

What you should know about lead in your drinking water.

Introduction

The United States Environmental Protection Agency (EPA) and your local water and sewer division are concerned about lead in our drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (PPB), or 0.015 milligrams of lead per liter of water (mg/L). Under federal law public water suppliers are required to undertake a comprehensive program to minimize lead in your drinking water. This program includes corrosion control treatment, source water treatment, and public education. This page explains the simple steps you can take to protect yourself and your family by reducing your exposure to lead in drinking water.

Health Effects of Lead

Lead is a common, natural, and often useful metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, solder, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that will not hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination – like dirt and dust – that rarely affect an adult. It is important to wash children's hands and toys often, and to make sure they only put food in their mouths.

Lead in Drinking Water

Lead in drinking water, although rarely the sole cause of lead poisoning can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion or wearing away, of materials containing lead 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, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2 per cent lead, and restricted the lead content of faucets, pipes, and other plumbing materials to 8.0 percent. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into our drinking water. This means that the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead. Water from the hot water tap often can contain more lead and other harmful materials because hot water will more easily dissolve contaminants, and because hot water often stands for long periods of time in your water boiler and pipes.

Steps You Can Take in the Home to Reduce Exposure to Lead in Drinking Water

Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, you can have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

1. Flush Your System

Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing, the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15 to 30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than five cents per month. To conserve water, fill several bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building letting the water flow before using it may not work to lessen your

risk from lead. The plumbing systems have more, and sometimes larger, pipes than smaller buildings. Ask your landlord for help in locating the source of lead and for advice on reducing the lead level.

2. **Use Only Cold Water for Cooking and Drinking**

Try never to cook with or drink water from the hot tap. Hot water can dissolve more lead more quickly than cold water. Also, hot water stands in your water boiler and pipes for longer than cold water, contributing to higher contaminant levels. If you need hot water for cooking or drinking, draw water from the cold tap and heat it on your stove.

3. **Remove Loose Lead Solder and Debris**

Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes or homes in which the plumbing has recently been replaced by removing the faucet strainers (aerators) from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers (aerators) and flush out any debris that has accumulated over time.

4. **Identify and Replace Lead Materials with Lead-Free Ones**

If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber that did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull grey and when scratched with a key looks shiny. In addition, notify your State Department of Environmental Protection about the violation.

5. **Determine Whether Your Service Line is Lead**

The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the Town's records of building permits. A licensed plumber can at the same time check to see if your home's plumbing contains lead. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water after the comprehensive treatment program is in place, your local water and sewer division may be required to replace the line; if the line is only partially controlled by the division, they can provide you with information on how to replace your portion of the service line, or offer to replace that portion of the line at your expense and take a follow-up tap water sample after the replacement. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

6. **Have an Electrician Check Your Wiring**

If the grounding wires from your home 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.

7. **Purchase or Lease a Home Treatment Device**

Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap; 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.

8. **Purchase Bottled Water for Drinking and Cooking**

For more information you can consult a variety of sources. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

- The Tennessee Division of Water Supply web site can provide you with information about the city's water supply and a list of local laboratories that have been certified by the EPA for testing water.
- The Tennessee State Department of Public Health at 1-800-532-9571 can provide you with information about the health effects of lead and how you can have your child's blood tested.