

University of Michigan Health System

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Lead Poisoning, Prevention of

What is lead poisoning?

Lead poisoning is a common preventable disease in the U.S. and Canada. Most commonly, lead poisoning is caused by being repeatedly exposed to small amounts of lead. Once lead is in the body it does not leave on its own. If enough lead builds up in the body it causes lead poisoning.

What are the symptoms of lead poisoning

There may not be any obvious symptoms at first, so parents of children with mild lead poisoning may not know to get medical help. Low levels of lead are harmful. The brain is most sensitive to lead exposure during the first 6 years of life. Exposure to lead may cause such problems as lowered IQ scores, decreased attention span, decreased hearing, speech delays, and other developmental delays.

Though uncommon, exposure to large amounts of lead causes severe lead poisoning and major symptoms. The symptoms of severe lead poisoning include abdominal pains, headaches, vomiting, confusion, muscle weakness, seizures, hair loss, and anemia.

Where might my child be exposed to lead?

The most common source of lead exposure for children is lead-based paint. Lead was banned from house paint in 1978. Three-quarters of all houses built before 1960 contained lead-based paint. When paint chips or peels, young children can pick up these chips and chew them. More commonly, children swallow dust and soil contaminated with lead paint. Home remodeling and sanding put a great deal of lead powder into dust and soil. Because toddlers commonly put their hands in their mouths, suck their thumbs, and explore their environment by tasting things, they are at greater risk for lead poisoning.

Other sources of lead are air, water, and food. The amount of lead in the air from car exhaust has been markedly reduced now that unleaded gasoline is commonly used. Lead is found in low levels in some drinking water because lead-based solder on old water pipes may add lead to water. (Lead-based solder was not banned for use with water pipes until 1986.) Lead is also sometimes found in fruit juice, food stored in lead-glazed pottery, low-quality toys, metal trinkets, and crayons. Average lead levels in children in the U.S. have been declining in recent years, however all sources of lead have still not been eliminated.

How do I prevent lead poisoning?

- Talk to your state or local health department about testing paint and dust from your home for lead if you live in a house or apartment built before 1978, especially if young children live with you or visit you.
- Make sure your child is not exposed to peeling paint. Pay special attention to windowsills.
- To remove lead dust:
 - Rinse your child's hands and face before she eats.

- Rinse toys and pacifiers frequently.
- If your child sucks his thumb or fingers, rinse his hands frequently.
- Wet-mop your hard surface floors.
- Close off rooms that are being remodeled.
- If you have leaded paint on the outside of your house, keep lead dust from being tracked into your house. Have a washable mat at each door entry so everyone who enters wipes their feet. If the soil around your house is definitely contaminated with lead, have a rule that people take off their shoes before coming into your house.
- If the soil around your home is contaminated with lead, replace it or plant bushes next to the walls so that children cannot play there.
- If you need water for cooking or for preparing formula, use only water from the cold water tap. If the water hasn't been used for several hours, let the water run for 2 minutes before you use it. (Lead dissolves more in warm water or standing water.) If you are concerned, have your water tested for lead.
- Do not store food or drink in pottery that may not have been fired correctly.
- Make sure your child's diet contains enough iron and calcium. Both of these minerals make it harder for the body to absorb lead.
- Make sure that all adults who work with lead shower and change clothes before spending time with your child.
- Make sure your child's toys and crayons are made by a reputable manufacturer.

How can I check if my child has lead poisoning?

Lead poisoning is diagnosed by a blood test. In most states only children who are at high risk for lead poisoning are tested. For high risk children this test is done when children are 12 months old and repeated when they are 2 years old. You should have your child tested if:

- Your child lives in or regularly visits a house or structure with peeling or chipped paint that was built before 1950, including day care centers, preschools, or homes of babysitters and relatives.
- Your child lives in or regularly visits a home that is being renovated and was built before 1978.
- Your child has a brother, sister, housemate, or playmate who is being tested or treated for lead poisoning.
- Your child lives with an adult whose job or hobby involves exposure to lead. Examples of such jobs or hobbies include furniture refinishing, making stained glass, making pottery, using indoor firing ranges, and working in industries such as storage batteries, automotive repair, and bridge, tunnel, and elevated highway construction.
- Your child lives near an active smelter, battery recycling plant, mine tailing pile, or other industry likely to release lead.
- Your child receives medical treatment for removal of a foreign body from the ear, nose, or stomach.
- Your child has the habit of swallowing nonfood substances (pica).
- Your child is less than 6 years old and has an unexplained developmental delay, hearing defect, irritability, severe attention deficit, violent tantrums, or unexplained anemia.
- Your child lives in a neighborhood at high risk for lead poisoning (often identified by zip code).

Children who remain at high risk for lead exposure should be tested for lead at least every year until their 6th birthday. The levels of lead when a child is 12 months old and 24 months old are especially important.

How is it treated?

Children with high levels of lead in their blood or symptoms of lead poisoning need to start taking a medicine

(called a chelating agent) that binds with the lead and carries it out of the body. All children need to be protected from re-exposure to the lead until it is removed. A public health agency or housing agency should carefully inspect the child's home for lead hazards. Your family should take all of the precautions for preventing lead exposure.

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