HEAVY METALS
How They Affect Your Health

The biological terrain of the body is all about the vital balance of biochemistry and biophysics that establishes the internal environment in which the cells function; that in turn determines health. A well-balanced mineral count is one of the essential parameters for a healthy biological terrain; this is determined by diet, digestion, emotional/mechanical stressors, and environmental pollution (specifically heavy metal burden or intoxication). In 1974, the World Health Organization had suggested that at least 80% of all chronic disease conditions can be attributed to environmental pollution one way or another; and that of all the pollutants, heavy metals pose the biggest threat to our health. They can either directly or indirectly cause, contribute, or worsen nearly every disease or illness we know. They have a devastating influence on our physical, mental, and emotional well-being.

The major cause for all degenerative diseases is the overproduction of free radicals; pollution elevates the production of free radicals that cause oxidation and hence the stage is set for bacteria, viruses, and degenerative diseases to develop. Of the many producers of oxidants, heavy metals are among the most dangerous, because they are not metabolized or broken down, instead, are accumulated and stored in the tissues and organs. It is difficult to avoid heavy metals since they're present in our air, water, food, cosmetics, vaccines, medical drugs, paints, hobbies, and even in our mouths if we have silver-mercury amalgam fillings. They enter the body through inhalation, intestinal absorption, as well as absorption through the skin. In most cases of body burdens, it is the metabolic disturbance that leads to the increased retention of heavy metals, although the reverse is true as well in that heavy metal accumulation leads to metabolic disturbance; either one can happen first. Deviation from normal digestion and proper protein metabolism, as well as diet, nutritional status, stress, and illness will allow heavy metals to accumulate in the body; this allows them to contribute with their adverse effects on the very conditions that invited them in at the first place. Once absorbed into the body, heavy metals have a wide distribution in various organs, glands, and the central nervous system. Some metals seek bones and therefore settle into the skeletal system and the teeth. Organo-metallic forms of heavy metals can readily pass through membranes and even cross the blood-brain barrier. They can poison enzyme systems, effectively increase free radical production, and displace or compete with essential elements that make up metalo-enzyme complexes, thus interfering with the absorption of nutritional minerals.

Heavy metals are a major source of free radicals that cause cell-damage by oxidation (loss of electrons); this causes the blood to pass protons into the urine which now becomes more acidic as a result of higher proton concentration in it. The body's elimination system is able to get rid of these excess protons; however, a small accumulation of them occurs into the connective tissue and absorption into the cell follows. Once the proton gets inside the cell, intra-cellular potassium will be excreted and washed out with the urine to maintain electrical balance. This leads to an overall body tissue acidification and hence slowing down of all metabolic and digestive processes, a diminished kidney function, and a decreased enzyme activity. Degenerative diseases are the outcome of this kind of situation; these result in chronic pain and inflammation which are a major source of free radical production that in turn will cause further oxidation, thus completing a vicious cycle. Heavy metals like cadmium, lead, mercury and more are so pervasive in our society today that it is no longer a question of whether or not we are toxic, but rather what our toxicity level is. They disturb the biological terrain of the human body, thereby creating an environment conducive to the development of pathogens that thrive in that specific condition. As Claude Bernard believed, pathogens and disease occurred only when the biological terrain was destabilized or when an imbalance was present.

Additionally, heavy metals harm the body by tying up binding sites on cells, preventing essential minerals from getting in. In the human system, bivalent metals are engaged in a continuous fight for the site against one another; the result is displacement of the element of lesser atomic mass by another of a heavier atomic mass. Heavy metals grab the biological spaces that would've been filled with necessary minerals that are lighter in mass. As an example, mercury and cadmium that are toxic heavy metals are under the same group in the periodic table of elements as zinc which is a beneficial mineral; mercury and cadmium, being heavier than zinc, can prevent it from being utilized and thus resulting in zinc deficiency. Zinc will be displaced from its biological site in the presence of either one of these two heavy metals. PMS, fatigue, thyroid issues, loss of smell and taste, macular degeneration, prostate enlargement, rheumatoid arthritis, low libido, sterility, immune suppression are only some of the symptoms of zinc deficiency. If ratio of protective nutritional metal to toxic heavy metal falls below an ideal level, then the heavy metal could be interfering with the function of the protective metal, even if heavy metal is not in a toxic reference range.

The success of a medical treatment for a health condition, related to chronic metal poisoning, is dependent upon heavy metal elimination from the body in a safe manner. Heavy metal detoxification programs improve overall immune response and get rid of allergies, headaches, depression, fatigue, pain, digestive issues, weight issues, irritability, brain fog and many more conditions that may have resulted from those toxic loads. Lowering heavy metal loads has turned around heart disease and diabetes, has improved memory, mood, and IQ. The following is a list of some conditions and/or symptoms that could be attributed to heavy metal load in the

body: Parkinson's, Alzheimer's, Autism, ALS, Lupus, Multiple Sclerosis, Asthma, Fibromyalgia, PMS, Hypoglycemia, Crohn's Disease, Arthritis, Type 2 Diabetes, impotence, low libido, liver disorder, kidney disease, skin issues, anger, irritability, mood swings, headaches, inability to concentrate, light sensitivity, loss of smell and taste, metallic taste, muscle twitches or tremors, ulcers, constipation, gas and bloating, rashes, poor lower body circulation, muscle cramps, cold or numb hands and feet, thyroid issues, yeast infections, fatigue, low body temperature, allergies, and overburdened immune system. Heavy metals, particularly mercury, kill the friendly bacteria in the gut that are beneficial for the internal mucosa that's there to protect the gut from toxins or allergens. A compromised gut overburdens the immune system and results in allergies. Furthermore, heavy metals bind to proteins in the body; recognized as foreign, they are attacked by the immune system leading to auto-immune disorders. A rise in cholesterol accompanies the inflammatory response in order to protect the nerves and brain against exposure to fat-soluble toxins and heavy metals; this can cause cardiovascular disease. As for cancer, heavy metals contribute to an acidified tissue in which cancer cells thrive, they exhaust the immune system by constant inflammatory response, and they bind to oxygen in the blood causing lack of energy and a low oxygen environment that is favorable for cancer cells. Heavy metals combine with bile resulting in a favorable environment for parasites and bacteria to flourish; these will plug up the hepatic or bile duct and hence causing digestive issues. The blocked gallbladder will not be able to process good oils, which will result in low levels of good oils, which in turn affects hormone production. All heavy metals destroy the nervous tissue by the huge number of free radicals they produce. They also inhibit the effects of certain neurotransmitters, causing depression. Adrenal glands can weaken and burn out as they try to self-regulate the compromising effects of heavy metals, leading to fatigue, since the adrenal glands put out the energy hormone Adrenaline.

In light of the above, heavy metal testing followed by treatment for its elimination are obviously key factors in paving the way to homeostasis. Traditional methods of testing, like hair or blood analysis, in some instances may not differentiate between organically bound metal atoms and unbound metal ions that are active electromagnetically; this is because the organic sample is destroyed in the course of analysis. Additionally, external contaminants of heavy metals on the hair samples could result in false positives. On the other hand, heavy metal ions are successfully detected by means of a dithizone process, in bodily liquids like urine and saliva. As a reagent, dithizone is able to accurately indicate the presence of heavy metal ions, both in qualitative and quantitative terms. The latter testing method is a non-invasive, fast, easy, affordable, and reliable way to assess heavy metal load, in comparison to other methods.

Before starting on any other detoxification program, it would be a wise step to screen for this very harmful thing called "a heavy metal" that plays a part in so many disease conditions.