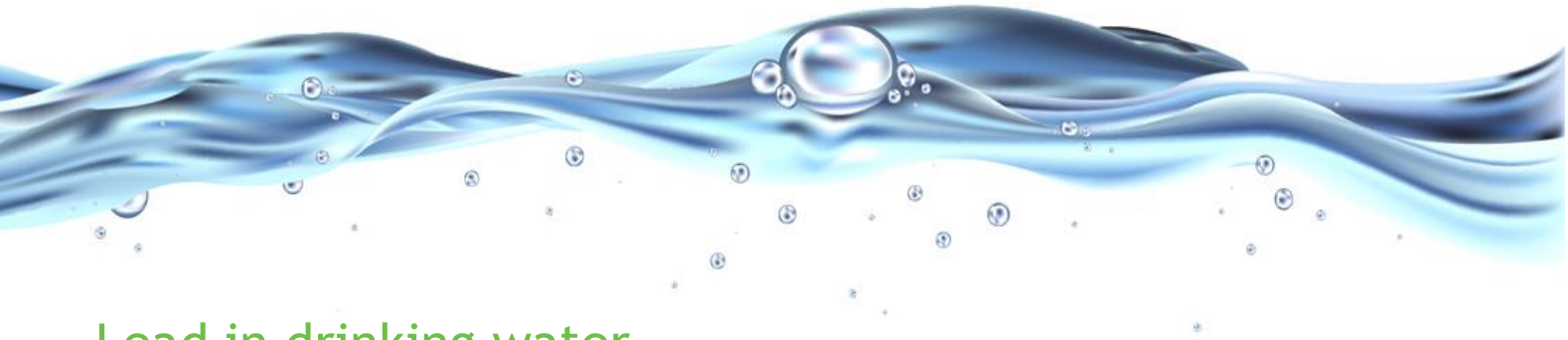
COLORADO
Department of Public Health & Environment

Learning about lead in drinking water



Lead in drinking water

What is lead and where does it come from?

Lead is a naturally occurring metal that can be found in all parts of our environment – the air, the soil, the water, and even inside our homes. This metal has been used in a wide variety of products found in and around our homes, including paint, ceramics, pipes and plumbing materials, solders, gasoline, batteries, ammunition, and cosmetics.

How does lead get into drinking water?

Lead is not typically present in the treated water or source water supplied to your home. However, lead can enter your drinking water from the service line (pipe) that connects your home to the distribution line (water main) or from pipes and faucets in your home. The most common problem is with underground lead service pipes from the water main to your home. Plumbing in your home like galvanized piping, brass or chrome-plated brass faucets and fixtures or pipes with lead solder can also release significant amounts of lead into your drinking water. While homes built before 1986 are more likely to have lead pipes, fixtures or solder, many brass faucets and fittings sold in the U.S. as late as 2013 could contain significant amounts of lead.

What are the health effects associated with lead exposure?

High levels of lead in drinking water can cause health effects if the lead in the water enters the bloodstream and causes an elevated blood lead level. Lead "bio-accumulates" in the body, which means it stays and builds up over time, so ongoing exposure, even at low levels, can cause health effects over time. Infants and children are particularly susceptible to the health effects of lead because their bodies absorb lead at higher rates than the average adult. Exposure to lead can result in:

- Delays in children's physical or mental development.
- Decreased IQ in children.
- Kidney problems.

High lead levels in adults have been linked to high blood pressure. Pregnant women and their fetuses are at risk since lead exposure may harm the fetus, causing lower birth weight and adversely impacting normal mental and physical development.

How can I find out the level of lead in my drinking water?

1. Contact your water provider

   If you receive a water bill, then you are connected to a public drinking water system. If your water bill is included in association dues, contact the manager to determine which public water system provides your water. Contacting your water provider is a good initial step as they may have important information and resources to help you determine the level of lead in your water. Make sure you ask your water provider if your home has a lead service line.

2. Have your water tested

   Testing is the only way to know whether your water contains lead. You cannot see, taste, or smell lead in drinking water. Testing is important if your home has lead pipes, lead-containing fixtures or lead solder.

How do I test my water?

Often, your water provider or local health department will be able to provide assistance with testing your water. Otherwise, you should contact a certified lead testing laboratory in your area (see resources). If sampling the water yourself, make sure you follow the directions provided by the laboratory.

How much lead in drinking water is too much?

If your tap water contains lead at levels exceeding EPA's action level of 15 parts per billion (ppb), CDC recommends that you should take action to minimize your exposure to lead in the water.

Children and pregnant women are especially vulnerable to the effects of lead exposure. Therefore, for homes with children or pregnant women and with water lead levels exceeding EPA's action level of 15 ppb, CDC recommends using 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. See resources below about bottled water and filtration devices.

For adults, most studies show that exposure to lead-contaminated water alone would not be

likely to elevate blood lead levels in most adults, even drinking water with a lead level close to the EPA action level of 15 ppb.

How can I reduce my exposure to lead in drinking water?

While there are simple steps you can take to reduce the amount of lead in your drinking water, the best long term solution is to identify and replace the pipes and/or fixtures that are the source of lead in your water.

Simple Steps You Can Take to Reduce Lead in Your Water

1. **Flush your pipes before drinking.** If it has not been used for several hours, run the cold water tap until the temperature is noticeably colder. This could take as little as five to thirty seconds if there has been recent heavy water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. This flushes lead-containing water from the pipes.
2. **Always use cold water for drinking, cooking, and preparing baby formula**. Never cook with or drink water from the hot water tap. Never use water from the hot water tap to make formula.
3. **Do not boil water to try to remove lead. Boiling water will NOT reduce lead.**
4. **Periodically remove and clean the faucet's strainer/aerator.** While removed, run the water to remove debris.
5. **Use a water filter or a home treatment device.** Many water filters and water treatment devices are certified by independent organizations for effective lead reduction. Devices that are not designed to remove lead will not work. Verify the claims of manufacturers by checking with independent certifying organizations that provide lists of treatment devices they have certified (see resources).
6. **Use bottled water.** Not all bottled water has been tested for lead and other contaminants. If you choose to use bottled water, you should verify that the water has been tested (see resources).

How can I get my child's blood tested for lead?

If your child has been drinking water with lead levels above EPA's action level, you should contact your local health department or healthcare provider to find out how you can get your child tested for lead.

What about other uses of water?

- Bathing and showering is safe, even if the water contains lead over the EPA's action level. Human skin does not absorb lead in water.
- Washing dishes is safe. Only a very small amount of water clings to smooth surfaces, such as dishes. Water with lead above the action level can be safely used to wash and sanitize

dishes, tables, and eating utensils. As infants and toddlers are especially sensitive to lead exposure, you should wash baby bottles and sippy cups with filtered or bottled water.
- Washing clothes is safe. Very little water remains on washed surfaces and in laundered fabrics. Water with lead above the action level can be safely used for general cleaning and washing of clothing, bedding and lines. As mentioned above, human skin does not absorb lead in water.

What about my pets?

If you are concerned, check with your veterinarian. You may also use the recommended steps above to reduce your pet's lead exposure in drinking water.

What about other sources of lead exposure?

When considering your child's exposure to lead, there are many other common sources of lead in Colorado homes to be aware of including:

- Chipping, peeling, or flaking lead-based paint which can be found in homes built before 1978.
- Lead- contaminated soil.
- Lead-contaminated imported spices or home remedies.
- Take-home exposure from work in lead-related industries such as mining, welding, or plumbing.
- Exposure from hobbies such as shooting with lead ammunition

Resources

General information

- Information about Lead in Drinking Water from EPA
  www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water
- Information about Lead in Drinking Water from CDC
  www.cdc.gov/nceh/lead/tips/water.htm

Information about water testing laboratories

- List of certified laboratories in Colorado
  www.colorado.gov/cdphe/laboratory-certification-program

Third-party certification organizations for water filters

- NSF International
  www.nsf.org/Certified/DWTU
- Water Quality Association
  www.wqa.org/Find-Products#
- Underwriters Laboratories
  www.ul.com/code-authorities/environmental-and-public-health/drinking-water

Researching bottled water

- NSF International
  http://info.nsf.org/certified/bwpi
- International Bottled Water Association
  www.bottledwater.org

Information about blood lead testing

- Colorado Department of Public Health and Environment
  www.colorado.gov/cdphe/leadtest

Information to help you identify plumbing materials and fixtures:

- How to Identify Galvanized Household Plumbing
  www.dcwater.com/waterquality/plumbing/identify.cfm
- Identifying Lead Free Certification Marks for Plumbing Products
  www.nsf.org/newsroom_pdf/Lead_free_certification_marks.pdf