

# Thirty-Six-Month Survival of Dental Sealants in Pediatric Patients at a Community Health Center



Catherine Koubek, DMD; Eva Dupay, DMD, MS  
NYU Langone Dental Medicine - Advanced Education in Pediatric Dentistry  
Suncoast Community Health Centers, Brandon, Florida

NYU Langone Dental Postdoctoral  
Residency Programs

## INTRODUCTION

- Dental caries commonly affect occlusal surfaces of permanent molars in children.
- Pit and fissure sealants provide a protective barrier against plaque and acids.
- Sealants are effective but their long-term survival may vary in real-world community health center environments.
- Evaluating sealant performance in these settings may support improvements in preventive dental care.

## PURPOSE

- The purpose of this study was to determine the 36-month failure rate of dental sealants placed in pediatric patients at a community health center.
- The study evaluated sealant outcomes in children aged 5–17 years who received sealants between 2021 and 2022.
- A secondary purpose was to examine whether patient or provider factors, including age group, caries risk, patient behavior, and operator type, were associated with sealant failure.

## METHOD

- Design: Single-site retrospective chart review.
- Setting: Suncoast Community Health Centers, Brandon, Florida
- Population: Pediatric patients aged 5–17 years with sealants placed 2021–2022
- Sample: 76 patient charts representing 403 sealed teeth.
- Outcome: Sealant failure defined as repair, restoration, preventive resin restoration, or extraction within 3 years.
- Analysis: Descriptive statistics and logistic regression evaluating age, caries risk, operator type and patient behavior.

## FIGURES



Variable	Odds Ratio	95% CI	p value
Age >8 years	0.51	0.13–1.9	0.3
Moderate vs High Caries Risk	0.31	0.04–1.4	0.2
Single Operator Technique	0.00	0.00– $4.88 \times 10^{24}$	>0.9
Poor Patient Behavior	82606281	0.00–Not estimable	>0.9

## RESULTS

- 403 sealed teeth evaluated over a 36 month follow up period.
- Overall sealant failure rate: 20.6 percent.
- No statistically significant predictors of sealant failure were identified in logistic regression analysis.

## CONCLUSIONS

- Approximately one fifth of sealants failed within 36 months. No statistically significant associations were found between sealant failure and age, caries risk, operator type or patient behavior. Larger multi-site prospective studies may better identify predictors of sealant longevity.
- Most sealants remained successful during the 3-year period, supporting the use of sealants as an effective preventive intervention in community health center populations. Lack of statistically significant findings may reflect small sample size and single site design.

## REFERENCES

- Ahovuo-Saloranta A, Forss H, Walsh T, Nordblad A, Makela M, Worthington HV. Pit and fissure sealants for preventing dental decay in permanent teeth. *Cochrane Database Syst Rev*. 2017 Jul 31;7(7):CD001830.
- Akinlotan M, Chen B, Fontanilla TM, Chen A, Fan VY. Economic evaluation of dental sealants: A systematic literature review. *Community Dent Oral Epidemiol*. 2018 Feb;46(1):38-46.
- Behroozian A, Aghazadeh Z, Sadrabad ZK, Aghazadeh M, Alizadeh V, Esmaili Z, Pirzadeh Ashraf M. Evaluation of the success rate of pit and fissure sealants on first molars: 12 months follow-up study. *Int J Dent Hyg*. 2022 Aug;20(3):465-470.
- Dasanayake AP, Li Y, Kirk K, Bronstein J, Childers NK. Restorative cost savings related to dental sealants in Alabama Medicaid children. *Pediatr Dent*. 2003 Nov-Dec;25(6):572-6.
- Kuhnisch J, Mansmann U, Heinrich-Weltzien R, Hinkel R. Longevity of materials for pit and fissure sealing results from a meta-analysis. *Dent Mater*. 2012 Mar;28(3):298-303.
- Paemanukornruk Y, Luksamjarulkul N, Gaewkhiew P. Resin-based sealant effectiveness in high-caries risk children: a systematic review. *BMC Oral Health*. 2025 May 23;25(1):768.
- Stangvaltaite-Mouhat L, Uhlen-Strand MM, Klepaker IV, Skudulyte-Rysstad R. Failures of Sealed Molars: Three-Year Results from a Multi-Centre Prospective Study in Public Dental Service in Norway. *Caries Res*. 2025.
- Weintraub JA. Pit and fissure sealants in high-caries-risk individuals. *J Dent Educ*. 2001 Oct;65(10):1084-90.
- Weintraub JA, Stearns SC, Rozier RG, Huang CC. Treatment outcomes and costs of dental sealants among children enrolled in Medicaid. *Am J Public Health*. 2001 Nov;91(11):1877-81.
- Wright JT, Crall JJ, Fontana M, Gillette EJ, 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. Evidence-based clinical practice guideline for the use of pit-and-fissure sealants. *J Am Dent Assoc*. 2016 Aug;147(8):672-682.