

## **OSU Pediatric Dentistry Clinic and OSU Coach -- Silver Diamine Fluoride (SDF) Protocol**

***Updated 5/11/17***

Material: Advantage Arrest® (38% SDF) from Elevate Oral Care

CDT Code: *D1354 - Application of a caries arresting medicament, without removal of tooth structure*

Maximum dose: 25 ul (1 drop)/10 kg per treatment visit (400-fold safety margin)

### **Indications (Patient Selection):**

1. High caries risk
  - Early Childhood Caries
  - Salivary dysfunction – e.g., cancer treatment, Sjogren's, ADHD medications
2. Pre-cooperative children
  - Few dental needs, deferring treatment until more cooperative
  - Non-candidate for sedation, or long wait list for GA/Sed/CC/Coach appointments
3. Medically compromised patients
  - Long Main OR wait time
  - Minimal treatment needs
    - Good OH with few needs
    - Recent treatment in OR
4. Difficult to treat dental carious lesions
  - Carious or hypoplastic lesions on partially erupted or ectopic molars
  - Bruxism causing exposed occlusal surfaces of SSCs
  - Wrap-around cervical lesions or root caries
5. Patient-related access barriers
  - Delayed first dental visit
  - Long distance between home and clinic
  - History of irregular dental visits
  - Low-cost option for treatment
  - Patients treated on the Coach
6. Other
  - Mixed dentition – caries on primary teeth with limited time left in mouth
  - Educational tool for children or parents—to show patient and parents where the active cavities are
  - Decrease sensitivity for patient comfort and/or to do treatment without local anesthesia at operative visit
  - Diagnostic tool for deep caries (when unsure if reversible or irreversible pulpitis), prior to restoring or referring for endodontic treatment

**Indications (Teeth):**

1. Dentin hypersensitivity
2. Active cavitated lesions into dentin that are accessible with microbrush (can use ortho separator or Superfloss technique for interproximal lesions)
3. Anterior and posterior teeth
  - OSU Pediatric Dentistry clinic: Confirm (twice) that parent understands black staining for anterior teeth
  - Coach (or when no parent is present for consent): Distals of canines and posterior teeth only
  - Staining is difficult to cover up completely without high-speed excavation of lesion + opaque material or full-coverage restoration

**Contraindications:**

1. Silver allergy
2. Spontaneous pain/irreversible pulpitis or pulpal necrosis
3. (Relative contraindication) Ulcerative gingivitis, stomatitis

**Procedure:**

1. Pediatric Dentistry Clinic: Explain SDF, show photos and complete appropriate treatment consent form.

Coach: Attempt to call parent and discuss SDF over phone. Needs to be documented in the treatment notes that attempt made to contact parent was successful or not successful. If no parent able to be reached, proceed. Remember, do not apply SDF anterior to the distal of canines.

**Script for Provider**

There are several options for treating this kind of cavity. We can do nothing, but that would mean it gets worse over time because it has already gone into the second layer of the tooth.

[We can try to fix it here in our office but he/she will probably not cooperate for that. OR We cannot do sedation right now because .... OR We can fix these cavities while your child is all the way asleep but we are trying to hold off on that because... OR ... We will schedule your child to be treated under general anesthesia but right now our wait list is X months long and we don't want the cavities to get worse before then...]

We have a medicine we can use called Silver Diamine Fluoride and it has been used for 80 years around the world. It is a type of antibiotic that we simply paint onto the tooth with a small paintbrush. We try to paint it on for as long as your child will let us, then we will dry it and paint some flavored fluoride on top of it to cover up the taste. What it does is kill the bacteria that are causing your child's cavity, and it turns the cavity hard like concrete. It also makes your child's tooth less sensitive. But it turns the cavity

black [show pictures] over the next few days. The staining tells us that the cavity has stopped and the medicine is working. If your child is wiggly and we accidentally get some of this medicine on their cheek or lip or gums, those will also stain brown or gray but that will go away within a few weeks. This medicine can also stain clothing so we will be careful not to touch other things with our gloves.

We want to bring your child back in about a month to check how the medicine is working. We may decide to paint it on again if the cavity is not as hard as concrete like we want. We will decide over time if it is best to keep re-applying this medicine or if we should put a filling or a crown on that tooth, [and hopefully by then your child will be more cooperative so we can do it in our clinic, we will be in the OR and will fix all at one time, etc etc].

2. Get SDF set-up from dental assistants in Pediatric Dentistry Clinic or Coach
  - a. One drop of SDF into a plastic dappen dish
  - b. Microbrush
  - c. Cotton rolls or gauze
  - d. Fluoride varnish or fluoride foam
3. Procedure:
  - a. Use cotton rolls or gauze to isolate affected teeth
  - b. Dry affected tooth surfaces with air-water syringe or with gauze or cotton roll
  - c. Bend micro-brush, immerse into SDF, remove excess on side of dappen dish
  - d. Apply SDF directly onto the affected tooth surfaces(s) with micro-brush
  - e. If possible, rub with micro-brush for 1 minute and allow SDF to soak into and react with lesion – in pre-cooperative children, even a few seconds will have an effect
  - f. Use gauze or cotton roll to remove excess SDF from tooth
  - g. Rinse area with water if patient is cooperative, and apply F varnish or F foam over SDF-treated area to improve taste/acceptance
4. Change gloves immediately and throw away microbrush, gauze, cotton rolls, etc. to decrease chances of transferring SDF to soft tissues
5. Post-procedure
  - a. Complete SDF patient tracking form (initial or follow-up visit) in AxiUm (or paper half-sheet forms go to Dorothy/Pedo or Mary/Coach)
  - b. AxiUm – charge as D1354 – one charge per visit (not per tooth)
  - c. AxiUm Progress note:

### **Silver Diamine Fluoride – Initial Visit**

*[This note needs heavy customization](Coach: Attempted to contact parent via phone and \_\_\_\_\_).* Gave the parent the options for treatment of caries/sensitivity including \_\_\_\_\_ *(fill in the blank – no treatment, general anesthesia, restorations, etc)* \_\_\_\_\_. Explained that Advantage Arrest (38% Silver Diamine Fluoride - SDF) is a liquid antibiotic we use to arrest the decay process. The reason SDF is recommended is: \_\_\_\_\_. At a later date, we may restore the tooth, or possibly defer treatment due to poor patient cooperation or limited time left in mouth. In the meantime, it will stain the cavity black. Showed parent before and after photos, after which parent gave verbal consent for SDF application. Cotton roll isolation, applied one drop with applicator to teeth #(?) for (?) seconds, blotted dry, and then applied F varnish/foam to improve taste. Provided SDF post-

op form. (If applicable: Explained the need for re-evaluation and re-application in 4-6 weeks. Next appointment scheduled for "SDF check")

### SDF Follow-Up Visit

Patient presented for SDF check.

Symptoms since last visit:

Felt lesion with explorer. Exam reveals (*hard/soft*) decay and black discoloration where SDF was applied. Discussed with parent the option of applying SDF again or (*fill in the blank*).

Parent (pleased/ not pleased) with SDF as treatment option.

(Choose which is applicable)

Will re-assess patient in (?) months and decide on next course of treatment as appropriate.

Patient will have new SDF application at next scheduled hygiene visit.

Patient will be scheduled for (?).

### SDF Algorithm

