

## **Heavy Metal Overview**

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Did you know that the expression “Mad as a Hatter” originated from 19<sup>th</sup> century felt hat makers who were chronically exposed to mercury compounds? What about the fact that many historians attribute the fall of the Roman Empire to widespread acute lead poisoning? The truth is toxic metals are found in almost every environment. Your home, job, and even recreational park may be threatening your well-being. Arming yourself with the ability to make informed decision today will ensure the health of you and your family tomorrow.

### **Heavy Metals**

A heavy metal is an element with a specific gravity (atomic weight) of 5.0 (fives times the density of water) or greater. While laymen tend to use the term “Heavy Metal” interchangeably with “toxic metal,” this is technically not correct. Some heavy metals actually have a relatively low toxic potential, while others are quite toxic to the body in any amount and should be avoided. The problem is that such toxic heavy metals permeate our environment to such an extent that total avoidance is all but impossible.

The Occupational safety & Health Administration regulates a number of toxic metals and their compounds, including arsenic, aluminum, antimony, beryllium, cadmium, cobalt, copper, hexavalent chromium, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, tin, vanadium, zinc.

You will recognize some of these elements as nutritive minerals – manganese, selenium, chromium, zinc, and iron. While varying amounts of these important nutritive minerals are needed to maintain health, excessive amounts can create toxic conditions. Likewise, some metals known for their toxicity, such as aluminum, are actually needed in trace amounts by the body. At elevated levels, however, they become toxic.

### **Toxic Metals**

Our concern here is with the major toxic metals: aluminum, arsenic, cadmium, copper, lead, mercury, and nickel. Once these have accumulated in the body, they're not easily released from storage and flushed from the body, as they tend to be harbored in fatty tissue. Their continued presence in the body's tissues creates an ongoing toxic condition that contributes to nutrient deficiency and can lead to serious illness. Toxic metals tend to accumulate in the immune system and in the brain and kidneys where they can disrupt normal functioning.

Although heavy metals are naturally found in the earth's crust in varying concentrations, human activity over the last 100+ years has greatly increased their presence in the environment. Since the Industrial Revolution, heavy metal

production and distribution have rapidly accelerated, so that the air, water and soil of the planet have become permeated with these metals. Heavy metals tend to persist and accumulate in the environment (as in the body), for they cannot be degraded or destroyed. They are used extensively today as components of numerous products, though the consumer is generally unaware of their presence in the seemingly harmless product.

Of the most toxic of the heavy metals, mercury and nickel, just happen to be the most abundant in the bodies of people living in industrialized nations. Although we are becoming increasingly aware of the health hazard posed by “silver” amalgam dental fillings (which are at least 50% mercury), most people still have these in their teeth. We also have a lot of nickel in our mouths in the form of stainless steel crowns, root canal posts and braces. “Nickel is both the most allergic and the most carcinogenic metal to which we’re exposed.”

Although each metal produces its own set of unique symptoms at toxic levels, we can generally to some degree about the symptoms of heavy metal poisoning, such as a metallic taste in the mouth, numbness, tingling in the hands and feet, frequent urination, tinnitus (ringing in the ears), leg cramps, skin rashes and more.

There are several laboratory tests your doctor can order to screen for the various heavy metals. Specialized analysis of urine, stool and hair can be of value as well as “challenge” tests, which involve the use of chelating agents that bind with heavy metals, pulling them out of the body.

Both intravenous and oral chelating agents have been used to lighten the body’s burden of heavy metals. Regardless of the therapy selected, it is imperative that sources of contamination be identified and removed or at least minimized. This can entail amalgam replacement with biocompatible materials or even a complete dental revision, where all procedures previously done may be modified or redone. Other measures to reduce the body’s burden of heavy metals may include the use of air and water purification devices in the home and special care with selection of consumer products. Going “organic” in selection of foods of all types can be very helpful in minimizing pesticide exposure, as can avoidance of conventional pesticide use in the home and opting for “least toxic” alternatives. Refer to the common sources of heavy metal toxicity, and take steps to eliminate them.

The above information is only the beginning. If you suspect that you or someone you love may have acute toxic metal poisoning visit a health care practitioner immediately. A regular detoxification program may prevent the accumulating of toxic metals and avert chronic poisoning. Remember, education is key to understanding your risk. The Internet and your local library offer a wealth of information on toxic metals.

## **Common Household Materials Containing Heavy/ Toxic Metal(s)**

Dental Materials □ mercury, silver,  
copper, nickel, cadmium, tin,  
zinc, platinum, titanium

Cooking Utensils □ aluminum,  
stainless steel (with nickel &  
copper)

Some paint □ lead, mercury,  
cadmium

Antiperspirants □ aluminum

Volcanic Eruptions □ mercury

Inexpensive Jewelry □ nickel

Fireworks □ aluminum, copper

Tobacco Smoke □ cadmium, lead,  
nickel

Some Glazed Pottery □ lead

Batteries □ lead, cadmium, mercury,  
nickel

Some Vaccinations □ mercury

Cosmetics □ aluminum, mercury,  
nickel

Pesticides/Insecticides □ arsenic,  
mercury, copper, lead

Most Baking Powders □ aluminum

Hydrogenated Oils □ nickel

Auto □ lead, cadmium, aluminum

Some Drugs □ arsenic (Flagyl),  
aluminum (buffered aspirin,  
antacids, vaginal douches,  
anti-diarrhea agents,  
hemorrhoid preparation),  
mercury (diuretics)

Refined Grains □ cadmium

Hair Dyes □ mercury, lead

Tap Water □ nickel, lead, arsenic

Bone Meal and Dolomite □ lead  
Pewter □ lead

Canned Food □ lead

Seafood / freshwater Fish □  
cadmium, mercury, arsenic

Hair Spray □ nickel

Fluorescent Lights □ mercury

Processed Cheese □ aluminum

Bleached Flour □ aluminum