



Fluoride in Drinking Water

Fluoride is the reduced form of the element fluorine, a highly reactive and abundant element in rocks and soils. Fluorine combines with various elements to form fluoride compounds. Fluoride compounds are used in aluminum, steel, glass, enamel, brick, tile, pottery, and cement manufacturing, as well as for fertilizer, pesticide, and insecticide production. They are also used as wood preservatives. Fluoride compounds are used in dental products and are added to some drinking water supplies.

People may be exposed to fluoride by consuming fluoridated water, food and beverages, and dental products. Soil also contains a significant amount of fluoride which can be easily ingested by toddlers and children.

How does fluoride get into my water?

Fluoride can enter water supplies through the natural weathering of rocks and soil containing fluoride, as well as from industrial discharge from chemical manufacturing plants. Low levels of fluoride occur naturally in most sources of drinking water in Canada. Fluoride compounds are added to some municipal drinking water supplies to prevent tooth decay among children.

How can fluoride affect my health?

Low levels of fluorides in drinking water protect tooth enamel against the acids that cause tooth decay.

Drinking water with high levels of fluoride over a prolonged period of time can cause moderate teeth stains, and increased risk of bone fractures. Skeletal fluorosis can occur at very high exposure levels, and has rarely been documented in Canada.

There has been no evidence suggesting fluoride causes cancer.

What is the Maximum Acceptable Concentration for fluoride in drinking water?

The *Guidelines for Canadian Drinking Water Quality* established by Health Canada has set the maximum acceptable concentration (MAC) of fluoride in drinking water at 1.5 milligrams per litre (mg/L). The drinking water guideline is based on the potential for dental staining, which is the effect that occurs at the lowest level of fluoride exposure.

How do I know if there is fluoride in my drinking water?

As fluoride is both tasteless and odourless, you won't be able to tell if it is in your drinking water. Private water supplies can be tested by an accredited laboratory to determine fluoride levels. All public water supplies are regularly tested for fluoride.

What if there are high levels of fluoride in my drinking water?

Boiling water with elevated fluoride levels will not make the water safe. An alternate safe water source, or water treated with an appropriate treatment device must be used for drinking, cooking, making juice, drinks, ice or infant formula, brushing teeth or soaking dentures, washing fruits and vegetables, and making soup, tea or coffee. Water with elevated fluoride levels may still be used for handwashing, washing dishes, bathing, and laundry.

If high concentrations of fluoride are found in your drinking water:

- Look for an alternate water source with low fluoride concentrations.
- Install an in-home water treatment device that can reduce the level of fluoride. Look for treatment devices that have been certified by an accredited certification organization as meeting the appropriate NSF International (NSF)/American National Standards Institute (ANSI) drinking water treatment unit standards for removing fluoride.
 - Distillation systems (NSF/ANSI standard 62)
 - Reverse osmosis drinking water treatment systems (NSF/ANSI standard 58)

After the system is installed, have the treated water tested for fluoride at a private accredited lab to make sure your system is working properly. Monitor and maintain your water treatment equipment according to manufacturer instructions.

- Exposure to fluoride may also be minimized by:
 - Supervising any child under 6 years of age while brushing teeth, using no more than a pea-sized amount of toothpaste on toothbrush and teach the child not to swallow;
 - Avoiding fluoridated mouthwash or rinses for children under 6 years of age;
 - Discuss the need for professional application of fluoride for children under 6 years of age;
 - Consult with a dentist before using a fluoride supplement, mouthwash or rinse;
 - Avoiding the use fluoride supplements if water is already fluoridated or naturally high.

If you are concerned about health risks from the consumption of water containing fluoride, please contact your doctor.

For more information about fluoride in drinking water, contact your local Environmental Health Officer.

Environmental Public Health Services
Regional Delivery Sector, Alberta Region
Edmonton Phone: (780) 495-2712
Calgary Phone: (403) 299-3939