



Issue Background Fluoridation and Drinking Water

Why fluoridate the water?

According to the U.S. Centers for Disease Control (CDC), more than 84 percent of U.S. children, 96 percent of U.S. adults, and 99.5 percent of Americans 65 years of age and older have experienced tooth decay. Fluoride works by stopping or even reversing the tooth decay process. North American water systems have added fluoride to their water supplies since 1945. Since that time, tooth decay has been reduced by 20%-40% where fluoridation has been implemented.

The CDC has proclaimed water fluoridation to be one of the top ten greatest public health achievements of the past century. It is an effective, safe, and inexpensive way to prevent tooth decay and benefits Americans of all ages and socioeconomic status. Research indicates that frequent exposure to small amounts of fluoride is the best way to prevent tooth decay, and this is best gained by drinking fluoridated water and using a fluoride toothpaste twice daily.

What is water fluoridation? How does it prevent tooth decay?

Fluoride is a naturally occurring element that is present in water. Utilities add fluoride to adjust the natural concentration of the water supply to the level recommended for optimal dental health. The three primary agents used in drinking water fluoridation are sodium fluoride, sodium fluorosilicate and fluorosilicic acid.

Fluoride's effect is topical. When small amounts of fluoride are maintained in the mouth in saliva and dental plaque (the film that adheres to tooth enamel), it keeps the tooth enamel strong by preventing the loss of important minerals.

Is fluoridation safe?

Extensive research conducted over the past 50 years has demonstrated that fluoridation of public water supplies at the appropriate level is a safe and effective way to reduce the incidence of tooth decay in a community. In 1993, a detailed review by the National Research Council in found no links between low-level fluoride ingestion and occurrences of cancer, kidney disease, gastrointestinal disorders, immunological disorders, reproductive effects, genetic disorders, or bone fractures.

Exposure to high levels of fluoride over a long time can cause dental fluorosis, a condition which leads to mottled tooth enamel, discoloration, and in some cases, erosion of the gumline. Drinking water's fluoride content is limited under federal law. The maximum level of fluoride deemed acceptable by the US Environmental Protection Agency (USEPA) is 4 milligrams per liter (mg/L). USEPA requested a second review completed in 2006, which found children exposed to fluoride at this level, which comes from naturally occurring fluoride, risk severe tooth

enamel fluorosis. A majority of the committee also concluded that people who consume water containing that much fluoride over a lifetime are likely at increased risk for bone fracture. Less than 1% of the U.S. population is served by water systems with this level of fluoride.

In 2001, the CDC established a new “optimal level” for fluoride content in drinking water to be in the range of 0.7 mg/L to 1.2 mg/L. Community water systems who fluoridate their water usually fall within this range.

The American Dental Association (ADA), the American Medical Association, the Centers for Disease Control and Prevention (CDC), the U.S. Public Health Service (USPHS), the World Health Organization (WHO), and many other public health and professional organizations recognize the public health benefits of drinking water fluoridation. These policies are based on the overwhelming weight of credible scientific evidence

AWWA supports fluoridation of water supplies in a safe, effective and reliable manner within the limits prescribed by health officials subject to community and local decision-making processes.

How popular is fluoridated tap water?

Fluoridation of drinking water has been used successfully in the United States for more than 50 years. In 2000, the CDC estimated that 66% of residents using community water systems, or 162 million people, had access to fluoridated tap water. Of the 50 largest cities in the United States, 43 have community water fluoridation.

As part of its “Healthy People 2010” campaign, the U.S. Department of Health and Human Services set a goal of increasing the proportion of the American population served by community water systems with optimally fluoridated water to 75% by the year 2010.

For more information on fluoride and fluoridation, visit:

[Centers for Disease Control and Prevention](#)

[American Dental Association](#)

Contact AWWA Public Affairs for more information

Greg Kail, Senior Public Affairs Manager

gkail@awwa.org | 303-734-3410

Kylah Hedding, Public Affairs Manager

khedding@awwa.org | 303-347-6140