

Cavities used to be a fact of life. Over the past few decades, tooth decay has been reduced dramatically. The key reason for this reduction is fluoride. Research shows that an appropriate level of fluoride reduces cavities in both children and adults. It can also help repair the early stages of tooth decay even before the decay becomes visible. Like any other nutritional supplement, fluoride is safe and effective when used properly.

What is fluoride?

Fluoride comes from the element fluorine. Fluorine only exists in combination with other elements as a fluoride *compound*. It is found in this form as a part of minerals in rocks and soil everywhere. Water passes over rocks containing fluoride and dissolves the fluoride-containing compounds. The result is that a small amount of soluble fluoride is present in all water sources, including the oceans. Fluoride is present to some extent in all foods and beverages, but the concentrations vary widely.

How does fluoride benefit teeth?

Fluoride is effective in preventing and reversing the early signs of tooth decay. Researchers have shown that there are several ways through which fluoride achieves its decay-preventive effects:



- It makes the tooth structure stronger so teeth are more resistant to acid attacks. Acid is formed when the bacteria in plaque breaks down sugars and carbohydrates in food. Repeated acid attacks break down the tooth, which causes cavities.
- Fluoride can repair or remineralize areas in which acid attacks have already begun. This is important because remineralization can reverse the early decay process as well as create a tooth surface that is more resistant to decay.
- Tooth enamel that has incorporated fluoride during development and before teeth appear in the mouth is more resistant to acid attack than fluoride-deficient enamel.

Fluoride Supplementation

Fluoride should be obtained in two forms: topical and systemic.

Topical fluoride

Topical fluorides strengthen teeth already present in the mouth making them more decay-resistant. Topical fluorides include toothpastes, mouth rinses and professionally applied fluoride therapies.



Systemic fluoride

Systemic fluorides are those that are ingested into the body and become incorporated into forming tooth structures.

Systemic fluorides can also give topical protection because fluoride is present in saliva, which continually bathes the teeth. Systemic fluorides include water fluoridation or dietary fluoride supplements in the form of tablets, drops or lozenges.

Fluoridation of Drinking Water

Community water fluoridation has been around for over 50 years. Water fluoridation is simply the process of adjusting the fluoride content of fluoride-deficient water to the recommended level for optimal dental health. In the United States, the optimum concentration of fluoride in water has been established in the range of 0.7 to 1.2 parts per million (ppm). An abundance of research has established the fact that adjusting the amount of fluoride in a community's drinking water to proper levels is the best way to prevent tooth decay. This is an inexpensive and easy method of giving protection to large numbers of people. It gives the greatest benefit to those who drink fluoridated water starting at birth. Research has also shown that adults are protected from root decay when they drink fluoridated water.

Community water fluoridation is endorsed by the American Dental Association, the American Medical Association, the United States Public Health Service and the Washington State Department of Health.

Is fluoride added to local community water systems?

In Benton and Franklin counties, the City of Pasco is the largest community system that adds fluoride to its drinking water. The cities of Kennewick and Richland *DO NOT* add fluoride to their water at this time.

If you drink water from a smaller community water system, speak with your water system operator. He or she should be able to tell you what the level of fluoride is in your drinking water.

Single family well owners can have their water tested for fluoride at a laboratory such as the one at the Benton-Franklin Health District. Call one of our offices for current pricing information. Other laboratories can be located in the yellow pages of your phone directory.

Why is it important to know the level of fluoride in my water?

It is recommended that you know the level of fluoride in your drinking water in order to help your dentist determine the need for fluoride supplementation, especially for children. There are

some areas in the Columbia Basin in which the natural concentration of fluoride in the groundwater meets or exceeds the recommended levels.

Fluoride concentrations above 2 ppm can cause teeth to become mottled and discolored. Extremely high levels over a long period of time may lead to damaged bone tissue.

If you would like to know the general levels of fluoride that are known in Benton, Franklin and Umillita Counties, check our website at: <http://www.bfhd.wa.gov/info/fluoride.php>

If you need more information about the benefits of fluoride supplementation, talk with your dentist or call the Benton-Franklin Health District.

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Fluoride

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