

# Policy on Use of Fluoride

## Review Council

Council on Clinical Affairs

## Latest Revision

2018

### Purpose

The American Academy of Pediatric Dentistry (AAPD) affirms that the use of fluoride as an adjunct in the prevention of caries is safe and effective. The AAPD encourages dentist and other health care providers, public health officials, and parents/caregivers to optimize fluoride exposures to reduce the risk for caries and to enhance the remineralization of affected tooth structures.

### Methods

This document was developed by the Liaison with Other Groups Committee and adopted in 1967. This is an update from the last revision in 2014. An electronic database search using the terms: fluoride, fluoridation, acidulated phosphate fluoride, fluoride varnish, fluoride therapy, and topical fluoride previously was conducted to develop and update this policy. The current update relied upon systematic reviews, expert opinions, and best current practices. The use of silver diamine fluoride is addressed in a separate AAPD policy.<sup>1</sup>

### 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.<sup>2</sup> Long-term use of fluorides has reduced the cost of oral health care for children by as much as 50 percent.<sup>3</sup> When public water is fluoridated to an optimal level, there is a 35 percent reduction in decayed, missing, and filled primary teeth and 26 percent fewer decayed, missing, and filled permanent teeth.<sup>4</sup> The occurrence of fluorosis, causing esthetic concerns, has been reported to be 12 percent when public water contains 0.7 part per million (ppm) fluoride.<sup>4</sup> When combined with other dietary, oral hygiene, and preventive measures<sup>5</sup>, the use of fluorides can further reduce the incidence of caries.

Professional fluoride products should only be applied by or under the direction of a dentist or physician who is familiar with the child's oral health and has completed a caries risk assessment. When fluoridation of drinking water is impossible, effective fluoride supplementation can be achieved through the intake of daily fluoride supplements according to established guidelines.<sup>2,6-8</sup> Before supplements are prescribed, it is essential to review dietary sources of fluoride (e.g., all drinking water sources, consumed beverages, prepared food, toothpaste) to determine the patient's true exposure to fluoride,<sup>2,9,10</sup> and to take into consideration the caries risk of the

child. The mean fluoride concentration of ready-to-feed infant formulas in the U.S. is 0.15 ppm for milk-based formulas and 0.21 ppm for soy-based formulas.<sup>11</sup> The more important issue, however, is the fluoride content of concentrated or powdered formula when reconstituted with fluoridated water. The range of fluoride in ppm for reconstituted powdered or liquid concentrate, when reconstituted with water containing 1 ppm fluoride, is 0.64–1.07.<sup>11</sup> As the Environmental Protection Agency/Department of Health and Human Services' recommendation<sup>12</sup> for optimizing community water supplies to 0.7 ppm fluoride is instituted, fluorosis due to reconstituting infant formula with fluoridated water is less of an issue.

Significant cariostatic benefits can be achieved by the use of over-the-counter fluoride-containing preparations such as toothpastes, gels, and rinses, especially in areas without water fluoridation.<sup>2</sup> The brushing of teeth with appropriate amounts of fluoride toothpaste twice daily for all children is encouraged.<sup>13</sup> Monitoring children's use of topical fluoride-containing products, including toothpaste, may prevent ingestion of excessive amounts of fluoride.<sup>13,14</sup> Numerous clinical trials have confirmed the anti-caries effect of professional topical fluoride treatments, including 1.23 percent acidulated phosphate fluoride [(APF); 1.23 percent fluoride], five percent sodium fluoride varnish [(NaFV); 2.26 percent fluoride], 0.09 percent fluoride mouthrinse, and 0.5 percent fluoride gel/paste.<sup>15</sup> For children under the age of six years, five percent sodium fluoride varnish in unit doses, which reduce the potential for harm, is the recommended professionally-applied topical fluoride agent.<sup>15</sup>

A significant number of parents and caregivers are concerned about their child receiving fluoride and may refuse fluoride treatment even though fluoride is safe and effective.<sup>16</sup> This is similar to opposition to community water fluoridation.<sup>17</sup> Topical fluoride refusal and resistance may be a growing problem and mirror trends seen with vaccination refusal in medicine.

### Policy statement

The AAPD:

- Endorses and encourages the adjustment of fluoride content of public drinking water supplies to optimal levels where feasible.

#### ABBREVIATION

AAPD: American Academy Pediatric Dentistry. ppm: part per million.

- Endorses the supplementation of a child's diet with fluoride according to established guidelines when fluoride levels in public drinking water are suboptimal and after consideration of sources of dietary fluoride and the caries risk of the child.
- Encourages the brushing of teeth with appropriate amounts of fluoride toothpaste twice daily for all children.<sup>11</sup>
- Encourages the application of professional fluoride treatments for all individuals at risk for dental caries.
- Encourages dental professionals to inform medical peers of the potential of enamel fluorosis when excess fluoride is ingested prior to enamel maturation.
- Encourages the continued research on safe and effective fluoride products.
- Supports the delegation of fluoride application to auxiliary dental personnel or other trained allied health professionals by prescription or order of a dentist after a comprehensive oral examination or by a physician after a dental screening has been performed.
- Encourages all beverage and infant formula manufacturers to include fluoride concentration with the nutritional content on food labels.
- Recognizes that drinking fluoridated water and brushing with fluoridated toothpaste twice daily are the most effective method in reducing dental caries prevalence in children.
- Encourages dental providers to talk to parents and caregivers about the benefits of fluoride and to proactively address fluoride hesitance through chairside and community education.

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