

Water fluoridation snapshot



This leaflet is intended to be read in conjunction with the following booklets:

- Department of Human Services Victoria. Water fluoridation helps protect teeth throughout life. Melbourne: Department of Human Services Victoria, 2007
- Department of Human Services Victoria. Water fluoridation: information for health professionals. Melbourne: Department of Human Services Victoria, 2007

These booklets are available from the Department of Human Services 1800 651 723, or online at www.health.vic.gov.au/environment/water/fluoridation.htm.

- Water fluoridation is a safe, effective, inexpensive and socially equitable way to help reduce tooth decay in both children and adults.
- Water fluoridation has been practised for more than 50 years in Australia.
- Melbourne's water was fluoridated in 1977. More than 75 per cent of Victoria's population currently receive fluoridated water. New South Wales celebrated 50 years of water fluoridation in 2006.
- Six-year-old children in fluoridated areas experience up to **36 per cent** less tooth decay.
- Fluoride in drinking water acts like a **constant repair kit** that neutralises the effect of acids that cause decay and helps to repair damage before it becomes permanent.
- Water fluoridation is supported by many national and international organisations including: World Health Organisation, World Dental Federation, National Health and Medical Research Council, the Australian Dental Association, the Australian Medical Association and the Public Health Association of Australia.
- In 2006, the World Health Organization, the World Dental Federation and the International Association for Dental Research urged governments to develop effective legislation and programs to ensure access to fluoride for dental health in all countries. These organisations also confirmed that 'universal access to fluoride for dental health is a part of the basic human right to health.'
- In 2004, all Australian Health Ministers endorsed water fluoridation as a national oral health initiative—a key action in *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2004–2013*.
- Healthy teeth require a combination of a healthy diet, good oral hygiene, appropriate use of fluoridated toothpaste and regular dental checkups.

Similar prevention measures

- Examples of other public health preventative measures include the addition of calcium to milk/breakfast cereals (to improve teeth/bone health); folate to breakfast cereal/bread (prevention of birth defects); iodine to salt (prevention of stunted growth and diminished intelligence); and thiamine to white flour (to improve health outcomes for individuals with poor diets).

Water fluoridation helps protect teeth against decay

- 'Fluoridation of community drinking water is a major factor responsible for the decline in dental caries (tooth decay) during the second half of the 20th century'.¹
- Water fluoridation has been deemed one of the 'ten great public health achievements' of the 20th century by the United States Centers for Disease Control and Prevention. Other significant achievements include vaccination, motor vehicle safety, control of infectious diseases and recognition of tobacco as a health hazard.²
- Recently, the Australian Institute of Health and Welfare (AIHW) released its report *Australia's dental generations: the National Survey of Adult Oral Health 2004–06*, surveying more than 14,000 Australians from 15 to 98 years of age, of which 5,500 were dentally examined.

The report showed that members of the fluoride generation (born after 1970) had half the level of decay that their parents generation had developed by the time they were young adults.³

Water fluoridation helps protect teeth throughout life

- Water fluoridation helps protect teeth against decay in people of all ages, from very young children to the elderly.^{4,5}
- The importance of caring for baby and adult teeth is highlighted on page 5 of the booklet ‘Water fluoridation helps protect teeth throughout life’.

Water fluoridation benefits everybody

- ‘Water fluoridation remains the most equitable and cost-effective method of delivering fluoride to all members of most communities, regardless of age, educational attainment or income level.’¹
- ‘Water fluoridation remains the most socially equitable means of achieving community-wide exposure to the caries prevention effects of fluoride. The relationship between dental caries and socioeconomic status also means that the individuals most likely to benefit from the preventive effects of water fluoride, to the greatest extent, are those least able to access dental treatment services.’⁶

Water fluoridation helps prevent pain and suffering

- Water fluoridation helps prevent pain and suffering associated with tooth decay. When severe, tooth decay can adversely affect appearance, self-esteem, social interaction and the ability to eat and chew.⁷ If baby teeth are lost too early because of decay, orthodontic treatment may be required later on to correct the positioning of the adult teeth.

- In 2004–05 across Victoria there were almost 5,000 children under the age of 10, including 250 two-year olds, who required a general anaesthetic for treatment of their dental decay. In non-fluoridated areas of Victoria, three times as many people per capita required a general anaesthetic in hospital for treatment of dental decay than in fluoridated areas.⁸

Children living in fluoridated areas of Victoria have considerably less tooth decay

- Six year old children living in fluoridated areas of Victoria experience 36 per cent less decay in their **baby** teeth than those in non-fluoridated areas.⁹
- Twelve year old children living in fluoridated areas of Victoria experience 22 per cent less decay in their **adult** teeth than those in non-fluoridated areas.⁹

Water fluoridation is safe and effective

- ‘Community water fluoridation is safe and cost-effective.’¹⁰
- ‘Water fluoridation is the most effective method of reaching the whole population, so that all social groups benefit without the need for active participation on the part of individuals.’¹⁰
- ‘Since 1950, opponents of water fluoridation have claimed it increased the risk for cancer, Down syndrome, heart disease, osteoporosis and bone fracture, acquired immunodeficiency syndrome, low intelligence, Alzheimer disease, allergic reactions, and other health conditions. **The safety and effectiveness of water fluoridation have been re-evaluated frequently, and no credible evidence supports an association between fluoridation and any of these conditions.**’¹¹

Osteosarcoma*

- Claims that fluoride contributes to osteosarcoma are based on extracts of a 2006 paper by Elise Bassin et al, ‘Age-specific fluoride exposure in drinking water and osteosarcoma (United States)’.¹¹ The paper presents partial findings of a 15-year study of fluoride and osteosarcoma.
- Supervisor of the 15 year Harvard study, Professor Chester Douglass, advised caution when interpreting Bassin’s findings, noting that preliminary findings from the overall analysis of the cases identified between 1993 and 2000 did not show an association between osteosarcoma and fluoride in drinking water.¹²
- Major systematic and expert reviews have not identified any increased risk of cancer associated with fluoridated drinking water at 1 mg/L (1 ppm).^{1, 13, 14} In Australia, an average of nine to ten cases of osteosarcoma are diagnosed each year in children under the age of 15. In Victoria, an average of two or three cases are diagnosed each year.¹⁵

* *More detailed information is provided in Osteosarcoma and fluoride: information compiled by the Department of Human Services and The Cancer Council Victoria, available at the Department of Human Services’ water fluoridation website (details on page 1).*

Most Australians have had water fluoridation for 30–50 years

- The first water fluoridation program in Australia was in Beaconsfield over 50 years ago.¹⁶
- More than two thirds of Australians have fluoridated water, including residents of all capital cities except Brisbane.¹⁷
- More than three quarters of Victorians have water with either naturally-occurring or added fluoride—most of these people live in Melbourne.¹⁸
- Melbourne has had fluoridated water for over 30 years.

Leading national and international health organisations recommend water fluoridation

- Water fluoridation is supported by over 150 scientific and health organisations worldwide, including the World Health Organization, the National Health and Medical Research Council, the Australian Dental Association, the Australian Medical Association and the Public Health Association of Australia.
- In 2006, the World Health Organization, the World Dental Federation and the International Association for Dental Research urged governments to develop effective legislation and programs to ensure access to fluoride for dental health in all countries.¹⁹

The use of fluorides in Australia: guidelines

- In October 2005, the Australia Research Centre for Population Oral Health (ARCPOH) hosted a workshop on the use of fluorides in Australia, attended by 35 experts, universities, jurisdictional and peak body representatives from all states and territories of Australia.
- The workshop resulted in development of *The use of fluorides in Australia: guidelines*.²⁰ The guidelines support continuation and extension of community water fluoridation in Australia, confirming it as ‘an effective, efficient, socially equitable and safe population approach to the prevention of caries in Australia.’

You can't taste fluoride in water

- Fluoride has no taste or smell, so water fluoridation will not change the taste or smell of drinking water.⁵
- Melbourne received the gold medal award in 2003 for the best-tasting drinking water in Australia. The silver medal went to Darwin and the Bronze medal to Hobart.²¹ All of these cities have water fluoridation.

Water fluoridation saves individuals and families time and money

- In the 25 year period following its introduction, water fluoridation was estimated to have resulted in benefits to the Victorian community of around \$1 billion, through avoided dental costs and saved work and leisure time.²²

References

- Centers for Disease Control and Prevention, 1999. ‘Achievements in public health, 1990–1999, fluoridation of drinking water to prevent dental caries.’ *Morbidity and Mortality Weekly Report* 48(41):933–940.
- Centers for Disease Control and Prevention, 1999. ‘Ten great public health achievements—United States, 1990–1999,’ *Morbidity and Mortality Weekly Report* 48(12):241–264.
- Australian Institute of Health and Welfare, 2007. *Australia's dental generations: the National Survey of Adult Oral Health 2004–06*. Canberra: AIHW.
- Medical Research Council Working Group, 2002. *Water fluoridation and health*. United Kingdom: Medical Research Council.
- World Health Organization, 2002. *World Water Day 2001: Oral health*. Available at http://www.who.int/water_sanitation_health/oralhealth/en/print.html (accessed 2007).
- Department of Human Services Victoria, 2000. *Evidence-based health promotion resources for planning: no. 1—oral health*. Melbourne: Department of Human Services Victoria.
- Australian Health Ministers' Conference, 2004. *Healthy mouths healthy lives: Australia's national oral health plan 2004–13*. Adelaide: Government of South Australia on behalf of the Australian Health Ministers' Conference.
- Department of Human Services Victoria, 2007. *Demographic analysis of trends in dental ambulatory care sensitive condition (ACSC) admissions in Victoria, 1997–98 to 2004–05*. Melbourne: Department of Human Services Victoria (unpublished).
- Dental Health Services Victoria, 2006. Victorian School Dental Epidemiological Data 2003–05. Melbourne: Dental Health Services Victoria.
- World Health Organization, 1994. Expert Committee on Oral Health Status and Fluoride Use. *Fluorides and oral health: report of a WHO expert committee on oral health status and fluoride use*. Geneva: World Health Organization.
- Bassin E, Wypig D, Davis R, Mittleman M, 2006. ‘Age-specific fluoride exposure in drinking water and osteosarcoma (United States)’. *Cancer Causes Control* 17:421–428.
- Douglass C, Joshipura K, 2006. ‘Caution needed in fluoride and osteosarcoma study.’ *Cancer Causes Control* 17:481–482.
- Ahokas J, Demos L, Donohue D, Killalea S, McNeil J, Rix C, 1999. *Review of water fluoridation and fluoride intake from discretionary fluoride supplements: review for National Health and Medical Research Council*. Melbourne: Royal Melbourne Institute of Technology and Monash University.
- National Health Services (NHS) Centre for Reviews and Dissemination, 2000. *A systematic review of public water fluoridation*. York: University of York.
- Department of Human Services and Cancer Council Victoria, 2006. *Osteosarcoma and fluoride*. Available at http://www.health.vic.gov.au/environment/downloads/fluor_osteos.pdf
- Committee of Inquiry into the Fluoridation of Victorian Water Supplies, 1980. *Report of the committee of inquiry into the fluoridation of Victorian water supplies 1979–80*. Melbourne.
- Armfield J, 2006. ‘The extent of water fluoridation coverage in Australia.’ *Australian and New Zealand Journal of Public Health* 30(6):581–582.
- Victorian water authorities' annual reports 2005–06. Victorian population serviced by reticulated water supplies.
- World Health Organization, World Dental Federation and International Association for Dental Research, 2006. *Call to Action to promote dental health by using fluoride*. Available at http://www.fdiworlddental.org/public_health/assets/Fluoride_Consultation/Fluoride_Declaration_Final_E.pdf
- Australian Research Centre for Population Oral Health, 2006. ‘The Use of Fluorides in Australia: guidelines.’ *The Australian Dental Journal* 51(2):195–199.
- Topsfield J, 2003. ‘The finest drop in the land.’ *The Age*. August 13 2003. Available at <http://www.theage.com.au/articles/2003/08/12/1060588392405.html?from=storyrhs>.
- Department of Human Services Victoria, 2003. *Impact analysis of water fluoridation*. Prepared by Jaguar Consulting. Melbourne: Department of Human Services Victoria (unpublished).