



# Better Health With Fluoridated Water

**Fluoridated Drinking Water Makes Sense and Costs Only Cents**

## **Do Lufkin Residents Need Community Water Fluoridation? [Yes, and Here's Why](#)**

Oral health and general health are not separate. Dental care is the most prevalent unmet health need of children in the United States and Dental Caries (the #1 childhood chronic disease causing tooth decay) is 5 times more common than asthma. Untreated dental decay can lead to malnourishment, bacterial infections, pain and even death.

In 2000, the Surgeon General described tooth decay as a silent epidemic. It only makes sense that communities do everything possible to protect their citizens from tooth decay, by utilizing proven evidence-based prevention strategies.

Dental disease is often misunderstood as a problem that affects individuals due to their own irresponsibility or ignorance, when in reality it is a complex health issue tied to education, access, insurance coverage, and many more confounding factors. Self-sufficiency and personal responsibility are important concepts regarding dental disease impact on overall health, but we urge Lufkin residents to consider utilizing community water fluoridation so that every resident has access to effective, low cost cavity prevention.

Community water fluoridation and brushing with fluoride toothpaste complement each other, like seat belts and air bags in automobiles. Both work individually, but together they provide even better protection. Many years after fluoride toothpaste became widely used; an independent panel of experts examined the specific impact of water fluoridation and determined that fluoridation reduces tooth decay by about 29%.<sup>1</sup> At a time when more than 100 million Americans lack dental insurance, community water fluoridation has been demonstrated to be safe, cost-effective and beneficial through every stage of life and for all people, regardless of age, race, ethnicity or socioeconomic status.

With Lufkin's current population of 42,237, per the Texas Commission on Environmental Quality (TCEQ), the cost of fluoridation is **\$0.095** per year per person, making a lifetime of cavity prevention less than **\$8**. The Texas Department of State Health Services Fluoridation Program estimates the cost of fluoride additive at **\$4011/year** to the city, based on Lufkin's average production rate and current average fluorosilicic acid price at \$2.00/gallon.

"Fluorosilicic acid (FSA) [also known as Hydrofluorosilicic acid (HFA)] is a high purity source of fluoride. It is simpler to use than any other chemical approved for water fluoridation purposes, primarily because it is a liquid and can therefore be accurately measured and fed with a minimum of equipment. In contrast to powdered or granular chemicals, it presents no dust problems, no measuring problems and handling requires a minimum of labor."<sup>2</sup> Today, most cities that have fluoridated water systems use FSA. FSA dissolves quickly to add fluoride ions to water at the water plant and is not present in the water at the tap.

We encourage you to read the following pages where additional information on fluoridation's efficacy, safety and cost-effectiveness are provided for your review and consideration.

The Texas Oral Health Coalition supports the continuation of community water fluoridation for the City of Lufkin and for residents in the City of Diboll, Redland WSC, Woodlawn WSC, Angelina Co FWSD 1, and Pine Oaks Oasis that purchase water from the Lufkin potable water supply.

*This information has been provided by the Texas Oral Health Coalition, Inc.*

## Is Fluoridation Effective?

**Yes.** The overwhelming evidence demonstrates the ability of fluoridated water to reduce tooth decay in both children and adults.

- The Centers for Disease Control and Prevention (CDC) report that fluoridated water reduces tooth decay by about 25 percent over a person's lifetime.<sup>3</sup>
- In 2013, the U.S. Task Force on Community Preventive Services-an independent panel of experts-reviewed 161 studies before deciding to recommend fluoridation on the basis of "strong evidence of its effectiveness" for people of all ages, races and ethnicities.<sup>4</sup> The Task Force's recommendations are considered the "gold standard" for public health prevention.
- In a 2013 letter, the Deans of Harvard Medical School, Harvard School of Dental Medicine and the Harvard School of Public Health stated that they "continue to support community water fluoridation as an effective and safe public health measure" and noted that fluoridation "has made an enormous impact on improving the oral health of the American people."<sup>5</sup>
- Although brushing with fluoride toothpaste is important, numerous studies confirm that fluoridated water provides important, added protection against tooth decay. Over the past five years, studies in Nevada, Alaska and New York have demonstrated that kids in fluoridated communities have better oral health.<sup>6</sup>
- Fluoridation plays a key role in closing the gap in cavity rates between disadvantaged and affluent Americans. A 2002 research paper 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.<sup>7</sup> The Hispanic Dental Association has called fluoridation a valuable tool "in the reduction of oral health disparities."<sup>8</sup>
- Low-fluoride water is associated with more tooth decay, and studies show that dental problems undermine children's performance in school.<sup>9</sup>
- Each year, hundreds of thousands of people seek emergency room treatment for non-traumatic dental conditions that were preventable. Many of these ER patients are enrolled in Medicaid or other taxpayer-funded programs.<sup>10</sup>
- One of the easiest ways to determine whether health-related statements are valid is to look for credible organizations who agrees with them. No widely respected health organization opposes community water fluoridation.<sup>11</sup>

## Is Fluoridation Safe?

**Yes.** Over seventy years of experience and research have provided solid evidence that fluoridated water is safe. The following examples reflect this conclusion:

- In 2015, the Water Research Foundation examined the latest science and found no issues that pose a risk to public health from community water fluoridation in the U.S.<sup>12</sup>
- "Expert panels consisting of scientists from the United States and other countries, with expertise in various health and scientific disciplines, have considered the available evidence in peer-reviewed literature and have not found convincing scientific evidence linking community water fluoridation with any potential adverse health effect or systemic disorder such as an increased risk for cancer, Down syndrome, heart disease, osteoporosis and bone fracture, immune disorders, low intelligence, renal disorders, Alzheimer disease, or allergic reactions."<sup>13, 1, 14</sup>
- The National Academies Advisers to the Nation on Science, Engineering and Medicine routinely conduct a scientific review of EPA's Standards of Fluoride in drinking water and to date have found no adverse health effects in the following studies regarding Musculoskeletal Effects, Reproductive and Developmental Effects, Neurotoxicity and Neurobehavioral, Effects on the Endocrine(Thyroid) System, Effects on the Gastrointestinal, Renal, Hepatic, and Immune Systems, Genotoxicity and Carcinogenicity.<sup>15</sup> Dental Fluorosis was noted at 4 mg/L. Three times more than CWF. Even at a Fluoride level of 2.0 mg/L, severe fluorosis is virtually zero.
- Committees of the National Research Council have produced five reports about fluoride or fluoridation-three since 1993-and none of these documents expresses concern about the safety of fluoride in the concentration used for community water fluoridations.<sup>16</sup>
- 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."<sup>17</sup>
- A 2014 report by Public Health England examined the common safety concerns that critics raise-such as cancer and kidney problems-and reached this conclusion: "The report provides further reassurance that water fluoridation is a safe and effective public health measure."<sup>18</sup>

- In 2014, a panel comprised of the Royal Society of New Zealand and the Prime Minister’s Chief Science Advisor issued a report concluding “the safety margins are such that no subset of the population is at risk because of fluoridation.” The panel issued a unanimous statement that “the scientific issues raised by those opposed to fluoridation are not supported by the evidence.”<sup>19</sup>
- Opponents often cite IQ studies from China or other countries that are flawed and do not reflect how fluoridation is practiced in the U.S. The average fluoride level tested in these studies failed to account for lead, arsenic or other factors that could affect IQs. (This is noteworthy because many of China’s water supplies are severely polluted.<sup>20</sup>) The Harvard researchers who reviewed these studies publicly distance themselves from the way that anti-fluoride groups have tried to spin the results.<sup>21</sup> Finally, a peer-reviewed 2014 study published by the American Journal of Public Health has found no difference in IQ scores, in either children or adults, between those drinking fluoridated water and non-fluoridated water.<sup>22</sup>
- The fluoridation process is held to high standards of safety. The quality and safety of fluoride additives are ensured by NSF/ANSI Standard 60—a set of guidelines developed at the request of the Environmental Protection Agency. Hundreds of samples have been taken and tested under Standard 60 to confirm the quality and purity of fluoride additives.<sup>23</sup>
- All products undergo stringent testing to assure that they meet the requirements of the Environmental Protection Agency (EPA) before adding to our water supply and the National Sanitation Foundation (NSF) International and American Water Works Association (AWWA) carry out these tests. Fluoride additives must meet the rigid requirements of Standard 60 of the NSF/ANSI rule and all products conform to these standards and meet or exceed them.
- NSF/ANSI Standard 60 certification operates worldwide and uses on-site inspections and even surprise “spot checks” and independent analyses to confirm these additives meet quality and safety standards.<sup>24</sup>
- Texas requires that all of the water utilities purchase their fluoride additive that meets NSF/ANSI standards, so the public can be assured water suppliers follow industry-approved processes and use only products that meet national and international standards for purity.<sup>25</sup>
- The addition of fluorosilicic acid to a water supply can be readily controlled to give a total fluoride (F) level of 0.70 mg/L. This is the recommended level shown to be effective for reducing tooth decay.<sup>26</sup>
- Texas water systems also report their data to the Texas Commission on Environmental Quality (TCEQ) and the public has access to this information [http://www.tceq.state.tx.us/agency/water\\_main.html](http://www.tceq.state.tx.us/agency/water_main.html) where they can find the Result List by Analyte for all of the substances (including fluoride) found in each water system. All chemical feed systems designs and processes must be approved by TCEQ with safety and security measures provided.

## Is Fluoridation Worth the Investment?

**Yes.** Research shows that Community Water Fluoridation offers the greatest Return on Investment (ROI) for each \$1 spent on Health Programs including Childhood Vaccinations, Rural Health CHW Navigators, Tobacco Prevention, Asthma Disease Management and Employee Wellness Programs.<sup>27</sup> The following examples demonstrate why fluoridation saves money for consumers and taxpayers:

- “The Centers for Disease Control and Prevention estimates that every \$1 invested in water fluoridation saves \$38 in dental treatment costs. The reduction in just the costs of filling and extracting diseased teeth (not counting lost work time and dental pain) far exceed the cost of fluoridation. The CDC reports that if all water were fluoridated, it would save over \$1 billion annually.”<sup>28, 29</sup>
- Community water fluoridation is the most cost-effective health measure for preventing decay.<sup>30</sup>
- By reducing tooth decay, fluoridation reduces the dental treatment costs that families would otherwise pay. Many families lack dental insurance, and even those who are covered often pay significant out-of-pocket costs for fillings, crowns or other dental treatments.<sup>31</sup>
- The average cost of a filling is **\$185**, according to the American Dental Association’s “2013 Survey of Dental Fees” regional data, that includes Texas. This average is based on a two surface anterior resin-based composite and a two surface posterior resin-based composite.<sup>32</sup> The lifetime cost of treating one decayed molar is **\$6,105**.<sup>33</sup>
- Taxpayers also benefit from fluoridation. In fact, the Texas 75<sup>th</sup> Legislature instructed the Texas Department of Health Services to conduct a study on the cost of publicly financed dental care in relation to community water fluoridation. The results of this study show that *Texas saves \$19-\$24 per child, per year* in Medicaid costs for children because of the cavities that were prevented by drinking fluoridated water.<sup>34</sup>

- Texas residents benefit in other ways. For example, the performance of our schools has a long-term financial impact on our state’s economic prosperity. School performance is indirectly affected by fluoridation because children with poor dental health are nearly three times more likely to miss school and are four times more likely to earn lower grades.<sup>35</sup>
- Research shows adults with access to fluoridated water during childhood earn about 2% more each year, reflecting a positive impact on earnings.<sup>36</sup>

When we fail to use proven preventive strategies like community water fluoridation, nearly everyone - not just those who say they don’t want fluoridated water, feels the consequences. In one way or another, the cost and impact of tooth decay affect virtually everyone in the community. Community water fluoridation remains the most effective and cost efficient method for reducing dental disease in all populations regardless of age, gender, race, ethnicity, or family income levels. Texas should be proud that 79% of people on community water supplies have optimally fluoridated water.<sup>37</sup> This is something Texas does to promote health equity and is a smart health strategy worth expanding.

*This information has been provided by the Texas Oral Health Coalition, Inc.*

## Sources

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