



## FLUORIDES AND HUMAN HEALTH

### The Issue

Most Canadians are exposed to fluorides on a daily basis, both through the trace amounts found in almost all foods and those that are added to some drinking water supplies to prevent tooth decay.

### Background

Fluorides are chemical compounds, which in nature are found in air, water, soil and almost all foods. Fluorides are released into the environment by weathering processes and by volcanic activity and may be released by the production of phosphate fertilizers, by aluminum smelting and by chemical manufacturing.

### Health Benefits of Fluorides

Many governments and health organizations, including Health Canada, the Canadian Public Health Association, the Canadian Dental Association, the Canadian Medical Association and the World Health Organization endorse the fluoridation of drinking water to prevent tooth decay.

Fluorides protect tooth enamel against the acids that cause tooth decay. Many studies have shown that fluoridated drinking water greatly reduces the number of cavities in children's teeth. About 40 percent of Canadians receive fluoridated water.

### Risks for Children

If children under the age of six ingest high levels of fluorides during the period of tooth formation, they can develop dental fluorosis. This condition causes white areas or brown stains to appear on the teeth, which affects the appearance of the teeth but not their function. However, excessive intakes of fluoride can cause damage to tooth enamel, resulting in tooth pain and some problems with chewing. The risk goes away once teeth are formed, at age 6 or 7. Health Canada has set labelling requirements for dental products (such as toothpaste) that contain fluoride because young children have a tendency to swallow these products.

### Risks for Adults

High levels of fluorides consumed for a very long period of time may lead to skeletal fluorosis. These levels are much higher than those to which the average Canadian is exposed daily, even with fluoridated drinking water. Skeletal fluorosis is a progressive but not life-threatening disease in which bones increase in density and become more brittle. In mild cases, the symptoms may include pain and stiff joints. In more severe cases, the symptoms may include difficulty in moving, deformed bones and a greater risk of bone fractures.



## Minimizing Your Risk

Drinking water that meets the quality guidelines does not usually need extra treatment. However, there are several steps that you can take to keep your fluoride intake within safe limits.

- Never give fluoridated mouth-wash or mouth rinses to children under six years of age, as they may swallow it.
- Talk to your dentist before using fluoridated mouthwash.
- Health Canada does not recommend the use of fluoride supplements (drops or tablets). This guideline is consistent with recommendations made by Health Canada's First Nations and Inuit Health Branch (FNIHB) and the Canadian Association of Public Health Dentistry (CAPHD).
- Make sure that your children use no more than a pea-sized amount of toothpaste on their toothbrush, and teach them not to swallow toothpaste. Children under six years of age should be supervised while brushing, and children under the age of three should have their teeth brushed by an adult without using any toothpaste.

## Government of Canada's Role

Health Canada works in collaboration with the provinces and territories to maintain and improve drinking water quality. Together, both levels of government have

developed Guidelines for Canadian Drinking Water Quality. These guidelines are reviewed and revised periodically to take into account new scientific knowledge.

Health Canada endorses the fluoridation of drinking water to prevent tooth decay, but does not participate in the decision to fluoridate a water supply. Provincial and territorial government are generally responsible for the safety of drinking water. In collaboration with their municipalities, they decide whether or not to fluoridate and the amount of fluoride to be added.

Fluoride is one of the many chemicals for which guidelines have been set. The maximum acceptable concentration of fluoride in drinking water is 1.5 milligrams per litre. Health Canada believes that this level provides the maximum dental benefit without undue health risks. An optimal fluoride concentration of 0.8 to 1.0 mg/L has been recommended for those communities wishing to fluoridate their water supply.

The government of Canada created the Office of the Chief Dental Officer (OCDO) in October 2004 to improve the oral health status of Canadians and to increase awareness about the prevention of oral diseases.

## Need More Info?

To obtain a copy of the Canadian drinking water guideline for fluoride or to learn more about Health Canada's drinking water program, go to Health Canada's Water Quality Web site at : [http://www.hc-sc.gc.ca/ewh-semt/water-eau/index\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/water-eau/index_e.html)

For more information on Water safety go to Health Canada's Water Talk Web site at: [http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/water\\_talk-parlons\\_eau\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/water_talk-parlons_eau_e.html)

For more information on The Office of the Chief Dental Officer go to : [http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/ocdo-bdc/index\\_e.html](http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/fnihb-dgspni/ocdo-bdc/index_e.html)

For more information on Oral Health go to Health Canada's Oral Health Web site at: [http://www.hc-sc.gc.ca/hl-vs/oral-bucco/index\\_e.html](http://www.hc-sc.gc.ca/hl-vs/oral-bucco/index_e.html)

or the Canadian Association of Public Health Dentistry at: <http://www.caphd-acsd.org/>

For additional articles on health and safety issues go to the It's Your Health Web site at: [www.healthcanada.gc.ca/iyh](http://www.healthcanada.gc.ca/iyh) You can also call toll free at 1-866-225-0709 or TTY at 1-800-267-1245\*