

York Region Community and Health Services is mandated to promote safe water practices. This fact sheet is part of a series to provide information and standards on this topic.

Facts about Lead

What is Lead?

Lead is a silvery grey heavy metal which occurs naturally in soil. It has been widely used since early times. Today, lead is used in pigments (colours in dyes), chemicals, solder, other alloys and sheathing around cables.

How are humans exposed to lead?

The four most common ways people are exposed to lead are through air, water, dust/dirt and food. The following chart shows total lead exposure from each of these sources:

Air	about 3 per cent
Drinking Water	about 30 per cent
Dust/Dirt	about 15 per cent for children
Food	about 52 per cent for adults

Why is lead sometimes present in water?

Lead is a metal that can dissolve in water. Traditionally, lead compounds were used in plumbing fittings and in solder to join pipes together in water distribution systems. If water stays in a distribution piping system for long periods of time, lead may dissolve into the water.

Lead in water can also come from industrial air emissions and discharges, from rocks and soil, and from other natural processes.

Is the Region of York municipal water safe to drink?

Yes. The levels of lead in the Region of York municipal water supplies are so low that the lead cannot be detected. These levels are well below the provincial and federal drinking water standards.

Lead can dissolve into drinking water from a distribution piping system if there is no water flow for several hours at a time. If you have not used the water in your home for six hours, it is recommended to run the cold water tap until the water feels cold to the touch. This could take up to five minutes or more.

What is the Canadian standard for the level of lead in drinking water?

The Canadian and Ontario maximum acceptable concentration (MAC) for lead in drinking water is 0.01 milligrams per litre (10 parts per billion). This standard is based on calculations of a safe level of exposure for children and adults. Short-term drinking of water with lead concentrations above the MAC does not necessarily pose a health risk.

How does lead affect human health?

Lead has no known biological benefit for human health. High levels of lead can affect human health in many ways. Lead can damage various systems and organs, including the nervous system, the reproductive system, the kidneys and bone marrow.

Lead can also cause anemia, a medical condition that occurs when a person does not have enough red blood cells. Lead also interferes with the metabolism of calcium and vitamin D. At very high levels, lead can cause convulsions, coma and death. Lead poisoning is indicated by a blue line around the gums.

Lead is especially harmful to the developing brains of a fetus in pregnant women and to young children. High blood lead levels in children can cause learning disabilities and behavioural problems.

Drinking municipal water does not cause high levels of lead in a human body.

What are the symptoms of lead toxicity?

Signs of chronic or long-term lead toxicity include tiredness, sleeplessness, irritability, headaches, joint pain, gastrointestinal symptoms, and high diastolic blood pressure.

These symptoms would be very unusual for someone who has been exposed to lead from drinking water. If you experience any of these symptoms, or are interested in being tested for exposure to lead, see your doctor.

What can I do to protect myself and my family from exposure to lead in drinking water?

Drink only cold flushed water. If you have not used the water in your home for six hours run the cold drinking water tap until the water feels cold to the touch. This could take up to five minutes or more. Boiling your water will not reduce lead levels.

Replace any plumbing fixtures and water service lines that contain lead.

Purchase only lead-free solder marked for use in potable water supplies.

Where can I get more information about lead?

Call York Region *Health Connection* 1-800-361-5653 or TTY 1-866-252-9933 or visit the following websites:

- [World Health Organization](#)
This site provides information on lead poisoning.
- [Health Canada](#)
This site provides guidelines on the safe removal of lead-based paint as part of a renovation project.