

FLUORIDE SAFETY:

A Guide for Health Professionals

Fluoride is one of the most effective tools we have to prevent dental caries and strengthen children's teeth. It has been added to public water supplies and dental products for decades and is credited with a national reduction in dental disease across the lifespan. For a variety of reasons, however, parents and caregivers may have questions about the use and safety of fluoride for themselves and their children.

What is fluoride, and what are its uses?

Fluoride is a mineral that is mined from phosphate rock. In its naturally occurring form, fluoride dissolves into water and is found in environmental sources throughout the world.

Much like iron and calcium, fluoride is also present in a wide variety of consumer products. Some of these include toothpaste, cosmetics, and ceramics. It is one of many minerals our bodies need for optimal health.

How We Consume Fluoride

Most fluoride is consumed through fluoridated tap water and foods and beverages prepared with fluoridated water. We also get fluoride from dental products such as toothpaste and mouth rinses. Because of its preventive qualities, children may receive topical fluoride treatments from health care professionals and are sometimes prescribed supplements.

Fluoride Additives

There are three fluoride additives used in the United States: sodium fluoride, sodium fluorosilicate, and fluorosilicic acid. All water treatment additives, including fluoride, must comply with national safety standards established by the following independent certification organizations: [National Sanitation Foundation International](#), the [American National Standards Institute](#), and the [American Water Works Association](#).

The fluoride that is added to public water supplies is absorbed and metabolized by the human body exactly as naturally occurring fluoride is.

My Water's Fluoride

The Centers for Disease Control and Prevention (CDC) maintains [My Water's Fluoride](#), a website where people can find links to information on fluoride from their local water systems.

Community Water Fluoridation

Community water fluoridation (CWF) has been a public health practice in the United States for almost 70 years. To protect our teeth, local water operators adjust the fluoride in municipal water supplies to attain the level recommended by the U.S. Public Health Service. No adverse health effects have been associated with consuming water fluoridated at the recommended levels.

Regulation and Safety

The U.S. Environmental Protection Agency (EPA), under the [Safe Drinking Water Act](#), regulates drinking water and sets standards to limit the levels of contaminants in drinking water.

The U.S. Department of Health and Human Services (HHS) reviews scientific evidence and recommends an appropriate fluoride level, taking into account all our sources of fluoride.

HHS Recommends Single CWF Level For All States

In 2011, HHS recommended a change in the level of fluoride added to public water system from a range of 0.7 - 1.2 milligrams per liter to 0.7. This recommendation results from research that shows there is no difference in water consumption in warmer climates and sets one level for the nation.

Concerns Specific to Fluoride Additives

Fluoride additives are derived from a manufacturing process that also supports other consumer products. For example, fluoride is mined from the same phosphate rock that can be used to manufacture phosphate fertilizer and is sometimes misnamed a 'byproduct' of the fertilizer industry. This can contribute to confusion and misunderstanding about its safety.

So, how much do patients need?

Recommended daily allowances or, as they are now known, [Dietary Reference Intakes](#) (DRIs) for fluoride have been established but they are not commonly used. DRIs detail nutrient requirements to optimize health and set maximum level guidelines to reduce the risk of adverse health effects from excessive consumption. DRIs for fluoride, like those for minerals such as potassium and sodium, vary by age and body weight. Children and adults who consume a typical diet, drink fluoridated water, and use optimally fluoridated dental products with proper supervision will not exceed the maximum levels for fluoride.

Some water supplies, particularly well water, can have higher than recommended, naturally occurring levels of fluoride. Testing the water may be recommended in order to prevent over consumption.

Infant Formula

According to the evidence-based clinical [recommendations](#) of the American Dental Association, it is safe to use fluoridated water to mix infant formula.

Bottled Water

Most bottled water in the U.S. does not contain an optimal level of fluoride. Families who drink primarily bottled water could be missing the preventive effects of optimally fluoridated tap water. Because public drinking water in the U.S. is among the safest in the world, there is no added health benefit to purchasing and drinking bottled water. Both [The Centers for Disease Control and Prevention](#) (CDC) and the [U.S. Environmental Protection Agency](#) (EPA) maintain consumer resources on their websites.

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

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The Science Behind Fluoride Safety

Reviews of the scientific literature overwhelmingly find community water fluoridation to be both safe and effective. Some of the world's leading health organizations recognize the public health benefits of CWF, including the [Institute of Medicine](#), the [National Research Council](#), and the [World Health Organization](#).

The [American Academy of Pediatrics](#), the [American Dental Association](#), and the [American Academy of Pediatric Dentistry](#) are among many national organizations that support the use of fluoride to protect children's teeth.

Health Concerns

Despite intense study and nearly 70 years of practical experience, families may be exposed to information that raises concerns about possible associations between fluoride and a variety of illnesses. Although none has been proven, here are some concerns you may hear. (Please also see the *Say This, Not That* tool.)

Thyroid, Kidney & Other Disease

The consumption of fluoridated water has not been shown to cause or worsen conditions of the thyroid, kidney, heart, or other glands/organs.

Cancer

The [American Cancer Society](#) and the [National Cancer Institute](#) are just two organizations to confirm that there is no association between water fluoridation and risk of cancer. Fluoride is not and has never been designated as a carcinogen.

IQ

A [2012 review](#) of a diverse selection of studies published over a 22 year period noted "the possibility of an adverse effect of high fluoride exposure on children's neurodevelopment" in China, Mongolia, and Iran. This review is not applicable to fluoride levels in U.S. community water systems.

For additional resources and information, please visit www.ILikeMyTeeth.org.

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