Is the Environment Toxic to your Health?
By Suzanne Tang, N.D., L.Ac.

The tremendous technological and industrial advancements in the last fifty years have taken a devastating toll on our environment. Our air, food, and water have become increasingly polluted by toxic chemicals and metals. A recent study published in Environmental Science and Technology found samples of U.S. grocery stores’ fish, pork, eggs, turkey, chicken, and dairy products to be contaminated with toxic, man-made flame retardants or polybrominated diphenyl ethers, known as PBDEs. These chemicals used in carpeting, electronics and furniture can remain in the body for several years. In the largest study of chemical exposure ever conducted on human beings, the U.S. Centers for Disease Control and Prevention reported in 2005 that most American adults and children were found to carry dozens of pesticides and toxic compounds used in consumer products such as plastics, nail polish and other beauty products. Many of these toxic compounds are linked to potential health threats. In addition, one out every 18 women of child-bearing age had mercury that exceeded the level the U.S. Environmental Protection Agency deemed safe to a developing fetus.

An estimated 80,000 chemicals are in commercial use today. Many of these chemical pollutants and metals are difficult to avoid. Herbicides and pesticides are sprayed on plants and produce. Thousands of chemical pollutants are released by automobiles, planes, and industrial plants into our air and drinking water. Mercury exposure is likely if you have amalgam fillings, have been vaccinated, frequently eat tuna fish, or even take Chinese herbs from questionable manufacturers. Open up your kitchen and bathroom cupboards and you’ll likely find a product containing levels of aluminum, such as your antiperspirant, your frying pan, canned foods and drinks, and your antacids. If you have recently remodeled, be aware of the hundreds of solvents and chemicals that off gas from the new carpet, paint, and wood floors into the air. Or if you live in an older home built before 1978, you may be exposed to lead found in the paint.

Dr. Jerome A. Paulson, an associate professor of pediatrics at the George Washington School of Medicine and Health Sciences specializing in children’s environmental medicine expressed the toxic state of our environment well, “We have fouled our own nest. We have contaminated the environment sufficiently that there are measurable amounts of potentially toxic substances in people – kids and adults.”

How detrimental are these pollutants to our health? Common toxic metals found in our environment such as aluminum, arsenic, lead, and mercury can have deleterious effects on multiple systems, the brain and nervous system, the heart and arteries, the gastrointestinal system especially intestines and liver, and many enzymatic and biochemical processes.

There are numerous signs and symptoms that are associated with heavy metal and chemical exposure. These include developmental delay, poor concentration, memory loss, difficulty with speech, irritability, headaches, nausea, vomiting, indigestion, poor coordination, numbness and tingling, tremors, joint pain, muscle weakness or aches, abnormal skin pigmentation, thickened skin or hyperkeratosis, anemia, pallor, fatigue, and dizziness.

Research studies are discovering correlations between the increased incidence of conditions such as cancer, attention deficit and hyperactivity disorder, and neurological
disorders, Alzheimer’s disease and multiple sclerosis to exposure to heavy metals. Studies have shown that children with dyslexia have higher amounts of aluminum compared to children who do not have dyslexia (1, 2). High levels of aluminum may also be linked to debilitating diseases such as Alzheimer’s disease and amyotrophic lateral sclerosis (3, 4). Arsenic commonly found in drinking water has been associated with bladder cancer (5) as well as ischemic heart disease. (6) Hair lead and cadmium have been found to be correlated with both reduced intelligence scores and lowered school achievement scores (7). It has been well established that lead can interfere with cognitive development. There was an astounding seven-fold increase in students who had high levels of lead that failed to graduate from high school (8). Along with obesity, high LDL cholesterol levels, and family history mercury toxicity may also be a risk factor for cardiovascular disease since mercury may promote lipid peroxidation or free radical damage. A case-controlled study demonstrated that the number of dental amalgam fillings was associated with increased risk of acute myocardial infarction or heart attack (9). In addition, mercury toxicity may be correlated with multiple sclerosis. Levels of mercury in hair were significantly higher in subjects with multiple sclerosis than in control subjects that did not have multiple sclerosis (10).

Heavy metal and chemical toxicity can be assessed properly with thorough history taking, physical examination, and laboratory testing. Heavy metals and chemicals can be quantified in hair, urine, blood, and fatty tissue samples. Hair has a long history in human and animal studies of revealing chronic, long-term exposure to toxic metals. The hair follicle is richly supplied by blood vessels and is a transport medium for essential and toxic metals. Urine shows recent exposure within days or weeks and indicates how metals are being excreted before, after, and during a provocative challenge. Meso-2,3-dimercaptosuccinic acid or DMSA is a non-toxic oral metal chelator commonly used to provoke excretion of heavy metals. Blood analysis can demonstrate effectiveness of clearance mechanisms in blood and indicates most recent exposure from hours to days. Since chemicals are commonly deposited into fat, fatty tissue analysis is an adequate method of identifying chemical toxicity.

A naturopathic doctor can appropriately assess for heavy metal and chemical toxicity and create an effective treatment plan to promote detoxification and elimination of toxic metals and chemicals. A detoxification plan often includes a healthy, fiber and nutrient rich diet high in organic vegetables, fruits, whole grains, nuts, seeds, legumes, and filtered water. Artichokes, beets, leafy green vegetables, such as kale, collard, and chard, and cruciferous vegetables, such as broccoli, brussel sprouts, and cauliflower are emphasized to promote liver detoxification. Supplementing with water-soluble fibers such as guar gum, oat bran, pectin, and psyllium seed husk supports elimination of toxic compounds. High-potency multiple vitamin and mineral supplementation is also recommended. Vitamins such as vitamin C, E, A, and beta-carotene and minerals such as selenium and zinc are powerful antioxidants that decrease free radical damage and stabilize membranes to protect against toxin damage. Furthermore, selenium reduces toxicity of lead, increases excretion of cadmium and mercury, and is necessary for optimal glutathione peroxidase function, essential for detoxification and membrane stabilization. Protein, specifically sulfur containing amino acids such as methionine, cysteine, and taurine is also recommended to support toxic chemical metabolism. Intake of garlic, onions, and eggs, high sulfur-containing foods can also aid chemical
metabolism. Botanicals, milk thistle (*Silybum marianum*) and turmeric (*Curcuma longa*) further enhance liver detoxification. The use of oral, topical, or intravenous chelators to bind and remove heavy metals may also be recommended but should be administered and supervised by a qualified practitioner. Exercise and sauna therapy and colon hydrotherapy are also effective measures to support detoxification and elimination of toxins via lipolysis and sweating.

Clearly, the well-being and health of our environment has an incredible impact on our own well-being and health. Taking the appropriate steps to not only heal our own bodies, but also our earth is imperative to ensuring the longevity and wellness of future generations.


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