



# CDA Position on Use of Fluorides in Caries Prevention

## **Preamble**

The Canadian Dental Association supports the appropriate use of fluorides in dentistry as one of the most successful preventive health measures in the history of health care. Over 50 years of extensive research throughout the world has consistently demonstrated the safety and effectiveness of fluorides in the prevention of dental caries.

Fluorides are found naturally throughout the world. They are present to some extent in all food and water so that all humans ingest some fluoride on a daily basis. In addition, fluorides are used by communities as a public health measure to adjust the concentration of fluoride in drinking water to an optimum level (water fluoridation); by individuals in the form of toothpastes, rinses, lozenges, chewable tablets, drops; and by the dental profession in the professional application of gels, foams and varnishes.

The availability of fluorides from a variety of sources must be taken into account before embarking on a specific course of fluoride delivery to either populations or individual patients. This is particularly important for children under the age of six, where exposure to more fluoride than is required to simply prevent dental caries can cause dental fluorosis. Provided that the total daily intake of fluoride is carefully monitored, fluoride is considered to be a most important health measure in maintaining oral health for all Canadians.

CDA recognizes the need to monitor the scientific literature with respect to levels of exposure to fluoride and general health to ensure the continued safe and effective use of fluorides in dentistry.

## **Water Fluoridation**

CDA supports fluoridation of municipal drinking water (at minimum levels required for efficacy as recommended by the Federal-Provincial-Territorial Committee on Drinking Water) as a safe, effective and economical means of preventing dental caries in all age groups. Fluoride levels in the water supplies should be monitored and adjusted to ensure consistency in concentrations and avoid fluctuations.

Communities considering water fluoridation are encouraged to review their individual circumstances carefully and in detail, giving attention to any available data on the dental health of community members, the size of the group not likely exposed to adequate fluoride from other sources, the minimum level of fluoride required to be beneficial, and any other information which would be helpful in making the required value judgment.

CDA recognizes and supports the need for continued research to determine optimal water fluoridation levels that can continue to provide protection from dental caries while reducing potential to contribute to fluorosis.

### **Fluoridated Toothpastes and Mouth Rinses**

CDA recognizes and supports the use of fluoridated toothpastes and mouth rinses in the prevention of dental caries.

Fluoridated toothpastes should be used twice a day to brush teeth. Early commencement of tooth brushing has been associated with lack of colonization by the bacteria that are primarily responsible for cavities. Because young children tend to swallow toothpaste when they are brushing, which may increase their exposure to fluoride, the following guidelines have been established to moderate their risk of developing dental fluorosis while optimizing the benefits of fluoride.

**Children from birth to 3 years of age** should have their teeth and gums brushed by an adult. The use of fluoridated toothpaste in this age group is determined by the level of risk. Parents should consult a health professional to determine whether a child up to 3 years of age is at risk of developing tooth decay. If such a risk exists, the child's teeth should be brushed by an adult using a minimal amount (a portion the size of a grain of rice – see figure 1) of fluoridated toothpaste. Use of fluoridated toothpaste in a small amount has been determined to achieve a balance between the benefits of fluoride and the risk of developing fluorosis. If the child is not considered to be at risk, the teeth should be brushed by an adult using a toothbrush moistened only with water.

Early childhood tooth decay can be painful, may cause infection and is difficult and expensive to treat. Therefore, by a child's first birthday, the parents should consult a health professional knowledgeable in the areas of early childhood tooth decay and the benefits of fluoride. This health professional will help to determine the child's risk of developing tooth decay and whether there would be a benefit of brushing with a minimal amount (a portion the size of a grain of rice) of fluoridated toothpaste before the age of 3 years.

A child may be at risk of early childhood tooth decay if one or more of the following conditions exist:

1. The child lives in an area with a non-fluoridated water supply and low (< 0.3 ppm) natural fluoride levels. (Contact the municipal government to determine if drinking water is fluoridated).
2. The child has a visible defect, notch, cavity or white chalky area on a baby tooth in the front of the mouth.
3. The child regularly consumes sugar (even natural sugars) between meals. This includes use of a bottle or sippy cup filled with any liquid other than water and consumption of sweetened medications.
4. The child has special health care needs that limit his or her cooperative abilities, thus making it difficult for the parent to brush the child's teeth.

5. The child's teeth are brushed less often than once a day.
6. The child was born prematurely with a very low birth weight of less than 1500 grams [3 pounds].
7. The parent or caregiver has tooth decay.
8. The child has visible plaque, such as white or yellow deposits on the teeth.

**Children from 3 to 6 years of age** should be assisted by an adult in brushing their teeth. Only a small amount (a portion the size of a green pea – see figure 1) of fluoridated toothpaste should be used.

All children should be supervised or assisted until they develop appropriate manual dexterity.

Fluoride mouth rinses are an effective preventive measure for at risk individuals and should be used according to the specific needs of the individual. Fluoride mouth rinsing is not recommended for children under 6 years of age.

### **Professional Topical Applications of Fluoride Gels, Foams and Varnishes**

CDA recognizes and supports the professional topical applications of fluoride gels, foams and varnishes in the prevention of dental caries for individuals at risk.

### **Fluoride Supplements**

Fluoride supplements, in the form of chewable tablets, lozenges or drops, are not recommended for the majority of Canadians. However, health professionals may wish to prescribe fluoride supplements to high risk patients in non-fluoridated communities where individuals are not able to obtain fluoride in any other form (e.g. toothpaste) and after they have completed a thorough analysis of the patient's fluoride intake.

CDA suggests the following guidance in the use of fluoride supplements:

- Before prescribing fluoride supplements, a thorough clinical examination, dental caries risk assessment and informed consent with patients/caregivers are required.
- The Canadian Consensus Conference on the Appropriate Use of Fluoride Supplements for the Prevention of Dental Caries in Children, held in November 1997, suggested that high caries risk individuals or groups may include those who do not brush their teeth (or have them brushed) with a fluoridated dentifrice twice a day or those who are assessed as susceptible to high caries activity because of community or family history, etc.
- The estimations of fluoride exposure from all sources should include the use of fluoridated dentifrice and all home and child care water sources. Health professionals should be aware of the water fluoride content in their area. This information is available from public health agencies.

The possible impact of fluoride reducing factors within the home, such as the use of unfluoridated bottled water or some reverse osmosis devices, should be taken into account.

- Lozenges or chewable tablets are the preferred forms of fluoride supplementation. Drops may be required for individual patients with special needs.
- The use of fluoride supplements before the eruption of the first permanent tooth is generally not recommended. When, on an individual basis, the benefit of supplemental fluoride outweighs the risk of dental fluorosis, practitioners may elect to use these supplements at appropriate dosages in young children. In doing so, **the total daily fluoride intake from all sources should not exceed 0.05-0.07 mg F / kg body weight** in order to minimize the risk of dental fluorosis.
- Following the eruption of the first permanent tooth and the associated decrease in the risk of dental fluorosis at this stage of development, fluoride supplementation in the form of lozenges or chewable tablets may be used to deliver an intra-oral fluoride.

### **Fluoride Exposure from Multiple Sources**

CDA recognizes the availability of fluoride from a variety of sources and the increasing prevalence of dental fluorosis within communities. For this reason, CDA recommends:

- Patients and the parents of young children are encouraged to give attention to their circumstances and to be aware of their own potential exposure to fluoride (in drinking water from their own wells, for example).
- Provincial health departments should help to inform both patients and health professionals concerning the fluoridation status of naturally fluoridated drinking water in communities and areas.
- Parents should supervise the tooth brushing of young children and educate them to use only a pea-sized amount of fluoridated toothpaste on their toothbrush and to minimize swallowing.
- Health professionals and patients should review a patient's potential exposure to fluoride whenever treatment includes an option for additional exposure.

CDA Board of Directors

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**Figure 1.** A *rice grain sized* portion of toothpaste on a child’s toothbrush is shown on the left. A *pea-sized* portion of toothpaste is shown on the right.