

Elevated Blood Lead Levels in Adults Fact Sheet

What is lead?

Lead is a naturally occurring, bluish-grey metal found in the environment. Exposure to lead can occur through inhalation or ingestion from anything that produces lead dust or fumes. The primary use of lead in the United States is for lead-acid storage batteries found in automobiles. Alloys of lead can also be found in ammunition, pipes, building material, solder, radiation shielding, ceramic glazes and fishing weights.

Which adults are exposed to lead?

About 95% of all reported elevated blood lead levels in adults in the United States are work-related. Occupations that have the greatest risk include battery manufacturing, lead smelters, sandblasters, soldering, automobile repair, and construction workers. Other activities that involve lead include auto body repair at home, shooting firearms, use of folk remedies (including Greta and Azarcon), electronics repair, stained glass or jewelry making, painting/paint removal, remodeling buildings, drinking moonshine, or living near landfill and hazardous waste sites.

How can lead affect my health?

At low blood lead levels a person may have no symptoms. At higher blood lead levels a person may develop general symptoms of illness like abdominal pain, headache, fatigue, irritability, and joint or muscle aches. At very high blood lead levels, a person can develop nerve damage that causes numbness in the hands and feet and a condition called “foot drop” where it is hard to raise the toes when the foot is lifted off the ground. Anemia is also common. Extremely high blood lead levels can result in seizures and even death.

Having an elevated blood lead level over a long period of time is associated with high blood pressure and kidney damage in adults. A high blood lead level in both men and women is associated with infertility.

There is some evidence that high blood lead levels in women can cause miscarriage. If a woman with a high blood lead level gets pregnant, the lead will cross the placenta into the fetus. This can cause premature birth and low birth weight. In addition, babies who were exposed to lead in the uterus have similar problems as children who were exposed to lead in early childhood. Women who have been exposed to lead through their work and who would like to get pregnant should talk to their doctor about their blood lead level and ways to reduce their lead exposure.

How likely is lead to cause cancer?

Lead is considered to be a possible human carcinogen, but research in people suggests that if there is a risk, it is very low.

Is there a medical test to determine whether I have been exposed to lead?

A venous blood test can be performed at your doctor’s office to measure your blood lead level. Elevated blood lead levels that are greater than or equal to 5 µg/dL in adults (16 years or older) are reportable by regulation to the Virginia Department of Health.

How can I reduce the risk of exposure to lead?

Exposure to lead in the workplace can be lowered through the use of engineering controls that reduce air-lead levels. Exposure can also be reduced through the use of protective clothing and respirators. If a person could be exposed to lead at work, he or she should wash hands and face before eating or drinking, eat and drink in areas free of lead dust and fumes, change into different clothes and shoes before working with lead, shower after working with lead before going home, and wash clothes separately from other family members' clothes.

If a person lives with young children it is especially important to reduce the amount of lead brought into the home on clothing, shoes, and skin. Even small amounts of lead can significantly raise the blood lead level of children who come into contact with it.

Has the federal government made recommendations to protect human health?

OSHA has set a permissible exposure limit (PEL) for lead in air of 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) over an eight hour time-weighted average. Workplaces are required to monitor the blood lead levels of workers who are exposed to lead above a certain action level and provide appropriate personal protective equipment to their workers. If a worker's blood lead level is consistently found to be above 50 $\mu\text{g}/\text{dL}$ the employer must remove the worker from any tasks that could expose them to lead until their blood lead level drops below 40 $\mu\text{g}/\text{dL}$.

The EPA has set a treatment technique action level of 15 parts per billion (ppb) for public water supplies.

Where can I get more information on lead?

- If you have concerns about lead, contact your healthcare provider.
- Call your local health department. A directory of local health departments is located at <https://www.vdh.virginia.gov/local-health-districts/>. Contact the Virginia Department of Health at (804) 864-8182 or at toxicology@vdh.virginia.gov.
- For additional information, please visit: <http://www.atsdr.cdc.gov/ToxProfiles/tp.asp?id=96&tid=22>. If you are concerned about exposure to lead at work, visit the Occupational Safety and Health Administration's (OSHA) site on lead: <https://www.osha.gov/SLTC/lead/>.