

# Myths and Facts About Water Fluoridation

(Updated March 17, 2011)

<b><i>Myths</i></b>	<b><i>Facts</i></b>
<p><b>1. Adding fluoride to water is like forcing people to take medication.</b></p>	<p><b>Fluoride occurs naturally in water. The term “fluoridated water” simply means that the fluoride level in a water system has been adjusted to a certain level—or optimal level—to prevent tooth decay. Most water systems in the U.S. are fluoride-deficient without this adjustment.</b></p> <ul style="list-style-type: none"><li>• Fluoride is not a medication. It is a mineral essential for human life based on its role in metabolism and other cell functions. Fluoride in drinking water has two beneficial effects: preventing tooth decay and contributing to healthy bones.<sup>1</sup></li><li>• U.S. court decisions have rejected the argument that fluoride is a “medication” that should not be allowed in water. The American Journal of Public Health summarized one of these rulings, noting that “fluoride is not a medication, but rather a nutrient found naturally in some areas but deficient in others.”<sup>2</sup></li><li>• Adding fluoride to water is like any other treatment to improve the quality of drinking water. It is based on public officials making a decision that is informed by sound research—not driven by fear.</li><li>• Those who prefer not to drink from a public water system can do so. Maintaining an optimal amount of fluoride in water is based on the principle that decisions about public health should be based on what is healthy for the entire community, not based on the fears of a few individuals who have extreme opinions about their drinking water.</li></ul>

**2. There is little difference in the dental health of people in communities with fluoridated water compared to those in communities without it.**

**There is a *clear* difference between the health of communities that fluoridate their drinking water and those that do not. Fluoridation prevents tooth decay and improves dental health.**

- Studies consistently show that water fluoridation reduces tooth decay by 18 to 40 percent.<sup>3</sup>
- A study of two similar, adjacent communities in Arkansas showed that residents without access to fluoridated water had twice as many cavities as those with access to fluoridated water.<sup>4</sup>
- Children on Medicaid in less fluoridated counties in New York State require 33 percent more treatments for tooth decay than those in counties where most water systems are optimally fluoridated.<sup>5</sup>
- Texas saves \$24 per child, per year in Medicaid expenditures for children because of the cavities averted by drinking fluoridated water.<sup>6</sup>
- The benefits of fluoridation are long-lasting. A recent study of U.S. adults found that those born in counties with fluoridation lose fewer teeth than those born in fluoride-deficient counties.<sup>7</sup>
- International studies across the United States, Australia, Britain, Canada, Ireland, and New Zealand showed 15 to 40 percent less tooth decay in optimally fluoridated communities compared to fluoride-deficient communities.<sup>8</sup>
- The Centers for Disease Control and Prevention named fluoridated water as one of “10 great public health achievements” of the 20th century.”<sup>9</sup>

**3. Fluoridation causes cancer and other serious health problems.**

**Fluoridated water is safe. Claims that it causes cancer or other life-threatening illnesses are unproven.**

- The National Cancer Institute has stated: “Many studies, in both humans and animals, have shown no association between fluoridated water and risk for cancer.”<sup>10</sup>
- In 2006, a panel of the National Research Council—an arm of the National Academies of Science—found no convincing evidence of a causal link between fluoridation and cancer.<sup>11</sup>
- A leading spokesperson for the Centers for Disease Control and Prevention notes that “60 years of research has shown that there’s no persuasive evidence that points to any harm from community water fluoridation.”<sup>12</sup>
- Fluoridation opponents cite an “exploratory” Harvard study in the mid-1990s associating fluoride with osteosarcoma, a rare bone cancer. The author herself described the study as having “limitations.” In addition, the principal investigator of the study has stated that further analysis does *not* support this association.<sup>13</sup>
- The overwhelming evidence shows the benefits of water fluoridation far outweigh any perceived risk. A 2006 study by the Australian National Health and Medical Research Council examined 408 studies on fluoridation, and concluded that water fluoridation offers clear benefits without solid evidence of negative health effects.<sup>14</sup>
- At least 100 million Americans have been drinking fluoridated water for many decades. 72 percent of the U.S. population served by community systems has fluoridated water.<sup>15</sup>
- Without fluoridated water, children face a much higher rate of tooth decay and the potential for related dental diseases can have lasting effects on their health, schooling and future. The risk we must avoid is that of allowing our children to grow up without water fluoridation.

**4. There are better ways of delivering fluoride than adding it to water.**

**Water fluoridation provides dental benefits to people of *all* age and income groups without requiring them to spend extra money or change their daily routine.**

- The CDC notes that fluoride is most effective when provided in “the right amount in the right place at the right time,”<sup>16</sup> and there’s no better way to ensure that than fluoridated water.
- A 2003 study of fluoridation in Colorado concluded that “even in the current situation of widespread use of fluoride toothpaste,” water fluoridation “remains effective and cost saving” at preventing cavities.<sup>17</sup>
- Studies conducted in communities that fluoridated water in the years after fluoride toothpastes were widely used have shown a lower rate of tooth decay than communities without fluoridated water.<sup>18</sup>
- For low-income individuals who are at higher risk of dental problems, fluoride rinses are a costly expense, which is why these products are not the “easy” answer that opponents of fluoridation claim they are. Water fluoridation is the least expensive and most effective solution.

**5. Fluoridated water isn't safe for babies.**

**Water fluoridated at the optimal level is safe for babies and young children.**

- The American Academy of Pediatrics and the American Medical Association support water fluoridation.<sup>19</sup>
- Fluoridated water can be used to reconstitute infant formula. The issue for parents of infants to consider is enamel fluorosis—a minor, cosmetic condition that produces faint white markings on permanent teeth as they are forming (from birth through age 8). The risk of dental fluorosis is low. Even when it occurs, fluorosis is barely noticeable—if noticed at all.<sup>20</sup>
- Mothers who rely on reconstituted infant formula should consult with their pediatricians about options other than using fluoridated water. Some pediatricians may recommend alternatives to fluoridated water, while others may tell parents to continue using fluoridated water.
- The CDC concludes the vast majority of fluorosis cases are mild, and fluorosis can also occur in communities without fluoridated water.<sup>21</sup>
- Fluoridated water has stood the test of time, serving U.S. communities since 1945.<sup>22</sup> Today, over 195 million people (72 percent of Americans on public water supplies) drink fluoridated water.<sup>23</sup> Tens of millions, many of whom are now parents themselves, were given formula reconstituted with fluoridated water when they were infants.

**6. Tooth decay is no longer a problem in the United States.**

**Tooth decay is the most common childhood disease, five times more prevalent than asthma.**

- Tooth decay affects nearly 60 percent of children.<sup>24</sup>
- Tooth decay causes problems that often last long into adulthood— affecting kids’ schooling, access to healthcare, the ability to get jobs and even national security.
  - California children missed 874,000 school days in 2007 due to dental problems.<sup>25</sup>
  - A study of seven Minneapolis-St. Paul hospitals showed that patients made over 10,000 trips to the emergency room because of dental health issues, costing more than \$4.7 million.<sup>26</sup>
  - An estimated 164 million hours of work are missed during a year because of dental problems or treatments.<sup>27</sup> In addition, poor dental health worsens a person’s future job prospects. A 2008 study confirmed a widely held but little-discussed prejudice: People who are missing front teeth are viewed as less intelligent, less desirable and less trustworthy than people without a gap in their smile.<sup>28</sup>
  - In a 2008 study of the armed forces, 52 percent of new recruits were categorized as Class 3 in “dental readiness”—meaning they had oral health problems that needed urgent attention and would delay overseas deployment.<sup>29</sup>
- Between 1994 and 2004, tooth decay increased by 15 percent among kids ages two to five.<sup>30</sup>

<p><b>7. Fluoridating water is an expensive burden to communities or states in this time of recession.</b></p>	<p><b>Water fluoridation saves money.</b></p> <ul style="list-style-type: none"> <li>• For most cities, every \$1 spent on water fluoridation returns \$38 in savings.<sup>31</sup></li> <li>• The average cost for one dental filling is \$120, compared to less than \$1 per person, per year to fluoridate water for a community of 20,000 residents or more.<sup>32</sup></li> <li>• A study by the Texas Department of Health found that fluoridated water saved \$24 per child, per year in state Medicaid costs.<sup>33</sup></li> <li>• Researchers estimated that fluoridation saved Colorado nearly \$149 million in 2003 by preventing unnecessary treatment costs. These savings averaged about \$61 per person.<sup>34</sup></li> <li>• A 1999 study compared Louisiana communities that were fluoridated with those that were not. The study found that low-income children in non-fluoridated communities were three times more likely than those in communities with fluoridated water to receive dental treatment in a hospital operating room.<sup>35</sup></li> <li>• Like other public works, which continue to be funded even during economic downturns, fluoridation is an investment that provides huge economic returns to communities, once implemented, year after year.</li> </ul>
<p><b>8. Most countries in Western Europe don't fluoridate their water so why should we?</b></p>	<p><b>Millions of people in Great Britain, Spain and Ireland drink fluoridated water. And millions of other Europeans receive fluoride through salt or milk.</b></p> <ul style="list-style-type: none"> <li>• Whether the vehicle is water, salt or something else, millions of Europeans are receiving fluoride's protection to prevent tooth decay.<sup>36</sup></li> <li>• In some Western European countries, the large number of separate water sources used for drinking water makes water fluoridation very difficult logistically.<sup>37</sup> Several of these countries use salt fluoridation as an alternative, demonstrating that they recognize the public health value of fluoride.<sup>38</sup></li> <li>• After the fall of communism in Czechoslovakia, school-based dental programs were discontinued and water fluoridation ended in most of the country. According to a study, "Subsequent surveys indicated an increasing [decay] prevalence after these changes."<sup>39</sup></li> <li>• In 2009, the European Archives of Paediatric Dentistry published an analysis of 59 studies and concluded that "water fluoridation is effective at reducing caries in children and adults. With the exception of dental fluorosis, no association between adverse effects and water fluoridation has been established."<sup>40</sup></li> <li>• An estimated 405 million people in 60 countries worldwide enjoy the benefits of fluoridated water.<sup>41</sup></li> </ul>

## Sources:

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