



MERCURY

Where do we get mercury exposure from?

- * dental fillings
- * low-energy light bulbs and thermometers (when they break)
- * pharmaceuticals (often as thiomersal) as a preservative
- * disinfectants, cleaning products, antiseptics, bleaching creams
- * some cosmetics as a preservative
- * fish such as tuna, due to water pollution
- * combustion in coal-fired power plants, atmospheric release in gold mining
- * disposal in hazardous waste, crematorium smoke, sewage sludge incineration
- * industries such as caustic soda production, pig iron and steel production and metal smelting

Why is it toxic?

- * It is a neurotoxin which builds up in the brain and can eventually cause disordered thinking and anxiety
- * It disrupts enzymes such as catalase, superoxide dismutase and possibly GSH peroxidase, all of which are needed for fighting oxidative damage
- * It removes glutathione from cells and inhibits other GSH enzymes. Glutathione helps to regulate nitric oxide, and is a major antioxidant factor and detox agent. It's also fundamental to many body processes.
- * It inhibits acetylation and reacts with receptors on cysteine molecules. Cysteine is an important amino acid required for many body functions
- * It irreversibly inhibits an enzyme called NAT1 required to detox aromatic amines
- * It affects immune function in cells by messing up signalling pathways and may contribute to autoimmunity



What can be done?

Minerals such as zinc and selenium, plus N-acetyl-cysteine can be used. A diet rich in sulphur-containing proteins will assist with detox, and there are a number of practitioner products which can be used to detox gradually. The detox process can take around a year to complete. Fast detoxing is highly likely to create major health problems. Also have a hair mineral analysis to determine mercury levels.



For more information, visit <http://www.epa.gov/hg/health.htm>

CADMIUM

Where do we get cadmium exposure from?

- * Cigarette smoke
- * Soil contamination which affects animals and plants which are eaten by humans
- * Occupational exposure from manufacturing
- * Batteries, mining byproducts, electroplating, old TV picture tubes and other machinery
- * Semiconductors for solar cells and lights
- * Paint pigments, in watercolours, gouaches and acrylics or very old house paint

Why is it toxic?

- * It accumulates in the body in many areas, particularly the kidneys, lungs, liver, pancreas, thyroid, heart, muscles, and bones
- * It creates inflammation in intestinal cells causing pain and digestive dysfunction





CADMIUM continued

- * Like mercury, it binds to glutathione and prevents it from working
- * It affects gut flora, decreasing good bacteria, and therefore decreasing immune function and all of the benefits that good gut bacteria confer
- * It accumulates particularly in the kidneys, where it stays for 20-30 years, and eventually causes kidney disease
- * It causes lung impairment when it lodges in the lungs
- * It can cause bone disease
- * Cadmium is secreted in breast milk

What can be done?

- * Make sure your levels of magnesium, zinc, iron and calcium are good, as deficiencies of these minerals increase absorption and retention of cadmium. This particularly applies to women who are breastfeeding.
- * Have a hair mineral analysis test to determine your heavy metal status
- * See a practitioner for a supervised detox program (see section on mercury)

For more information: http://www.cadmium.org/env_exp.html



LEAD

Where do we get lead exposure from?

- * Mining and industry
- * Older people may still be affected from when lead was in petrol
- * Lead can be in toys manufactured in 3rd world countries
- * Lead has been used in cosmetics, but is being phased out in many countries
- * Many paints have contained lead

Children absorb lead very quickly, much more than adults; pregnant women are also at major risk.

Why is it toxic?

- * It displaces calcium in bones, contributing to osteoporosis in later life
- * It can cause peripheral neuropathy (lack of feeling) in the hands and feet
- * It affects fertility in both men and women
- * It causes hyperactivity and mood changes in children
- * At high levels it can cause seizures and mental retardation in children
- * It can cause sleep disturbance and short term memory loss
- * It can cause major depression, anxiety and panic disorders
- * Very high levels can cause constipation, coma, neural dysfunction and death
- * It may possibly contribute to the genesis of various cancers and diseases

What can be done?

Alpha-lipoic acid can bind with heavy metals such as lead, for excretion. Vitamin C is also helpful in eliminating lead. A general heavy metal detox program administered by a practitioner will assist greatly, but must be done slowly. You definitely need a hair mineral analysis to check levels of all heavy metals.



For more information: <http://www.environment.gov.au/atmosphere/airquality/publications/health.html>

and <http://www.lead.org.au/fs/fst7.html>

REMEMBER: THERE IS NO SAFE LEVEL OF A TOXIN. By definition, a toxin is something that is unsafe.