

# Fluoride Varnish and Silver Diamine Fluoride

## A Resource Guide



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# Introduction



The National Maternal and Child Oral Health Resource Center (OHRC) developed this publication, *Fluoride Varnish and Silver Diamine Fluoride: A Resource Guide*, to help health professionals, program administrators, educators, policymakers, parents, and others promote oral health and prevent oral disease.

Professionally applied fluoride varnish inhibits demineralization of tooth enamel. Fluoride varnish can also remineralize early enamel demineralization. Fluoride varnish applied to the teeth of children decreases dental caries experience, especially if applied frequently and close to the time of tooth eruption.

Fluoride varnish can easily and safely be applied by both oral health professionals and non-oral-health professionals in a variety of settings. The U.S. Preventive Services Task Force recommends that primary care health professionals apply fluoride varnish to the primary teeth of children starting at the age of primary tooth eruption and continuing through age 5.

Topical silver diamine fluoride (SDF) is a liquid that is applied to a tooth surface with an active dental caries lesion to arrest the lesion. SDF has been used in Japan for over 40 years to arrest dental caries lesions and reduce tooth hypersensitivity in primary and permanent teeth. During the past decade, many other countries have been using SDF with similar success. SDF was approved by the Food and Drug Administration in 2014 as a treatment for sensitive teeth and has been used off-label to arrest dental caries lesions in the United States since 2015.

SDF is safe for children and adults. The cost of SDF treatment is lower than the cost of conventional dental caries treatment. The American Dental Association's expert panel strongly recommends the use of 38 percent SDF solution to arrest advanced dental caries lesions on any coronal surface of primary teeth. The American Academy of Pediatric Dentistry supports the use of SDF as part of an ongoing dental-caries-management plan with the aim of optimizing individualized patient care consistent with the goals of a dental home.

The resource guide is divided into two sections. The first section describes materials, such as brochures, fact sheets, guidelines, curricula, and reports published from 2016 through 2019 as well as seminal resources published before 2016. The second section lists federal agencies, national professional associations, centers, and national coalitions that may serve as resources.

Our intent is to share resources that are useful and that represent current science and practice. For further information, we encourage you to contact the organizations listed. Your state and local departments of health, state and local oral-health-related associations and societies, state or local oral health coalitions, and university-based libraries are additional sources of information. OHRC will update the resource guide periodically, and we would appreciate hearing from you if you know of any relevant resources that are not included in this edition.

# Acknowledgments



The following National Maternal and Child Oral Health Resource Center staff members assisted in the development of this resource guide: Beth Lowe, Katy Battani, Sarah Kolo, and Olivia Pickett. In addition, we are grateful

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# Materials

# Materials

## Data and Surveillance

### CARIES PREVENTION SERVICES REIMBURSEMENT TABLE

This document presents survey findings for the 50 states and the District of Columbia on reimbursement for risk assessment, oral examination, fluoride varnish, anticipatory guidance, and family oral health education. It presents information on the following topics: type of health professional, services, fees, procedure codes, delegation, age limit for services, number of varnish applications reimbursed annually, training requirement, payor, payment by Medicaid or the Children's Health Insurance Program, and legislative approval to reimburse health professionals. Information about commercial payment and procedure codes is also included.

American Academy of Pediatrics, Oral Health Initiative, Medicaid | Medicare | CHIP Services Dental Association; and National Academy for State Health Policy. 2018. *Caries Prevention Services Reimbursement Table*. Elk Grove Village, IL: American Academy of Pediatrics, Oral Health Initiative. 1 v. [www.aap.org/en-us/\\_layouts/15/WopiFrame.aspx?sourcedoc=/en-us/Documents/OralHealthReimbursementChart.xlsx&action=default](http://www.aap.org/en-us/_layouts/15/WopiFrame.aspx?sourcedoc=/en-us/Documents/OralHealthReimbursementChart.xlsx&action=default)

### FUTURE SMILES: STUDENT SURVEY

The survey is designed to obtain information about the level of students' satisfaction with oral health services (screenings, cleanings, fluoride varnish applications, dental sealant application, and education) provided in a school-based oral hygiene program for children from families with low incomes in Nevada. The survey is available in English and in Spanish.

Future Smiles. 2016—. *Future Smiles: Satisfaction Survey*. Las Vegas, NV: Future Smiles. 1 item. [www.surveymonkey.com/r/FutureSmilesStudents](http://www.surveymonkey.com/r/FutureSmilesStudents)

## Professional Education and Training

### APPLYING FLUORIDE VARNISH

This video for health professionals provides information about fluoride varnish, including recommendations from professional organizations about how often it should be applied and the ages of children who should receive it. The video demonstrates how to apply it to the teeth of young children using the knee-to-knee position and with a child placed on an examination table. Tips for applying fluoride varnish effectively using both methods are provided.

From the First Tooth. 2015. *Applying Fluoride Varnish*. Portland, ME: From the First Tooth. 1 video (1:50 min.). [www.youtube.com/watch?v=j8Ujt1FhMU8](http://www.youtube.com/watch?v=j8Ujt1FhMU8)

### BEST PRACTICE APPROACH REPORT: USE OF FLUORIDE IN SCHOOLS

This report focuses on best practices for the use of fluoride in schools. It discusses fluoride as a measure to prevent tooth decay in children, different types of programs that provide fluoride to children, and different forms of fluoride. Evidence for the efficacy of fluoride in preventing tooth decay and best practice criteria are provided. The report also includes state practice examples.

Association of State and Territorial Dental Directors. 2018. *Best Practice Approach Report: Use of Fluoride in Schools*. Reno, NV: Association of State and Territorial Dental Directors. 24 pp. [www.astdd.org/docs/final-approved-fluoride-in-schools-bpar-july-2018.pdf](http://www.astdd.org/docs/final-approved-fluoride-in-schools-bpar-july-2018.pdf)

## CLINICAL RECOMMENDATIONS FOR USE OF PROFESSIONALLY-APPLIED OR PRESCRIPTION-STRENGTH, HOME-USE TOPICAL FLUORIDE AGENTS FOR CARIES PREVENTION IN PATIENTS AT ELEVATED RISK OF DEVELOPING CARIES

This guide provides information that health professionals can use in making decisions about which fluoride agents (fluoride varnish, fluoride mouthrinse, fluoride gel or paste) are most appropriate for infants and children under age 6, children and adolescents ages 6–18, and adults over age 18, as well as for adult root caries. Dosages and application schedules are provided. Risk factors for developing tooth decay are included.

American Dental Association, ADA Center for Evidence-Based Dentistry. 2013. *Clinical Recommendations for Use of Professionally-Applied or Prescription-Strength, Home-Use Topical Fluoride Agents for Caries Prevention in Patients at Elevated Risk of Developing Caries*. Chicago, IL: American Dental Association, ADA Center for Evidence-Based Dentistry. 2 pp. [https://ebd.ada.org/~media/EBD/Files/ADA\\_Evidence-based\\_Topical\\_Fluoride\\_Chairside\\_Guide.pdf?la=en](https://ebd.ada.org/~media/EBD/Files/ADA_Evidence-based_Topical_Fluoride_Chairside_Guide.pdf?la=en)

## COMMUNITY HEALTH ADVISOR MODEL EFFECTIVE IN ORAL HEALTH SETTINGS

This brief describes findings from a study to determine the feasibility and efficacy of using trained community health workers (parents) to apply fluoride varnish to children in an elementary school setting. Contents include background on local legislation, development and testing of the written protocol and training module, and findings from clinical assessments.

Rady Children's Hospital San Diego, Center for Healthier Communities. 2011. *Community Health Advisor Model Effective in Oral Health Settings*. San Diego, CA: Rady Children's Hospital San Diego, Center for Healthier Communities. 1 p. [www.rchsd.org/documents/2016/03/community-health-briefs-community-health-advisor-model-effective-in-oral-health-settings.pdf](http://www.rchsd.org/documents/2016/03/community-health-briefs-community-health-advisor-model-effective-in-oral-health-settings.pdf)

## CONNECTING SMILES: IMPROVING HEALTH THROUGH ORAL HEALTH INTEGRATION

This training contains five modules for health professionals and their staff about oral health and children, caries risk assessment, oral health anticipatory guidance for families, benefits of fluoride and fluoridated water, fluoride varnish, and strategies for integrating oral health into a medical practice. The training is recognized by the South Carolina Medicaid agency as a prerequisite for applying fluoride varnish and billing for this service. [Funded by the Maternal and Child Health Bureau]

South Carolina Department of Health and Environmental Control. 2018. *Connecting Smiles: Improving Health Through Oral Health Integration*. Charleston, SC: South Carolina Department of Health and Environmental Control. 68 pp. [www.connectingsmilessc.org/fluoride-varnish-training](http://www.connectingsmilessc.org/fluoride-varnish-training)

## CONSENT FOR TREATMENT OF TOOTH DECAY (CAVITIES) WITH SILVER DIAMINE FLUORIDE (SDF)

This form is designed for oral health professionals to give parents or guardians to obtain consent for treating a child's tooth decay with silver diamine fluoride (SDF). The form provides information about what SDF is and how it works, limitations and side effects of SDF treatment, reasons to avoid SDF treatment, and other options for treating tooth decay. Photographs showing teeth before and after SDF treatment are included. The form includes space for the child's name, tooth numbers to be treated, and the name and signature of the parent or guardian.

Apple Tree Dental. 2017. *Consent for Treatment of Tooth Decay (cavities) with Silver Diamine Fluoride (SDF)*. Rochester, MN: Apple Tree Dental. 1 p. [www.appletreedental.org/wp-content/uploads/2018/09/INFORMED\\_CONSENT\\_SDF-SILVER\\_DIAMINE\\_FLUORIDE\\_v-1-30-2017.pdf](http://www.appletreedental.org/wp-content/uploads/2018/09/INFORMED_CONSENT_SDF-SILVER_DIAMINE_FLUORIDE_v-1-30-2017.pdf)

## DEAR MEDICAL DIRECTOR

This template letter is designed for pediatricians or pediatric practices to place on their own letterhead for use in appealing denials for coverage of and payment for fluoride varnish application by

pediatricians. The letter provides an explanation for why such denials are inappropriate, including that they violate the intent of current procedure terminology (CPT) guidelines and Affordable Care Act requirements.

American Academy of Pediatrics. 2019. *Dear Medical Director*. Itasca, IL: American Academy of Pediatrics. 2 pp. [www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Payer-Advocacy.aspx](http://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Oral-Health/Pages/Payer-Advocacy.aspx)

## EQIPP: ORAL HEALTH

This course is designed to help pediatric primary care health professionals (PPHPs) recognize the role they play in providing oral health care. Topics include the importance of a dental home and PPHPs' role in establishing a dental home, dental caries and caries risk assessment, the importance of maternal oral health, age-specific oral health anticipatory guidance, and oral-injury prevention. Information about fluoride varnish, including who should apply it and how it is applied, how to address families' concerns, processes for procuring and storing, and billing for applications, is also provided. The course is available at no charge for American Academy of Pediatrics members and for a fee of \$199 for non-members.

American Academy of Pediatrics. 2016. *EQIPP: Oral Health*. Chicago, IL: American Academy of Pediatrics. 1 v. <https://shop.aap.org/eqipp-oral-health>

## EVIDENCE-BASED CLINICAL PRACTICE GUIDELINE FOR THE USE OF PIT-AND-FISSURE SEALANTS: A REPORT OF THE AMERICAN DENTAL ASSOCIATION AND AMERICAN ACADEMY OF PEDIATRIC DENTISTRY

This report presents findings from a systematic review and recommendations to address clinical questions related to the effect of pit-and-fissure sealants on preventing and arresting dental caries in children and adolescents. Additional topics include the efficacy of dental sealants compared with fluoride varnishes and the relative merit of head-to-head comparisons of the different types of sealant material used on pits and fissures of occlusal surfaces.

Wright JT, Crall JJ, Fontana M, Gillette J, Novy BB, Dhar V, Donly K, Hewlett ER, Quinonez RB, Chaffin J, Crespin M, Iafolla T, Siegal MD, Tampi MP, Graham L, Estrich C, Carrasco-Labra A. 2016. Evidence-based clinical practice guideline for the use of pit-and-fissure sealants: A report of the American Dental Association and American Academy of Pediatric Dentistry. *Journal of the American Dental Association* 147(8):672–682. <http://ebd.ada.org/en/evidence/guidelines/pit-and-fissure-sealants>

## FLUORIDE THERAPY

This document provides recommendations to help health professionals and parents make decisions concerning appropriate use of fluoride as part of comprehensive oral health care for infants, children, adolescents, and individuals with special health care needs. Methods are presented, and background information about fluoride (community water fluoridation, fluoride supplements, topical fluoride treatments, and silver diamine fluoride) is included.

American Academy of Pediatric Dentistry, Council on Clinical Affairs. 2018. *Fluoride Therapy*. 4 pp. [www.aapd.org/research/oral-health-policies--recommendations/fluoride-therapy](http://www.aapd.org/research/oral-health-policies--recommendations/fluoride-therapy)

## FLUORIDE VARNISH: AN EVIDENCE-BASED APPROACH—RESEARCH BRIEF

This brief presents information to help health professionals design, implement, and evaluate community-based programs that apply fluoride varnish. Topics include a definition of fluoride varnish and how it prevents tooth decay; the characteristics, effectiveness, and safety of fluoride varnish; and recommendations for using fluoride varnish. The brief also provides tips for selecting cost-effective community and school dental-caries-prevention programs.

Association of State and Territorial Dental Directors. 2016. *Fluoride Varnish: An Evidence-Based Approach—Research Brief*. Reno, NV: Association of State and Territorial Dental Directors. 19 pp. [www.astdd.org/docs/fl-varnish-brief-september-2014-amended-05-2016.docx](http://www.astdd.org/docs/fl-varnish-brief-september-2014-amended-05-2016.docx)

## FLUORIDE VARNISH: APPLICATION AND INFORMATION

This video for health professionals provides information about fluoride varnish, including recommendations from professional organizations about how often it should be applied and the ages of children who should receive it. The video demonstrates how to apply it to the teeth of young children using the knee-to-knee position. Tips for applying fluoride varnish effectively and post-application instructions are included.

Minnesota Oral Health Coalition. 2016. *Fluoride Varnish: Application and Information*. Plymouth, MN: Minnesota Oral Health Coalition. 1 video (3:11 min.). [www.youtube.com/watch?v=OzM4UQxP67Q](http://www.youtube.com/watch?v=OzM4UQxP67Q)

## FLUORIDE VARNISH AND SILVER DIAMINE FLUORIDE: FLUORIDE RELEASE ANALYSIS AND CLINICAL GUIDANCE

This article presents information from a study on fluoride release and guidance on the use of fluoride varnish and silver diamine fluoride (SDF). The article provides background information about fluoride and SDF and fluoride release, discusses the study approach, and presents findings. Topics include clinical indications; potential treatment-selection factors; clinical tips; common misconceptions, questions, and concerns about SDF; benefits and success rates; and insurance coverage. Key points are presented, and a stand-alone handout on professional-use fluoride products is included.

American Dental Association, Council on Scientific Affairs. 2017. Fluoride varnish and silver diamine fluoride: Fluoride release analysis and clinical guidance. *ADA Professional Product Review* 12(2):1–7. [www.ada.org/en/publications/ada-professional-product-review-ppr/current-issue](http://www.ada.org/en/publications/ada-professional-product-review-ppr/current-issue)

## FLUORIDE VARNISH APPLICATION

This video for health professionals begins with a pediatric dentist explaining what fluoride varnish is, how it is applied, and why it is important to apply it to the teeth of infants and young children. The video then shows the dentist as she applies fluoride varnish to the teeth of a young child with a parent using the knee-to-knee

position, explaining what she is doing step by step. The dentist then provides post-application instructions to share with parents.

Virginia Health Catalyst. 2018. *Fluoride Varnish Application*. Glenn Allen, VA: Virginia Health Catalyst. 1 video (4:36 min.). <https://vimeo.com/257932840>

## FLUORIDE VARNISH APPLICATION AMONG NORTH DAKOTA FAMILY PRACTICE PHYSICIANS & PEDIATRICIANS: 2016 CHARTBOOK

This chartbook presents findings from a survey of pediatricians and family practice physicians in North Dakota conducted to study fluoride-varnish application in clinical practice. Contents include an overview of the study; information about the methods and response demographics; and findings related to assessment, fluoride-varnish application, referral, and need for training and education.

Schroeder S, Ahmed A. 2016. *Fluoride Varnish Application Among North Dakota Family Practice Physicians & Pediatricians: 2016 Chartbook*. Grand Forks, ND: University of North Dakota School of Medicine and Health Sciences, Center for Rural Health. 15 pp. [www.ruralhealth.und.edu/pdf/fluoride-application-nd-physicians.pdf](http://www.ruralhealth.und.edu/pdf/fluoride-application-nd-physicians.pdf)

## FLUORIDE VARNISH APPLICATION IN PRIMARY CARE SETTINGS

This fact sheet presents findings from a survey of pediatricians and family practice physicians in North Dakota to assess their knowledge about fluoride-varnish application and determine how many were providing and billing for the service. Contents include information about the percentage of pediatricians and family practice physicians who conducted oral health risk assessments, those who had a list of dentists for client referral, and those who applied fluoride varnish for infants and children beginning at age 6 months.

University of North Dakota School of Medicine and Health Sciences, Center for Rural Health. 2016. *Fluoride Varnish Application in Primary Care Settings*. Grand Forks, ND: University of

North Dakota School of Medicine and Health Sciences, Center for Rural Health. 2 pp. [www.ruralhealth.und.edu/pdf/fluoride-varnish-application-primary-care.pdf](http://www.ruralhealth.und.edu/pdf/fluoride-varnish-application-primary-care.pdf)

## FLUORIDE VARNISH TRAINING MANUAL FOR MASSACHUSETTS HEALTH CARE PROFESSIONALS

This manual is designed to help health professionals implement fluoride-varnish applications for infants, children, and adolescents ages 6 months to 21 years who are enrolled in Massachusetts' Medicaid program. Contents include facts on fluoride-varnish application; office-based and online training options; steps for using fluoride varnish in the office; a template for documenting the procedure and post-procedure; and coding, reimbursement, and claim submission. The manual also includes information for parents about fluoride varnish.

Massachusetts Department of Public Health, Division of Primary Care and Health Access, Office of Oral Health. 2016. *Fluoride Varnish Training Manual for Massachusetts Health Care Professionals*. Boston, MA: Massachusetts Department of Public Health, Division of Primary Care and Health Access, Office of Oral Health. 13 pp. [www.mass.gov/eohhs/docs/masshealth/provlibrary/fv-manual.pdf](http://www.mass.gov/eohhs/docs/masshealth/provlibrary/fv-manual.pdf)

## FLUORIDE VARNISHES FOR PREVENTING DENTAL CARIES IN CHILDREN AND ADOLESCENTS

This review provides information about the effectiveness and safety of fluoride varnishes in preventing dental caries in children and adolescents and examines factors potentially modifying their effect. The review presents a summary of findings, background, objectives, methods, results, and a discussion. Implications for practice are presented.

Marinho VCC, Worthington HV, Walsh T, Clarkson JE. 2013. Fluoride varnishes for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 7(art. no. CD002279):1–93. [www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002279.pub2/full](http://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002279.pub2/full)

## FUTURE SMILES: PARTICIPATION FORMS

These forms are intended for use in implementing a school-based oral hygiene program to provide preventive oral health services (screenings, cleanings, fluoride varnish applications, dental sealant application, and education) for children from families with low incomes in Nevada. Contents include a consent form, a data-collection form, a parent letter, and a privacy notice.

Future Smiles. 2016–. *Future Smiles: Participation Forms*. Las Vegas, NV: Future Smiles. 3 items. [www.futuresmiles.net/resources/program-information](http://www.futuresmiles.net/resources/program-information)

## INFORMED CONSENT FOR SILVER DIAMINE FLUORIDE

This form is designed to assist oral health professionals in obtaining patient consent for use of silver diamine fluoride (SDF) to arrest dental caries. Contents include facts about SDF, including potential risks, and alternatives to using SDF. A photo of how teeth may look after SDF treatment is included. The form is available in Chinese, English, and Spanish.

San Francisco Department of Public Health, Dental Services. 2016. *Informed Consent for Silver Diamine Fluoride*. San Francisco, CA: San Francisco Department of Public Health, Dental Services. 1 p. [www.nnoha.org/resources/dental-program-management/dental-forms-library](http://www.nnoha.org/resources/dental-program-management/dental-forms-library)

## ORAL HEALTH: CHILD AND TEEN CHECKUPS (C&TC) FACT SHEET FOR PRIMARY CARE PROVIDERS

This fact sheet provides information for physicians, nurse practitioners, physician assistants, and nurses about their role in and responsibility for supporting the oral health of infants, children, and adolescents from birth to age 20 who are eligible for Minnesota's Early and Periodic Screening, Diagnostic, and Treatment program. Topics include requirements for the visit, personnel training, and documentation of counseling and referral; recommendations for oral health risk assessment and fluoride-varnish application; why preventive oral health care is important; anticipatory guidance; professional recommendations; and resources.

Minnesota Department of Health, Child and Teen Checkups Program. 2016. *Oral Health: Child and Teen Checkups (C&TC) Fact Sheet for Primary Care Providers*. St. Paul, MN: Minnesota Department of Health, Child and Teen Checkups Program. 2 pp. [www.health.state.mn.us/docs/people/childreneyouth/ctc/oralhealth.pdf](http://www.health.state.mn.us/docs/people/childreneyouth/ctc/oralhealth.pdf)

## PIT AND FISSURE SEALANTS VERSUS FLUORIDE VARNISHES FOR PREVENTING DENTAL DECAY IN THE PERMANENT TEETH OF CHILDREN AND ADOLESCENTS

This review evaluates the relative effectiveness of dental sealants compared with fluoride varnishes (FVs) or sealants together with FVs compared with FVs alone for preventing dental caries in the occlusal surfaces of permanent teeth of children and adolescents. The review is an update of one first published in 2006 and last updated in 2010. It provides background, objectives, methods, results, and a discussion.

Ahovuo-Saloranta A, Forss H, Hiiri A, Nordblad A, Mäkelä M. 2016. Pit and fissure sealants versus fluoride varnishes for preventing dental decay in the permanent teeth of children and adolescents. *Cochrane Database of Systematic Reviews* 1(art. no. CD003067):1–65. [www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003067.pub4/full](http://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003067.pub4/full)

## PROFESSIONAL SERVICES FLUORIDE VARNISH PROGRAM POLICY

This document for primary care health professionals describes recommendations and the rationale for applying fluoride varnish to the teeth of infants and young children ages 6 months through 5 years. The document also provides information about training and certification prerequisites and coding for fluoride-varnish-application reimbursement in Louisiana.

Louisiana Department of Health and Hospitals. 2016. *Professional Services Fluoride Varnish Program Policy*. Baton Rouge, LA: Louisiana Department of Health and Hospitals. 2 pp. [www.dhh.louisiana.gov/assets/docs/BayouHealth/Informational\\_Bulletins/16-07/IB16-7.pdf](http://www.dhh.louisiana.gov/assets/docs/BayouHealth/Informational_Bulletins/16-07/IB16-7.pdf)

## PROVIDER TRAINING FLUORIDE VARNISH HD

This video for health professionals explains what fluoride varnish is, why it is important, and how it is applied to the teeth of infants and young children. The video shows a dentist applying fluoride varnish to a young child's teeth with a parent using the knee-to-knee position, explaining the procedure step by step and providing the parent with post-application instructions.

Minnesota Oral Health Coalition. 2016. *Provider Training Fluoride Varnish HD*. Plymouth, MN: Minnesota Oral Health Coalition. 1 video (2:11 min.). [www.youtube.com/watch?v=OzM4UQxP67Q](http://www.youtube.com/watch?v=OzM4UQxP67Q)

## PUBLIC HEALTH INTERVENTION: USE OF SILVER DIAMINE FLUORIDE FOR ARRESTING DENTAL CARIES

This document provides information about silver diamine fluoride (SDF) and how it can be used to arrest dental caries. Topics include background information, indications for use of SDF in children and adults, information about clinical applications and safety, and clinical protocols.

Illinois Department of Public Health. 2017. *Public Health Intervention: Use of Silver Diamine Fluoride for Arresting Dental Caries*. Springfield, IL: Illinois Department of Public Health. 3 pp. [www.dph.illinois.gov/sites/default/files/publications/publicationsohpmsdf-guidance\\_0.pdf](http://www.dph.illinois.gov/sites/default/files/publications/publicationsohpmsdf-guidance_0.pdf)

## SILVER DIAMINE FLUORIDE PROTOCOL

This document provides information about silver diamine fluoride (SDF) and how to use it. The document presents background and discusses the efficacy and safety of SDF, requirements for applying it in Iowa, indications and contraindications for application in children and adults, how to apply SDF, and frequency of application for best results.

Iowa Department of Public Health. 2018. *Silver Diamine Fluoride Protocol*. Des Moines, IA: Iowa Department of Public Health. 3 pp. [https://idph.iowa.gov/Portals/1/userfiles/222/Silver%20Diamine%20Fluoride%20Protocol\\_IDPH\\_8\\_2018.pdf](https://idph.iowa.gov/Portals/1/userfiles/222/Silver%20Diamine%20Fluoride%20Protocol_IDPH_8_2018.pdf)

## SILVER DIAMINE FLUORIDE (SDF) APPLICATION: EVIDENCE-BASED RECOMMENDATIONS

This video presents recommendations from the 2018 American Dental Association clinical practice guideline on nonrestorative treatments, including silver diamine fluoride (SDF), for carious lesions. The safety of SDF is discussed, along with scientific evidence and recommendations for its use. Guidance for dentists on how to use a risk-assessment approach to determine whether the use of SDF is appropriate for patients is provided, along with guidance on how to talk to patients about use of SDF and other treatment options. A four-step process for applying SDF is included, along with guidance on how to determine whether reapplication is needed.

American Dental Association. 2018. *Silver Diamine Fluoride (SDF) Application: Evidence-Based Recommendations*. Chicago, IL: American Dental Association. 1 video (3:36 min.). [www.youtube.com/watch?v=a0HH7GifdM4&feature=youtu.be](http://www.youtube.com/watch?v=a0HH7GifdM4&feature=youtu.be)

## SILVER DIAMINE FLUORIDE (SDF) FACT SHEET

This fact sheet presents recommendations from the 2018 American Dental Association clinical practice guideline on nonrestorative treatments, including silver diamine fluoride (SDF), for carious lesions. The safety of SDF is discussed, along with scientific evidence and recommendations for its use. Guidance for dentists on how to use a risk-assessment approach to determine whether the use of SDF is appropriate for patients is provided, as well as guidance on how to talk to patients about use of SDF and other treatment options. A four-step process for applying SDF is included. Guidance on how to determine whether reapplication is needed is also presented.

Association of State and Territorial Dental Directors. 2017. *Silver Diamine Fluoride (SDF) Fact Sheet*. Reno, NV: Association of State and Territorial Dental Directors. 2017. [www.astdd.org/www/docs/sdf-fact-sheet-09-07-2017.pdf](http://www.astdd.org/www/docs/sdf-fact-sheet-09-07-2017.pdf)

## SILVER DIAMINE FLUORIDE VERSUS SODIUM FLUORIDE FOR ARRESTING DENTINE CARIES IN CHILDREN: A SYSTEMATIC REVIEW AND META-ANALYSIS

This article provides information about a systematic review of the capabilities of silver diamine fluoride vs. sodium fluoride (fluoride varnish) to arrest dental caries in children. The authors critically appraised and statistically evaluated studies addressing this topic to determine which ones to include. The article provides background information and presents results, study findings and outcomes, and a quality assessment of the included studies. A statistical meta-analysis and a discussion are presented.

Trieu A, Mohamed A, Lynch E. 2019. Silver diamine fluoride versus sodium fluoride for arresting dentine caries in children: A systematic review and meta-analysis. *Scientific Reports* 9(2115):1–9. [www.nature.com/articles/s41598-019-38569-9](http://www.nature.com/articles/s41598-019-38569-9)

## THANKS FOR PROTECTING US 2

This video discusses the importance of healthy primary teeth to children's overall health and how health professionals can play a role in preventing oral disease in infants and young children by administering fluoride varnish as soon as the first tooth emerges. The video also discusses other ways that health professionals can encourage good oral health at well-child visits, including providing information about toothbrushing, proper use of bottles, good nutrition, how to establish a dental home, and the importance of establishing a dental home.

Maine Health Educational Services. 2018. *Thanks for Protecting Us 2*. Portland, ME: Maine Health Educational Services. 1 video (3:24 min.). [www.youtube.com/watch?v=NlIy\\_2M3Dk&feature=youtu.be](http://www.youtube.com/watch?v=NlIy_2M3Dk&feature=youtu.be)

## TOPICAL FLUORIDE CARIES PREVENTION: EXECUTIVE SUMMARY OF THE UPDATED CLINICAL RECOMMENDATIONS AND SUPPORTING SYSTEMATIC REVIEW

This executive summary provides evidence-based clinical recommendations related to professionally applied and prescription-strength home-use topical fluoride agents, including fluoride varnish, for caries prevention. It presents background information and methods; summarizes, discusses, and offers general remarks on the recommendations; and provides directions for future research.

Weyent RJ, Tracy SL, Anselmo TA, Beltrán-Aguilar ED, Donly KJ, Frese WA, Hujoel PP, Iafolla T, Kohn WK, Kumar J, Levy SM, Tinanoff JT, Zero D, Frantsve-Hawley J, Meyer DM, the American Dental Association Council on Scientific Affairs Expert Panel on Topical Fluoride Caries Prevention Agents. 2013. Topical fluoride caries prevention: Executive summary of the updated clinical recommendations and supporting systematic review. *Journal of the American Dental Association* 144(11):1279–1291. [www.ncbi.nlm.nih.gov/pmc/articles/PMC4581720](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4581720)

## Public Education

### FLUORIDE VARNISH: A PART OF A HEALTHY CHILD

This video for parents describes fluoride varnish and how it is used to prevent tooth decay in infants and children. Topics include what fluoride varnish is, how it works, and why it is important for infants' and children's health. Information about the safety and effectiveness of fluoride varnish and the importance of establishing an oral hygiene routine that includes regular oral health visits is included. The video is available in English, French, Hmong, Karen, Oromo, Russian, Somali, and Spanish.

Minnesota Oral Health Coalition. 2016. *Fluoride Varnish: A Part of a Healthy Child*. Plymouth, MN: Minnesota Oral Health Coalition. 1 video (2 min., 16 sec.). [www.youtube.com/channel/UCJn\\_RooxLVcnhojqS92\\_AyQ/videos?view=0&shelf\\_id=0&sort=dd](http://www.youtube.com/channel/UCJn_RooxLVcnhojqS92_AyQ/videos?view=0&shelf_id=0&sort=dd)

### FLUORIDE VARNISH: FOR CHILDREN AGE SIX MONTHS AND OLDER

This brochure for parents provides information about fluoride varnish for children ages 6 months and older. The brochure discusses what fluoride varnish is and what it does, whether it is safe, how it is applied, and how long its effects last. A photograph showing fluoride being applied to an infant's teeth is included. The brochure is written in simple language and is available in English and in Spanish.

Virginia Department of Health. 2017. *Fluoride Varnish: For Children Age Six Months and Older*. Richmond, VA: Virginia Department of Health. 1 p. [www.vdh.virginia.gov/content/uploads/sites/30/2016/08/Fluoridevarnish.pdf](http://www.vdh.virginia.gov/content/uploads/sites/30/2016/08/Fluoridevarnish.pdf)

### FLUORIDE VARNISH GUIDE

This document provides information about fluoride varnish for health professionals and parents. Topics include how fluoride varnish works, whether it is safe, how often it should be applied, and why it is recommended. An application protocol is provided, and the advantages of fluoride varnish are discussed.

Tennessee Department of Health, Oral Health Services. 2016. *Fluoride Varnish Guide*. Nashville, TN: Tennessee Department of Health, Oral Health Services. 8 pp. [www.tn.gov/content/dam/tn/health/program-areas/oral-health/Dental-Fluoride-Varnish-Guide-2017.pdf](http://www.tn.gov/content/dam/tn/health/program-areas/oral-health/Dental-Fluoride-Varnish-Guide-2017.pdf)

### PROTECT YOUR BABY FROM TOOTH DECAY

This brochure for parents provides information about how to keep infants' and young children's teeth healthy. Other topics include the importance of primary teeth; what fluoride varnish is, how it helps prevent tooth decay, how it is applied, whether it is safe, and what happens after it is applied. Also discussed is how much toothpaste to use for infants and young children. The brochure is available in English and in Spanish.

Arkansas Department of Health, Office of Oral Health. 2017. *Protect Your Baby from Tooth Decay*. Little Rock, AR: Arkansas Department of Health, Office of Oral Health. 2 pp. [www.healthy.arkansas.gov/images/uploads/pdf/Cavity\\_Prevention\\_brochure\\_2017.pdf](http://www.healthy.arkansas.gov/images/uploads/pdf/Cavity_Prevention_brochure_2017.pdf)

## SDF: GIVING VERY YOUNG CHILDREN SOMETHING TO SMILE ABOUT

This video provides information about using silver diamine fluoride (SDF) to arrest dental caries in young children. The video provides background on SDF. It discusses the safety, efficacy, and cost of SDF treatment and the advantages and disadvantages of SDF over alternative approaches to treating dental caries in young children. The video also shows how SDF is applied and provides information about insurance coverage for SDF treatment in North Carolina.

Raskin M. *SDF: Giving Very Young Children Something to Smile About*. 2019. Chapel Hill, NC: University of North Carolina at Chapel Hill; Raleigh, NC: North Carolina Division of Public Health Oral Health Section. 1 video (7:53 min.). <http://toothtalk.org/portfolio-view/sdf-giving-very-young-children-something-to-smile-about>

## SILVER DIAMINE FLUORIDE

This fact sheet for consumers provides information about silver diamine fluoride (SDF). It explains what SDF is, how it is applied, and who should and should not receive SDF treatment. Photographs of teeth before and after SDF application are included.

Apple Tree Dental. 2017. *Silver Diamine Fluoride*. Rochester, MN: Apple Tree Dental. 1 p. [www.appletreedental.org/wp-content/uploads/2018/09/Patient-Education-SDF-SILVER-DIAMINE-FLUORIDE-all-ages-2017.pdf](http://www.appletreedental.org/wp-content/uploads/2018/09/Patient-Education-SDF-SILVER-DIAMINE-FLUORIDE-all-ages-2017.pdf)

## SILVER DIAMINE FLUORIDE: A NEW TREATMENT FOR CAVITIES

This brochure provides information about silver diamine fluoride and how it is used to arrest dental caries in children and adults. The brochure explains what silver diamine fluoride is; provides detailed steps for applying it; and discusses indications for use, benefits, risks, drawbacks, and contraindications.

Community Health Center of Franklin County. No date. *Silver Diamine Fluoride: A New Treatment for Cavities*. Turners Falls, MA: Community Health Center of Franklin County. 2 pp. [www.chcfc.org/uploads/2/0/9/1/20916560/silver\\_diamine\\_fluoride\\_brochure.pdf](http://www.chcfc.org/uploads/2/0/9/1/20916560/silver_diamine_fluoride_brochure.pdf)

## SMILE SAVERS ACTIVITY BOOKS

These activity books provide information about oral health and promote oral health to children. One book is for children from kindergarten to grade 4, and the other is for children in grades 5 and up. Activities include coloring, crossword puzzles, word games, and comics that can be colored.

Alabama Department of Public Health, Oral Health Office with Troy University. 2016. *Smile Savers Activity Books*. Montgomery, AL: Alabama Department of Public Health, Office of Oral Health. 2 items. [www.alabamapublichealth.gov/oralhealth/education.html](http://www.alabamapublichealth.gov/oralhealth/education.html)



# Organizations

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## AMERICAN ACADEMY OF PEDIATRIC DENTISTRY

211 East Chicago Avenue, Suite 1600  
Chicago, IL 60611-2637  
Telephone: (312) 337-2169  
Fax: (312) 337-6329  
Website: [www.aapd.org](http://www.aapd.org)

The American Academy of Pediatric Dentistry (AAPD) works to achieve optimal oral health for children and adolescents, including those with special health care needs, by delivering services that meet the needs of its members, partners, and stakeholders. AAPD serves primary care and specialty pediatric dentists, as well as general dentists who treat children and adolescents in their practices. AAPD develops resources, provides educational opportunities, conducts research, and advocates for pediatric oral health.

## AMERICAN DENTAL ASSOCIATION

211 East Chicago Avenue  
Chicago, IL 60611-2678  
Telephone: (312) 440-2500  
Fax: (312) 440-7494  
E-mail: [info@ada.org](mailto:info@ada.org)  
Website: [www.ada.org](http://www.ada.org); [www.mouthhealthy.org](http://www.mouthhealthy.org)

The American Dental Association (ADA) provides oral health information to dentists and consumers and works to improve oral health and advance the dental profession at the national, state, and local levels. ADA offers information about oral health education and careers, produces resources, and advocates for public policy issues affecting the practice of dentistry and oral health. ADA's Mouth Healthy website provides oral health information for consumers.

## AMERICAN DENTAL HYGIENISTS' ASSOCIATION

444 North Michigan Avenue, Suite 400  
Chicago, IL 60611  
Telephone: (312) 440-8900  
Website: [www.adha.org](http://www.adha.org)

The American Dental Hygienists' Association works to support dental hygienists throughout

their careers and to advance the dental hygiene profession by developing new career paths, expanding opportunities for care, and providing training and information.

## ASSOCIATION OF STATE AND TERRITORIAL DENTAL DIRECTORS

3858 Cashill Boulevard  
Reno, NV 89509  
Telephone: (775) 626-5008  
Fax: (775) 626-9268  
Website: [www.astdd.org](http://www.astdd.org)

The Association of State and Territorial Dental Directors promotes the establishment of national dental public health policy, assists state oral health programs in the development and implementation of programs and policies for preventing oral disease, builds awareness and strengthens public health professionals' knowledge and skills by developing position papers and policy statements, provides information on oral health to health officials and policymakers, and conducts conferences for the dental public health community.

## CENTERS FOR DISEASE CONTROL AND PREVENTION

1600 Clifton Road  
Atlanta, GA 30329-4027  
Telephone: (800) 232-4636  
E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)  
Website: [www.cdc.gov](http://www.cdc.gov)  
Division of Oral Health: [www.cdc.gov/oralhealth](http://www.cdc.gov/oralhealth)

The Centers for Disease Control and Prevention (CDC) works to combat disease and supports communities and citizens to do the same. CDC's Division of Oral Health works to improve oral health and reduce oral health disparities by helping states improve their oral health programs, extending the use of proven strategies to prevent oral disease, enhancing efforts to monitor oral disease, contributing to the scientific knowledge base related to oral health and oral disease, and guiding infection control in dentistry.

## NATIONAL MATERNAL AND CHILD ORAL HEALTH RESOURCE CENTER

Georgetown University  
Box 571272  
Washington, DC 20057-1272  
Telephone: (202) 784-9771  
E-mail: [OHRInfo@georgetown.edu](mailto:OHRInfo@georgetown.edu)  
Website: [www.mchoralhealth.org](http://www.mchoralhealth.org)

The National Maternal and Child Oral Health Resource Center responds to the needs of professionals working in states and communities with the goal of improving oral health services for pregnant women, infants, children, and adolescents, including those with special health care needs, and their families (MCH population). The resource center collaborates with government agencies, professional associations, foundations, policy and research centers, and voluntary organizations to gather, develop, and share information and materials to promote sustainable oral health services for the MCH population.



National Maternal and Child Oral Health Resource Center