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The American Dental Association (ADA) convened a team of experts to conduct a systematic review and subsequently form recommendations for the arrest or reversal of cavitated and non-cavitated carious lesions in both primary and permanent dentition. The guideline presents eleven clinical recommendations concerning the use of nine nonrestorative caries treatments, including sodium fluoride varnish, sealants, resin infiltration, and the ADA's first-ever recommendations for silver diamine fluoride (SDF). [ADA.org/caries](https://ada.org/caries)

These guidelines provide clear instructions on how to begin these practices in your office and they also provide helpful decision-making tools in the form of chair-side guides (seen below), and information for patients. The ADA website even provides options for patients on its website. You can [view all of the information here](#).

[illegible]

For more information on application of SDF, there are great instructional videos and research summaries available. Dr. Jeanette MacLean's [video can be seen here](#), and Dr. Yasmi Crystal and Dr. Richard Niederman published an [Evidence-Based Dentistry Update on SDF Use](#).

Questions can be directed to the ADA Center for Evidence-Based Dentistry at [ebd@ada.org](mailto:ebd@ada.org).

## Practice Guidelines

### Cover Story

## Evidence-based clinical practice guideline on nonrestorative treatments for carious lesions

A report from the American Dental Association

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Supplemental material is available online.

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## Journal of Dental Research Also Printed the Guidelines

The research from these new ADA Evidence-Based Guidelines for Nonrestorative Treatment of Carious Lesions was so important it's also been printed in the JDR. You can find the research here: <http://journals.sagepub.com/doi/full/10.1177/0022034518800014>

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## Myth Busters - Getting the most out of SDF applications

### 1. Application

There have been multiple methods to apply SDF discussed in the previous few months and years. In short, caries removal is not necessary prior to application. Clean the lesion of plaque and food debris, isolate, dry the tooth, then apply the SDF with a microbrush, and, when possible, allow the SDF to absorb for 1 to 3 minutes (do not blow compressed air). Those are the most important steps in the process. Excess liquid can be blotted with gauze and/or the treated surface can be coated with fluoride varnish. Dr. Yasmi Crystal and Richard Niederman just published an Evidence-Based Dentistry Update on Silver Diamine Fluoride which summarizes the available evidence and references this basic application video (links are above).

### 2. SDF and Bonding

Some practitioners have expressed concern regarding the impact of SDF on bond strength to restorative materials. Rest assured that SDF does NOT have a negative impact on bond strength, and there is literature to support this. In fact, SDF has even been shown in studies to enhance the performance of GIC for ART (Zhao et al Journal of Dentistry 2017) and increase retention of sealants. (Perez-Hernandez et al European Archives of Pediatric Dentistry doi.org/10.1007/s40368-018-0374-4). You can find some supporting articles here:

[Microtensile Bond Strength Between Glass Ionomer Cement and Silver Diamine](#)

### [Fluoride-Treated Carious Primary Dentin](#)

#### [Effect of Silver Diamine Fluoride on Microtensile Bond Strength to Dentin](#)

#### [Effect of Silver Diamine Fluoride \(SDF\) Application on Microtensile Bond Strength of Dentin in Primary Teeth](#)

Several other studies exist on using SDF under restorations. Contact us and we can provide information specific to your needs.

### 3. Light Curing

Do not light cure SDF. Some clinicians have light cured SDF after application in an attempt to set the material and disclose the treated surface. This can cause immediate discoloration. We recommend against this due to the immediate oxidization of silver caused by the light. There was also a recent study that looked at penetration of silver into dentin with and without light curing. Although no difference in depth was noticed, it is still unknown how much silver is deactivated (by oxidization) and not allowed to react with the tooth.

### 4. Toxicity

Thirty eight percent silver diamine fluoride sounds high, but that number breaks down to 25% silver, 8% ammonia and 5% fluoride. The low volume of SDF (typically one drop) used to treat further limits risk of ingestion. In fact, a drop of SDF (0.025 ml) is smaller than a drop of water (0.05 ml) due to density and surface tension with only 1.12 mg F in a drop. A properly fluoridated liter of water has approximately the same amount of fluoride as a drop of SDF. Most of the SDF drop will also remain in the dappen dish, on the applicator or will bind to the tooth. There's very little chance for a full drop to be ingested.

The silver content is roughly 400 times lower than the EPA's limit for ingestion, thus toxicity is a low concern.

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## PCORI Grant for Case Western

Last year, two Patient-Centered Outcomes Research Institute grants were awarded to Dr. Richard Niederman for New York University to compare SDF+FV to sealants+FV in NYC and rural New England school-aged children. These grants totaled over \$17,000,000.

In November of 2018, a new PCORI grant was awarded to Case Western University in Cleveland, Ohio. This \$4,200,000 grant will allow Dr. Suchrita Nelson PhD to evaluate SDF vs. ART (using a GI) in low-income elderly housing communities where transportation, income and cognitive disabilities limit access to oral care. Success of this grant would have far reaching impact of expansion of care for this population.

You can read more about [this grant here!](#)

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## Upcoming CE Programs on SDF

The ADA Annual Session in Hawaii was a great success. The Arizona AGD Summit was another great success, and there are other upcoming programs and events you can attend. Various experts have been at our booth at trade-shows answering questions regarding SDF as well as the new Nonrestorative Caries Treatment Guidelines. If you didn't get a chance to see them at these events, SDF leaders will be presenting upcoming CE programs and available at our booth to meet with you.

Information on these events can be found at the link below.

1. *Learn Techniques and practical considerations for using SDF and Glass Ionomer Cement (GIC) from Dr. Jeremy Horst and Dr. Doug Young on Saturday, February 2nd, 2019, at University of the Pacific, San Francisco, CA. The combination of these two materials just may bridge the gap between remineralization and traditional restorative materials. Review the evidence, case studies, underlying scientific mechanisms and role play how to communicate these treatments to your patients in this 6 hr ADA CERP Course. [Click here to register.](#)*
2. *Yankee Dental Convention - Dr. Lauren Feldman will be our expert to answer any clinical questions you may have. Stop by Booth 1509!*
3. *Chicago Midwinter Dental Meeting - Dr. Jeanette MacLean and Dr. Grace Yum will join us as our experts answering clinical and office integration questions regarding SDF. Come see us at Booth 4839!*
4. *Countless other events are planned such as the Townie Meeting in Scottsdale AZ, California Society of Pediatric Dentistry Meeting, American Academy of Pediatric Dentistry, and several other events. Contact us for more information on each.*

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## Clinicians Report Buyers Guides

Clinicians Report recently released their 2019 Buyers Guides. Both the Dental and Hygiene buyers guide included Advantage Arrest Silver Diamine Fluoride 38% as well as three other products available from Elevate Oral Care (FluoriMax 2.5% NaF Varnish, FluoriMax 5000 1.1% NaF Dentifrice, and TePe Easy Picks). Visit [Clinicians Report](#) to get a copy for your practice.

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## Dr. Steve Duffin and the Medical Management of Caries



Long before the FDA cleared Silver Diamine Fluoride for use in the United States, pioneers were already exploring how silver nitrate, fluoride varnish, and silver diamine fluoride could impact caries in their patients. Dr. Steve Duffin began using silver products in his Keizer, Oregon dental practice in 2006 to help maintain his Medicaid patients' health. With low cost

products and treatments, he successfully reduced the caries rates in his patient population. He was so successful in improving their health that he was noticed by governments in South America and other areas to develop programs to treat caries in their countries using Silver Diamine Fluoride.

Since 2006, Dr. Duffin has developed and assisted in the development of SDF application process, and its inclusion in other techniques such as Silver Modified Atraumatic Restorative Treatment (SMART), SDF around margins of existing restorations, indirect pulp cap procedures, and other uses of the chemistry.

Dr. Duffin continues to develop treatment programs for countries including Ecuador, Ghana, Bolivia and others. He's also active in lecturing and instructing others in the Medical Management of Caries. [His website](#) provides countless articles and supporting information on how SDF and the [Medical Management of Caries](#) can be accomplished in dentistry.

Have you ever wondered what SDF does to bacteria? [Take a look at this video.](#)

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