



Lead

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What is Lead?

Lead is a highly toxic metal and it is all around us. Lead was used for many years in paints and other products found in and around our homes. Lead-based paint and lead contaminated dust are the main sources of exposure for lead in U.S. children. Lead-based paints were banned for use in housing in 1978. There is a good chance that any home, building, school or day care center built before 1978 contains some lead paint.

One million children are affected by lead poisoning, but when you know what to look for and what to do, lead poisoning is entirely preventable.

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Where is Lead Found?

The most common source of lead is from paint in homes and buildings built before 1978. Lead also can be emitted into the air from industrial sources and leaded aviation gasoline, and lead can enter drinking water through plumbing materials.

It is also used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to automobile gasoline was banned in 1996 in the United States.

Lead is also a naturally occurring element. Natural levels of lead in soil range between 50 parts per million (ppm) and 400 ppm. Mining, smelting, and refining activities have resulted in substantial increases in lead levels in the environment, especially near mining and smelting sites. For example, near some types of industrial and municipal facilities, and adjacent to highways ([Chaney et al., 1984](#); [Schacklette et al., 1984](#)) soil lead concentrations have been reported to be more than 11,000 ppm ([National Research Council, 1980](#)).

Read more about where lead can be found:

- [At home](#)
- [At schools and childcare facilities](#)
- [In products](#)
- [In drinking water](#)
- [In outdoor air](#)
- [In soil](#)

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How Can People Be Exposed to Lead?

Children

Lead is dangerous to children because babies and young children often put their hands and other objects that can have lead dust on them in their mouths. Also, children's growing bodies absorb more lead than adult bodies do, and their brains and nervous systems are more sensitive to the damaging effects of lead.

Children living at or below the poverty line who live in older housing are at greatest risk. Children of some racial and ethnic groups, and those living in older housing, are disproportionately affected by lead.

[Learn more about sources of lead exposure.](#)

Pregnant Women

Pregnant women can be exposed to lead by spending time in areas where lead-based paints are deteriorating into lead dust that they then breathe in. Likewise, eating and drinking from dishes or glasses that contain lead water, or using certain [folk remedies](#) to which lead is intentionally added can cause exposures to lead. In addition, working in a job or engaging in [hobbies](#) where lead is used, such as making stained glass, can increase exposure.

Adults

Adults are also susceptible to lead exposure. This may be from:

- Breathing in lead dust, especially during renovation or repair work that disturbs painted surfaces in older homes and buildings.
- Putting their hands or other objects covered with lead dust in their mouths.
- Eating or drinking contaminated food or water or using certain folk remedies.
- Working in a job or engaging in [hobbies](#) where lead is used.

[Learn more about sources of lead exposure.](#)

Lower Your Chances of Exposure to Lead

Simple steps like keeping your home clean and feeding your family a well-balanced diet will go a long way in preventing lead poisoning. You can lower the chances of exposure to lead in your home, both now and in the future, by taking these steps:

- Use only cold water to prepare food and drinks.
- Flush all water outlets used for drinking or food preparation.
- Clean debris out of all outlet screens or aerators on faucets on a regular basis.
- Keep your home clean and dust-free.
- Wipe up any paint chips or visible dust with a wet sponge or rag. Clean dust around areas where there is friction and dust can be generated, such as doors, windows, and drawers.
- Wash children's hands, bottles, pacifiers and toys often.
- Teach children to wipe and remove their shoes and wash hands after playing outdoors.
- Ensure that your family members eat well-balanced meals. Lead interferes with some of the body's basic functions. Our bodies can't tell the difference between lead and calcium, which is a mineral that strengthens bones. Children with healthy diets absorb less lead.
- Make sure your contractor is [Lead Safe Certified](#).

Determine if your family is at risk for lead poisoning with the [Lead Poisoning Home Checklist \(PDF\)](#) (1 pg, 47K, [About PDF](#)).

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Possible Adverse Health Effects of Exposures to Lead

Lead exposure affects the nervous system and can cause a range of health effects, from behavioral problems and learning disabilities, to seizures and death. Children six years old and younger are most at risk.

Children

If not detected early, children with high levels of lead in their bodies can suffer from:

- Damage to the brain and nervous system
- Behavior and learning problems, such as hyperactivity
- Slowed growth
- Hearing problems
- Headaches
- Anemia
- In rare cases of acute lead poisoning from ingestion of lead, seizures, coma and even death.

Pregnant Women

Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. During pregnancy, lead is released from bones as maternal calcium is used to help form the bones of the fetus. This is particularly true if a woman does not have enough dietary calcium. Lead can also be easily circulated from the mother's blood stream through the placenta to the fetus. Mothers with high levels of lead in their bodies can expose their developing fetuses, resulting in serious and developmental problems including:

- Miscarriages,
- Premature births or low birth weight,
- Brain damage, decreased mental abilities and learning difficulties, and/or
- Reduced growth in young children.

Find out more about lead's effects on pregnancy:

- [March of Dimes Healthy Pregnancy](#) EXIT Disclaimer
- [Effects of Workplace Hazards on Female Reproductive Health](#), National Institute for Occupational Safety and Health.

Adults

Lead is also harmful to adults. Adults can suffer from:

- Hearing and vision impairment,
- Reproductive problems (in both men and women),
- High blood pressure and hypertension,
- Nerve disorders,
- Memory and concentration problems,
- Poor muscle coordination, and
- Muscle and joint pain.

[Read more on the health effects of lead at the Agency for Toxic Substances and Disease Registry \(ATSDR\).](#)

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Lead Exposure Data

<http://www.epa.gov/lead/pubs/learn-about-lead.html>

The Centers for Disease Control (CDC) has identified that the current blood lead level of concern in children is 10 micrograms (μg) of lead per deciliter (dL) of blood (10 $\mu\text{g}/\text{dL}$); however, adverse effects may occur at lower levels than previously thought. In January 2012, an [advisory panel to the CDC](#) recommended lowering the level that triggers intervention.

[Get information on the number of children with elevated blood lead levels, and number and percentage of children tested for lead in your area.](#)

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References

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