

Community Water Fluoridation --The # 1 Way to Prevent Dental Decay

What is Community Water Fluoridation? Community water fluoridation is the process of adjusting the fluoride content that occurs naturally in a community's water to the best level for preventing tooth decay. A key word in this definition is "adjusting" because all drinking water supplies contain some fluoride naturally.

Fluorine is the 13th most abundant element in nature. It is present in small and varying amounts in all soils, plants, animals and water supplies and, therefore, all diets contain fluoride. There is no such thing as a fluoride-free water supply. A community that fluoridates its water is simply modifying the amount of fluoride already found naturally in the water to a level that is best for its residents dental health. Thus, adjusted water fluoridation means that the appropriate amount of fluoride is being maintained in the community's water supply. Getting the right amount of ingested fluoride is important to prevent tooth decay. However, where water fluoride levels occurs in nature at too high a level or dietary fluoride supplements or fluoride toothpaste are misused, discoloration of the teeth (dental fluorosis) also can occur. Thus, water operators continuously monitor the fluoride content of drinking water in communities that fluoridate. Research has shown that the most favorable concentration for community water fluoridation in the United States varies from 0.7 parts-per-million (ppm) in hot climates to 1.2 ppm in cold climates. For moderate climates, one part fluoride in one million parts of water (1 ppm) is recommended. (1 ppm is the same as 1 mg/L.) This amount is extremely small. To appreciate how small, think of it compared with other units of measurement. ***1 ppm is equivalent to 1 inch in 16 miles, 1 minute in 2 years, or 1¢ in \$10,000.***

What Are the Benefits of Community Water Fluoridation? Hundreds of studies carried out in the United States and many other countries during the past half century prove that community water fluoridation prevents tooth decay. At a time when the only fluoride available was that found naturally in drinking water, studies showed that children who grew up in fluoridated communities experienced about 50-60 percent less decay than those in non-fluoridated ones.

Because fluoride was so successful in preventing decay, it later was incorporated into many oral health products, such as toothpastes and mouthrinses. Most people in non-fluoridated communities now receive some protection against cavities from fluoride contained in these toothpastes and mouthrinses and in foods and beverages processed in fluoridated communities. This is why recent measures of dental decay prevention from community water fluoridation in the United States have been smaller, generally in the 20 – 40 % range. This remains a substantial reduction in disease.

Do Adults Benefit from Drinking Fluoridated Water? It has been a popular misconception that fluoridation helps only children. **Adults as well as children benefit from drinking fluoridated water throughout their lives.** Several studies show that people in their sixties who have lived all

of their lives in areas with sufficient fluoride in the drinking water have much less tooth loss and tooth decay than do adults in non-fluoridated communities. Because more people are living longer and keeping more of their natural teeth, and older persons often experience receding gums and exposed roots, the problem of decay on the root surfaces of teeth is increasing. Recent studies have shown that adults who live in communities with optimal levels of fluoride in the water supply have much less root-surface decay than do adults of the same ages in low-fluoride communities.

In areas where other fluoride methods have not been widely available, studies of community water fluoridation historically have shown reductions in tooth decay of approximately 60%. With use of other fluoride products such as fluoride containing toothpaste, rinses and gels, currently widespread in most areas of the United States, the measurable benefits from water fluoridation now are:

- **20 to 40 percent less dental decay in persons of all ages**
- **More children free of dental decay**
- **Many fewer extracted permanent first molars ("6-year molars") in children**
- **Lower dental bills for repairing decayed teeth**
- **Less need for procedures that require anesthesia and drilling**

Why is Community Water Fluoridation an Ideal Public Health Method? Community water fluoridation is effective, safe, inexpensive, and practical. The average cost of fluoridation is about 50 cents per person a year. This is one of the best bargains in health today. Studies in the United States, Canada and New Zealand have shown that the annual costs of children's dental care decrease after community fluoridation has been in operation for several years.

The entire community benefits from community water fluoridation, regardless of a person's age, income, level of education, or access to dental care services. Everyone automatically benefits when they drink fluoridated water and consume foods and beverages prepared with it.

Is Community Water Fluoridation Safe? The safety of community water fluoridation has been studied more thoroughly than any other public health measure during the past 45 years, with results of hundreds of clinical, animal and laboratory studies supporting its safety. One reason for the large amount of this research is that opponents of fluoridation have made so many inappropriate claims of harm, including assertions that water fluoridation causes heart disease, cancer, Down's syndrome, premature aging and even acquired immune-deficiency syndrome (AIDS). Much additional research has been conducted which refutes these unsupported claims.

Each study has reaffirmed the safety of fluoridation.

Who Supports and Who Opposes Community Water Fluoridation? Community water fluoridation has the unqualified approval of every major health organization in the United States and many other countries as well. The American Dental Association and the U.S. Public Health Service have endorsed community water fluoridation since 1950, and the American Medical Association, since 1951. In 1958, the World Health Organization recognized it as a practical and effective public health measure and has repeated its support at successive World Assemblies. The U.S. Department of Health and Human Services recently reaffirmed its support. The Consumers union has published excellent review articles in support of fluoridation. Other organizations have adopted policies in support of fluoridation, including The American Academy of Pediatrics, American Cancer Society, American Heart Association, American Public Health Association and International Association for Dental Research. Based on extensive review of 50 years of experience with fluoridation, the American Association of Public Health Dentistry in 1992 reaffirmed its unqualified support of fluoridation. Efforts to begin community water fluoridation, however, have frequently been hampered because of organized opposition to fluoridation. Frequently, these opponents also take issue with such basic health practices as the pasteurization of milk and immunization against infectious diseases. These groups try to attract support by appealing to popular generic issues, such as individual rights, freedom of choice, anti-pollution, natural diets and substances in the environment that lead to cancer. In many areas, proposals to fluoridate the water have become political issues, decided by public referenda or by elected officials who sometimes lack specific knowledge about the benefits and safety of fluoridation or fail to seek expert advice on health matters. During these campaigns, opponents often resort to scare tactics and spread false, irrelevant and misleading information. As a result of such misinformation, doubts raised in voters' minds may lead them to rejection of fluoridation.

What is the Current Status of Community Water Fluoridation? More than half of the U.S. population, (about 135 million persons) live in communities served by fluoridated water supplies (0.7 ppm or more). This includes about 10 million people who live in communities with sufficient naturally occurring fluoride in their drinking water. About 30 million Americans cannot benefit from fluoridation because they live in areas, largely rural, that lack community water supplies. Currently, 42 of the 50 largest cities in the U.S. fluoridate their drinking water supplies. Several of them, including San Francisco, Baltimore, Pittsburgh and Washington D.C., have had fluoridated

water for about 40 years. However, eight of the nation's 50 largest cities, including Los Angeles, San Diego, San Antonio and Honolulu, still have not fluoridated their water supplies and, consequently, are not providing the known dental benefits of fluoridation to their residents. Community water fluoridation has not been adopted as widely by smaller U.S. cities and towns. The reasons are usually economic or political, or sometimes simply reflect a lack of perceived need. As of December 31, 1989, the International Dental Federation (FDI) reported that its member countries estimated that 275 million persons living in 24 of those countries drank fluoridated water that was adjusted properly. The estimates showed that another 300 million persons, in the world drank water with naturally occurring, appropriate amounts of fluoride. The Republic of Ireland passed legislation requiring national fluoridation in the early 1960s. The municipal water supplies in Hong Kong and Singapore have been fluoridated for many years.

Can you obtain information on fluoridation from your dentist?

Contact your family dentist and discuss with him/her the values of fluoridation of public water systems. The American Association of Public Health Dentistry urges you to support of fluoridation of your community water system. If you need additional information please do not hesitate to visit our web site at "<http://www.volusiahealth.com/eh>" or call one of the one of the following phone numbers, where additional information may be obtained:

- (386) 274-0714 -----Volusia County Environmental Health Engineering Drinking Water Program
- (850) 487-1845-----Florida Department of Health Office of Dental Health
- (312) 440-2593 -----American Dental Association
- (404) 488-4450-----Centers for Disease Control

In summary, community water fluoridation is the most effective way to prevent tooth decay. The following key facts about fluoridation summarize why this is so.

- **Fluoridation is the least expensive and most effective way to reduce tooth decay.**
- **Fluoridation is safe.**
- **Fluoridation benefits children and adults.**
- **Fluoridation provides benefits that continue for a lifetime when consumption of fluoridated water continues.**
- **Fluoridation reduces the need for and cost of dental treatment.**
- **Fluoridation is the surest way for everyone in the community to benefit.**
- **Fluoridation benefits everyone when they drink fluoridated water and consume foods and beverages prepared with it.**