



School Dental Sealant Programs White Paper
Association of State and Territorial Dental Directors (ASTDD)
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Problem

The Centers for Disease Control and Prevention (CDC) reports that dental caries (tooth decay) affects nearly one quarter of US children aged one to five years and over half of those aged 12 to 19, and is almost entirely preventable.¹ Although dental disease may affect any child, children from low-income households experience more tooth decay than those from higher-income families. Data show that children aged six through 11 years from families living below the poverty threshold are almost twice as likely to have developed tooth decay in their permanent teeth as are children from families with incomes greater than two times the federal poverty threshold.² Most decay occurs on the pits and fissures of posterior tooth surfaces, for which dental sealants are the most effective preventive approach. Other factors that increase the incidence of tooth decay in children are poor dietary habits, lack of dental insurance and access to dental care, as well as inadequate exposure to the benefits of fluoridated water and dental sealants.

The Healthy People 2020 goal is for 28.1 percent of US 6-9 year olds to have at least one sealant on a permanent molar.³ Dental sealant prevalence was lower among children living at or below 100 percent of the federal poverty level (26 percent) compared with children living above the poverty level (34 percent). A similar pattern was found among adolescents aged 13–15, but the difference was not statistically significant. Dental sealant prevalence was significantly lower for non-Hispanic black adolescents (32 percent) compared with non-Hispanic white adolescents (56 percent), among those aged 13–15.²

Methods

The Community Preventive Services Task Force recommends school-based dental sealant programs based on strong evidence of effectiveness in preventing caries in children.⁴ Dental sealants protect the pits and fissures of permanent posterior teeth, where 90 percent of decay occurs in school-aged children's teeth. Resin-based sealants have been preferred due to their high retention rates.⁵ A 2013 Cochrane Collaboration review of sealant studies found that sealant placement on the occlusal surfaces of the permanent molars in children and adolescents reduces caries by 81 percent when compared to no sealant placement when followed up to two years.⁶

For any program, choosing the right sealant material is important. Several sealant materials are available and the most commonly used are resin-based sealants and glass ionomer cements. Current evidence comparing the effectiveness of these two materials is of low quality; therefore, recommendations on superiority of one material over another are not possible at this time.^{6,7} When selecting dental sealant materials for use in a school-based dental sealant program, the following factors should be considered:^{8,9}

- Cost
- Simplicity of application technique
- Program staffing, including use of four-handed technique

- Programmatic policy for sealant placement on partially-erupted teeth or situations in which isolation is difficult

Program staffing considerations also include whether dentist supervision is required by state practice act. Certain sealant materials are more likely to require occlusal adjustment, and under most state practice acts, only dentists may perform this procedure⁹. The placement of sealant material demands meticulous application technique following the manufacturer’s instructions.¹⁰

Sealants are not only beneficial for permanent molars, but also for primary teeth when determined that the tooth, or the patient, is at risk for experiencing caries. Radiographs should not be obtained for the sole purpose of placing sealants; nor is the use of other diagnostic aids, including a sharp explorer, recommended.¹¹ A four-handed technique should be used when resources allow and teeth should be sealed, even if follow-up care cannot be guaranteed.¹¹

Dental sealants are most effective when placed on teeth of children at highest risk for tooth decay.¹¹ “School sealant programs can be an important intervention to increase the receipt of sealants, especially among underserved children.”¹¹ Targeting higher-risk schools to reach higher-risk children is a practical approach for increasing sealant prevalence through school-based sealant programs. Using a school’s Free and Reduced Price Meal Program enrollment as a risk threshold provides the ability to reach higher-risk children.¹² Sealant programs could reduce or eliminate racial and economic disparities in sealant use if programs were provided to all eligible, high-risk schools such as those in which a significant proportion of the children are eligible for the Free and Reduced-Price Meal Program.^{13,14} Additionally, school-based sealant programs have the potential to link students with treatment services in their community and facilitate enrollment in Medicaid and the Children’s Health Insurance Program (CHIP).^{11,15}

Access to sealants in school settings affords an opportunity for every child to grow, develop and learn free of pain from dental disease. According to the Centers for Disease Control and Prevention, dental sealants can reduce decay by 81 percent in the two years after placement, and continue to be effective for nearly five years.^{6,16} Sealants are safe¹⁷ and cost considerably less than restorations; their use can not only safely prevent dental decay but can also save money for patients, families, and states. Sealant programs based in or linked to schools are an optimal way to reach children – especially low-income children who have trouble accessing dental care. To ensure their effectiveness, school sealant programs should follow evidenced-based recommendations, monitor sealant retention and reapply if lost.

Concluding Statement

The Association of State and Territorial Dental Directors (ASTDD) fully supports, endorses, and promotes school-based and school-linked dental sealant programs that follow evidence-based guidelines as part of a comprehensive community strategy to serve the greatest number of children and adolescents at highest risk for dental disease. The ASTDD recommends school-based and school-linked dental sealant programs as an important and effective public health approach that complements clinical care systems in promoting the oral health of children and adolescents.

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