



## IOWA DEPARTMENT OF PUBLIC HEALTH FLUORIDE VARNISH APPLICATION PROTOCOL

### Overview

Fluoride varnish is a resin that is applied to the tooth surface to protect it from decay. The purpose of applying fluoride varnish is to arrest and reverse the process of dental caries formation. Most fluoride varnishes contain 5% sodium fluoride in a colophony/resin base.<sup>1</sup>

Fluoride varnish is painted directly onto the teeth by dental or other health care professionals. The varnish forms a thin sticky layer on the tooth, which hardens on contact with saliva. Fluoride is then absorbed into the enamel of the tooth. Fluoride varnish is not intended to adhere permanently; the varnish holds a high concentration of fluoride in a small amount of material in close contact with the teeth for many hours until it is brushed off. Varnishes must be reapplied at regular intervals with at least four applications per year for optimal effectiveness.

### Advantages

Fluoride varnish application does not require special dental equipment and is inexpensive. It is easy to apply and does not require a professional dental cleaning prior to application. Because only a minimal amount is used and it dries immediately upon contact with saliva, fluoride varnish is safe and well-tolerated by infants, young children and individuals with special needs.

No published evidence indicates that professionally applied fluoride varnish is a risk factor for dental fluorosis, even among children younger than 6 years of age. Proper application technique reduces the possibility that a patient will swallow varnish during its application and limits the total amount of fluoride swallowed as the varnish wears off the teeth over several hours. Fluoride varnish is approved by the Food and Drug Administration and is endorsed by the American Dental Association.

### Indications for use

Fluoride varnish can safely be applied to the teeth of all children and adults. It is ideal for infants and children, pregnant women and older adults with a moderate or high risk of developing tooth decay. The preventive effect of fluoride varnish is strongest when applications begin before the onset of detectable dental caries for high-risk populations. Reductions in tooth decay of 18 percent to 25 percent have been demonstrated upon early intervention.<sup>1</sup> Socioeconomic status can be an indicator of decay risk, as low-income children and adults tend to experience more decay than those with higher-income. Additional risk factors include the following:

#### Children

- Have history of decay, visible plaque, white spot lesions or stained fissures
- Continue to use the bottle past 1 year of age or sleep with a bottle containing liquids other than water
- Breastfeed on demand at night
- Use a bottle or sippy cup throughout the day containing liquids other than water
- Consume high carbohydrate or sugar-containing food or drinks throughout the day

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<sup>1</sup> ASTDD Fluorides Committee. (2014). *Fluoride Varnish: an Evidence-Based Approach*  
[www.astdd.org/www/docs/fl-varnish-research-brief.pdf](http://www.astdd.org/www/docs/fl-varnish-research-brief.pdf)

- Have a developmental or physical disability
- Regularly use oral medications with high sugar content
- Have family members with a history of decay

#### Adults

- Have had decay in the past or have white spot lesions
- Have a developmental or physical disability
- Chronically use high sugar oral medications
- Have family members with a history of decay
- Consume high carbohydrate or sugar-containing food or drinks throughout the day

#### **Application of fluoride varnish**

Fluoride varnish may only be applied by an Iowa licensed dentist, licensed dental hygienist, registered dental assistant, licensed physician or other health professional functioning within their scope of practice or licensure.

#### Supplies

- Disposable gloves
- Gauze sponges (2 x 2)
- Fluoride varnish (single use dosage with applicator)
- Toothbrush (optional)
- Paper towels or disposable bibs to place on the patient's chest or under the head (optional)

#### Applying the fluoride varnish

- Wipe the teeth with gauze to remove excess plaque or debris from teeth
- For best results, eliminate any excess saliva/moisture from area to be treated using a gauze sponge. The provider will usually be able to isolate and dry a quadrant of teeth at a time, but may have to work with fewer teeth in some patients. Infants are easiest because they have only anterior teeth.
- Apply a **thin** layer of the varnish to **all surfaces of the teeth, including the chewing and interproximal surfaces.**
- Avoid applying varnish on large open decay where there may be pulp involvement.
- Once the varnish is applied, moisture (saliva) contamination is not a concern because the varnish sets quickly as it comes in contact with saliva.

#### Post-application instructions for patients

- Eat only soft foods for at least 2 hours after treatment. Avoid eating hard, crunchy foods.
- Do not drink hot liquids or use alcohol (mouth rinses) for at least 6 hours.
- Do not brush or floss for at least 4-6 hours after application.
- The teeth may be discolored temporarily (a dull or yellow tinge) until the varnish is brushed off.
- Wait until the following day for normal brushing and flossing.

The varnish application should be repeated at **three-month intervals for moderate or high-risk patients** and at **six-month intervals for patients who are at low risk.**