

## **Protecting Your Family from Environmental Toxicity**

*By: Dr. Ted Suzelis, N.D.*

Staying healthy in the 21<sup>st</sup> century is much more difficult than in the past. Part of this difficulty is due to the environmental pollution of our air, water and food. Minimizing our exposure to environmental toxins can make a big difference in sustaining good health. The Environmental Protection Agency (EPA) prepares a list of environmental toxins based on a combination of their frequency, toxicity, and potential for human exposure. The top five toxic substances on this list are arsenic, lead, mercury, vinyl chloride, and polychlorinated biphenyls (PCBs). By understanding what these substances are and how to avoid them, families can take a positive step towards the goal of preventing illness and staying healthy.

### **Arsenic**

Arsenic is a naturally occurring element widely distributed in the earth's crust. Chronic low level exposure to arsenic can cause headaches, fatigue, confusion, numbness and tingling of the extremities, and hearing loss. There is also sufficient evidence to link arsenic exposure to lung, skin, liver, bladder, and kidney cancer. The EPA minimum risk level for arsenic exposure via ingestion is 7-56 micrograms per day for adults, depending on weight. The average daily dietary intake of arsenic by adults in the United States is 11-14 micrograms per day. 80% of dietary arsenic intake comes from non-organic meat, fish and poultry. 90% of outdoor wooden structures in the US are made of arsenic containing CCA pressure treated wood. CCA-treated wood has a greenish tint. Other common sources of arsenic exposure are agricultural fertilizer, cigarette smoke (1.4 micrograms per cigarette), workplace exposures, water, and power plant emissions.

### **Lead**

Lead is a naturally occurring metal found in small amounts in the earth's crust. Moderate toxicity from lead can cause difficulty concentrating, muscular exhaustibility, headaches, vomiting, constipation, general fatigue, tremors, diffuse abdominal pain, and weight loss. Pregnant women with elevated blood levels of lead may have an increased chance of miscarriage, spontaneous abortion or still birth, preterm labor, and newborns with low birth weight or neurological problems. The US Centers for Disease Control (CDC) considers lead poisoning the foremost environmental health threat to children in the US. Lead exposure comes from eating food or drinking water that contains lead, spending time in areas where lead-based paints have been used and are deteriorating, or working in a job where lead is used.

### **Mercury**

Mercury is a naturally occurring metal found in small amounts in the earth's crust. Exposure to mercury can cause permanent damage to the brain, kidneys and developing fetus. Effects on brain functioning include irritability, shyness, tremors, changes in vision or hearing, and memory problems. There is conflicting evidence about a link between mercury toxicity and autism. Mercury exposure comes from eating fish or shellfish contaminated with mercury, release of mercury from dental work and amalgam tooth fillings, thimerosal containing vaccinations, mercury containing thermometers, and workplace exposure to mercury. Although all fish contain some amount of mercury, the fish with the least mercury are anchovies, haddock, hake, herring, ocean perch, wild/Alaskan salmon (not farmed), sardine, tilapia, and freshwater trout.

Canned tuna has less mercury than albacore tuna and tuna steaks, but should be avoided in pregnant women due to high levels of lead.

### **Vinyl chloride**

Vinyl chloride is a manufactured substance that is used to make polyvinyl chloride (PVC). PVC is used to make a variety of plastic products, including pipes, wires, and cable coatings, and furniture and automobile upholstery. Breathing vinyl chloride for long periods of time can result in permanent liver damage, immune reactions, nerve damage, and liver cancer. Most exposure to vinyl chloride is from workplace exposure, although other sources of exposure include water from contaminated wells and vapors released from plastics industries, hazardous waste sites, and landfills. The EPA listed Ohio as being the second largest vinyl chloride polluter of water sources in the U.S. between the years of 1987 and 1993. Information is not available for more recent years.

### **Polychlorinated Biphenyls (PCBs)**

Polychlorinated biphenyls are manufactured mixtures of up to 209 individual chlorinated compounds. The manufacture of PCBs was stopped in the U.S. in 1977, but are still found in the environment. Exposure to PCBs can cause acne-like skin conditions, liver, stomach, and thyroid gland injuries in adults and behavioral and immune system alterations in children. PCBs are known to cause cancer in animals. The main source of exposure to PCBs is from eating contaminated food. Conventionally produced dairy products, meats, poultry, and seafood contain the highest amounts of PCBs in the American diet. Farmed salmon has much higher levels of PCBs than that of wild/Alaskan salmon. Other exposure to PCBs comes from household appliances, such as televisions and refrigerators that were made 30 or more years ago.

By minimizing exposure to arsenic, lead, mercury, vinyl chloride, and PCBs, individuals and families can reduce their risk for certain types of cancer and other diseases caused by these toxins. One of the best and easiest ways to lower your exposure to these substances is to eat organic food and drink purified water. If you are going to eat seafood, the best choice is to eat salmon listed as wild, Alaskan, Coho, or sockeye. Other recommendations for avoiding these toxins are to avoid cigarette smoke, avoid workplace exposure, seal CCA-treated wood yearly, and keep your children away from lead-based painted walls.

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