

What is blood lead?

The term “blood lead” refers to a type of poisoning in the blood that comes from exposure to various types of lead in the environment. Exposure may occur from lead-based paints, workplace environment or from inhaling or ingesting contaminated water and soil. Lead-based paint is the most widespread and dangerous high-dose source of lead exposure for young children.

How do children get lead in their blood?

Lead in the air can enter the body through the lungs, where it is quickly transported by the blood to other parts of the body. Larger lead-containing particles that are too large to enter deeply into the lungs can be coughed up and swallowed. Once lead enters the body, it travels to soft tissues such as the liver, kidneys, lungs, brain, spleen, muscles, and heart.

Unborn children can be exposed to lead through their mothers.

What are the signs and symptoms of blood lead poisoning?

Because lead exposure often occurs with no obvious symptoms, it frequently goes unrecognized.

Who is most at risk?

Children under 6 years of age are at highest risk, because they are growing so rapidly and because they tend to put their hands or other objects into their mouths.

Other risk factors include:

- Children living in or regularly visiting older housing
- Other children in the family or neighborhood with high blood lead levels
- Adults of the family who participate in lead-related occupations or hobbies
- Living in a neighborhood that is close to active industries that can potentially release lead into the atmosphere, and
- Race, ethnicity and low income.

What type of health problems are caused by blood lead poisoning?

Lead can affect nearly every organ and system in the body. Depending on the level of exposure, lead can harm the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system.

Health effects include:

- decreased intelligence
- behavioral and speech problems
- anemia
- decreased muscle and bone growth
- poor muscle coordination
- hearing damage.

How is blood lead diagnosed?

A blood lead test is the best way to measure lead exposure. Children are given a blood test to determine the level of lead in their blood.

The amount of lead in blood is referred to as blood lead level (BLL). BLLs are measured in

micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$). Experts use a reference level of 5 $\mu\text{g}/\text{dL}$ to identify children with BLLs that are much higher than most children's levels. However, there is no known safe BLL.

How is blood lead poisoning treated?

Experts recommend evaluation and treatment of children with BLLs greater than or equal to 15 $\mu\text{g}/\text{dL}$, and may consider chelation therapy when a child is found with a test result of greater than or equal to 45 $\mu\text{g}/\text{dL}$ of lead in the blood.

Chelation therapy is a chemical process in which a synthetic solution is injected into the bloodstream to remove heavy metals and/or minerals from the body.

How can blood lead poisoning be prevented?

- Talk to your state or local health department about testing paint and dust from your home for lead.
- Make sure your child does not have access to peeling paint or chewable surfaces painted with lead-based paint.
- Children and pregnant women should not be present in housing built before 1978 that is undergoing renovation. They should not participate in activities that disturb old paint or in cleaning up paint debris after work is completed.
- Create barriers between living/play areas and lead sources. Until environmental clean-up is completed, clean and isolate all sources of lead.

- Close and lock doors to keep children away from chipping or peeling paint on walls.
- Regularly wash children's hands and toys. Hands and toys can become contaminated from household dust or exterior soil.
- Regularly wet-mop floors and wet-wipe window components. Wet-mop floors and wet-wipe horizontal surfaces every 2-3 weeks.
- Keep windowsills and wells clean to reduce dust.
- Take off shoes when entering the house to prevent bringing lead-contaminated soil in from outside.
- Prevent children from playing in bare soil; if possible, provide them with sandboxes.
- Plant grass on areas of bare soil or cover the soil with grass seed, mulch, or wood chips, if possible.
- Until the bare soil is covered, move play areas away from bare soil and away from the sides of the house.
- If you have a sandbox, cover the box when not in use to prevent cats from using it as a litter box. That will help protect children from exposure to animal waste.

Where can I get more information?

- Your personal healthcare provider
- [Centers for Disease Control and Prevention](#)
- [Utah Environmental Epidemiology Program](#)
- [Utah Department of Environmental Quality](#)
- [U.S. Occupational Safety and Health Administration](#)