

Is Fluoride Safe?

YES! Community water fluoridation (CWF) is safe, effective and necessary to protect teeth at all ages. That's the conclusion of [every major health organization](#) in the United States. Evidence from years of experience demonstrates that communities with fluoridated water have less tooth decay. Here are interesting facts that will disprove a few myths you may have heard.

1. Fluoride is good for teeth, and to have good health, you need healthy teeth.

Fluoride is a mineral known to be safe and effective at preventing tooth decay. There is no scientifically valid evidence to show that fluoride causes cancer, kidney disease, or other disorders.

The Facts:

- A U.S. Public Health Service¹ review of data and research concluded that "Expert panels which reviewed this international body of literature agree that there is **no credible evidence** of an association between either natural fluoride or adjusted [fluoride in drinking water and human cancer](#)."
- Drinking fluoridated water has not been shown to cause or worsen conditions of the thyroid, kidney, heart, or other glands/organs. The only proven risk associated with excess fluoride is a cosmetic condition known as dental fluorosis.
- For more information, see [Common Questions about Fluoride](#).

2. The fluoride in water does not typically cause fluorosis.

Dental fluorosis is a minor change in the appearance of the teeth, usually resulting in faint white marks on the enamel.^{2,3} People anywhere can have fluorosis, even in communities that do not add fluoride to the water.

The Facts:

- Fluorosis occurs when young children get too much fluoride, *over an extended period of time*, while their teeth are still growing under the gums. Toothpaste contains a higher concentration of fluoride than water.⁴ This is why parents of children under the age of 6 are advised to supervise tooth-brushing and use the right amount of toothpaste.⁵
- In 2015, the Department of Health and Human Services recommended a reduced amount of fluoride in water.⁶ This is good news. As we get fluoride from a variety of sources, we can add less to our water.
- For more information, see [Fluorosis Facts](#).

3. Fluoridated water is safe for babies and children.

Fluoride is an important mineral for everyone, especially children. We all have bacteria in our mouths. Bacteria produce acid that harms teeth. Fluoride protects teeth and helps reverse early signs of decay.

The Facts:

- The American Academy of Pediatrics (AAP), along with the American Dental Association (ADA) and the Centers for Disease Control and Prevention (CDC), agree that water fluoridation is a safe and effective way to prevent tooth decay in children.^{7,8}
- According to the ADA, it is safe to use fluoridated water to mix infant formula. The risk if mixing infant formula with fluoridated water is mild fluorosis (see above). If you have concerns about this, talk with your pediatrician or dentist.⁹
- For more information, see [Fluoride and Children](#).

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4. Fluoride toothpaste has an excellent safety record.

Millions of Americans use fluoride toothpaste to prevent cavities and protect their teeth without any negative effect. Warning labels on toothpaste simply reflect the fact that toothpaste has a high concentration of fluoride.

The Facts:

- Fluoride toothpaste is recommended for babies and toddlers by the [American Academy of Pediatrics](#), the [American Association of Pediatric Dentistry](#), and the [American Dental Association](#).
- Of course, parents are advised to supervise their children when brushing teeth to prevent unnecessary swallowing. For young children, whose teeth are still forming, swallowing toothpaste can lead to fluorosis, a minor change in appearance of the teeth.
- For more information, see [Toothbrushing Tips for Young Children](#).

5. The fluoride added to drinking water is regulated for safety.

Fluoride is a mineral that is mined from phosphate rock. In nature, fluoride dissolves into water and is found in water throughout the world. Much like iron and calcium, fluoride is also present in a wide variety of consumer products.

The Facts:

- Fluoride is mined from phosphate rock, a process that also results in ingredients for other consumer products. For example, phosphoric acid is added to beverages like Coke and Pepsi. Although fluoride is extracted from the same phosphate rock that is used to create fertilizer, it is not a by-product of the fertilizer industry.¹⁰
- The quality and safety of fluoride additives are ensured by Standard 60, a program commissioned by the Environmental Protection Agency (EPA). Standard 60 is a set of standards created and monitored by an independent committee of health experts. This committee provides regular reports to the EPA.

6. Well water in some locations can have too much natural fluoride.

In some U.S. communities, the natural fluoride levels in well water or aquifers are unusually high, sometimes higher than the recommended amount in public water systems, according to the National Research Council.

The Facts:

- In 2006, a National Research Council (NRC) report raised concerns about high levels of fluoride but stated that its report was not an evaluation of community water fluoridation, which was "outside the scope of this report and is not evaluated."¹¹
- The Centers for Disease Control and Prevention (CDC) wrote that the NRC's findings "are consistent with CDC's assessment that water is safe and healthy at the levels" used for water fluoridation.¹²

7. American's IQ scores have risen alongside water fluoridation.

Between the 1940s and the 1990s, the average IQ scores of Americans improved 15 points.¹³ This took place at the same time that fluoridation expanded to serve millions more Americans. Claims made about fluoride and the developing brain are not based on sound science.

The Facts:

- Claims that fluoride affects the brain appeared following an article, known as the "Harvard study"¹⁴, which reviewed a variety of older studies that included IQ scores of children in China.

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Mongolia and Iran. The study did not test cause and effect or conduct research designed to explain a possible relationship between fluoride and IQ.

- In many of the areas observed, the water had very high levels of natural fluoride — as much as 10 times higher than levels used to fluoridate public water systems in the U.S.
- For more information, see [Does Fluoride Lower IQ?](#)

8. Comparing fluoridated and non-fluoridated communities shows that fluoride is really effective. All over the world, comparisons show that people living in communities with fluoridated water have better oral health than those who don't.

The Facts:

- There is lots of proof that fluoridated water protects teeth. Since 2010, studies from Nevada¹⁵, New York¹⁶ and Alaska¹⁷ have added to the overwhelming evidence that fluoridated water protects teeth from decay. Earlier studies from New Zealand¹⁸ and Great Britain¹⁹ also showed better oral health where there was fluoridation.
- Products such as fluoride toothpaste, tablets and varnish are proven effective through tests called randomized clinical trials.
- "Randomized" studies of fluoridation can't be performed. That would require dividing a community into two groups: where one group of homes receive fluoridated water and the other does not. The danger of removing fluoride is that those households will, over time, have more tooth decay. Instead of setting up such a study, we rely on the *entire body of evidence* to demonstrate the effectiveness of fluoride.

9. Fluoridated water is safe for plants, animals and fish.

Fluoride occurs naturally in streams, rivers, and lakes all over the world. The average fluoride level in ocean water is much higher than public water systems.

The Facts:

- The amount of fluoride added to public water systems does not harm plants or animals.²⁰ And research shows that even high levels of fluoride do not have a toxic effect on plants in places like ponds.²¹
- The average fluoride level in ocean water (1.4 milligrams per liter) is much higher than what is used to fluoridate public water systems.^{22, 23} No reputable source has identified any negative effects on salmon or other fish that live in the ocean.

10. Fluoride, like iron and calcium, is a mineral, not a medicine.

Fluoride is added to water for the same reasons that vitamin D is added to milk: it's a brilliantly simple way to provide many, many people with an important health benefit.

The Facts:

- Fluoride is a nutrient, not a medicine.^{24, 25} Medicine is used to cure or control a medical problem that has already been diagnosed, such as hay fever or high blood pressure. Fluoridated water is not a cure; it's a proven way to prevent a medical problem: tooth decay.
- Fortifying drinking water with fluoride is a lot like fortifying milk with Vitamin D. These additives prevent poor health. America has a history of fortifying foods or beverages to strengthen health—for example, adding iodine to table salt, fortifying milk with Vitamin D, and adding folic acid to breads and cereals.

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No one can feel healthy when their teeth are infected and causing pain. The bad news is that tooth decay is still really common. The good news is that it's really easy to prevent. Fluoride is both safe and effective. It's an excellent way to help prevent decay before it begins!

Sources

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