ✓ never overexert in anything you do

Making these rules your habit will benefit your wellbeing in the long run. Chances are - greatly. You'll feel fresher, more energetic, you'll think and react better, slow down aging, and strengthen your resistance to diseases. Much less would be well worth breaking old and building new habits.

Think of your body as a river bed exposed to a constant forces of erosion from both, outside elements and the very life force flowing through it. Your body has the ability to protect itself from being worn away too quickly - but only if you don't stand in its way. And you will prevent that from happening by avoiding the bad luck numbers - your health's five worst enemies - while playing the lucky ones: your health's six best friends. It is as simple as that.

At a glance, here's your cross/check list:

- ~~Poor diet~~
- ~~Faulty digestion~~
- ~~Toxins~~
- ~~Unhealthy emotions~~
- ~~Insufficient rest~~
- ✓ Healthful diet
- ✓ Efficient digestion
- ✓ Minimized toxic exposure
- ✓ Emotional wellbeing
- ✓ Adequate physical activity
- ✓ Needed rest



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