



## Topical Fluoride

The most effective preventive measure available for the control of dental cavities is the exposure of tooth surfaces to fluoride. Fluoride not only increases the acid resistance of teeth, but also reduces the bacterial challenge by inhibiting plaque formation. Since fluoride is capable of exerting its beneficial effects through several protective mechanisms, adults as well as children can benefit from multiple approaches to topical fluoride therapy.

The uptake of fluoride by tooth enamel is directly proportional to the duration of the application. Therefore, the recommended application times must be followed to achieve maximum efficiency. The acids produced by bacterial plaque present on the teeth create cavities by dissolving tooth minerals. Applied fluoride will increase the acid resistance of the enamel surface. It will also reverse and remineralize early (incipient or “beginning” cavities. Some incipient cavities have been observed to actually disappear because of the redeposition of mineral within the cavity.

The antibacterial properties of fluoride are well documented. Application of topical fluorides will significantly reduce plaque accumulation. The presence of fluoride reduces the ability of bacteria to produce harmful acids. At higher concentrations, fluoride inhibits growth and metabolism of bacteria. At the concentrations used in dental office topical applications, fluoride is actually bactericidal. Bacteria cannot live in the presence of this concentration of fluoride.

Fluoride is also effective at reducing sensitivity of root surfaces. As we know, fluoride can initiate mineralization of tooth surfaces. This process will occlude or block exposed dentinal tubules with fluoride-rich deposits. This blocks the main avenue of dentinal pain transmission. The application of topical fluoride helps in the prevention of cavities by favoring remineralization, inhibiting demineralization, reducing plaque formation and inhibiting the activity of bacteria. It also helps decrease sensitivity. The effectiveness of topical fluoride is dependent on the mode of application and length of time that the fluoride is in direct contact with tooth surfaces.

Teeth are the most vulnerable to decay when they first erupt. Therefore, topical application of fluoride is extremely important for prevention of cavities in children. Adults face problems such as exposed root surfaces, lack of salivary flow (dry mouth syndrome,) existing restorations, and other factors that make them vulnerable to decay. Both children and adults can benefit greatly from the topical application of fluoride.

To maximize effectiveness of topical fluoride:

1. Have regular application of topical fluoride as part of your regular dental office visits
2. Use prescription-strength fluoride toothpaste (ie Prevident) that can be obtained from your dentist
3. Use over-the-counter fluoride rinses at home (ie “ACT”)
4. Drink fluoridated water; check labels to verify fluoride content of bottled water

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