

# Policy Statement 2.2.1 – Community Oral Health Promotion: Fluoride Use (Including ADA Guidelines for the Use of Fluoride)

## Position Summary

Water fluoridation is the safest and the most effective way to reduce tooth decay (dental caries). All Australians should have access to the benefits of fluoride.

### 1. Background

- 1.1. The use of fluoride in dentistry is one of the most important ways of preventing and limiting tooth decay 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 20th Century. Similarly, scientific bodies in Australia, recognised public health groups and professional organisations support water fluoridation.
- 1.2. The National Health and Medical Research Council (NHMRC) strongly recommends community water fluoridation as a safe, effective and ethical way to help reduce tooth decay across the population. The NHMRC supports Australian states and territories fluoridating their drinking water supplies within the range of 0.6 to 1.1 milligrams per litre (mg/L).
- 1.3. 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 60 years.
- 1.4. Fluoridation of community water supplies benefits all age groups. The NHMRC found that water fluoridation reduces tooth decay by 26% to 44% in children and adolescents, and by 27% in adults.
- 1.5. Recent Australian research states that access to fluoridated water from an early age is associated with less tooth decay in adults.
- 1.6. Community water fluoridation may be impractical in very small communities, particularly those in regional and remote areas.
- 1.7. A significant number of households are not connected to mains water.
- 1.8. The effect of water fluoridation is predominantly from the fluoride being in contact with the tooth surface, that is, the effect is from the fluoride being in the fluid at the tooth surface.

There are two ways in which the fluoride in drinking water acts to reduce tooth decay:

- Reducing demineralisation (i.e. where the enamel begins to dissolve). This makes teeth more resistant to decay.
- Enhancing remineralisation (i.e. recovery of weakened enamel). This helps repair the early reversible stage of tooth decay.

Fluoride also slows the activity of bacteria that cause decay and combines with enamel on the tooth surface to make it stronger and better able to resist decay.

- 1.9. Infant formula products sold in Australia are safe to be fed to infants when made up with drinking water fluoridated at the levels used in Australia.
- 1.10. It is safe for the unborn child and infant when pregnant and breastfeeding mothers drink water fluoridated at Australian levels. Breast milk naturally contains about 5–10 µg (micrograms) of fluoride per litre of milk. The level of fluoride in breast milk remains steady when a nursing mother drinks fluoridated water.

- 1.11. Dental fluorosis can affect the appearance of teeth, most commonly appearing as white lines/areas on tooth surfaces. It is caused by a high intake of fluoride from one or more sources during the time when teeth are developing. Almost all dental fluorosis in Australia, however, is mild or very mild, does not affect the function of the teeth, and is not of aesthetic concern to those who have it. Mild to very mild dental fluorosis has been associated with a protective benefit against tooth decay in adult teeth. Moderate dental fluorosis is very uncommon and severe dental fluorosis is rare in Australia. The very small amount of moderate and severe dental fluorosis in Australian children aged 8-14 years is not statistically different between fluoridated and non-fluoridated areas, meaning there is no evidence that community water fluoridation at Australian levels gives rise to these forms of dental fluorosis. In Australia dental fluorosis has declined, over a time when the extent of water fluoridation in Australia has expanded. The decline in dental fluorosis in Australia is linked to reduced exposure to fluoride from other sources such as toothpaste, due to the availability and promotion of low fluoride toothpastes for children and public health messages and guidelines about the appropriate use of these products.
- 1.12. There are numerous causes of defective enamel formation not related to fluoride. Studies have shown that most bottled water sold in Australia does not contain fluoride at sufficient levels to have a preventive effect on tooth decay.
- 1.13. Fluoride supplements in the form of drops and tablets are not widely available in Australia but are available in New Zealand and other overseas countries.
- 1.14. There is reliable evidence that community water fluoridation at current Australian levels is not associated with cancer, Down syndrome, cognitive dysfunction, lowered intelligence or hip fracture.
- 1.15. There is no reliable evidence of an association between community water fluoridation at current Australian levels and other human health conditions. Conditions where there is no evidence of association include chronic kidney disease, kidney stones, hardening of the arteries (atherosclerosis), high blood pressure, low birth weight, all-cause mortality, musculoskeletal pain, osteoporosis, skeletal fluorosis, thyroid problems or self-reported ailments such as gastric discomfort, headache, and insomnia.

## Definitions

- 1.16. **ADDITIONAL SOURCES OF FLUORIDE** is an all-encompassing term to include all sources of fluoride other than community water fluoridation – such as fluoride rinses, toothpastes, gels, drops, tablets and fluoride in foods and beverages.
- 1.17. **BOARD** is the Dental Board of Australia.
- 1.18. **DENTAL FLUOROSIS** is the staining or mottling of the teeth as a result of greater than optimal fluoride ingestion during tooth development in children.
- 1.19. **DENTIST** is an appropriately qualified dental practitioner, registered by the Board to practise all areas of dentistry.
- 1.20. **DENTAL PRACTITIONER** is a person registered by the Board to provide dental care.
- 1.21. **FLUORIDE SUPPLEMENTS** are those products that seek to achieve a similar effect on the individual as fluoridation of the water supply.
- 1.22. **WATER FLUORIDATION** is the adjustment of the natural levels of fluoride found in community water supplies to an optimal level for maximum tooth decay prevention and minimal occurrence of dental fluorosis.

## 2. Position

### Water Fluoridation

- 2.1. All Australians should have equality of access to the benefits of fluoride, either by water fluoridation or the use of fluoride supplements.
- 2.2. Fluoridation of community water supplies is preferred as a safe and effective means of reducing the prevalence of tooth decay in all age groups and should be implemented and maintained in those communities where there is an insufficient natural fluoride content for this purpose.
- 2.3. Where community water supplies are fluoridated, there must be adequate control and supervision of the procedure.

- 2.4. Governments must adopt water fluoridation as part of Health Policy and actively promote its introduction, where it is feasible, as a public health measure.
- 2.5. Manufacturers and producers of bottled water should be encouraged to ensure that their products contain fluoride at in the range 0.6 – 1.1 milligram per litre (mg/L) and that the fluoride content is included in labelling.
- 2.6. Only water filters that do not remove fluorides should be recommended.
- 2.7. 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**

- 2.8. People living with non-fluoridated water supplies should use fluoride supplements.
- 2.9. Fluoride supplements must be used under the direction of a dentist and should take into account the assessment, conducted by a dentist, of an individual's risk of tooth decay.
- 2.10. Fluoride supplements must be readily available at a reasonable cost to those needing them. Toothpastes containing fluoride should be used as an important method of further reducing tooth decay, regardless of whether or not the area water supply is optimally fluoridated. Fluoride toothpastes should be used in accordance with usage instructions or as recommended by a dental practitioner who should take into account the age of the patient, the access to fluoridated water and an assessment of an individual's tooth decay risk. Young children should have adult supervision when brushing to limit the amount of toothpaste used and, thereby, the ingestion of fluoride. Toothpaste should be kept out of the reach of young children.
- 2.11. Professional topical application of fluorides must be selectively used on patients who, as a result of an evaluation conducted by a dentist, are assessed as having an increased risk of tooth decay.
- 2.12. 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 tooth decay and dental fluorosis;
  - investigations of the impact of both conditions on people's well-being and quality of life;
  - risk factors for tooth decay and dental fluorosis; use of fluoride in dental practice and the population;
  - and the efficacy, effectiveness and cost effectiveness of fluoride methods of delivery.
  - development of new preventive interventions including new methods 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**

- 2.13. 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.

## **Research**

- 2.14. Support must be given to ongoing research into the epidemiology of tooth decay and the use of fluoride to ensure assessments of safety, effectiveness and efficiency of all methods of delivery of fluoride are up to date.

### **Policy Statement 2.2.1**

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

Revised version adopted by ADA Federal Council, November 11/12, 2004.

Amended by ADA Federal Council, April 7/8, 2005.

Revised version adopted by ADA Federal Council, November 15/16, 2007.

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.

Amended by ADA Federal Council, November 13/14, 2014.

Amended by ADA Federal Council, August 17/18, 2017.

Editorially amended by Constitution & Policy Committee, October 5/6, 2017.

Amended by ADA Federal Council, November 22/23, 2018

## 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 tooth decay in communities.
- 1.2 Surveys of tooth decay and dental fluorosis must 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 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. They must be added to drinking water to achieve a fluoride concentration of 1mg/L.

### 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 unless the tooth decay risk is deemed as high as assessed by a dentist.
- 3.2 For children aged 18 months to five years (inclusive), the teeth should be cleaned twice a day with toothpaste containing 0.5–0.55 mg/g of fluoride (500–550 ppm). 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. If risk of tooth decay is increased, concentrations of fluoride greater than 550 ppm may be used as recommended by a dentist.
- 3.3 For people aged six years or more, the teeth must be cleaned twice a day or more frequently with standard fluoride toothpaste containing 1 - 1.5 mg/g fluoride (1000–1500 ppm). 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 dentist.
- 3.4 For children who do not consume fluoridated water or who are at elevated risk of developing tooth decay for any other reason, guidelines about toothpaste usage must 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 tooth decay.
- 3.5 For teenagers, adults and older adults who are at elevated risk of developing tooth decay, 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 must standardise and restrict the toothpaste tube orifice to allow a more accurate and consistent amount of toothpaste to be dispensed.
- 3.7 Manufacturers must 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 tooth decay risk.
- 4.2 Fluoride varnish should be used for people who have elevated risk of tooth decay.
- 4.3 High concentration fluoride gels and foams (those containing more than 1.5 mg/g fluoride ion) may be used for patients who have an increased risk of tooth decay

## 5. Fluoride Mouth Rinses

- 5.1. Fluoride mouth rinses must not be used by children under the age of six years due to the possibility that they will ingest some of the product 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 tooth decay 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 tooth decay.
- 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 and acidic foods and beverages, posing the highest risk.

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