

“There is a wealth of evidence demonstrating the effectiveness of fluoride in preventing tooth decay ... Water fluoridation is an effective public health measure for dental health and can reduce dental decay in children by as much as 50 percent.”

(Public Health Advisory Committee, 2003)

What is fluoride?

- Fluoride is a form of the element fluorine.
- Fluoride compounds occur in rocks, soil, in the sea, and in fresh water. Fluorine is the 13th most abundant element in the Earth’s crust.

- Research carried out in the 1930s and 1940s showed that tooth decay rates were significantly lower when water contained around one part per million of fluoride
- In many parts of the world, drinking water contains levels of fluoride high enough to prevent tooth decay, but not in New Zealand.

What is water fluoridation?

- Water becomes naturally fluoridated when fresh water flows over rocks and minerals containing fluoride.
- Community water fluoridation is the process of adjusting the natural level of fluoride in the water supply to between 0.7 ppm and 1.0 ppm. This is the optimal amount that provides protection against tooth decay. The amount added is monitored to make sure that the levels stay within that range.
- The first community water fluoridation scheme started in the United States in 1945. Overseas countries with community water fluoridation include Australia, Singapore, Hong Kong, Spain, Ireland, the United Kingdom, the United States, Canada, Argentina and Brazil. Over 350 million people worldwide have community water fluoridation and a further 50 million people have drinking water with enough naturally-occurring fluoride to prevent tooth decay.

Community water fluoridation in New Zealand:

- The first water fluoridation scheme in New Zealand started in Hastings in 1954. Now, just over half of the population receives water from a community fluoridation scheme. Auckland, Hamilton, Wellington, Dunedin, Invercargill and Methven are some of the areas with fluoridation – Christchurch is the only major city without. Pressure from anti-fluoridation campaigners has led to a number of schemes being stopped, including Ashburton in 2002 and Timaru in 1985. Water fluoridation has been shown to be cost-effective for New Zealand communities with a population of over 1,000. The Ministry of Health will pay up to 100 percent of the cost of installing fluoridation equipment.

How do we know fluoridation is safe?

- Research into the effects of fluoride on humans has been carried out since the early 1900s, and continues to be carried out today.
- Recent reviews of this research, in New Zealand and overseas, continue to report that there is no scientific basis for concern about adverse health effects from long-term consumption of water containing around one part per million fluoride.
- White mottling of teeth, known as dental fluorosis, is known to occur more often in fluoridated areas. However, cosmetically unacceptable fluorosis is very uncommon in New Zealand. Noticeable fluorosis is more likely to be due to swallowing of toothpaste by children aged under six.
- The chemicals used in water fluoridation are manufactured to ensure very low levels of other impurities such as arsenic, cadmium and lead. These substances naturally occur in water at non-toxic levels and fluoridation does not have a measurable impact on their toxicity.

How effective is fluoridation?

- Studies carried out in the 1940s and 1950s showed community water fluoridation produced decreases in tooth decay of around 60 percent. The widespread availability of fluoride from other sources, such as toothpaste, means that fluoridation has less impact now, however studies continue to show benefits of water fluoridation over and above those from toothpaste alone.
- Decay levels for New Zealand 5-year-olds who do not live in an area with community water fluoridation are 54 percent higher than for those with fluoridated water.
- Fluoridation does not just benefit children – fluoride in water prevents tooth decay in adolescents, adults and the elderly.

Isn't fluoridation mass medication?

- The individual's preference to have water without added fluoride has to be weighed against the benefits to the whole community and the very low risks involved. Water fluoridation does not infringe any basic human right.
- Water fluoridation provides significant benefits to those who can least help themselves – particularly children, but also those from disadvantaged families.

Water Fluoridation

What alternatives are there to fluoridation?

- Research has shown that teeth need to be exposed to fluoride both before and after eruption for maximum cavity protection.
- Because fluoridated water is swallowed it is an important source of fluoride for teeth before they erupt. After tooth eruption, both fluoridated water and toothpaste combine to prevent decay.
- Fluoride tablets can be added to drinking water at home, but this is more expensive and time-consuming than community water fluoridation and the community misses out from the benefits of fluoride in processed foods and drinks.

More information on the www:

- Ministry of Health, NZ
www.moh.govt.nz/fluoride
- Canterbury DHB
www.smileforlife.co.nz
- American Dental Association
www.ada.org/goto/fluoride
- British Fluoridation Society
www.bfsweb.org

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COMMUNITY WATER FLUORIDATION

Information Sheet



Canterbury

District Health Board

Te Poari Hauora ō Waitaha