Frequently Asked Questions about Water Fluoridation

FACTS
ABOUT WATER FLUORIDATION

- Fluoride is a natural substance found in rocks, soil and natural water sources.[1]
- Water fluoridation prevents dental decay in individuals of all ages.[3]
- It is a safe, legal and efficient way of providing benefit to everyone in the community, especially those who are disadvantaged.[3]
- Even though fluoride toothpaste is widely available, there is still substantially more tooth decay in non-fluoridated areas compared to fluoridated areas of NSW.[2]

The US Centers for Disease Control and Prevention has recognised water fluoridation as one of the 10 great public health achievements of the 20th Century.

What is fluoride?

Fluoride is a naturally occurring element found in rocks, soil, natural water sources, plants and animals.[1]

What is water fluoridation?

All public water supplies naturally contain some fluoride, but many do not have enough fluoride to protect against tooth decay. Water fluoridation is the process of adding fluoride to the drinking water source so that the amount of fluoride in the water reaches the level recommended for preventing tooth decay.[2]

In NSW, fluoride is added to the water at water treatment plants up to 1 mg/L (milligram per litre), equivalent to 1 part per million (ppm), in line with the National Health and Medical Research Council recommendations.[3]

What is tooth decay?

Tooth decay can be prevented and even reversed when caught early,[4] and fluoride plays a crucial role in this process. Decay happens when bacteria in plaque produce acids from sugars and refined carbohydrates in our diet.[4] Initially, the minerals lost from teeth during acid attacks are naturally replenished through remineralisation. However, frequent consumption of sugary foods and drinks can overwhelm this process, leading to cavity formation.[4] Fluoride aids in recovery by strengthening teeth against acid attacks and reversing early mineral loss. Tooth decay is a widespread issue in NSW, Australia, and globally,[4,5] causing pain, infection, and tooth loss, which can diminish overall wellbeing.[6] Untreated tooth decay can disrupt eating, sleeping, and social activities, and it's a leading cause of preventable hospitalisations in Australia, with over 20,000 admissions in NSW in 2021-2022.[7] Managing tooth decay is not only concerning for individuals but also costy.[6]

How long has NSW had water fluoridation?

Yass was the first town in NSW to become fluoridated in 1956 and since that time, water fluoridation has been a way of life in Australia with approximately 93% of the population in NSW having access to fluoridated water.[3]

Is it safe?

Extensive research has established that water fluoridation is a safe and effective public health measure.

Australia's leading expert body developing health advice, the National Health and Medical Research Council (NHMRC), has conducted several reviews on the efficacy and safety of water fluoridation. Information from the comprehensive review on the health effects of water fluoridation conducted during 2014-2016 reaffirms:

- Water fluoridation is effective in reducing dental decay and
- There is no evidence of any negative health effects associated with water fluoridation at recommended levels in Australia.[3]

NSW water utilities follow the NHMRC recommendation of fluoridating water to a level of 1mg/L (1ppm). The scientific evidence indicates that there are no adverse general health effects associated with public water fluoridation at this recommended level.[3] The safety and effectiveness of water fluoridation is reviewed periodically by authoritative bodies in Australia and internationally.

Is it ethical?

Following a thorough review of the evidence, the NHMRC recommends community water fluoridation as a safe, effective and ethical way to help reduce tooth decay.[3] Water fluoridation is able to reach the most disadvantaged members of society in a way that many other oral health interventions cannot. While there are some within the community who oppose this approach on the basis that it impacts personal choice, ADA NSW supports fluoridation as an effective way to protect the most vulnerable members of the community and promote good oral health for all.

Who benefits from water fluoridation?

In Australia and NSW there is consistent evidence that water fluoridation at the current Australian level of 1 mg/L (1ppm) is associated with reduced rates and severity of tooth decay in children, adolescents and adults.[2,3]

Water fluoridation can help to reduce tooth decay in the community regardless of age, individual motivation, socio-economic status or the availability of dental care. These benefits are greatest for children and those on a lower income who tend to have higher rates of decay.[3]

The belief that only children benefit from fluoride is outdated. Fluoride helps to prevent decay when it is incorporated into the developing tooth enamel of young children, but also when it is present in the mouth, on the surfaces of the teeth. For this reason the beneficial effect of water fluoridation is available to individuals of all ages with teeth.[2]

Why fluoridate water when fluoride is widely available from other sources, like fluoride toothpaste?

In Australia, the main access to fluoride is from water fluoridation and fluoride toothpaste. Research in NSW and Australia has demonstrated a continued benefit of water fluoridation in tooth decay prevention.[8] These findings show that tooth decay was lower among children in areas with water fluoridation than non-fluoridated areas.[8] This indicates that water fluoridation provides decay-prevention benefits additional to those provided by other fluoride sources alone.[1]

Is NSW in support of water fluoridation?

Recent evidence shows consistent community support for water fluoridation.[9] Since 2007, reports on the attitudes of Australians towards water fluoridation in various regions of Australia has documented that 60-87% were in favour of fluoridating public water supplies.[9]

Is water fluoridation cost effective?

Studies overwhelmingly show that water fluoridation is cost effective. Water fluoridation results in cost savings - for every $1 spent on fluoridation, $7–$18 is saved in avoided treatment costs.[1]

Endorsement of water fluoridation

As early as the 1950s, reputable scientific, health and health-related professional organisations throughout the world recognised the importance of water fluoridation due to the oral health and economic benefits that resulted. These organisations have repeatedly endorsed fluoridation of drinking water as a desirable public health policy based on numerous scientific studies carried out throughout the world.

In Australia this includes:

- National Health and Medical Research Council (NHMRC)
- Australian Dental Association
- Australian Medical Association
- Public Health Association of Australia
- Royal Australasian College of Physicians
- The Royal Flying Doctor Service
- Australian Academy of Science
- Australian Centre for Human Health Risk Assessment
- Osteoporosis Australia
- Arthritis Australia
- Kidney Health Australia
- Australasian Academy of Paediatric Dentistry
- National Rural Health Alliance

Internationally this includes:

- World Health Organisation
- United States Public Health Service
- Centers for Disease Control and Prevention (US)
- International Association of Dental Research
- FDI World Dental Federation
- Royal College of Surgeons (UK)
- Royal College of Physicians (UK)
- American Academy of Paediatrics

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