

Is Fluoridation Effective?

A Summary of Research

Fluoridated water adds *even more* to the protection our teeth get from toothpaste and other fluoride products. And it is the most cost-effective and equitable way to prevent dental disease for *everyone*.

Here is a sample of studies confirming the benefits of fluoridating public water systems.

Fluoridation reduces tooth decay in children.

- [A study](#) (2018) of over 13,000 U.S. children determined that for every 100 children with access to fluoridated water, there are **130 fewer** decayed surfaces of *primary teeth* and **30 fewer** decayed surfaces of *permanent teeth*. In other words, fluoridation reduces the risk of decay in both primary and permanent teeth.
- In 2013, the U.S. [Community Preventive Services Task Force](#) panel of experts examined 28 studies and concluded that there is “**strong evidence**” that fluoridated water reduces tooth decay among children.
- [Canadian researchers](#) (2021) compared children’s tooth decay rates in Calgary, which stopped fluoridation in 2011, and Edmonton, which continued fluoridation. Decay rates in Calgary **increased significantly**, well above the rates among Edmonton children, after fluoridation was stopped. Research like this led the Calgary city council to vote to restart fluoridation.
- [Researchers in Australia](#) (2018) found that preschool-age children who didn’t have fluoridated water had an **86% higher** rate of *potentially preventable* hospitalizations for serious dental conditions.



Fluoridation protects adults’ teeth, too.

- [Researchers in England](#) (2021) found that older adults benefited significantly from growing up with fluoridated water. The researchers wrote, “Being exposed to fluoridated water was associated with having **more natural teeth in later life**.”
- An [Australian study](#) (2017) of adults aged 20-35 found that those who had lifetime access to fluoridated water had **lower tooth decay rates** than those who didn’t.
- [A study in Brazil](#) (2016) found that the people who lived most of their lives in a non-fluoridated community had **nearly three times** as many decayed, filled or missing teeth than those who lived in fluoridated communities for at least three-quarters of their lives.
- A study in the [American Journal of Public Health](#) (2010) found that people who consumed fluoridated water as children were less likely to have lost their teeth due to decay **40 or 50 years** later, when they were middle-aged adults.



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Fluoridation helps address disparities for families with low incomes.

- In its 2021 [Oral Health in America](#) report, the National Institutes of Health (NIH) mentioned fluoridation a dozen times, citing the fact that it “**benefits economically vulnerable groups.**”
- In 2014, researchers in England studied the [hospital admission rates](#) for tooth extractions at dozens of hospitals, including many in economically disadvantaged areas — some of them were fluoridated and some were not. Nineteen of the 20 areas with the **highest hospital admission rates were in areas without fluoridation.**
- The co-authors of [a 2010 study](#) looking at the long-term impact of water fluoridation in the U.S. said their findings suggest that the benefits of fluoridation “may be larger than previously believed” and that fluoridation has “**a lasting improvement in racial/ethnic and economic disparities in oral health.**”



Fluoridation saves money by reducing the need for dental treatment.

- [An Alaska study](#) (2021) examined changes in the cost of treating tooth decay in low-income children in two cities: Anchorage and Juneau. Before Juneau stopped fluoridating in 2007, the average cost to treat tooth decay was similar to Anchorage. After, costs in Juneau **jumped by 47%**, while treatment costs in fluoridated Anchorage increased only 5%.
- [A U.S. study](#) (2016) found that each person in a fluoridated community saves an average of **\$32.19** a year (in 2013 dollars) in dental care that would otherwise be needed to treat decay. If non-fluoridated water systems (serving at least 1,000 people) were to fluoridate, the authors estimated that as much as **\$2.5 billion** might be saved every year.
- [A New York study](#) (2010) revealed that low-income children in counties with less fluoridation needed more dental treatment than those in counties where fluoridated water was common. The annual Medicaid treatment costs were almost **\$24 higher per recipient** (in 2006 dollars) in counties with less fluoridated water.
- [A Colorado study](#) (2005) showed that fluoridated water **saved nearly \$149 million** each year (in 2003 dollars) by avoiding unnecessary treatment costs.
- [A Texas study](#) (2000) found that fluoridation **saved** the state Medicaid program an average of **\$24 per child, per year** (in 1997 dollars).
- [A Louisiana study](#) (1999) compared areas that were fluoridated with those that were not. The study found that low-income children in communities without fluoridated water were **three times more likely to need expensive dental treatment** in a hospital operating room than those in communities with fluoridated water.