



## AUSTRALIAN DENTAL ASSOCIATION INC.

### POLICY STATEMENT

### 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 20<sup>th</sup> 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

The Australian Dental Association recommends :

- 2.1.1 Water fluoridation as the most effective, equitable and efficient measure for achieving reduction in dental caries incidence across a community.
- 2.1.2 That the 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 That the optimum level of fluoride to be achieved in a water supply should take into account climatic conditions.
- 2.1.4 That where fluoridation of water supplies is effected, there must be adequate control and supervision of the procedure.
- 2.1.5 That Governments must adopt water fluoridation as part of Health Policy and actively promote its introduction, where it is feasible, as a public health measure.

### 2.2 Additional Sources of Fluoride

Guidelines for the use of various forms of fluoride are outlined in "Guidelines for the use of Fluoride" appended to this Policy Statement. The Australian Dental Association recommends :

- 2.2.1 That, 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.
- 2.2.2 That, 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.
- 2.2.3 That toothpastes containing fluoride 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.

2.2.4 That professional topical application of fluorides should be selectively used only on patients who, as a result of an evaluation conducted by a dentist, are assessed as having a high caries risk.

2.2.5 That fluoride supplements should not be taken during pregnancy.

### 2.3 **Dental Fluorosis**

**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 [which pose a mild to moderate cosmetic problem] to significant areas of brown staining with pitted enamel effects or large areas of enamel missing [which are more severe effects on developing dental enamel caused by very high fluoride exposure]. Dental fluorosis is 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 mottling type blemishes in teeth other than fluorosis.

The Australian Dental Association recommends the control of additional fluoride sources, rather than the reduction or removal of the optimum fluoride level in drinking water, as the preferred strategy for maintaining the low incidence of dental fluorosis.

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#### **Policy Statement 1.2.1**

Adopted by Federal Council, November 15/16, 2001.

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AUSTRALIAN DENTAL ASSOCIATION INC.

## GUIDELINES FOR THE USE OF FLUORIDE

[Appendix to Policy Statement 1.2.1]

### 1 Water Fluoridation

- 1.1 Water fluoridation is the preferred method of reducing dental caries incidence in communities over the use of discretionary fluoride supplements.
- 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 0.5 to 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 The use of fluoride tablets and drops in areas where the water supply does not contain optimum levels of fluoride is not advised unless under the prescription of a dentist who should take into account an assessment of an individual's caries risk, a professional assessment of the fluoride content of the drinking water, and a fluoride history.
- 2.2 If the dentist assesses a person as having an unknown fluoride exposure from all sources and is assessed as having a low decay risk, it is preferable to :
  - ! rely on the topical effect of toothpastes,
  - ! not introduce fluoride supplements, and
  - ! in an area which does not have optimally fluoridated water, allow children to use adult strength [1,000 ppm] toothpaste.
- 2.3 The current state of research and recommendation for discretionary

fluoride supplements is inconclusive because of the difficulty in quantifying all sources of fluoride in order to minimise the effects of dental fluorosis in individual children.

The following guidelines represent information which, although not an empirical ADA recommendation, is being used as the basis for advice by some dental organisations worldwide.

**Guidelines for a precise daily dose of fluoride for a child - usually added to a drink [Source : American Dental Association [www.ada.org](http://www.ada.org)]**

FLUORIDE IN THE LOCAL WATER SUPPLY [mg/litre]	FLUORIDE DOSAGE OF SUPPLEMENT [DROPS, TABLETS] BY AGE GROUP			
	IN MILLIGRAMS/DAY			
	Birth to 6 Months	6 Mths – 3 Years	3 – 6 Years	6–16 Years
Less than 0.3	None	0.25	0.5	1.0
0.3 - 0.6	None	None	0.25	0.5
Greater than 0.6	None	None	None	None

- 2.4 The following are important considerations when using such a dosage schedule.
- 2.4.1 Where the fluoride content of a water supply is unknown, testing should be conducted before supplements are prescribed. This is especially important for water sourced from wells or bores.
  - 2.4.2 A fluoride history taken by a dentist should include all current sources of fluoride and details of any former exposure in other regions.
  - 2.4.3 The high compliance costs, both in time and money, of a regime of fluoride supplements may lead individuals to alternative strategies.
  - 2.4.4 Unless the parameters that can allow a reasonably accurate assessment of an individual's exposure are well-known, it is preferable not to use supplements but to rely on other preventive measures, including fluoride toothpaste and dietary control, in order to reduce caries risk.
  - 2.4.5 Fluoride supplements [drops, tablets] should not be taken during a pregnancy.
- 2.5 The alternative method of 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, as if it were from the tap, for use by all members of the household.

- 2.6 Fluoride supplements should be packaged in child-proof containers, and the total sodium fluoride content of a container should not exceed 120 mg.



### 3 **Fluoride Toothpaste**

- 3.1 Fluoride toothpaste should be used regardless of any other sources of fluoride.
- 3.2 Fluoride toothpaste containers should carry advice that, for children under the age of six years, brushing should be supervised and only a small “pea” sized amount of paste should be placed on the brush.
- 3.3 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.
- 3.4 In fluoridated areas, the use of toothpaste containing more than 1,000 ppm of fluoride should be discouraged for children prior to the age of six years.
- 3.5 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 dentists and appropriate allied dental personnel, and should only be used after taking into account an assessment conducted by a dentist of an individual's caries risk.
- 4.2 Concentrated forms of fluoride can be professionally and selectively applied to exposed dentine to reduce cervical hypersensitivity.
- 4.3 Concentrated forms of fluoride such as gels, rinses and toothpastes, available over-the-counter should only be used on the prescription of a dentist [including directions for administration].

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

- 5.1 The beneficial effects of fluoride must be understood in conjunction with all the major risk factors for dental caries.
- 5.2 A person's diet has the potential for overcoming the beneficial effect of fluoride, with the high frequency of prolonging exposure to dietary sugars and starches posing the highest risk.
- 5.3 The efficiency and frequency of the removal of the biofilm known as dental plaque is a risk factor, with the chief strategies being tooth-brushing, flossing and antiseptic mouth-rinsing.

- 5.4 Factors that have the potential to affect the quality of saliva [such as smoking, substance abuse, some medications, ageing, and radiation therapy] create an oral environment that may overcome the benefits of fluoride.

- 5.5 The choice of whether or not to use discretionary supplements [drops or tablets] for people who live in an area which does not have optimal fluoridated drinking water, should be made on the assessment of risk factors in consultation with a dentist.



**Appendix to Policy Statement 1.2.1**

Adopted by Federal Council, November 15/16, 2001.

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