

# COMMUNITY WATER FLUORIDATION IN IOWA

**The Centers for Disease Control & Prevention, the U.S. Surgeon General, and the Iowa Department of Public Health support fluoridation of public water supplies because of its health benefits to the public. The U.S. Department of Health and Human Services' recommendation for the optimal level of fluoride in drinking water is 0.7 milligrams per liter.**

## TOOTH DECAY

Tooth decay affects all age groups. And although it is preventable, it is the most common chronic disease of childhood. Untreated decay can lead to pain, tooth loss, poor nutrition, and difficulty eating, sleeping, and learning. Nearly one-fifth of all health care spending for children is related to dental care.<sup>i</sup>

## BENEFITS OF FLUORIDATION

Fluoride strengthens tooth enamel, making teeth more resistant to decay. When fluoride is found naturally or added to community drinking water at proper concentrations, tooth decay can be prevented. The entire community benefits – all ages and income levels.

Community water fluoridation is one of the top ten public health achievements of the twentieth century due to its impact in reducing the amount of tooth decay experienced by Americans, particularly children. Fluoridation safely and inexpensively reduces tooth decay by 25 percent over a lifetime.<sup>ii</sup>

The Task Force on Community Preventive Services – an independent, nonfederal, volunteer group of public health and prevention experts – strongly recommends community water fluoridation. Their systematic review found that stopping fluoridation was associated with an increase in tooth decay.<sup>iii</sup>

## COST AND SAVINGS

By preventing tooth decay, water fluoridation saves money, both for families and for the health care system. Depending on the number of residents in a community, every dollar spent on fluoridation can save up to \$38 in avoided dental bills. Over a lifetime, the cost of fluoridation can be less than the cost of one dental filling.<sup>iv</sup> Although helpful, fluoride tablets, rinses, and toothpaste are more expensive and less effective than the fluoridation of drinking water.<sup>v</sup>

## ADDRESSING SAFETY CONCERNS

Fluoride is a naturally occurring element, present in water and food. In fact, in Iowa it is not uncommon to have naturally-occurring fluoride in water from 0.1 to greater than 1.0 milligrams per liter. Fluoridation of community drinking water involves adjusting the naturally-occurring concentration of fluoride to a level that is recommended for preventing tooth decay.

The recommended fluoride level for preventing tooth decay is 0.7 milligrams per liter. In the past, research showed that a range of 0.7 to 1.2 milligrams per liter was necessary due to different levels of water intake in hot versus cold climates. Updated research finds that water consumption no longer differs based on climate. This, along with the fact that people receive fluoride from a variety of sources (fluoridated toothpaste, over-the-counter rinses, and food and drink products processed with fluoridated water), has resulted in the recommended level of 0.7 milligrams per liter. The Iowa Department of Public Health monitors water systems that add fluoride to assure the concentration is appropriate.<sup>vi</sup>

Iowa Department of Public Health - July 2015

<sup>i</sup> US Dept. of Health & Human Services, NIDCR, Oral Health in America: A Report of the Surgeon General. Rockville, MD, 2000.

<sup>ii</sup> Griffin SO, Regnier E, Griffin PM, Huntley VN. Effectiveness of fluoride in preventing caries in adults. J Dent Res. 2007;86(5):410-414.

<sup>iii</sup> Truman BI, Gooch BF, Sulemana I, et al. Task Force on Community Preventive Services. Review of evidence on interventions to reduce dental caries, oral and pharyngeal cancers, and sports-related craniofacial injury. American Journal of Preventive Medicine. 2002. 23(15) 1-84.

<sup>iv</sup> Griffin SO, Jones K, Tomar SL. An Economic Evaluation of Community Water Fluoridation. Journal of Dental Public Health. 2001;61(2):78-86.

<sup>v</sup> Kumar JV, Moss ME. Fluorides in Dental Public Health Programs. Dent Clin N Am. 2008;52:387-401.

<sup>vi</sup> U.S. Department of Health and Human Services Federal Panel on Community Water Fluoridation. U.S. Public Health Service Recommendation for Fluoride Concentration in Drinking Water for the Prevention of Dental Caries. Public Health Reports. 2015:130(4)