

Water Fluoridation

Frequently Asked Questions

Is tooth decay a serious problem in Santa Clara County?

According to one survey, about 1 in 3 Santa Clara County kindergartners (31%) and third graders (30%) had untreated tooth decay. Also, about 3 in 5 Asian and Hispanic kindergartners had tooth decay as compared to 1 in 5 of their White counterparts. Additionally, about 1 in 2 kindergartners (51%) and 3 in 5 third graders (61%) could not get dental care due to lack of dental insurance. Approximately two third of the kindergartners (74%) eligible for the Free or Reduced-Price Meal Program had experienced tooth decay as compared to 37% among those not eligible for the program.¹

According to another local study, about 1 in 3 adults (35%) have had at least one of their permanent teeth removed because of tooth decay or gum disease.³

What is fluoride?

Fluoride is a naturally occurring mineral present in drinking water. Fluoride is naturally present in all community water systems to some level, but is usually insufficient to help prevent tooth decay. The naturally occurring fluoride levels in Santa Clara are less than 0.2 mg/L or parts per million (ppm).⁵

How does fluoride reduce tooth decay?

When present in water at optimal levels, fluoride has been shown to prevent tooth decay. It does so by strengthening the tooth enamel in children and thus making the teeth more resistant to decay. A major risk for tooth loss in older adults is cavities, especially root caries. Root caries most commonly affect the molar teeth. Fluoride has been shown to undo newly formed cavities and prevent root caries in adults.⁵

What is community water fluoridation and why do we fluoridate water?

Community water fluoridation refers to addition of fluoride to a water supply. While all drinking water contains some fluoride, water fluoridation adjusts this naturally occurring fluoride level to the optimum level for preventing tooth decay. The optimum concentration of fluoride in water has been determined to be between 0.7 to 1.2 mg/l depending on the air temperature in a given region. Fluoride does not change the taste, smell, or appearance of the water. It is a safe, effective, and economical way to improve dental health for the entire community.⁵

Do adults, as well as children, benefit from water fluoridation?

Yes, water fluoridation provides dental health benefits for both children and adults.⁵



How much fluoride will Santa Clara County add to the water?

Current federal fluoridation guidelines state that community drinking water should contain between 0.7 and 1.2 ppm fluoride, a concentration effective for preventing tooth decay. The average annual maximum temperature for San Jose is 72.6 degree Fahrenheit. According to California Water Fluoridation Standards, the optimal fluoride level would be 0.8 mg/l (ppm). Thus 0.7mg/l would be added if the existing water fluoride level is 0.1 mg/l.⁵

Is there a difference in effectiveness between naturally occurring fluoridated water and water that has fluoride added to it?

No. The same fluoride ion is present in naturally occurring fluoride and fluoride drinking water additives. Also, fluoride metabolism is not affected by different chemical compounds nor are they affected by whether fluoride is present naturally or artificially.⁵

Do water filters remove fluoride? Will using a home water filtration system take the fluoride out of my homes' water?

Removal of fluoride from water is difficult. Most home point-of-use treatment systems installed at single faucets use activated carbon filtration, which does not remove fluoride. Reverse osmosis point-of-use devices can effectively remove fluoride although the amount may vary given individual circumstances.⁵

Does bottled water contain fluoride?

Some bottled waters contain fluoride and some do not. Fluoride can occur naturally in source waters used for bottling or be added. The U.S. Food and Drug Administration does not require bottlers to list the fluoride content in a bottle of water, but does require fluoride additives to be listed. Contact the manufacturer to ask about the fluoride content of a particular brand of bottled water.⁵

What is enamel fluorosis and when does it occur?

Enamel fluorosis is a hypomineralization of the enamel surface of the tooth that develops during tooth formation. It may range from barely noticeable white spots to pitting and staining. It can occur only during tooth development. Only children 8 years old and younger are at risk, as this is the time when permanent teeth are developing under the gums. Severe enamel fluorosis can occur when young children consume excess fluoride, from any source, during critical periods of tooth development.⁵

What if my child has been receiving fluoride drops or tablets?

Only children living in non-fluoridated areas should use prescription dietary fluoride supplements between the ages of six months to 16 years of age. When the water is fluoridated, there is no need to continue using fluoride drops or tablets. Please consult with your healthcare provider or dentist before discontinuing the use of fluoride drops, or other supplements.⁵

Should my family continue brushing with fluoridated toothpaste?

Yes. For most people (children over six years of age, adolescents, and adults) brushing at least twice a day with fluoride toothpaste is recommended.⁵ Some simple recommendations are advised to reduce the risk of enamel fluorosis among children aged 6 years and younger:

- Supervise brushing to discourage swallowing toothpaste
- Place only a small pea-size amount of fluoride toothpaste on your child's toothbrush
- Seek advice from a dentist or other health care professional before introducing fluoride toothpaste to children less than 2 years of age

What are the guidelines for breast-fed and formula-fed infants?

Breast feeding is the most complete form of nutrition for infants. Breast milk has a low concentration of fluoride and does not contribute to enamel fluorosis. Mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis may increase the chance of a child developing the faint white markings of very mild or mild enamel fluorosis. Parents should follow the advice of the formula manufacturer and their child's doctor for the type of water appropriate for the formula they are using. Parents and caregivers of infants fed primarily with formula from concentrate can lessen the fluoride exposure by mixing formula with low fluoride water most or all of the time. Ready to feed (no-mix) infant formula typically has little fluoride and may be preferred for use at least some of the time.⁵

What is the effect of fluoridation on people with Chronic Kidney Disease (CKD)?

There is no evidence that consumption of optimally fluoridated drinking water increases the risk of developing CKD, although only limited studies addressing this issue are available.² According to the National Kidney Foundation, fluoridation presents no health risks for people with mild renal disease. However, those individuals with end stage renal disease might be at risk for skeletal fluorosis, although there are limited studies addressing this issue. Fluoride concentrations in dialysis machines should follow established guidelines.⁷

Can my pets drink fluoridated water?

Yes. Research findings do not support an association between water fluoridation and negative health effects on plants and animals.⁵

What is the effect of water fluoridation on the environment?

Scientists have found a lack of evidence to show an association between water fluoridation and a negative impact on people, plants, or animals.⁵

Which health organizations support and endorse water fluoridation?

- American Dental Association (ADA)
- Centers for Disease Control and Prevention (CDC)
- American Medical Association (AMA)
- American Academy of Pediatrics (AAP)
- U.S. Surgeon General
- National Institute of Dental & Craniofacial Research (NIDCR)
- World Health organization (WHO)
- Santa Clara County Dental Society

- California Dental Association⁴

What is the cost effectiveness of water fluoridation?

The economic analysis found that for larger communities of more than 20,000 people where it costs about 72 cents (in 1999 dollars) per person per year to fluoridate the water, every \$1 invested in this preventive measure yields approximately \$38 savings in dental treatment costs. In Santa Clara County, the average cost of one filling (\$146) would provide fluoridation for a family of four for 50 years.^{5, 6, 9}

How can I learn more about water fluoridation?

- Centers for Disease Control and Prevention
 - <http://www.cdc.gov/Fluoridation/>
- American Dental Association
 - <http://ada.org/public/topics/fluoride/>

References:

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7. National Kidney Foundation. Fluoride Intake in Chronic Kidney Disease, April 15, 2008. March 4, 2009
http://www.kidney.org/atoz/pdf/Fluoride_Intake_in_CKD.pdf
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<http://www.chdp.ca.gov/CERTLIC/DrinkingWater/Pages/Fluoridation.apx>
9. Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR Recomm Rep*. 2001 Aug 17;50(RR-14):1-42
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>