

Elevated Blood Lead Levels in Children

What is an elevated blood lead level?

Lead is a highly toxic metal that was used for many years in products found in and around our homes. In Virginia, an elevated blood lead level in a child is defined in the Virginia Administrative Code as 10 or more micrograms of lead in a deciliter ($\mu\text{g}/\text{dL}$) of blood. As of June 2012, CDC uses a reference value of $5\mu\text{g}/\text{dL}$ to identify children with blood lead levels that are much higher than most children's levels. This new level is based on the U.S. population of children ages 1-5 years who are in the highest 2.5% of children when tested for lead in their blood.

Is there a "safe" blood lead level?

There is no safe blood lead level. In addition, the harm that lead causes to children increases as their blood lead levels increase.

Who gets elevated blood lead levels?

Children are more vulnerable to lead than adults. While all children are at risk from lead, children living in older housing and in poverty are at the greatest risk of exposure. Children who eat paint chips or breathe dust from flaking or peeling lead-based paint are the most likely to develop a problem. Children may also develop high blood lead levels by drinking water contaminated with lead that may be in the plumbing system or by being exposed to contaminated soil or other lead hazards.

What are the symptoms?

Most children who have elevated levels of lead in the blood do not have any obvious symptoms. When symptoms such as stomach ache, poor appetite, and irritability appear, they are often confused with other childhood illnesses. Very severe lead exposure (blood lead levels greater than $80\mu\text{g}/\text{dL}$) can cause coma, convulsions and even death. The long-term effects of elevated blood lead levels in children may include slow development, reduced Intelligence Quotient (IQ) scores, learning disabilities, hearing loss, reduced height, and hyperactivity.

How soon do symptoms appear?

This depends on the level of lead in the blood.

How is an elevated level of lead in the blood detected?

The only way to find the problem is to test the blood. Some providers use machines that can test capillary blood. The best way to confirm blood lead is via a venous blood draw.

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Who should be tested for blood lead in Virginia?

In Virginia, Blood Lead Levels should be obtained in children at ages 1 and 2 unless they are determined to be at low risk for elevated blood-lead levels. The high risk criteria are outlined in Virginia regulations, 12VAC5-120-30. All Medicaid enrolled children are required to be tested at 1 and 2 years of age.

If a case is found, should family members be tested?

A case of elevated blood lead indicates an environmental source of lead, often in the home. Brothers and sisters up to 6 years of age should be tested. If the source is a home renovation project, parents and older siblings may need to be evaluated to check for signs of exposure. If the source is found to be a day care center, other children in that facility should be tested.

How is an elevated blood lead level in a child treated?

High levels of lead in the blood (45 µg/dL and above) may be removed by a treatment called chelation. Chelation therapy is not recommended for lead levels < 45 µg/dL. Chelation is sometimes done on an outpatient basis, but hospitalization may be needed.

Can a child with an elevated blood lead level return home?

If a child is to receive chelation therapy as an outpatient and the home is found to be the source of the lead, the child should live somewhere else until the source of the lead is removed from the home. CDC recommends that clinicians closely monitor the health status of children identified as having blood lead levels above the reference value until environmental investigations and mitigation strategies are complete.

What can be done to prevent childhood lead exposure?

Keeping the home clean, eating a good diet, and washing hands can help prevent lead poisoning. Adults can check the home for potential danger areas, looking for flaking paint, crumbling plaster, indoor dust and outdoor dirt that may have lead in it. Any peeling paint should be removed and the paint chips swept away. Children should not be present when scraping or cleaning up paint chips. Dust should be kept to a minimum by damp mopping and using a wet cloth to clean walls, window sills, and other surfaces. Painted wood should not be burned for heating. More tips for preventing childhood lead poisoning are included in the pamphlet entitled "Protect Your Family from Lead in Your Home." This pamphlet can be obtained by calling 1-800-424-LEAD.

How can I get more information about elevated blood lead levels in children?

- 1) If you have concerns about elevated blood lead levels in children, contact your healthcare provider.
- 2) Call your local health department. A directory of local health departments is located at <http://www.vdh.virginia.gov/LHD/index.htm>.
- 3) Visit the Centers for Disease Control and Prevention website at <http://www.cdc.gov/nceh/lead/>.