Community Water Fluoridation: Frequently Asked Questions

What is fluoride?

Fluoride is a naturally occurring mineral found in lakes, rivers, and groundwater. It is most commonly known for its dental benefits as it helps strengthen tooth enamel and prevent tooth decay. Fluoride is added to toothpaste and mouth rinses and is often added to public water supplies to promote oral health.

What is community water fluoridation?

All drinking water naturally contains some fluoride. Community water fluoridation is the process of adjusting the naturally occurring fluoride level to the optimum level for preventing tooth decay. Over 75 years of experience and thousands of research studies have shown that fluoridating public drinking water is safe and effective as well as the best way to enhance oral health in a community. The Centers for Disease Control and Prevention recognized drinking water fluoridation as one of the most important public health achievements of the 20th century.

Numerous highly respected organizations support community drinking water fluoridation, including the Centers for Disease Control and Prevention, American Dental Association, American Medical Association, American Academy of Pediatrics, National Institutes of Health, California Department of Public Health, and the World Health Organization.

Why does Metropolitan fluoridate its water supplies?

Fluoridation has received widespread support from public health organizations and regulators since the mid-20th century. In 1995, California Gov. Pete Wilson signed a state law that requires any public water supplier with 10,000 or more customer service connections to fluoridate, if funding is available.

As a wholesale water provider that delivers imported supplies to 26 member agencies and not directly to retail customers, Metropolitan was exempt from this mandate. However, in 2001, dental health directors and local public health officials formally requested Metropolitan to begin fluoridation at its five water treatment plants, emphasizing the significant public health benefits and cost savings resulting from centralized fluoridation for Southern California.

In February 2003, Metropolitan's Board of Directors adopted a policy to incorporate fluoridation into Metropolitan's water treatment processes. Later that year, the district received a $5.5 million grant from the California Dental Association Foundation to design and build fluoridation facilities at its water treatment plants. In 2007, Metropolitan began fluoridating its water supplies in accordance with its state-issued permit.

How does fluoride protect teeth against tooth decay?

Tooth enamel and the underlying material are primarily composed of two essential minerals – calcium and phosphate. Tooth decay happens when acids produced by bacteria in the mouth dissolve or "demineralize" the teeth. Fluoride helps protect against tooth decay in several ways: it slows down or halts the demineralization process, encourages remineralization, and reduces the amount of acid produced by bacteria, all of which promote healthy teeth.

What does the research say about community water fluoridation?

Research shows that community water fluoridation significantly reduces rates of tooth decay. In communities with fluoridated water, studies show a decline in tooth decay of 30 to 60% among infants; 20 to 40% among children aged 8 to 12; and 15 to 35% among teenagers, adults, and seniors.

Some of the earliest evidence of fluoride's benefits came from comparisons between communities with naturally high fluoride levels in their drinking water and those with low levels. This initial research laid the groundwork for the original recommendations to fluoridate water supplies.

Recognizing the continued public health benefit of community water fluoridation, an objective of the U.S. Department of Health and Human Services' Healthy People 2030 Initiative, which was launched in 2020, is to increase the proportion of people whose water systems have the recommended amount of fluoride.

How much fluoride is in Metropolitan's water supplies?

Water from Metropolitan's imported sources naturally contains fluoride levels ranging from 0.1 to 0.4 milligrams per liter (mg/L) or parts per million (ppm). Metropolitan adjusts this naturally occurring fluoride to the recommended level of 0.7 mg/L (or ppm), which is considered optimal by the U.S. Department of Health and Human Services and the CDC.

Since Metropolitan only supplies about half of the water used in Southern California, it's important to keep in mind that the water delivered to your home may not necessarily come from Metropolitan. Many utilities have multiple sources of water supply. If you're interested in the fluoride levels in your tap water, you're encouraged to contact your water provider for more information or check their annual consumer confidence report required of all community water systems.

What does Metropolitan use to fluoridate its supplies?

Metropolitan uses fluorosilicic acid to fluoridate drinking water supplies because it is the most cost-effective and safe option among the three commonly used methods. All drinking water additives, including fluorosilicic acid, must be approved by state drinking water authorities. This additive has been tested and certified to meet safety standards established by the American

National Standards Institute and the National Sanitation Foundation. This certification is a requirement for Metropolitan's permit to add fluoride to its water supply.

How much does it cost Metropolitan to fluoridate at its treatment plants?

Metropolitan estimates that the cost of fluoridating its water supplies is less than $2 per acre-foot of treated water, primarily influenced by the price of the fluorosilicic acid. (An acre-foot is about 326,000 gallons, enough water to meet the needs of three Southern California households for a year.)

According to the American Dental Association, the lifetime cost per person to fluoridate a water system is less than that of a single dental filling. Additionally, the CDC reports that providing optimally fluoridated water to communities for one year saves $6.5 billion in dental treatment costs, and for every dollar spent on fluoridation, $20 is saved in avoided dental expenses.

Fluoridated water provides equal health benefits to all members of the community, especially those without access to regular dental care, making it a valuable resource for everyone, according to the California Department of Public Health.

Once Metropolitan adds fluoride at its treatment plants, do its member agencies and retailers still need to treat their supplies?

Any agency that relies entirely on Metropolitan for its treated drinking water will receive water with fluoride at the recommended optimum concentration. However, if a water system blends Metropolitan's fluoridated water with other non-fluoridated sources, it will need to provide additional fluoride treatment to maintain optimal levels. Without this extra fluoride, the overall health benefits of fluoridation may be diminished in the blended water.

If my local water district fluoridates its water and Metropolitan also adds fluoride to its supplies, wouldn't this result in over-fluoridated water?

Blending fluoridated water from different sources does not increase total fluoride levels in water; the final fluoride concentrations reflect the weighted average from each source. Public water systems must monitor fluoride levels in their drinking water daily to ensure that fluoride levels remain within the prescribed control range. To prevent any risk of chemical overfeed, Metropolitan monitors the water leaving its treatment plants continuously using online analyzers and takes samples twice per day for compliance reporting.

If I use a fluoridated toothpaste, am I already getting enough fluoride to protect against decay?

Using fluoridated toothpaste provides significant protection against tooth decay, but the benefits of community water fluoridation complement those from toothpaste. Fluoridated toothpastes became widely available in the 1970s, and communities that started fluoridation during that time generally experienced lower rates of tooth decay compared to those that did not, despite the prevalence of fluoridated toothpaste. This suggests that both sources of fluoride work together to enhance dental health. Also, the optimal level of fluoride in drinking

water considers exposure from other sources of fluoride such as toothpaste.

Is fluoride harmful to human health?

More than 6,800 studies and research papers have investigated the potential health effects of fluoride in drinking water, and the overwhelming evidence shows that fluoride is safe and beneficial.

Some studies conducted outside of the United States have indicated fluoride concentrations above 1.5 mg/L – more than double the optimal amount of the 0.7 mg/L used in drinking water systems in the United States – may be associated with adverse effects to cognitive development. However, more research is needed. California water systems with fluoride levels exceeding 2 mg/L are required to implement treatment measures to lower those levels.

Is fluoride regulated in drinking water?

The U.S. Environmental Protection Agency's maximum contaminant level (MCL) for fluoride in drinking water is 4 mg/L, based on protection against increased risk of skeletal fluorosis, which can result in a weakening of the bones and joint pain. The EPA also has a non-enforceable secondary standard for fluoride of 2 mg/L, to address potential cosmetic effects (discolored teeth).

The California primary MCL is 2 mg/L, established by the State Water Resources Control Board.

A federal court ruling in September 2024 raised concerns about fluoride in drinking water systems. What does this mean?

In a lawsuit filed by the advocacy group Food & Water Watch and others against the U.S. Environmental Protection Agency, a Northern California federal judge in September 2024 determined that adding fluoride to community water systems at recommended levels poses "an unreasonable risk" of injury to public health. However, the judge made clear he did not conclude that fluoridated water is actually harmful to public health.

In reaching his decision, the judge relied on a recent National Toxicology Program study that concluded higher levels of fluoride exposure, such as drinking water containing more than 1.5 mg/L, are associated with lower IQs in children. In that study, NTP emphasized that there were "insufficient data to determine if the low fluoride level of 0.7 mg/L currently recommended for U.S. community water supplies has a negative effect on children's IQ." The objective of the NTP study was to "undertake a systematic review of the literature concerning the association between fluoride exposure and neurodevelopmental and cognitive effects and to determine the level of confidence in that evidence" but it was not designed to include the results of the thousands of studies that have concluded fluoride levels of 0.7 mg/L are safe. Specifically, the study states, "This Monograph and Addendum do not address whether the sole exposure to fluoride added to drinking water in some countries (i.e., fluoridation, at 0.7 mg/L in the United States and Canada) is associated with a measurable effect on IQ." Also, the study acknowledged the health benefits of fluoride with respect to oral health, but they were not the focus of the review.

The NTP report was based on studies conducted in countries outside the United States where there are high levels of naturally occurring fluoride in the water. Also, because the studies were from various countries with different study populations, it is uncertain whether the data on children's IQ are accurate, comparable, or generalizable. Socioeconomic, physical, familial, cultural, genetic, nutritional, and environmental confounders all affect IQ.

Based on the federal judge's ruling, what happens next?

The court indicated that the EPA has several options for how to proceed, ranging from requiring warning labels to potentially banning fluoride altogether. The EPA filed an appeal in January 2025, and with requested extensions, its opening brief is due by July 18.

In April 2025, the EPA announced that it is conducting a review of new scientific information on potential health risks of fluoride in drinking water and will prepare an assessment that will inform any potential revisions to EPA's fluoride drinking water standard.

In addition, Secretary of Health and Human Services Robert F. Kennedy Jr. has indicated he will direct the CDC's task force to study fluoride and make a new recommendation. Meanwhile, several public health agencies, including the California Department of Public Health, have reaffirmed their support for community water fluoridation. In April 2025, CDPH officials released a statement that "Community water fluoridation is the single most cost-effective, equitable and safe public health measure to prevent tooth decay and improve oral health."

Metropolitan is monitoring developments regarding fluoride, and will continue to adhere to all regulations. This ensures that water quality and safety standards are maintained according to the latest requirements.

What actions have states taken since the September 2024 court ruling?

Utah and Florida have enacted new laws that ban adding fluoride to drinking water, and at least nine other states are considering bans, local control measures, or opt-out provisions for community fluoridation. However, at least eight other states have rejected or not advanced legislation and measures to ban or limit fluoridation.

I heard that fluoride can cause teeth to become discolored or pitted, is that true?

Dental fluorosis is a condition that affects the appearance of teeth, caused by high levels of fluoride intake during early childhood. It's important to note that this typically occurs at levels much higher than the concentration in fluoridated drinking water.

When public health officials set the optimal fluoride levels for community water supplies, they carefully considered the balance between preventing tooth decay and the risk of dental fluorosis. Most cases of dental fluorosis arise from using fluoride-containing products like toothpaste and supplements, rather than from drinking fluoridated water.

While there has been a slight increase in dental fluorosis cases since water fluoridation started, most instances are mild and quite rare in communities with properly fluoridated water. Mild dental fluorosis usually shows up as small, opaque white spots on teeth. In more severe cases, teeth can become stained or pitted, but these are uncommon.

Should I give fluoridated water to my infant?

The ADA has stated it is safe to use fluoridated water to mix infant formula. If infants are primarily fed infant formula, using fluoridated water might increase the chance for mild enamel fluorosis. The ADA encourages parents and caregivers to talk to their dentists about what's best for their child. According to the CDC, parents can use low-fluoride bottled water some of the time to mix infant formula to lessen the risk of mild dental fluorosis.

For more information, visit the ADA's website, Fluoridation FAQs | American Dental Association, and the CDC's website on community water fluoridation.

Will I miss the benefits from fluoridation if I drink bottled water, vended water, or water from a water store? What about home filtration devices?

If you primarily drink bottled water, water from vending machines, or water from water stores, you might be missing out on the benefits of optimally fluoridated water. Most of these alternatives usually have fluoride levels that are lower than what's recommended for effective tooth decay prevention. For home filtration systems, consumers should check with the manufacturer of their device to understand whether it removes fluoride.

I still would rather not drink water that has fluoride added to it. What choices do I have?

Since many brands of bottled water contain some fluoride, you can call the consumer information number on the label to ask about the fluoride levels and whether they occur naturally.

Some bottled waters are labeled "purified" and employ treatment that may remove fluoride. These are typically processed through methods like reverse osmosis or distillation. Again, check the label or call the consumer service number for details about fluoride levels.

If you're considering alternate water sources, such as from vending machines or water stores, make sure the water has been treated with reverse osmosis or distillation. You can also use home treatment systems that employ these methods. NSF International certifies certain reverse osmosis and distillation units for effectively reducing fluoride. For a list of state-certified residential water treatment devices, visit: https://www.waterboards.ca.gov/drinking_water/certlic/device/watertreatmentdevices.html.

Remember, it's important to maintain any home filtration devices according to the manufacturer's instructions to ensure they work effectively.

Will fluoridated water harm my pets?

There is no evidence that indicates fluoridated water at the levels prescribed for human consumption is harmful to animals or pets.

Where can I get more information about fluoride?

State Water Resources Control Board, Division of Drinking Water
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.html

California Department of Public Health
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/Pages/OralHealthProgram/Fluoridation.aspx

Centers for Disease Control and Prevention
https://www.cdc.gov/fluoridation/about/index.html

American Dental Association
https://www.ada.org/resources/community-initiatives/fluoride-in-water/fluoridation-resources

National Institute of Dental and Craniofacial Research
https://www.nidcr.nih.gov/health-info/fluoride/community-water-fluoridation