



# Fluoride in Drinking Water

## What Is Fluoride?

Fluoride is found naturally in water, foods and soil. The fluoride ion comes from the element fluorine, the 17th most abundant element in the earth's crust. Water passes over rock formations to dissolve the fluoride compounds creating small amounts of fluoride in all water sources, including the oceans. Underground water sources are more likely to have higher levels of fluoride. Fresh water supplies generally contain between 0.01–0.3 ppm (mg/L), while the ocean contains between 1.2 and 1.5 ppm. The fluoride added to drinking water comes from mined rock that is processed and purified to meet drinking water regulatory standards.

## What Does Fluoride Do?

Fluoride provides a two part level of protection for our teeth. Fluoride can protect teeth from demineralization caused by the acids formed in our mouths when bacteria utilize sugar. Teeth that are already damaged by acid demineralization can benefit from fluoride, which can accumulate in the damaged areas and help to strengthen the enamel, a process called remineralization.

Fluoride can be implemented for dental hygiene in two ways: topically and systemically. Topical fluorides strengthen established teeth.

In this method of delivery, fluoride is incorporated into the tooth surface making it more decay-resistant. Topical fluorides include toothpaste, mouth rinses and professionally applied fluoride gels and rinses.

Systemic fluorides are those that are ingested and become incorporated into forming tooth structures. Systemic fluorides ingested regularly during tooth development are deposited throughout the entire surface and provide longer-lasting protection than those applied topically. Systemic fluorides can also

provide topical protection because they are present in saliva, which continually bathes the teeth providing a reservoir of fluoride that can be incorporated into the tooth surface to prevent decay. Fluoride may also become incorporated into dental plaque that facilitates further remineralization. Systemic fluoride sources include water, dietary fluoride supplements and fluoride present in food and beverages.



## Is Drinking Water Fluoridation Safe?

Community water fluoridation is the most effective public health measure to prevent and control dental caries. According to the CDC, community water fluoridation is not only safe and effective, but it is also cost-saving and the least expensive way to deliver the benefits of fluoride to all community residents. For larger communities of more than 20,000 people, fluoridation costs about 50 cents per person. Fluoridation benefits all people regardless of age, income, education or socioeconomic status. All community residents can benefit just by drinking tap water and consuming foods and beverages prepared with fluoridated water.

## Fluoridation at CLCJAWA

CLCJAWA was the third water plant in North America to earn the Drinking Water

Excellence Award from the USEPA and American Water Works Association. Our aggressive testing program puts us at the forefront of drinking water awareness and we are constantly striving to improve our process by implementing the most up-to-date research available. CLCJAWA uses fluorides that are certified to meet drinking water regulations. Every

tanker truckload of fluoride is tested before use. CLCJAWA adds the minimum amount of fluoride permitted by the Illinois Department of Public Health (IDPH) or 0.9 mg/L. This is equivalent to 0.9 pounds of fluoride in every one million pounds of water. Fluoride levels are checked twice daily in our lab, and are checked monthly by an independent IDPH certified lab.

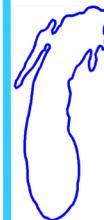


Central Lake County



## Fluoride Regulations

- Illinois Department of Public Health (IDPH) rules require all water systems to maintain a fluoride level of 0.9 -1.2 milligrams per liter (mg/L).
- The USEPA has set the maximum contaminant level (MCL) at 4.0 mg/L for fluoride based on the best available science to prevent potential health problems.
- The EPA has also set a secondary standard (SMCL) for fluoride at 2.0 mg/L. Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.
- The HHS proposed a recommended optimal level of 0.7 mg/L to promote public health benefits of fluoride for preventing tooth decay while minimizing the chance for dental fluorosis
- For more information please contact the IDPH at 217-785-4899 or visit their website at [www.idph.state.il.us/HealthWellness/oralHlth/](http://www.idph.state.il.us/HealthWellness/oralHlth/)



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