

BABY TEETH MATTER: Minimally Invasive Dentistry Tips

Minimally invasive dentistry (MID) includes the use of topical and systemic fluorides, sealants, and motivational interviewing for the primary prevention of dental caries. Once a child has dental caries, it includes the use of silver diamine fluoride, glass ionomer restorations, and Hall crowns.

Participants in the Baby Teeth Matter Collaborative received continuing dental education and have incorporated MID into their dental programs, significantly reducing the number of children who need to be referred to private pediatric dentists. This also reduces the number of children who receive dental care under general anesthesia. The FDA issued the warning below:

[12-14-2016] The U.S. Food and Drug Administration (FDA) is warning that repeated or lengthy use of general anesthetic and sedation drugs during surgeries or procedures in children younger than 3 years or in pregnant women during their third trimester may affect the development of children's brains.

Furthermore, MID is less traumatic for the child and caregiver, and gives us the opportunity to work towards building a relationship with the child and caregiver. Children who receive MID generally become excellent dental patients at an early age because these procedures involve no shots and no drills. It's really a win-win situation for everyone. Finally, while some of these procedures are "temporary", they often last the life of the primary teeth.

We have gathered some "tips from the field" below. These products and procedures are evolving quickly as MID becomes adopted more widely so be sure to check with other dental health professionals, professional organizations, and your dental materials representatives for the latest information.

Resources

<https://www.ihs.gov/DOH/index.cfm?fuseaction=ecc.caries>

Systemic Fluoride (water, drops, pills)

Water fluoridation is still the cornerstone of any dental public health program, but children need to drink it for it to be effective. If a family has fluoridated water, remind them to use it instead of bottled water. Prescription fluorides can also be effective if used daily over a period of several years but Indian Health Service does not strongly promote this practice only because so very few families follow through with this kind of recommendation.



Topical Fluoride

Fluoride toothpaste should be used twice daily by all children, beginning when the first tooth erupts. The recommended amount for young children is a pea-size dab.

Fluoride varnish applied 3-4 times a year is recommended for all young children and especially for those who are at high risk for dental caries.

Dental Sealants: Dental sealants are recommended for both the primary and permanent molars. For the primary teeth, many dental programs are using glass ionomers since it is difficult to get a dry field in young children. Be sure to use a true glass ionomer (self-cured) when possible because the true glass ionomers have a higher fluoride release.

Silver Diamine Fluoride (SDF)

SDF is being used by many IHS/Tribal dental programs to arrest dental caries. SDF has been widely adopted by participants in the Baby Teeth Matter Collaborative. Since this is still a relatively new procedure and the arrested decay turns a dark color, we recommend securing a signed informed consent from the caregiver. It is best to have a picture of what an arrested carious tooth looks like on the consent form.

While you can use silver nitrate “topped” with fluoride varnish, we recommend using silver diamine fluoride (Advantage Arrest) and following the manufacturer recommendations for application.

Glass Ionomer (GI) Restorations

While initially many dental providers were using a “scoop and fill” method to remove dental caries and fill with a glass ionomer restoration, most providers are now using silver diamine fluoride to arrest the dental caries and then putting the glass ionomer on the arrested lesion to lessen the look of a black tooth surface. The glass ionomer restoration restores tooth function, lessens food traps, and is often a more aesthetic outcome for the child and family.

Auto-cured GI products have the highest fluoride-release and are probably your best material for restoring carious lesions on high-risk children. You can use the same products for sealants and restorations on the primary teeth. Light-cured resin-modified GI products are stronger and may be easier to use with some children, depending on the clinical case. Experiment with a range of true GI products and resin-modified GI products until you find the products that work best for various clinical situations.

A coating over the GI restoration prevents overhydration and dehydration of the GI— a manufacturer’s clear coat is one option but a very thin layer of Vaseline will also be effective. Refer to the package insert of the material you are using and follow their recommendations.

Hall Crowns

The Hall technique is a non-invasive treatment for decayed primary molar teeth. Decay is sealed under preformed (stainless steel) crowns, avoiding injections and drilling. The technique has an evidence-base showing that it is acceptable to children, parents and dentists and it is preferred over standard *filling* techniques, due to the ease of application and overall patient comfort as young patients don't have to undergo injections and drilling. Crowns placed using the Hall Technique have better long term outcomes (pain/infection and need for replacement) compared with standard fillings.

Participants in the BTM Collaborative generally use SDF to first arrest caries, and then place Hall Crowns when indicated.

Tips from the field on the Hall Technique

Many providers prefer 3M-ESPE pre-contoured Ion NiChro crowns.

Spoon excavators for removing crowns: any "spoon" style excavator instead of the "discoid" type more commonly used (2.0 mm of course will be stronger than 1.0 mm)

Make sure the blade on each side has a right-handed and left handed curve to get under and support the forces.

Miltex: THES2.

Goldman: EXC61/62.

HuFriedy: EXC36/37, EXC61/62.

More Resources

AAPD Policy on Silver Diamine Fluoride

http://www.aapd.org/media/Policies_Guidelines/P_SilverDiamine.pdf

Indian Health Service national Early Childhood Caries Initiative has online courses and materials on minimally-invasive dentistry.

<https://www.ihs.gov/DOH/index.cfm?fuseaction=ecc.caries>