Policy on Use of Fluoride

Originating Committee
Liaison with Other Groups Committee

Review Council
Council on Clinical Affairs

Adopted
1967

Revised
1978, 1995, 2000, 2001, 2003, 2007, 2008

Reaffirmed
1977

Purpose
The American Academy of Pediatric Dentistry (**AAPD**), affirming that fluoride is a safe and effective adjunct in reducing the risk of caries and reversing enamel demineralization, encourages public health officials, health care providers, and parents/caregivers to optimize fluoride exposure.

Methods
A MEDLINE search was conducted using the terms "fluoride", "fluoridation", "acidulated phosphate fluoride", "fluoride varnish", "fluoride therapy", and "topical fluoride". Expert opinions and best current practices also were relied upon for this guideline.

Background
The adjustment of the fluoride level in community water supplies to optimal concentration is the most beneficial and inexpensive method of reducing the occurrence of caries.[1] Epidemiologic data within the last half-century indicate reductions in caries of 55 to 60% and recent data still show caries reduction of approximately 25%, without significant enamel fluorosis, when domestic water supplies are fluoridated at an optimal level.[2] Evidence accumulated from long-term use of fluorides has demonstrated that the cost of oral health care for children can be reduced by as much as 50%.[3] These savings in health dollars accrue to private individuals, group purchasers, and government care programs. An even higher caries reduction can be obtained if the proper use of fluorides is combined with other dietary, oral hygiene, and preventive measures[4,5] as prescribed by a dentist familiar with the child's oral health and family history.

A large body of literature supports the incorporation of optimal fluoride levels in drinking water supplies. When fluoridation of drinking water is impossible, effective systemic fluoridation can be achieved through the intake of daily fluoride supplements. Before supplements are prescribed, it is essential to review dietary sources of fluoride (eg, all drinking water sources, consumed beverages, prepared food, toothpaste) to determine the patient's true exposure to fluoride.[1,6-9] Fluoride content of ready to use infant formulas in the US and Canada ranges from 0.1 to 0.3 mg/L[10], which provides only a modest source of fluoride. Non-milk based formulas have higher fluoride content because the calcium that is added to formula contains fluoride. The more important issue, however, is the fluoride content of concentrated or powdered formula when reconstituted with fluoridated water. Considering the potential for mild fluorosis, caution is advised for infants consuming formula that is reconstituted with optimally-fluoridated water.

Significant cariostatic benefits can be achieved by the use of fluoride-containing preparations such as toothpastes, gels, and rinses, especially in areas without water fluoridation.[11] Monitoring children's use of topical fluoride-containing products, including toothpaste, may prevent ingestion of excessive amounts of fluoride.[12]

A number of clinical trials have confirmed the anticaries effect of professional topical fluoride treatments, including 5% neutral sodium fluoride varnish.[13,14] Fluoride varnishes can prevent or reverse enamel demineralization.[15] In children with moderate to high caries risk, fluoride varnishes[14,16] and fluoride-releasing restorative and bonding materials have been shown to be beneficial and are best utilized as part of a comprehensive preventive program in the dental home.[17-19]

Policy statement
1. The AAPD endorses and encourages the adjustment of fluoride content of domestic community water supplies to optimal levels where feasible.
2. When fluoride levels in community water supplies are suboptimal, and after consideration of sources of dietary fluoride, the AAPD endorses the supplementation of a child's diet with fluoride according to the guidelines jointly recommended by the AAPD[8], the American Academy of Pediatrics[20], and the American Dental Association (**ADA**)[21] and endorsed by the Centers for Disease Control and Prevention.[1]

3. The AAPD encourages dental professionals to inform medical peers of the potential of enamel fluorosis when excess fluoride is ingested prior to enamel maturation.
4. The AAPD encourages continued research on the causes of enamel fluorosis.
5. The AAPD does not support the use of prenatal fluoride supplements.[19]
6. The AAPD recommends an individualized patient caries-risk assessment before prescribing the use of supplemental fluoride-containing products.[8,22]
7. The AAPD encourages the continued research on safe and effective fluoride products, including fluoride-releasing restorative materials.
8. The AAPD supports the delegation of fluoride application to auxiliary dental personnel, or other trained allied health professionals, by prescription or order of a qualified dentist, after a comprehensive oral examination has been performed.
9. The AAPD endorses ADA 2002 House of Delegates Resolution 67H to encourage labeling of bottled water with the fluoride concentration and company contact information.[23] The resolution also supports including information with each home water treatment system on the system's effects on fluoride levels.
10. The AAPD encourages all beverage and infant formula manufacturers to include fluoride concentration with the nutritional content on food labels.
11. The AAPD encourages dentists and other health care providers to educate parents that both infant formula and the water used to reconstitute the formula may contain fluoride. Dentists and other health care providers, therefore, should assist parents in determining the infant's fluoride exposure.

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