

Fluoride in Drinking Water

What is Fluoride?

Fluoride is a common element in the earth's crust and is present in groundwater naturally from trace concentrations to 5 mg/L.

Sources of Human Exposure:

Food and drinking water are the main sources of fluoride for most Canadians. Fluoride is now frequently added to products such as toothpaste, toothpowder, mouthwash and vitamin supplements.

Adults and children over 3 years of age readily excrete about 90% of the fluoride they ingest. Children under three years of age excrete only about 50% of the fluoride they ingest. Approximately 90% of the fluoride retained in the body is deposited in the skeleton and teeth.

Fluoride and Tooth Decay:

Fluoride increases the resistance of tooth enamel to acids that begin tooth decay in the mouth. Numerous studies have demonstrated the presence of low levels of fluoride, up to 1 mg/L, in drinking water can reduce cavities by 40 to 50 percent, while having absolutely no other harmful effects.

Dental Fluorosis:

Fluoride concentrations in drinking water higher than 1.5 mg/L may cause dental fluorosis in children, depending on the concentration, amount of water consumed and supplemental fluoride ingested (ie. toothpaste, rinses, etc.). Research has shown that in order for permanent teeth to be affected the excess consumption of fluoride must occur when children are between 2 and 3 years of age.

Mild forms of fluorosis are characterized by small white patches on the teeth. Moderate forms may involve brown patches and minute pitting of enamel. Severe forms of dental fluorosis are characterized by widespread deep brown or black stains and by excessive pitting.

A healthier future for all.

Reducing the Potential for Dental Fluorosis:

Where fluoride concentrations exceed 2.4 mg/L, children under 5 years of age should drink water from another source which has been tested for fluoride concentration. Alternatively, they may drink the water following treatment by reverse osmosis filtration.

Fluoride is removed from drinking water by reverse osmosis filtration. These filter systems are available commercially and may be installed to the cold water supply under the kitchen sink. Since this treatment removes the fluoride all household members should use fluoridated toothpaste.

Combined fluoride/vitamin preparations or other fluoride supplements should never be used without consultation with your family dentist. Parents should supervise children's brushing to prevent them from swallowing excessive amounts of fluoridated toothpaste.

Investigation and Testing for Fluoride:

Individuals with private supplies may contact their area public health inspector for further information on fluoride testing in drinking water. Advice can be given as to what treatment methods or alternatives are available to help ensure a safe water supply.