

Fluoride in Dentistry

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Fluoride is a naturally occurring mineral that protects teeth from tooth decay. Fluoride in the mouth (in the saliva and dental plaque) is an effective way to prevent tooth decay. The health benefits of fluoride are: Fewer cavities and less severe cavities. Less need for fillings and tooth extractions. Less pain and suffering associated with tooth decay. Fluoride works by stopping or even reversing the tooth decay process—it keeps tooth enamel strong and solid. Fluoride helps to remineralize tooth surfaces and prevents cavities from forming. Almost all water contains some naturally-occurring fluoride, but usually at levels too low to prevent tooth decay. Many communities adjust the fluoride concentration in the water supply to a level known to reduce tooth decay and promote good oral health (often called the optimal level). This practice is known as community water fluoridation, and reaches all people who drink that water. Given the dramatic decline in tooth decay during the past 70 years since community water fluoridation was initiated, the Centers for Disease Control and Prevention named fluoridation of drinking water to prevent dental caries as one of Ten Great Public Health Interventions of the 20th Century. Fluoride supplements can be prescribed for children at high risk of tooth decay, whose primary drinking water has a low fluoride concentration. For children under 8, weigh the risk for decay without fluoride supplements, the decay prevention offered by supplements, and the potential for dental fluorosis. The prescription dose of fluoride supplements should be consistent with the established by the American Dental Association, the American Academy of Pediatric Dentistry, and the American Academy of Pediatrics accepted adverse effect of fluoride at levels used for water fluoridation is dental fluorosis, which can alter the appearance of children's teeth during tooth development; this is mostly mild and usually only an aesthetic concern. Compared to unfluoridated water, fluoridation to 1 mg/L is estimated to cause fluorosis in one of every 6 people (range 4–21), and to cause fluorosis of aesthetic concern in one of every 22 people (range 13.6–∞).

Key Words: *Fluoride, Tooth decay, fluorosis, prevention of fluoride deficiency.*