

## **Fluoridation**

Community water fluoridation has been shown to be the single most effective public health measure to prevent tooth decay and the Centers for Disease Control and Prevention has proclaimed community water fluoridation as “one of 10 great public health achievements.” Studies have shown that adding fluoride to the municipal water supply at recommended levels prevent at least 25 percent of tooth decay in children and adults.

The benefits of Fluoride were discovered when Dr. Frederick McKay, a dentist who began practicing in Colorado Springs in 1901, noticed that the teeth of the natives had brown stains on their teeth. Through collaboration with other researchers it was eventually discovered that too much fluoride in the water was to blame but at the same time they noticed that affected teeth were surprisingly resistant to decay. Further research led to the optimal level of Fluoride in the water which allowed for caries prevention without the brown staining. Today the Environmental Protection Agency (EPA) has determined that the accepted "optimal" range of fluoride in water lies between 0.7 and 1.2 parts per million (ppm) or milligram per liter. Multiple studies in multiple countries around the world have shown that fluoridated water adhering to these standards has been scientifically established as safe for drinking. Water fluoridation is endorsed by almost every major health and safety-related organization.

Fluoride is a stable, dissociated, ionized form of fluorine, the 17th most common element. It is the 13th most common element in the earth's crust and in the ocean it is the 12th most common element. It is a naturally occurring element. At 1 ppm it can reduce tooth decay significantly without objectionable fluorosis. Undesirable side effects occur only when the level of fluoride is above 2 ppm. Some community water suppliers actually remove fluoride from the local water supply to bring it into the acceptable range. Fluoridated water protects against cavities and helps remineralize early carious lesions. Thanks to these preventive benefits, public water fluoridation is considered the most efficient and cost-effective cavity prevention measure available.

According to the CDC dental caries remains the most common chronic disease of children aged 6 to 11 years (25%) and adolescents aged 12 to 19 years (59%). Tooth decay is four times more common than asthma among adolescents aged 14 to 17 years (59% compared with 15%). Many adults also have untreated tooth decay—28% of those aged 35 to 44 years and 18% of those aged 65 years and older. Once dental caries has been established, the disease requires treatment. A dental carious lesion or a cavity only grows larger and more expensive to repair the longer it remains untreated. Without fluoridation and the benefits of fluoride, caries prevalence and severity would increase.

Dental caries is a preventable disease for most people with regular brushing, at least twice a day, and flossing, at least once a day. Drinking water with fluoride and using toothpaste with fluoride helps to remineralize, strengthen teeth and prevent decay. Finally, regular checkups and cleanings every 6 months with your dentist can help to keep your teeth healthy.

Written by Carlos Vallecillo, DDS and Rossana Menna, DDS  
[www.monalisadental.com](http://www.monalisadental.com)