



Lead in Drinking Water

Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. The greatest risk of lead exposure is to infants, young children, and pregnant women. Lead exposure can result in IQ and attention span decreases, and it may cause or worsen existing behavioral problems in infants and children. Adults can have increased risks of heart disease, high blood pressure, kidney, or nervous system problems. Additionally, lead is stored in the bones and can be released later in life. Because of this, if a mother was exposed to lead before or during pregnancy, the child may have an increased risk of certain health effects.

Sources of Lead

Lead is a common, natural, toxic, and often useful metal that was used for years in products found around the home. It can be found throughout the environment in lead-based paint, air, soil, household dust, food, and certain types of pottery, porcelain, and pewter.

Lead can also be found in water, although it rarely occurs naturally in water supplies like rivers and lakes. Instead, it enters drinking water primarily because of corrosion, or the wearing away, of lead-containing materials in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass- and chrome-plated brass faucets. In some cases, the pipes that connect your house to the water main (service lines) might be made of lead. Some common causes of corrosion are dissolved oxygen, acidity (low pH), and low mineral content in the water. Even if something is advertised as "lead free" it still may contain trace amounts of lead.

When water sits motionless in lead pipes or plumbing containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first draw from the faucet in the morning, or later in the afternoon after returning from work or school, can contain higher levels of lead.

Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure. This is particularly a concern for infants who drink baby formulas and concentrated juices that are mixed with water. It is estimated that drinking water could make up 20% or more of a person's total exposure to lead, and infants who drink mostly baby formulas mixed with water can receive 40%-60% of their total exposure to lead from drinking water.

Another source of concern is that homes built prior to 1978 may have lead-based paint both inside and outside of the house. Ingestion of lead-based paint chips is frequently a cause of lead exposure in young children. Soil and household dust may also contain deteriorating lead-based paint.

Steps You Can Take to Reduce Your Exposure to Lead in Drinking Water

To reduce your exposure to lead in drinking water, take the following precautions:

- **Flush your faucets before consuming water.** Before drinking or cooking with water from a faucet that has gone unused for more than six hours, run (flush) your faucet until the water becomes noticeably colder. A typical flush takes 30 seconds to three minutes, although a home with a lead service line may necessitate a longer flush time. Note that toilet flushing and showering only flushes water through a portion of your plumbing, so you will still need to flush water in each faucet before consuming it. To conserve water, you can use the first flush to wash dishes or water plants. Once the faucet is properly flushed, you may also fill a couple of bottles for drinking later.

- **Do not cook with or drink water from the hot water tap.** Hot water can dissolve more lead in less time than cold water. If you need hot water, draw water from the cold tap and heat it on the stove or microwave. Do not prepare baby formula with water from the hot water tap.
- **Do not boil water to remove lead.** Boiling water will not reduce lead levels.
- **Periodically remove the aerators from faucets and flush by running water** for three to five minutes to remove any loose lead solder or debris that has accumulated over time.
- **Determine if your service line is made of lead.** The best way to determine if your service line is made of lead is by hiring a licensed plumber to inspect the line. At the same time, a licensed plumber can check to see if your home or building's plumbing contains lead solder, lead pipes or pipe fittings that contain lead.
- **Contact your water supplier.** Your public water supplier should maintain records of materials in the distribution system. They should also be able to identify your service line and may have a program to provide you with a free or reduced cost lead service line replacement or free water testing.
- **Have an electrician check your wiring.** If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.
- **Get your water tested to determine if it contains elevated lead.** You cannot see, taste, or smell lead in drinking water, so you may choose to reach out to a laboratory that is certified by Ohio EPA to perform lead analysis on drinking water samples. A list of such laboratories is available at: <https://epa.ohio.gov/static/Portals/28/documents/labcert/Combined-Lab-List.pdf>.

Despite a public water system's best effort to control water corrosivity and prevent lead from entering the water supply, lead levels in some homes or buildings can be high. The steps described above will reduce the lead levels in your drinking water. However, if a water test indicates that the drinking water coming from your faucet contains lead levels higher than 15 parts per billion after flushing, or after the public water system has completed actions to minimize levels, then you may want to take any of the following additional measures:

- **Purchase or lease a home treatment device certified by an independent testing agency** such as NSF International and rated for lead reduction. Home treatment devices are limited in that each unit treats only water that flows from the faucet(s) to which it is connected, and all the devices require periodic maintenance and replacement. Countertop devices such as reverse osmosis systems installed on the faucet or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the faucet; however, all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit. Be sure to follow the manufacturer's recommendations for the replacement of filters or other media in the treatment unit to ensure the product is working correctly.
- **Purchase bottled water for drinking and cooking.** The Centers for Disease Control and Prevention recommends children and pregnant women use bottled water or water from a filtration system that has been certified by an independent testing organization to reduce or eliminate lead for cooking, drinking, and baby formula preparation.
- **If you are a parent and are concerned about lead exposure, you may want to have your child's blood tested** for lead by your family doctor or pediatrician and they can provide you information about the health effects of lead.

Additional Information

For more information about your drinking water, contact your water provider. For more information about reducing lead exposure around your home or building and the health effects of lead, visit U.S. EPA's website at epa.gov/lead or contact your health care provider. The [Ohio Department of Health's Childhood Lead Poisoning](http://ohio.gov/lead) website and [Ohio EPA's Learn about Lead](http://ohio.gov/lead) webpage are also helpful sources of information.