Is Fluoridation Effective?
A Summary of Research

Decades of research confirm the benefits of water fluoridation. Some people may question the value of fluoridating water at a time when fluoride toothpaste is widely used and children can get fluoride treatments from dentists. The following peer-reviewed studies and reports answer this question because many of them were conducted within the past 20 years—when both fluoride toothpaste and fluoride treatments were widely available. This research demonstrates the crucial, added protection against tooth decay that fluoridated water provides. The following research is only a small sample of studies confirming the value of fluoridating public water systems:

Fluoridation reduces the rate of tooth decay among children.

- The U.S. Task Force on Community Preventive Services—a blue-ribbon panel of experts—examined 21 studies and concluded in its 2000 report that fluoridated water reduces tooth decay by a median rate of 29% among children of ages 4 to 17.[1]
- A study of **Alaska** children (2011), conducted by the Centers for Disease Control and Prevention, showed that children living in non-fluoridated areas had a 32% higher rate of decayed, missing or filled teeth than kids in fluoridated communities.[2]
- A study of **Illinois** and **Nebraska** children (1998) found that the tooth decay rate among children in the fluoridated town was 45% lower than the rate among kids in the in the two non-fluoridated towns. This benefit occurred even though the vast majority of children in each of these communities were using fluoridated toothpaste.[3]
- A **Nevada** study (2010) examined teenagers' oral health and found that living in a community *without* fluoridated water was one of the top three risk factors associated with high rates of decay and other dental problems.[4]
- A study of more than 17,000 **Australian children** (2003) determined that fluoridated water's "preventive effect was maximized by continuous exposure both before and after eruption (i.e., when teeth first appear in the mouth)." This finding refutes the claim made by fluoridation opponents that topical application of fluoride is the only effective way to use fluoride.[5]

Fluoridation also protects adults' teeth.

- Nine studies were analyzed (2007) in the *Journal of Dental Research* to estimate water fluoridation's impact on adult teeth, and this report concluded that fluoridation reduced decay by 27%. The co-authors noted the study's significance for seniors because Medicare does not cover routine dental services and this lack of coverage "increases the need for effective prevention" of decay among older adults.[6]
- A study in the *American Journal of Public Health* (2010) found that the fluoridated water consumed as a young child makes the loss of teeth (due to decay) less likely 40 or 50 years later when that child is a middle-aged adult.[7]
- A study of nearly 3,800 adults in **Australia** (2013) determined that fluoridated water reduced tooth decay by a range of 21% to 30%. The study found that "greater lifetime exposure to water fluoridation" was connected to lower decay rates.[8]

Fluoridation helps to close the gap in decay rates.

- A 2002 study concluded that water fluoridation is "the most effective and practical method" for reducing the gap in decay rates between low-income and upper-income Americans. The study concluded, "There is no practical alternative to water fluoridation for reducing these disparities in the United States."[9]
- The co-authors of a study (2010) examining the long-term impact of water fluoridation in the U.S. wrote that 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."[10]

Research confirms the safety of fluoridation.

- A report by **Britain**'s leading health agency (2014) examined claims made about fluoridation's safety and concluded that the latest research "provides further reassurance that water fluoridation is a safe and effective public health measure."[11]
- The Toxicology Excellence for Risk Assessment, an independent U.S. research organization, explains that "medical scientists have agreed that small concentrations of fluoride have health benefits that vastly exceed any hypothetical health risk."[12]

Fluoridation saves money by reducing the need for fillings and other dental treatments.

- A **New York** study (2010) revealed that low-income children in less fluoridated counties needed more dental treatments than those living in counties where fluoridated water was common. The annual treatment costs per Medicaid recipient were $23.65 higher for those living in less fluoridated counties.[13]
- A **Texas** study (2000) found that fluoridation saved the state Medicaid program an average of $24 per child, per year.[14, 15]
- Fluoridated water saved **Colorado** nearly $149 million in 2003 by avoiding unnecessary treatment costs.[16]
- A 1999 study compared **Louisiana** parishes (counties) 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 than those in communities with fluoridated water to need dental treatment in a hospital operating room.[17]

Sources

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