

Fluoride

Fluoride exists naturally in water sources and is derived from fluorine, the thirteenth most common element in the earth's crust.

Since fluoride is present in most food and water, all humans ingest the mineral to some extent on a daily basis. In addition, Canadians (approximately 40 per cent) receive fluoride in their community water supply. Fluoride is also used by individuals in the form of consumer products such as toothpaste and rinses, and by oral health professionals in the professional application of fluoride treatments.

The Ontario Dental Hygienists' Association supports community water fluoridation.

More than 70 years of extensive research has consistently shown fluoride to be a safe, effective and economical means of preventing and even reversing the early stages of tooth decay (dental caries) in all age groups.

Health Canada, through the Federal-Provincial-Territorial Committee on Drinking Water, is responsible for overseeing the level of fluoridation in water supplies.

THE IMPACT ON ORAL HEALTH

Provided that the total daily intake of fluoride is carefully monitored, fluoride is considered to be an important health measure in maintaining oral health for all Canadians.

Fluoride works by strengthening or remineralizing the outer layer of teeth (called tooth enamel) to prevent cavities from starting, to reduce the size and number of cavities, and to lessen tooth sensitivity.

Children need fluoride protection while their teeth are developing. Adults also need fluoride since the possibility of root cavities (tooth decay in the roots of the teeth) increases with age.

Sources of fluoride

- Natural or community fluoridated water
- Food prepared in fluoridated water
- Seafood due to the natural sodium fluoride found in the ocean



- Tea and gelatin
- Consumer products, e.g., toothpaste, rinses, gels and drinking water that contains an optimal level of fluoride*
- Professional applications

SYMPTOMS AND RISKS

A person may require additional fluoride due to:

- Rampant cavities
- Dry mouth (xerostomia)
- Root sensitivity
- Dental erosion
- Exposure to head and neck radiation therapy
- Poor oral hygiene
- Previous history of dental decay
- Live in a community without water fluoridation

Overexposure to fluoride by chronically or frequently swallowing excess fluoride intended for topical application may result in dental fluorosis.

- This condition can cause teeth to erupt with white specks, small pits or brown stains.

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- In most cases, dental fluorosis is mild and barely visible; it is a cosmetic condition and is not health threatening.
- In more severe cases, fluorosis may be treatable by a dental professional.
- Any damage in tooth development due to fluoride occurs between the ages 6 months to 5 years.

Fluoride ingestion

Swallowing excessive fluoride (e.g., excessive toothpaste) may cause nausea and/or vomiting. The calcium from drinking a glass of milk will help to neutralize the fluoride. Meanwhile, contact an oral health professional, physician, emergency department or local poison control centre for advice.

TREATMENT

An assessment of fluoride sources and a thorough clinical examination is required before embarking on a specific course of fluoride treatment. For instance, oral health professionals should be aware of the water fluoride content in their area. This must be taken into account as well as the possible impact of fluoride reducing factors within the home such as the use of unfluoridated bottled water or some reverse osmosis devices.

If fluoride treatment is recommended, there are a number of options available.

Professional treatments include:

- Varnishes
- Trays using gel or foam
- Rinses
- Silver diamine fluoride

Home care treatments, as recommended by an oral health professional, include:

- Rinses – daily or weekly
- Custom trays using concentrated gels
- High fluoridated toothpastes

PREVENTION

Water fluoridation is the best way to provide fluoride protection to a large number of people at low cost. Where fluoride has been added to municipal water supplies, there has been a marked decline in tooth decay rates.

The public and parents of young children are encouraged to assess their circumstances and be aware of their own potential exposure to fluoride. Provincial health departments can help to inform the public concerning the fluoridation status of naturally fluoridated drinking water in various communities.

Dental hygienists recommend:

- Parents should supervise the tooth brushing of young children under six years of age.
- Children under three years of age should have their teeth brushed by an adult using only a smear of non-fluoride toothpaste.
- Once children are able to spit, they should use only a grain of rice sized amount of toothpaste and minimize swallowing toothpaste.
- Fluoride mouth rinsing is not recommended for children under six years of age.

During appointments dental hygienists provide a risk assessment and will review a client's fluoride sources whenever treatment includes an option for additional exposure.

*In Canada, the optimal level of fluoride in the water is 0.7 milligrams per litre (mg/L) – which can also be described as 0.7 parts per million (ppm). The optimal level takes into consideration the fluoride people receive from other sources, such as fluoridated toothpaste or mouth rinse.

As professional health-care providers, dental hygienists are primarily concerned with promoting good oral health. Dental hygiene is among the largest of the regulated healthcare professions in the province. In Ontario all dental hygienists are registered with the College of Dental Hygienists of Ontario, which regulates the profession to ensure the public receives safe and ongoing comprehensive oral care.

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