Academy of General Dentistry

FactSheet

# Fluoride & Your Health

**What is fluoride, and why is it good for my teeth?**
Fluoride is a compound of the element fluorine, which is found universally throughout nature in water, soil, air and in most foods. Existing abundantly in living tissue as an ion, fluoride is absorbed easily into tooth enamel, especially in children's growing teeth. Once teeth are developed, fluoride makes the entire tooth structure more resistant to decay and promotes remineralization, which aids in repairing early decay before the damage is even visible.

"Systemic" fluoride is ingested when added to public and private water supplies, soft drinks and teas, and is available in dietary supplement form. Once systemic fluoride is absorbed via the gastrointestinal tract, the blood supply distributes it throughout the entire body. Most fluoride not excreted is deposited in bones and hard tissues like teeth.

**What's a "topical" fluoride, and when should I use it?**
"Topical" fluoride is found in products containing strong concentrations of fluoride to fight tooth decay. These products, including toothpastes and mouthrinses, are applied directly to the teeth and are then expectorated or rinsed from the mouth without swallowing. Dentists recommend brushing with a fluoride toothpaste at least twice a day or after every meal, combined with a regimen of flossing and regular dental checkups.

Professionally-administered topical fluorides such as gels or varnishes are applied by the dentist and left on for about four minutes, usually during a cleaning treatment. For patients with a high risk of dental caries, the dentist may prescribe a special gel for daily home use, to be applied with or without a mouth tray for up to six weeks.

**Why is most of the water we drink fluoridated?**
Fluoridated water protects against cavities and root caries—a progressive erosion of adult root surfaces caused by gum recession—and helps remineralize early carious lesions. Thanks to these preventive benefits, public water fluoridation is considered the most efficient and cost-effective dental caries prevention measure available. More than 144 million United States residents in more than 10,000 communities drink fluoridated water, most from public water supplies with sodium fluoride added artificially. A small percentage get water from private wells with naturally fluoridated water.

The Environmental Protection Agency has determined that the accepted "optimal" range of fluoride in water lies between 0.7 and 1.2 parts per million (ppm) or mg per liter. The limit allowed by the EPA in public water is 4 ppm. Backed by results from more than 140 documented studies undertaken in 20 different countries over the past several decades, fluoridated water adhering to these standards has been scientifically established as safe for drinking. Water fluoridation is endorsed by nearly every major health and safety-related organization. Fluoridation of community water supplies is the single most effective public health measure to prevent tooth decay and to improve oral health for a lifetime.

**Can I get too much fluoride?**
In general, the use of fluoride is considered safe unless it's misused or overconcentrated. Drinking excessively fluoridated water can cause dental fluorosis, a harmless cosmetic discoloring or mottling of the enamel, visible by chalky white specks and lines or pitted and brown stained enamel on developing teeth.

Avoid swallowing toothpaste, mouthrinses or other topical supplements, check with your dentist on proper dosage, and be careful not to accidentally take too much.

If you are concerned about the fluoride levels in your drinking water, call the local public water department. If the source is a private well, request a fluoride content analysis taken via a water sample through your local or county health department.

**Are children more sensitive to fluoride?**
Children are more vulnerable to dental fluorosis because their developing teeth are sensitive to higher fluoride levels. They are at greater risk if they swallow or use too much toothpaste and fluoride supplements, or regularly drink water containing excessive fluoride levels. Monitor your child's intake and use of fluoride, and consult with your family dentist on the matter.

*Sources: "Federal Panel Backs Fluoride in Water," ADA News, Sept. 6, 1993.*

*"FDI Policy Statement on Fluorides and Fluoridation for the Prevention of Dental Caries," FDI Dental World, May/June 1993. "Current Thoughts on Prudent Fluoride Use," Journal of the American College of Dentists, Fall 1992. "Workshop Report-Water Fluoridation," Journal of Restorative Dentistry, May 1992. "When Your Patients Ask About Fluoride," JADA, Aug. 1991; "New Study Underscores Fluoride Safety," ADA News, March 5, 1990. "Don't Drink the Water?" Newsweek, February 5, 1990.*