



Fluoride Q&A

June 2015

Background: The city of Phoenix complies with U.S. Environmental Protection Agency (EPA) regulations regarding fluoride. Phoenix adds just enough fluoride in the treatment process to raise the level to 0.7 parts per million, the optimal fluoride level recommended by health professionals to attain dental benefits. 45 of the 50 largest cities in the United States fluoridate their tap water. Based on Centers for Disease Control (CDC) studies, the \$582,000 that Phoenix spends annually fluoridating (39 cents per person) could return over \$22,000,000 of savings in annual average dental treatment costs to the residents.

1. Does the city of Phoenix add fluoride to the tap water supply?

Yes. Since 1990, Phoenix has maintained fluoride at the 0.7 parts per million level that is now recommended for all water systems by the U.S. Department of Health and Human Services (DHHS) and the EPA. Fluoride is a naturally occurring element in the source water for the city of Phoenix. Natural source water fluoride levels are about 0.3 parts per million. Phoenix adds just enough fluoride in the treatment process to raise the level to 0.7 parts per million, the optimal level recommended by health professionals to attain dental benefits. That 0.7 equals about two drops in a 55 gallon barrel.

Recent sampling of the water entering the city of Phoenix distribution system showed fluoride levels between 0.6 and 0.8 parts per million. Phoenix complies with EPA regulations regarding fluoride.

2. Why is the U.S. Department of Health and Human Services recommending 0.7 parts per million?

Due to the increasing presence of fluoride in products such as toothpaste and mouthwash, on April 27, 2015, the DHHS announced final recommendation for an optimal fluoride level of 0.7 milligrams per liter of water (mg/L) or parts per million. The 0.7 parts per million level has been maintained by Phoenix since the city began using fluoride in 1990.

3. Who said we should add fluoride to our water?

The addition of fluoride to the city's water treatment process was approved by the City Council and Mayor in June 1990. This decision was based on public input, recommendations from numerous federal, state and local public health officials (including the Surgeon General of the U.S. Public Health Service and the CDC) and review of four decades of research supporting fluoridation as a safe and effective method for reducing the incidence of dental cavities.

4. Why is fluoride added to our tap water supply?

Fluoride containing compounds are used for preventing tooth decay throughout the nation. They are used for water fluoridation and in many products associated with oral hygiene. Community water fluoridation is the addition of fluoride to adjust the natural fluoride concentration of a community's water supply to the level recommended for optimal dental health. According to the CDC, community water fluoridation provides cost-savings for all communities (<http://www.cdc.gov/fluoridation/basics/index.htm>).



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5. Is adding fluoride to the water supply safe?

Based on medical information available to us, you would have to ingest approximately three to six times as much fluoride that is in Phoenix's tap water to experience health effects. Community water fluoridation is an effective, safe and inexpensive way to prevent tooth decay. Fluoridation benefits city of Phoenix residents of all ages and socioeconomic status. Since 1950, the American Dental Association (ADA) has unreservedly endorsed the fluoridation of community water supplies as safe, effective and necessary in preventing tooth decay. The Arizona Department of Health Services (ADHS), Office of Oral Health also strongly promotes and supports the addition of fluoride to drinking water as a decay prevention additive. The CDC has recognized the fluoridation of drinking water to prevent dental decay as one of 10 great public health achievements of the 20th century. Over the past 60 years, optimal fluoridation of community drinking water has been a major factor for the decline of tooth decay. The city of Phoenix stays current on continuing research being conducted on fluoride, such as the *Scientific Assessments and Actions on Fluoride* just announced by the DHHS and the EPA. This allows the city to immediately be aware of any new scientific evidence regarding the health impacts of fluoridation. The safety of our customers and their families always will be the paramount consideration in the treatment and delivery of our tap water.

6. Is fluoride in the water supply regulated?

Fluoride is regulated under the Safe Drinking Water Act by the EPA.

The city of Phoenix performs routine monitoring for fluoride and many other compounds in the water supply. This data is reported on an annual basis in the Water Quality Report which is distributed to water customers and is available on the city of Phoenix web site at <https://www.phoenix.gov/waterservices/waterquality/water-quality-reports>

While the levels of fluoride within the water distribution system can fluctuate due to a variety of factors including the influence of groundwater which can contain naturally-occurring fluoride, the amount of fluoride delivered by Phoenix is well below both the current EPA's primary and secondary standards for fluoride of 4.0 and 2.0 mg/L. Phoenix maintains 0.7 parts per million. If the EPA changes regulations regarding fluoride, Phoenix will comply with those updated regulations, as it has in the past.

7. What are the possible health effects of too much fluoride?

The 0.7 parts per million of fluoride Phoenix delivers to customers in its tap water is nowhere close to the 4.0 maximum contaminant level established by the EPA. Some people who drink water containing fluoride in excess of 4 parts per million over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at 2 parts per million or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

8. Do other cities fluoridate their tap water?

Based on water system data reported by states to the CDC Water Fluoridation Reporting System as of 2012, and the U.S. Census Bureau estimates from 2012, 74.6 percent of the U.S. population served by public water systems receives fluoridated water. Per the ADHS, 45 of the 50 largest cities in the United States fluoridate. Nine of the nation's ten largest cities fluoridate their tap water supply. Arizona ranks number 38 in the nation for the percentage of population



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receiving fluoridated water. There are 5.5 million people served by a community water system in Arizona and 57.8 percent are receiving fluoridated water. According to the ADHS, nine cities and towns in the state add fluoride: Bisbee, Chandler, El Mirage, Gilbert, Glendale, Mesa, Phoenix, Tempe and Yuma. Seven of the ten larger Valley cities deliver fluoridated water. 17 to 20 communities statewide have optimal, naturally occurring levels of fluoride and need no additional fluoridation.

9. What is the cost of fluoridating Phoenix's tap water?

The total annual cost of fluoridating the City of Phoenix drinking water is approximately \$582,000, of which \$420,000 is for the chemical. This equates to an annual cost of 39 cents per person for the 1.5 million people the Phoenix water system serves. Two studies of the economic impacts of fluoridating drinking water sponsored by the CDC in 2001 found that in communities of more than 20,000 people it cost about 50 cents per person to fluoridate the water and every dollar spent yielded approximately \$38 savings in annual average dental treatment costs per person. Based on this study, the \$582,000 that Phoenix spends annually fluoridating could return over a \$22,000,000 of savings in annual average dental treatment costs to the residents.

10. If I don't want fluoride in my water, how can I remove it?

Some in-home water treatment processes may remove fluoride. The city of Phoenix does not endorse any specific vendors or products nor does it provide information on water treatment processes. More information about home treatment systems is available from the Arizona Water Quality Association at 480-947-9850, <http://www.wqa.org> or by writing to 6819 E Diamond St., Scottsdale, AZ 85257.

11. Where can I find additional information about fluoride?

You can obtain further information about community water fluoridation by calling your dentist or visiting the websites of the ADHS Office of Oral Health (<http://www.azdhs.gov/phs/owch/oral-health/water-fluoridation.htm>) or the CDC Division of Oral Health (<http://www.cdc.gov/oralhealth>). Information about fluoride levels in the city of Phoenix tap water system is available for review online in the current Water Quality Report at: <https://www.phoenix.gov/waterservices/waterquality/water-quality-reports>