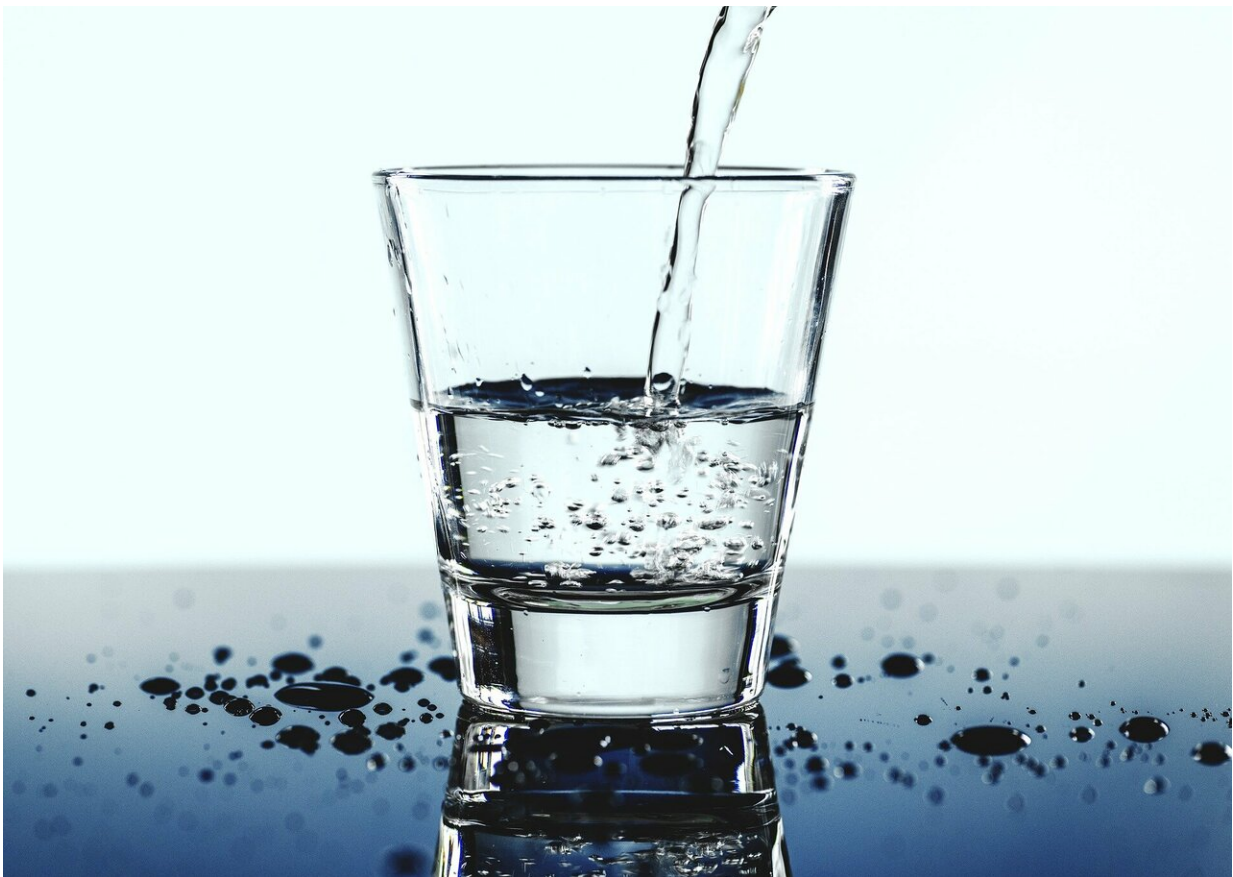


# Less than 75% of Queenslanders have access to fluoridated water. And it's putting oral health at risk

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Health-care professionals have recently called on the Queensland

government to mandate [fluoride in drinking water](#) across the state, where water fluoridation coverage lags behind other Australian states and territories.

But what are the benefits of adding fluoride to our drinking [water supplies](#)? And why do more than one-quarter of Queenslanders not have access to a fluoridated drinking water supply, while most other Australians do?

## **First, what is water fluoridation?**

Fluoride is a naturally occurring mineral best known for its role in strengthening our teeth. When our teeth come into regular contact with fluoride, this makes them more resistant [to dental caries](#), or decay.

Water [fluoridation](#) is a public health program which works to reduce dental decay at the [population level](#). It involves adding a very small amount of fluoride to public water systems which supply tap water. In Australia, the recommended levels of fluoride in public water supplies range from [0.6 to 1.1 mg per liter](#).

The idea of water fluoridation was pioneered in the United States. In 1945, Grand Rapids, Michigan became the first city in the world to [fluoridate its water supply](#). Water fluoridation was cited by the US Centers for Disease Control and Prevention as [1 of 10 great public health achievements](#) of the 20th century.

Fluoride has been added to water supplies in Australia for seven decades, starting in Beaconsfield, Tasmania, in 1953. Today, [over 90% of Australians](#) have access to fluoridated water.

The majority of [Australian states](#) and territories [have laws](#) requiring the fluoridation of public water supplies, with the exception of Queensland,

which has left the decision up to [individual local governments](#).

## The evidence

The scientific consensus is that water fluoridation is a safe and effective way to improve [oral health](#). The [Australian Dental Association](#), the [World Health Organization](#) and the [International Association for Dental Research](#) are among the bodies which endorse water fluoridation as a public health measure.

To support and maintain a program like water fluoridation on such a large scale, we need to routinely collect evidence it works.

The [National Child Oral Health Study 2012–14](#), which I was involved in, gathered data on more than 24,000 children across Australia. The evidence demonstrated [water fluoridation was effective](#) in preventing [dental caries](#). Another analysis I worked on of more than [5,000 children in Queensland](#), published in 2015, showed water fluoridation reduced [dental decay](#) by 40%.

Studies reviewed by the [National Health and Medical Research Council](#) (NHMRC) in 2017 showed water fluoridation can reduce the incidence of dental caries by 26% to 44% in children and adolescents, and by 27% in adults. Earlier evidence has similarly shown fluoridation is associated with [fewer caries in adults](#).

Water fluoridation has also been found to be [highly cost-effective](#)—investment in these programs can result in significant savings through improved population oral health.

## Can fluoridation reduce inequalities in oral health?

Social factors such as background and income are associated with oral health. For example, [people who are poorer](#), from culturally and linguistically diverse backgrounds, or from First Nations communities will often have poorer oral health compared with the overall population.

My research shows exposure to fluoridated water is associated with [reduced inequality in child oral health](#) related to household income and Indigenous status. We would expect to see this because of the passive mechanism of fluoride delivery. That is, people can benefit just by drinking fluoridated tap water, regardless of their socioeconomic circumstances.

## Potential side effects

Dental [fluorosis](#) (changes in the color of tooth enamel) is a known side effect of water fluoridation. But [dental fluorosis](#) can also result from intake of fluoride from other sources, such as fluoridated toothpaste and fluoride applications during procedures at the dentist when children are young. Dental fluorosis in Australia is mostly very mild to mild and not associated with long-term [oral health consequences](#).

The NHMRC's [2017 review](#) concluded water fluoridation poses no other risks which should be cause for concern.

However, fluoridation has historically been somewhat controversial. One of the reasons so many local councils in Queensland have opted out is vocal opposition from small groups.

An argument recently raised against fluoridation suggests early life intake of fluoride is associated with childhood development, particularly [lower IQ scores in children](#). Much of evidence for these arguments has come from poorly designed research or from areas with very high levels of natural fluoride and other heavy metals.

But child development is an important issue, so it's understandable this has caused concern.

Several large reviews have recently investigated this potential link. The reviews published in [2020](#), [2021](#) and [2023](#) all concluded [fluoride](#) exposure in the context of water fluoridation is not associated with lower cognitive abilities in children.

My colleagues and I also ran [an Australian study](#) to investigate this issue. We collected data from a nation-wide sample of more 2,600 children. We found exposure to fluoridated water in early childhood was not associated with any impact on child development.

This again shows us water fluoridation as practiced in Australia and internationally is safe for children.

## **Where to from here?**

While the most significant gaps in Australia are in Queensland, some other parts of the country are missing out on fluoridated water too, including many [rural towns in Victoria](#).

Water fluoridation has been a cornerstone of population prevention of [dental decay](#), which can lead to other oral and general health issues.

It's important [water fluoridation](#) programs are supported, maintained and expanded where possible by all levels of government and health organizations.

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