

## COMMUNITY ORAL HEALTH PROMOTION: FLUORIDE USE (Including ADA Guidelines for the Use of Fluoride)

### 1 Introduction

- 1.1 The use of fluorides in dentistry is one of the most important ways of preventing dental caries and has the support of peak public health and dental authorities. International bodies such as the US-based Centres for Disease Control and Prevention (CDC), the World Health Organisation (WHO) and the US Surgeon General actively promote water fluoridation. The CDC placed water fluoridation in the top ten public health achievements of the 20<sup>th</sup> Century. Similarly, scientific bodies in Australia, recognised public health groups and professional organisations support water fluoridation.
- 1.2 Community water fluoridation continues to be the most cost-effective, equitable and safe means to provide protection from tooth decay and has been successfully utilised in Australia for more than 50 years.
- 1.3 The effect of water fluoridation is predominantly topical.
- 1.4 Australian infant formula is manufactured to be safe and avoid causing fluorosis when used with fluoridated water.
- 1.5 Dental fluorosis occurs as a result of interference in the formation of the enamel. It varies from very thin, almost invisible, white patches or lines over the tooth surface to significant areas of brown staining and/or pitted enamel defects. Dental fluorosis can be a significant and unwanted effect on teeth if a child is exposed to high levels of fluoride when the teeth are forming, although instances of severe dental fluorosis are now rare in Australia.
- 1.6 Dental fluorosis is only one of the numerous causes of hypo-mineralisation blemishes, or mottling, in teeth.
- 1.7 Fluoride supplements in the form of drops and tablets are not widely available in Australia.

### **Definitions**

- 1.8 **ADDITIONAL SOURCES OF FLUORIDE** is an all-encompassing term to include all sources of fluoride other than water fluoridation – fluoride drops, rinses, tablets, toothpastes, gels and fluoride in foods and beverages.
- 1.9 **BOARD** is the Dental Board of Australia.
- 1.10 **DENTAL PRACTITIONER** is a person registered by the Board to provide dental care.
- 1.11 **DENTAL FLUOROSIS** is the staining or mottling of the teeth as a result of greater than optimal fluoride exposure while a child's teeth are developing.
- 1.12 **FLUORIDE SUPPLEMENTS** are those products that seek to achieve a similar effect on the individual as fluoridation of the water supply. The term is generally limited to fluoride tablets and drops.
- 1.13 **WATER FLUORIDATION** is the treatment of community water supplies for the purpose of adjusting the concentration of the free fluoride ion to the optimum level for maximum caries prevention and minimal occurrence of dental fluorosis.

## 2 Principles

- 2.1 Water fluoridation is the most effective, equitable and efficient measure for achieving reduction in dental caries incidence across a community.
- 2.2 For children, there is a need to use fluorides to strive for optimal caries prevention while ensuring the prevalence of dental fluorosis is minimised.
- 2.3 Whilst fluoridation of community water supplies is the preferred method of fluoride delivery, fluoride supplements can be used to promote a reduction in dental caries in areas that are not optimally fluoridated.
- 2.4 Fluoride supplements should not be taken directly by adults or children but should only be added to non-fluoridated water to mimic community water fluoridation.
- 2.5 Fluoridation of community water supplies benefits all age groups.

## 3 Policy

### **Water Fluoridation**

- 3.1 Fluoridation of community water supplies is preferred as a safe and effective means of reducing the prevalence of dental caries in all age groups and should be implemented and maintained in those communities where there is an insufficient natural fluoride content for this purpose.
- 3.2 The optimum level of fluoride to be achieved in a water supply should take into account climatic conditions and water consumption.
- 3.3 Where fluoridation of water supplies is effected, there must be adequate control and supervision of the procedure.
- 3.4 Governments must adopt water fluoridation as part of Health Policy and actively promote its introduction, where it is feasible, as a public health measure.
- 3.5 Manufacturers and producers of bottled water should be encouraged to ensure that their products contain fluoride at approximately 1 milligram per litre (mg/L) and that the fluoride content is included in labelling.
- 3.6 Only water filters that do not remove fluorides should be recommended.
- 3.7 Manufacturers of water filters or water filtering systems should include information on their products as to whether or not fluoride is removed.

### **Additional Sources of Fluoride**

- 3.8 Because of the variable presence of fluoride in foodstuffs, particularly processed foods and beverages, supplementary fluoride must be carefully prescribed and should take into account the assessment, conducted by a dentist, of an individual's caries risk.
- 3.9 Toothpastes containing fluoride should be used as an important method of further reducing dental caries incidence, regardless of whether or not the area water supply is optimally fluoridated. Fluoride toothpastes should be used as recommended by a dentist who should take into account the age of the patient, the access to fluoridated water and an assessment of an individual's caries risk. Special care must be taken with very young children to limit the amount of toothpaste used and, thereby, the ingestion of fluoride.
- 3.10 Professional topical application of fluorides should be selectively used on patients who, as a result of an evaluation conducted by a dentist, are assessed as having a high caries risk.
- 3.11 There is a need to support further studies that examine the impact of fluoride delivery mechanisms in the Australian population including: studies of the epidemiology of dental caries and dental fluorosis; investigations of the impact of both conditions on people's well-being and quality of life; risk factors for dental caries and dental fluorosis; use of fluoride vehicles in dental practice and the population; and the efficacy, effectiveness and

cost effectiveness of fluoride vehicles. Research is needed to develop new preventive interventions including new vehicles for fluoride delivery as well as other preventive strategies that are not based on fluoride. New interventions should be judged for their equivalency or superiority to existing preventive approaches that have documented efficacy.

## **Dental Fluorosis**

- 3.12 The control of additional fluoride sources, rather than the reduction or removal of the optimum fluoride level in drinking water, is the preferred strategy for maintaining the low incidence of dental fluorosis.

### **Policy Statement 2.2.1**

Adopted by ADA Federal Council, November 15/16, 2001.  
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Amended by ADA Federal Council, November 18/19, 2010.  
Amended by ADA Federal Council, April 12/13, 2012.  
Amended by ADA Federal Council, April 10/14, 2014.

**APPENDIX TO POLICY STATEMENT 2.2.1**  
**ADA GUIDELINES FOR THE USE OF FLUORIDE**

**1 Water Fluoridation**

- 1.1 Water fluoridation is a proven method for reducing the prevalence of dental caries in communities.
- 1.2 Surveys of dental caries and dental fluorosis should be undertaken regularly, taking into account all fluoride sources and patterns of consumption in a community, in order to confirm the most appropriate water fluoridation concentration for that community or region.
- 1.3 The optimal fluoride concentration of community water supplies will normally be in the range of 0.6 to 1.1 milligram per litre (mg/Litre) of water (commonly known as parts per million or ppm).
- 1.4 The fluoride content of bottled water should be clearly stated on the label.

**2 Fluoride Supplements**

- 2.1 Fluoride drops or tablets should not be taken (swallowed) directly by an adult or child.
- 2.2 So people in non-fluoridated areas can obtain the benefits of fluoride in water it is recommended that people buy bottled water with fluoride at approximately 1mg/L for drinking.
- 2.3 Support must be given to ongoing research into the epidemiology of dental caries and the use of fluoride to ensure assessments of safety, effectiveness and efficiency of all methods of delivery of fluoride are up to date.
- 2.4 All dental practitioners must maintain awareness of the latest science as it affects the use of all forms of fluoride.

**3 Fluoridated Toothpaste**

- 3.1 From the time that teeth first erupt (about six months of age) to the age of 17 months, children's teeth should be cleaned by a responsible adult, but not with toothpaste.
- 3.2 For children aged 18 months to five years (inclusive), the teeth should be cleaned twice a day with toothpaste containing 0.5–0.55mg/g of fluoride (500–550ppm). Toothpaste should always be used under supervision of a responsible adult, a small pea-sized amount should be applied to a child-sized soft toothbrush and children should spit out, not swallow, and not rinse. Young children should not be permitted to lick or eat toothpaste.
- 3.3 For people aged six years or more, the teeth should be cleaned twice a day or more frequently with standard fluoride toothpaste containing 1- 1.5mg/g fluoride (1000–1500ppm). People aged six years or more should spit out, not swallow, and not rinse. Standard toothpaste is not recommended for children under six years of age unless on the advice of a dental professional.
- 3.4 For children who do not consume fluoridated water or who are at elevated risk of developing caries for any other reason, guidelines about toothpaste usage should be varied, as needed, based on dental professional advice. Variations could include more frequent use of fluoridated toothpaste, commencement of toothpaste use at a younger age, or earlier commencement of use of standard toothpaste containing 1mg/g fluoride (1000ppm). This guideline may apply particularly to preschool children at high risk of caries.
- 3.5 For teenagers, adults and older adults who are at elevated risk of developing caries, dental professional advice should be sought to determine if they should use toothpaste containing

a higher concentration of fluoride (i.e. greater than 1000-1500 ppm up to 5000 ppm of fluoride).

- 3.6 Manufacturers should be encouraged to standardise and restrict the toothpaste tube orifice to allow a more accurate and consistent amount of toothpaste to be dispensed.
- 3.7 Manufacturers should be encouraged to avoid flavours that imitate too closely popular food tastes to avoid accidental ingestion of large amounts of paste by very young children.

#### **4 Application of Topical Fluoride**

- 4.1 Concentrated forms of fluoride should only be applied by suitably-qualified dental practitioners and should only be used after taking into account an assessment conducted by a dentist of an individual's caries risk.
- 4.2 Fluoride varnish should be used for people who have elevated risk of developing caries, including children under the age of 10 years.
- 4.3 High concentration fluoride gels and foams (those containing more than 1.5mg/g fluoride ion) may be used for people aged 10 years or more who are at an elevated risk of developing caries in situations where other fluoride vehicles may be unavailable or impractical.

#### **5 Fluoride Mouth Rinses**

- 5.1 Fluoride mouth rinses should not be used by children under the age of six years due to the likelihood that they will ingest large amounts and increase their risk of dental fluorosis.
- 5.2 Fluoride mouth rinses may be used by people over the age of six years under the direction of a dentist where it is considered an appropriate choice for preventing caries in high risk individuals and where there is certainty that the individual will understand that the product should be rinsed as directed and spat out, not swallowed.

#### **6 Fluoride, Diet, Cleaning Routines and Smoking**

- 6.1 The beneficial effects of fluoride must be understood in conjunction with all the major risk factors for dental caries.
- 6.2 A person's inappropriate dietary and other habits have the potential to overcome the beneficial effect of fluoride, with smoking, poor oral hygiene habits, and high frequency or prolonged exposure to dietary sugars, starches and acidic foods and beverages, posing the highest risk.