

INTRODUCTION

- Despite advances in preventive oral care, dental caries remains the most chronic disease among American children.¹
- Data from the National Health and Nutrition Examination Survey from 2011-2014 show 18% of children in the United States ages 6-11 had treated or untreated caries in their permanent teeth.²
- The survey also revealed more than half of adolescents ages 12-19 (58%) had decay in their permanent teeth.
- Prevention of dental caries before it begins is key.
- Dental sealants are one of the most effective means for preventing occlusal caries.

TECHNIQUE



DENTAL SEALANTS

- Provides a physical barrier over pits and fissures of posterior teeth.
- Prevents bacterial colonization and acid challenges from cariogenic bacteria.³ Provides both primary prevention (prevents caries from initiating) and a secondary prevention (impedes progression of non cavitated lesions).⁴
- Dental sealants remain underutilized;² children from lower SES are less likely to have sealants compared to children from higher income families.⁴

TECHNIQUE



RESIN-BASED SEALANTS

- Have been historically accepted as the gold standard.^{5,6}
- Consist of composite materials (plastic) and are either light-cured or self-cured (chemical-cured).⁶
- The material is flowable and does not require mixing, which affords the clinician adequate working time.⁶
- Requires etching, rinsing and thoroughly drying the tooth, which means resin-based sealants require an aerosol-generating procedure to place them.⁷

RESULTS



GLASS IONOMER SEALANTS

- Consists of a polymeric water-soluble acid, silicate glass, and water.⁶
- Material fuses directly to tooth structure, therefore no etching is required.⁶
- Hydrophilic: prefers moisture to bond and works in a wet field.
- Self-curing and will harden in approximately 2-3 minutes.
- No need for occlusal adjustment as they wear down with occlusion.
- Faster to place than resin-based sealants.
- Material does not contain Bis-GMA or Bis-Phenol A (BPA).⁶

COMPARISON

RESIN-BASED SEALANTS	GLASS IONOMER SEALANTS
Requires a dry field	Does not require a dry field
Requires acid etch	Does not require acid etch
Placement generates aerosols	Placement does not generate aerosols
Technique sensitive	Less technique sensitive
Retention: 7-10 years	Retention: 3-5 years
Does not permit remineralization	Permits remineralization
Minimal fluoride release	Maximum fluoride release
Risk of caries if void occurs	No risk of recurrent caries
	Can be placed under an operculum
	Ideal for community sealant programs
	Ideal for small children and special needs patients

CONCLUSION

- Dental sealants can assist in the prevention of occlusal caries in children and adolescents at high risk for caries development.
- A review of the literature on the effectiveness of pit and fissure sealants in caries prevention presents no evidence one sealant material is better than the other.^{8,9}
- Glass ionomer sealants allow for non-invasive and effect preventive measures to be employed during the COVID-19 pandemic, while simultaneously minimizing aerosol production, reducing the risk of viral contamination, and creating a safer clinical environment.

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