

US EPA ARCHIVE DOCUMENT

Lead

CAS Number: 7439-92-1

What is lead?

Lead is a metal that looks bluish gray in color. It is found in the earth's crust in small amounts. It doesn't really have an odor or a taste. Most of the lead that we see today comes from human activities.

What is lead used for?

Lead is mostly used to make batteries. It is also used to make ammunition (bullets) and pipes, and roofing materials. It was used in the past to make paint and gasoline.

How can lead enter and leave your body?

Lead can get into your body when you breathe lead contaminated air. Once in your lungs, the lead gets into your blood and travels to other parts of your body and is stored up in your bones. When children swallow lead contaminated soil or paint chips, a lot more of the lead spreads into other body parts. Lead is less likely to enter your body through the skin. If you are exposed to lead for a long period of time, the older you get, the higher the levels of lead will be in your bones and teeth. The lead that is not stored in your bones will leave your body through urine and feces.

How can you be exposed to lead?

You can be exposed to lead by breathing contaminated air, eating contaminated food or soil and drinking water. Dust particles that have lead attached to them can be in the air. You can also breathe lead dust.

You can be exposed if you work at a hazardous waste site where lead is disposed. Some small children can be exposed if they eat paint chips containing lead or if the toys and other objects they put in their mouth have been exposed to lead dust or dirt.

Exposure to lead through skin contact does not happen very often. The most common exposure is from breathing lead. Because lead was used in gasoline at one time, traces of lead could be in the air from automobile fumes.

What are the health effects of exposure to lead?

Unborn children are at greatest risk from exposure to lead because their bodies are still being formed. Young children are also at risk. Young children exposed to lead can experience a number of problems including a decrease in intelligence, slowed growth and hearing problems.

Pregnant women, who are exposed to lead, can expose their unborn child to lead. The lead exposure can reduce the baby's birth weight, cause premature or early birth, and can even cause the child to be aborted.

Adults and children exposed to large amounts of lead can experience brain and kidney damage.

Middle-aged men have experienced an increase in blood pressure. It can damage male sperm and other reproductive systems.

It really is not known if lead can cause cancer in humans but rats and mice given large doses of lead developed tumors.

The United States Department of Health and Human Services has determined that certain forms of lead, like lead acetate and lead phosphate are anticipated carcinogens (cancer-causing substances).

3. Services, 1993.
New York State Department of Health. Lead Exposure in Adults - A Guide for Health Care Providers. January 2001.
[Http://www.health.state.ny.us/nysdoh/lead/hlthcare.htm](http://www.health.state.ny.us/nysdoh/lead/hlthcare.htm)

What levels of exposure can result in harmful health effects?

The levels of lead in your blood are measured in micrograms per deciliter (ug/dL). Exposure to 100 - 150 ug/dL of lead for less than 14 days caused death in children and brain and kidney damage in adults. Pregnant women exposed to lead levels of 10 - 15 ug/dL can reduce the birth weight of infants and decrease their mental ability.

Exposure to 10 - 15 ug/dL of lead for more than 14 days reduced the birth weight of infants and decreased their mental ability. Exposure to 15 - 20 ug/dL decreased growth in young children. Exposure to 15 - 30 ug/dL increased blood pressure in middle-aged men, and exposure to 100 - 150 ug/dL of lead for less than 14 days caused death in children, and brain and kidney damage in adults.

Where can you get more information?

Contact your state health or environmental department, or:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road, N.E., E-29
Atlanta, Georgia 30333

References

1. Agency for Toxic Substances and Disease Registry (ATSDR). *Public Health Statement for Lead*. Atlanta, GA: U.S. Department of Health and Human Services, 1990.
2. Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for Lead*. Atlanta, GA: U.S. Department of Health and Human