

COMMUNITY ORAL HEALTH PROMOTION FLUORIDE USE

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 all peak public health and dental authorities. International bodies such as the US-based Centers 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 20th Century. Similarly, scientific bodies in Australia, recognised public health groups and professional organisations support water fluoridation. 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 over 50 years. The effect of water fluoridation is predominantly topical, with some systemic influence in children.

1.2 **Definitions**

1.2.1 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.

1.2.2 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.

1.2.3 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.

1.2.4 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.

2 Policy

2.1 **Water Fluoridation**

2.1.1 Water fluoridation is the most effective, equitable and efficient measure for achieving reduction in dental caries incidence across a community.

2.1.2 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.

2.1.3 The optimum level of fluoride to be achieved in a water supply should take into account climatic conditions.

- 2.1.4 Where fluoridation of water supplies is effected, there must be adequate control and supervision of the procedure.
- 2.1.5 Governments must adopt water fluoridation as part of Health Policy and actively promote its introduction, where it is feasible, as a public health measure.
- 2.1.6 Manufacturers and producers of bottled water should be encouraged to ensure that their products contain fluoride at approximately 1 milligram per litre [mgm/L] and that the fluoride content is included in labelling.
- 2.1.7 Only water filters that do not remove fluorides should be recommended.
- 2.1.8 Manufacturers of water filters or water filtering systems should include information on their products as to whether or not fluoride is removed.
- 2.1.9 Australian infant formula is safe to be used with fluoridated water.

2.2 Additional Sources of Fluoride

- 2.2.1 For children, there is a need to use fluorides to strive for optimal caries prevention while ensuring the prevalence of dental fluorosis is minimised.
- 2.2.2 Whilst fluoridation of community water supplies is the preferred method of fluoride delivery, fluoride supplements can be used in areas that are not optimally fluoridated to promote a reduction in dental caries. However, their use should take into account the assessment, conducted by a dentist, of an individual's caries risk. 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.
- 2.2.3 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.
- 2.2.4 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.
- 2.2.5 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.

2.3 Dental Fluorosis

- 2.3.1 Dental fluorosis occurs as a result of interference in the formation of the enamel matrix. 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. There are numerous causes of hypo-mineralisation blemishes, or mottling, in teeth other than fluorosis.

- 2.3.2 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 1.2.1

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GUIDELINES FOR THE USE OF FLUORIDE

[APPENDIX TO POLICY STATEMENT 1.2.1]

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 [in the form of drops or tablets]

- 2.1 Fluoride supplements should not be taken [swallowed] directly by an adult or child in the form of drops or tablets.
- 2.2 An alternative method to the administration of fluoride supplements [tablets or drops] in areas where optimally fluoridated water is unavailable should seek to imitate water fluoridation by adding the fluoride to the drinking water at a rate that is equivalent to the water concentration in fluoridated regions. This can be achieved by carefully adding the fluoride to a container of known quantity of water that is used for drinking, mixing and food preparation by all members of the household.
- 2.3 Fluoride supplements should be packaged in child-proof containers, and the total sodium fluoride content of a container should not exceed 120 mg.
- 2.4 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.
- 2.5 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 The following table represents the current recommendations regarding the use of toothpaste by various age groups in the community:

Table 1 - Recommendations for the use of fluoride-containing toothpaste

Local water supply fluoride content and caries risk	Age		
	From the eruption of the first tooth to 17 months	From 18 months to 5 years inclusive	From 6 years onwards
Water supply optimally fluoridated for the climatic conditions* or Natural water supply is at or close to what is considered optimal fluoride content for climatic conditions	Teeth to be cleaned WITHOUT TOOTHPASTE	Twice daily cleaning. Use a small pea-sized amount of child-strength toothpaste [0.4-0.55 mg/g of fluoride].	Twice a day cleaning - use adult strength toothpaste [1 mg/g fluoride].
Water supply not optimally fluoridated or An individual has been assessed as having an elevated risk of caries	Dentist may advise to use child-strength toothpaste at a younger age	Dentist may advise that adult strength toothpaste be used at a younger age	Dentist may advise brushing more frequently with adult strength toothpaste

* Climatic conditions are measured by mean average daily temperature. The higher the temperature, the more fluid is consumed so the less the concentration of fluoride needed.

3.2 Fluoride toothpaste containers should carry advice that reflects the principles of dose and age, adult supervision for children and the use of recommended increments [eg pea-sized].

3.3 Ingestion of fluoridated toothpaste should be discouraged.

3.4 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.

3.5 Teenagers and adults with elevated caries risk may use toothpaste strengths that are greater than 1 mg/g only on the prescription and supervision of a dentist.

3.6 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 Varnishes with high concentrations of fluoride may be applied occasionally to selected teeth or tooth surfaces where it is considered an appropriate choice.

4.3 Gels, foams and pastes with high concentrations of fluoride should only be used on the prescription of a dentist and are not to be used on children under the age of 10 years

because of the likelihood of ingestion of large amounts. They may be used on individuals 10 years of age and older where there is evidence of a high decay risk and where it is considered an appropriate choice.

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.

Appendix to Policy Statement 1.2.1

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