# ATTACHMENT A

## EFFECTIVENESS OF FLUORIDE SUPPLEMENTS IN PREVENTING TOOTH DECAY

For patients who do not have regular access to recommended levels of fluoride, prescription-strength fluoride supplements can be vital option to help them maintain good oral health. The age of the patient, the fluoride content in local drinking water, and other factors will drive dentist's decision about whether to recommend (or not recommend) fluoride supplements.

Dietary fluoride supplements are available only by prescription in the United States and are recommended by the ADA[1] and the US Preventive Services Task Force.[2,3] They are recommended by the ADA for use by children who are at high risk for developing tooth decay and living in areas where the primary source(s) of water are deficient in fluoride.[1] Similar to the benefits of community water fluoridation, fluoride in dietary supplements is incorporated into developing teeth to strengthen them and reduce the risk of decay.[2]

Dietary fluoride supplements can be effective in helping to prevent tooth decay for those at high risk for tooth decay. To receive the optimal benefit from fluoride supplements, the use of supplements should begin at 6 months of age and continue daily until the child is 16 years old.[1]

Recommendations for health professionals seeking to prescribe dietary fluoride supplements are found in *The Evidence-Based Clinical Recommendations on the Prescription of Dietary Fluoride: A Report of the American Dental Association Council on Scientific Affairs* published in 2010.[1] The *Chairside Guide: Dietary Fluoride Supplements: Evidence-Based Clinical Recommendations* can be accessed from the ADA's website, ADA.org.[4]

The current dietary fluoride supplement schedule appears in Table A-1.

**Table A-1. Dietary Fluoride Supplement Schedule for Children at High Caries Risk[1]**

| Age | Fluoride ion level in drinking water (ppm)* | | |
|---|---|---|---|
| | **<0.3 mg/L** | **0.3-0.6 mg/L** | **>0.6 mg/L** |
| **Birth-6 months** | None | None | None |
| **6 months-3 years** | 0.25 mg/day** | None | None |
| **3-6 years** | 0.50 mg/day | 0.25 mg/day | None |
| **6-16 years** | 1.0 mg/day | 0.50 mg/day | None |

* 1.0 part per million (ppm) = 1 milligram/liter (mg/L).
** 2.2 mg sodium fluoride contains 1 mg fluoride ion.

The expert panel convened by the ADA Council on Scientific Affairs developed the recommendations and emphasized that they must be balanced with the practitioner's professional judgment and the individual patient's needs and preferences. They also emphasized that children are exposed to multiple sources of fluoride. The panel encouraged health care providers to evaluate all potential fluoride sources and to conduct a caries risk assessment before prescribing systemic fluoride supplements.

Specific to prescribing dietary fluoride supplements, the recommendations included conducting an accurate assessment of the fluoride content of the patient's primary drinking water source(s).[1] The identification of the "primary" sources is sometimes difficult because some patients have multiple

sources of drinking water during a typical day. For example, while a patient may have access to drinking water in the home, they often also spend a large part of their day accessing drinking water at day care, school, or a place of work, which could be a different water system. To determine fluoride levels, it might be necessary to contact the local, county, or state health departments or municipalities or private water companies for information on the fluoride content of multiple public water sources or to contact a certified laboratory that can provide a fluoride test for private wells.

The ADA offers information on caries risk assessment[5] on its website. Caries risk assessments should be completed for patients on a regular basis to determine their risk for tooth decay, which can change over time.

While dietary fluoride supplements can be an effective means of caries prevention, they must be used daily, and individual patterns of adherence to the schedule (compliance) vary greatly. Therefore, the recommendations suggest that providers carefully monitor compliance to maximize the therapeutic benefit of dietary fluoride supplements in caries prevention. If the health care provider has concerns regarding compliance, it might be best to consider other sources of fluoride exposure for the patient, such as ensuring regular twice daily use of fluoride toothpaste.[1]

While dietary fluoride supplements can be effective in reducing tooth decay, there are several factors that can impede their use and resulting therapeutic value:

- Patients/parents/caregivers must have access to a professional health care provider who can conduct the necessary assessments and provide prescriptions for dietary fluoride supplements repeatedly over time, often needing adjustment based on age and changes in water sources.
- The dietary fluoride supplements must be obtained through a pharmacy/pharmaceutical service and refilled as necessary.
- The cost of the dietary fluoride supplements can be a financial hardship for some individuals.
- The compliance required (a child should take the supplement every day until 16 years of age) to obtain the optimal therapeutic effect often is difficult to achieve.
- Tablets and lozenges are manufactured with 1.0, 0.5, or 0.25 mg fluoride. To maximize the topical effect of fluoride, tablets and lozenges are intended to be chewed or sucked for 1–2 mins before being swallowed; for infants, supplements are available as a liquid and used with a dropper.

Noting the potential obstacles listed above, where feasible, community water fluoridation is preferred because it offers proven decay prevention benefits without the need for access to a health care professional or a change in behavior on the part of the individual. Simply by drinking water at home, school, work, or play, everyone in the community benefits regardless of socioeconomic status, educational attainment, or other social variables.[6]

While dietary fluoride supplements can reduce a child's risk of tooth decay, community water fluoridation extends that benefit to adults in the community. Additionally, the cost of dietary fluoride supplements over an extended period of time can be a financial concern to a family. In looking at overall costs, consideration should be given to the cost per person and the number of people who can benefit from a dietary fluoride supplement or community fluoridation program.[7]

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[1] Rozier RG, Adair S, Graham F, et al. Evidence-based clinical recommendations on the prescription of dietary fluoride supplements for caries prevention: a report of the American dental association council on scientific affairs. *J Am Dent Assoc.* 2010;141(12):1480–1489.

[2] National Institutes of Health: Office of Dietary Supplements. Fluoride: fact sheet for health professionals. Accessed March 21, 2025. https://ods.od.nih.gov/factsheets/Fluoride-HealthProfessional/

[3] Chou R, Bougatsos C, Griffin J, et al. Screening, referral, behavioral counseling, and preventive interventions for oral health in children and adolescents ages 5 to 17 years: a systematic review for the US preventive services task force. Rockville (MD), USA: Agency for Healthcare Research and Quality; 2023.

[4] American Dental Association. Chairside tool: dietary fluoride supplements: evidence-based clinical recommendations. 2010. Accessed March 20, 2025. https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/ada_evidence-based_fluoride_supplement_chairside_guide.pdf.

[5] American Dental Association. Oral health topic: caries risk assessment and management. Accessed March 20, 2025. https://www.ada.org/

resources/ada-library/oral-health-topics/caries-risk-assessment-and-management.

[6] Horowitz HS. The effectiveness of community water fluoridation in the United States. *J Public Health Dent*. 1996;56(5 Spec No):253–258.

[7] Garcia AI. Caries incidence and costs of prevention programs. *J Public Health Dent*. 1989;49(5 Spec No):259–271.