



# Silver Diamine Fluoride: A Practitioner's Perspective

## What you need to know, what your patients want to know

By Hellene Ellenikiotis, DDS, SCCDS member

### Product Guide

**Product name:** Advantage Silver Arrest - 38% silver diamine fluoride

**Format 1:** Unit dose: Box of 30 including applicators (\$122.50)

**Format 2:** Bottle: 8 mL, without applicators (\$162.50), applicators also available

**CDT code:** D1354: Interim caries arresting medicament, per tooth.

**Purchasing and information:** Elevate Oral Care, LLC, 877-866-9113

The Elevate website also features links to articles and provides free accredited CDE webinars: [www.elevateoralcare.com](http://www.elevateoralcare.com)



fig. A



fig. B



fig. C



fig. D

### Why do I have this in my practice?

This is the first FDA-cleared product, also effective to arrest caries.

### Is this FDA approved?

Yes. The FDA clearance is for sensitivity, the same clearance as fluoride varnish. Caries arrest is an off-label use for SDF, just as prevention is an off-label use for fluoride varnish.

### How does it work?

The silver acts as an antimicrobial, and fluoride hardens (remineralizes) the softened dentin.

### What are the clinical applications?

- Enamel caries. (fig. A)
- Root caries. (fig. B)
- Dentin decay in primary or permanent teeth (even when deep). (fig. C)
- Recurrent decay around restoration margins. (fig. D)
- Sensitivity prevention.

### Who do I use it with?

Children, elders, patients with exceptional needs, patients with limited means, patients

who prefer the medicine to the drill and patients with whom we're preventing pulp exposure.

Children who would otherwise be treated under GA or IV sedation, elders for whom conventional treatment may not be an option and people with limiting medical conditions now have an efficacious, inexpensive and minimally invasive treatment option.

### What is the average appointment time?

5 minutes.

### How much do I use?

One drop can treat five cavitated lesions.

### How do I apply it?

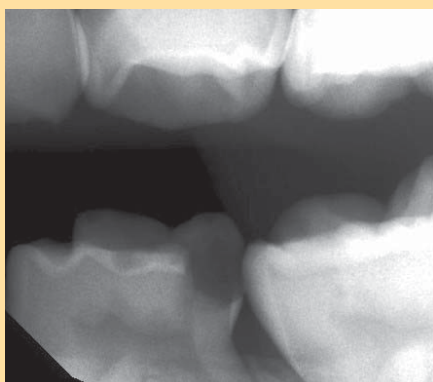
1. Remove debris.
2. No caries removal is required.
3. I recommend applying Vaseline to the lips.
4. Dri-angle and cotton roll isolation.
5. Dry the lesion, not necessary to desiccate.
6. Apply SDF with applicator.
7. Wait 1 minute if patient behavior allows.
8. Cover with fluoride varnish (optional).

Use superfloss or unwaxed floss to access interproximal lesions. After isolation, place the superfloss, apply the SDF to the superfloss with an applicator interproximally from the buccal and lingual aspects. Wait one minute if patient behavior allows. Covering with fluoride varnish is optional.

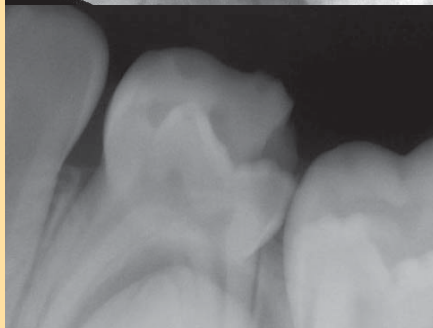
#### What are the post-op instructions?

If only SDF is used, the patient can eat or drink normally.

If fluoride varnish is applied, I recommend waiting an hour prior to eating or drinking.



**fig. E: Caries to inner third of dentin**



**fig. F: SDF as indirect pulp cap, restored with composite, one year post-op**

#### Do I apply just once?

There is greatest success when SDF is applied semiannually.

In high-risk patients, I'll do three applications in the first three months (1-4 weeks apart), and then at recall visits.

#### How do I know if it's working?

The treated surface turns black and hardens.

#### How effective is it?

SDF arrests caries approximately 80% of the time. SDF arrests root caries approximately 60% of the time.

#### What if I want to restore the tooth?

Restoration is optional.

General indications include:

- Desire to cover the black stain.
- Preventing pulp exposure.
- When cavitation is a food trap.

#### General protocols for restoring include:

Silver Modified Atraumatic Restorative Technique-SMART, which employs restoring with a Glass Ionomer like Equia Forte, Fuji IX, or Fuji II LC.

I'll use composite if I can prep the area, obtain clean margins and achieve isolation. Be sure to rinse the SDF prior to etching and bonding. If not rinsed, bonding strength can be decreased.

If SDF and composite or RMGI are used at that same visit, the restoration will cure gray. If esthetics are a concern, consider placing the restoration at a subsequent visit. An opaquer is usually required to fully mask the black stain. (fig. E, F)

#### What are the precautions in using SDF?

Silver allergy is a contraindication.

The maximum dose is 25 uL (1 drop) /10kg of body weight per treatment visit.

If SDF touches surrounding gum tissue, it may discolor brown or white. It goes away in a few days without treatment. (fig. G, H)



**fig. G**



**fig. H**

If SDF touches an area of the lips, it may temporarily discolor for a few days to a week. It goes away without treatment.

If accidental skin contact occurs, thoroughly wash the area with water, saline solution or ~3% hydrogen peroxide.

#### What about clean up?

SDF will stain countertops, floors and equipment. Train staff to handle and dispose of materials with care. Dispense on protected surface.

I recommend an ammonia-based cleaner such as Windex or Lysol wipes for immediate clean up. For dried stains, Mr. Clean Magic Eraser, bleach, Comet, or Bar Keepers Friend are go-to options.

*Dr. Hellene Ellenikiotis completed her DDS and GPR Residency at the University of California, San Francisco. She co-introduced SDF to UCSF, was co-author of the UCSF Protocol on SDF, and continues to give CE courses on the material. She is practicing in Los Gatos and Sunnyvale.*