

# Fluoride Varnish

## *An Effective Tool for Preventing Dental Caries*



**B**ecause frequent exposure to small amounts of fluoride each day is the best way to reduce the risk for dental caries (tooth decay), it is recommended that individuals drink water with an optimal fluoride concentration and brush their teeth with fluoride toothpaste twice a day. Among those at high risk for dental caries, additional forms of fluoride may be necessary to reduce risk.<sup>1</sup>

## Background

Fluoride-containing varnishes were developed to improve on the shortcomings of other topical fluoride vehicles (e.g., mouthrinse, gels) by prolonging contact of fluoride with tooth enamel.<sup>2</sup>

The decision to professionally apply topical fluoride should be based on assessment of dental caries risk, and fluoride varnish should ideally be applied by a dental or medical professional as part of a comprehensive, continuously accessible, coordinated, and family-centered oral health care program.<sup>3,4</sup>

Fluoride varnish applied every 6 months is effective in preventing dental caries in the primary and permanent teeth of children and adolescents at moderate to high risk for dental caries. For those at high risk, receiving fluoride varnish every 3 months may provide an additional caries-prevention benefit.<sup>5,6</sup>

The prescription and application of highly concentrated fluoride, including fluoride varnish, is regulated by state professional practice acts for dentists, dental hygienists, physicians, nurses, pharmacists, and others.<sup>7</sup>



## Effectiveness

The quality of evidence for the efficacy of high-concentration fluoride varnish in preventing dental caries in children at moderate to high risk for caries is high.<sup>1</sup>

To be most effective, fluoride varnish applications should occur before dental caries develops and therefore should be started in infancy.<sup>8</sup>

In a study of children ages 3–5 enrolled in Head Start, among the children with active dental caries who received fluoride varnish application, 81 percent of the active caries became inactive after 9 months, compared with 38 percent in children who did not receive fluoride varnish application.<sup>9</sup>

In a caries prevention program at an urban pediatric clinic serving families with low incomes, children ages 6–27 months who received a caries-risk assessment, fluoride varnish application, oral hygiene instruction, referral for treatment (if needed), and periodic recall had a significantly lower incidence of caries than did a comparison group who did not receive these services.<sup>10</sup>

Among 376 Chinese and Latino infants and children (ages 6–44 months) from families with low incomes, those who received oral hygiene counseling as well as fluoride varnish application had a lower incidence of dental caries than their counterparts who received only counseling.<sup>11</sup>



## Safety

When recommendations for dosages and frequency of fluoride varnish application are followed, no side effects are expected to occur.<sup>12</sup>

Risk of fluorosis from fluoride varnish is minimal.<sup>13</sup>

No adverse events or safety issues were reported among 376 Chinese and Latino infants and children (ages 6–44 months) from families with low incomes who received fluoride varnish application.<sup>11</sup>

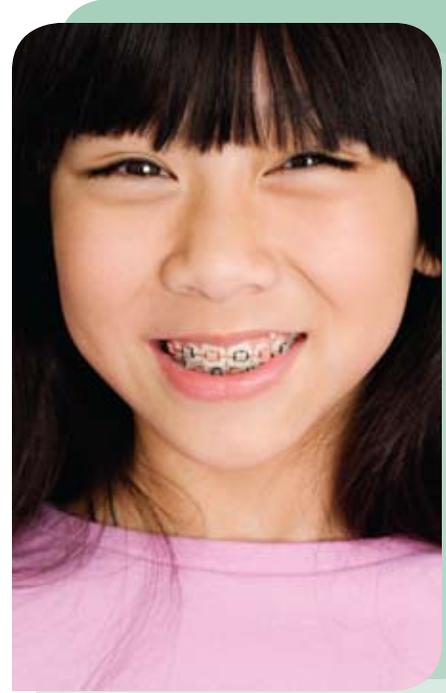
## Service Delivery and Access

Fluoride varnish, in comparison with gels or foams, is applied easily, sets quickly, and is less likely to be swallowed by young children.<sup>2,13</sup> This is especially advantageous in young children, in children or adults with special health care needs, and in public health programs.<sup>13</sup>

Having oral health professionals as well as medical professionals (e.g., physicians, nurse practitioners) apply fluoride varnish creates a wider array of access points at which children and adolescents enrolled in Medicaid can receive preventive services.<sup>14</sup>

The use of fluoride varnish to assist in the prevention of dental caries in children is expanding in both public and private settings that incorporate oral health risk assessments and parental counseling. These settings include Head Start programs; Special Supplemental Nutrition Programs for Women, Infants and Children (WIC) clinics; well-child clinics; medical offices; and other community programs.<sup>15</sup>

In a study of post-residency pediatricians, more than 90 percent said they should assess children's teeth for dental caries and educate families about preventive oral health. Pediatricians and dentists need to work together to improve the quality of preventive oral health care available to all young children.<sup>16</sup>

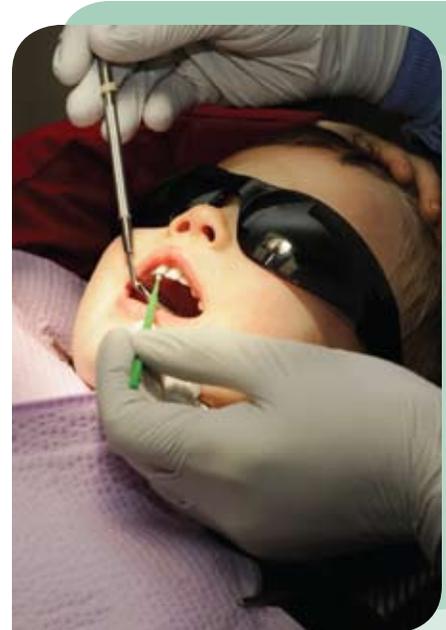


## Reimbursement

After Wisconsin changed its Medicaid policy to allow medical professionals (rather than just oral health professionals) to be reimbursed for fluoride varnish application, the number of fluoride varnish application claims for children enrolled in Medicaid (ages 1–6) increased significantly. The greatest increase was among children ages 1–2.<sup>14</sup>

If reimbursed at an appropriate level, a high proportion of primary care pediatric and family physicians are willing to provide fluoride varnish application to children who are eligible for Medicaid.<sup>17</sup>

A preventive initiative that includes an oral evaluation and fluoride varnish application for children and oral hygiene instruction for their parents receiving public assistance and seen in a pediatric medical residency setting provides an additional access point for preventive services to children at high risk for dental caries.<sup>18</sup>



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National Maternal and Child Oral Health Resource Center  
Georgetown University  
Box 571272  
Washington, DC 20057-1272  
(202) 784-9771 • (202) 784-9777 fax  
E-mail: [OHRCinfo@georgetown.edu](mailto:OHRCinfo@georgetown.edu)  
Web site: <http://www.mchoralhealth.org>

