

Metallic Mercury: Health Effects



Metallic Mercury is also called quicksilver, elemental mercury, mercurio, and azogue. This fact sheet describes health effects from exposure to metallic mercury in non-occupational settings like homes and schools.

What is metallic mercury?

Metallic mercury is a shiny, silvery liquid at room temperature. When the liquid is exposed to air, some of it evaporates and forms a gas or vapor that you cannot see or smell. The higher the temperature, the more vapor is formed. Breathing the vapor is dangerous and can cause serious health problems.

Where is metallic mercury found?

Many newer products have replaced mercury with safer alternatives, like the red liquid in thermometers. However, there are still many older, mercury-containing products in use.

Mercury May Be In:

- ◆ Some thermometers, barometers, thermostats, electrical switches
- ◆ Some types of home medical equipment
- ◆ Some light bulbs and fixtures, including fluorescent, high intensity, mercury vapor, high pressure sodium and metal halide bulbs
- ◆ Some clock pendulums
- ◆ Some batteries, athletic shoes, toys and cards that light up or make noise

Liquid mercury is sometimes brought home as a novelty from school or work. Mercurio or azogue is liquid mercury that is sold in capsules or glass vials. It is often used in religious practices like Espiritismo, Santeria, Voodoo, Palo Mayombe, and other ritualistic and folk

medicine practices. It may be purchased in botánicas (Latino and Haitian herb and spiritual shops).

When liquid mercury is contained within these items, there is little chance of exposure. However, if the items break, mercury can be released, and exposure is likely. Since mercury vapor is odorless and colorless, it is impossible to detect without special measuring devices.

How can metallic mercury affect the body?

Health effects are based upon how much we are exposed to and for how long. Even small amounts of mercury such as that found in thermometers or fluorescent bulbs can represent an exposure risk if not cleaned-up properly and promptly. Health effects can occur within hours (acute) or over weeks, months or even years (chronic).

Breathing mercury vapor is very dangerous - much more dangerous than swallowing it.

This is because inhaled mercury vapor is almost completely absorbed by the body. Ingested metallic mercury is *poorly* absorbed from the stomach and intestines, and most of it passes out of the body as fecal waste. Skin absorption is not usually an important route of exposure.

Inhaled mercury vapor can easily enter the blood stream, where it is carried throughout the body. It can travel to the brain and affect the central nervous system (CNS). Symptoms of CNS involvement include shakiness, tremors, personality changes like excessive shyness or irritability, tingling of the extremities, limb weakness and impaired motor control. It can also accumulate in the kidneys and cause kidney damage.

Long-Term (Chronic) Exposure



- ◆ Shakiness
- ◆ Psychological changes
- ◆ Difficulty sleeping
- ◆ Loss of appetite with weight loss
- ◆ Irritability
- ◆ Excessive shyness
- ◆ Emotional instability
- ◆ Headache
- ◆ Short-term memory loss

Fetal exposure is of particular concern because mercury can become trapped in the developing brain. This impairs brain development, and effects may show up months to years after the exposure stops.

Metallic mercury vapor may irritate the lining of mouth and lungs. This can cause a metallic taste in the mouth, chest tightness, cough, and burning sensation in the lungs. These symptoms can either be from short term exposure to high levels of mercury vapor (hours), or from longer term exposure to low levels over weeks or months. Other symptoms of exposure include nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

Who is at highest risk?

Children and pregnant women are at highest risk if exposed, because the central nervous system is not fully matured in children and fetuses. Also, since mercury vapor is heavier than air, it tends to settle to the floor. This puts children at increased risk, because they are closer to the ground and are more likely to breathe mercury vapor which has settled. They also tend spend more time sitting or lying on carpets or other flooring. Children exposed to mercury for long periods of time may develop a disorder called acrodynia, or pink disease. This looks like an abnormal red rash

with peeling of hands, nose, and soles of the feet. Other symptoms may follow, including excessive sweating or drooling, fretfulness, weakness, sleeplessness, irritability, fast heart rate, or increased blood pressure. Rarely, acrodynia can occur in teens and adults.

What if I was exposed or have symptoms?

If you or other household occupants have been exposed to mercury and are experiencing any symptoms described in this handout, **contact your doctor**. Be sure to tell him/her about your exposure to metallic mercury. There are laboratory tests that can help evaluate your level of exposure. Your doctor can order a urine mercury level to evaluate long-term exposure. A blood test is sometimes done to evaluate high-level, short-term exposures. However, these tests are not recommended for most home, school, or office exposures.

What about treatment?

Medical treatment is not needed for most of the exposures from spills in homes or schools that come from small quantities of mercury (like broken thermometers or fluorescent bulbs). If you are exposed to large amounts, or your exposure lasts for weeks, months, or years, you should talk to your doctor about treatment options.

More Mercury Information

For information about cleaning up broken thermometers or compact fluorescent bulbs (CFLs), mercury action levels for indoor spills, and spill response in schools, please visit the CT DPH website:

<http://www.ct.gov/dph/mercury>

Important Phone Numbers

CT Dept. Public Health Environmental & Occupational Health Assessment Program	860-509-7742
CT Poison Control Center	800-343-2722
CT Dept Environmental Protection Emergency Spills (24/7)	860-424-3338 866-337-7745 (toll free)
UCONN Health Center Occupational & Environmental Medicine Clinic	860-679-2893
Yale Occupational & Environmental Medicine Clinic	203-785-4197