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## 10-Minute EBD: Should Chipped or Worn Dental Sealants Be Observed, Touched Up, or Restored?

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# Should Chipped or Worn Dental Sealants Be Observed, Touched Up, or Restored?

By Elliot Abt, DDS, MS, MSc

A 22-year-old previous patient returned to my office seeking a second opinion. Recently, he had seen a dentist in his new hometown who recommended fillings on his back molars. More than eight years earlier I had placed sealants on the occlusal surfaces of 18 and 31. Both sealants were still present, but there was some “chipping” of the sealants without detectable decay. The radiographs provided by his new dentist do not show signs of concern.

I was tasked with determining the need for occlusal restorations, updating the sealants, or no treatment for these teeth. I recognized it would be necessary to provide supporting documentation to assure the patient of the reasoning for my recommendations, particularly if they conflict with what his new provider told him.

## Literature search pathway

To guide a literature search, I developed a PICO question:

- P** = For patients with lost or chipped dental sealants with out incipient decay.
- I** = Is sealant repair preferable
- C** = No intervention or placement of a direct restoration
- O** = Prevention of future decay

I searched the Cochrane and ADA databases. The search was refined using additional terms such as touch-up, incipient decay, preventive resin restoration, caries risk, non-cavitated, and utilization. The search revealed high-quality evidence, including a

## Should chipped or worn dental sealants be observed, touched up, or restored?

### Clinical Scenario



A young-adult former patient returns for a second opinion on the need to treat teeth with chipped and worn dental sealants.

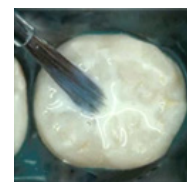
### Literature Search Strategies



Cochrane Library, AD EBD database — Clinical Guidelines

PICO: For patients with lost or chipped dental sealants with or without incipient decay, is sealant repair preferable to no intervention or placement of a direct restoration for prevention of future decay?

### Evidence Summary



- Partial loss of sealants is not considered a failure.
- Sealants reduce the odds for occlusal caries by 88% when maintained as needed.
- Even with evidence for a high magnitude of effect, fewer than 50% of dentists routinely place dental sealants.

systematic review and clinical practice guidelines (CPG).

## Findings and discussion

Few areas in dentistry rival sealants when it comes to an abundance of evidence. A Cochrane Systematic Review<sup>1</sup> of randomized controlled trials has found an odds ratio of 0.12 (95% CI 0.08-0.19), meaning that sealants vs. no sealants reduced the odds of caries by 88%.

The Scottish Dental Clinical Effectiveness Programme Guidance<sup>5</sup> notes that partial loss of sealants is not considered a failure, unlike the presence of occlusal caries. It supports routine maintenance of dental sealants with occasional touch-ups as needed.

Significantly, few medical/dental interventions reduce the risk of disease by such a large magnitude. For exam-

ple, on average, fluoride rinses, varnishes, and gels reduce caries risk by 24%.

The American Dental Association's clinical practice guideline<sup>2</sup> and systematic review<sup>3</sup> on sealants present findings consistent with a comparable high magnitude of effect found in the Cochrane Review. A recent *Journal of Dental Research Clinical and Translational Research Report* found that this ADA CPG provides high-quality guidance for the profession.

The ADA's guideline strongly recommends using sealants on the occlusal surfaces of primary and permanent molars with either sound surfaces or non-cavitated lesions. The ADA CPG is a public health document covering patients from all backgrounds, including those from lower

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## 10-Minute EBD

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socioeconomic backgrounds, where untreated occlusal non-cavitated lesions can progress quickly. Patients in more-affluent areas with better health habits and access to dental care generally have lower caries risk. Thus, in my practice, not all molars get sealed.

In the world of evidence-based dentistry, sealants have become rather notable for several reasons. They have good evidence for efficacy and a high magnitude of effect. Yet, even with Cochrane Reviews and ADA Clinical Practice Guidelines, fewer than 50% of general dentists and pediatric dentists routinely use them in clinical practice. A qualitative study<sup>4</sup> found that only about 40% of dentists

and pediatric dentists routinely use sealants in clinical practice. The reasons for this varied, but included themes such as the recommendation for prophylaxis/pumice of occlusal surfaces rather than fissurotomy, concern over sealing in bacteria, and lack of reimbursement from benefit plans. Additionally, a recent investigation found that school sealant programs, known to reduce caries risk, are underused.<sup>6</sup> Funding issues and policies regarding supervision by dental hygienists were identified as barriers to program expansion.

## Conclusion

Given the prevailing evidence and clinical presentation, I found that placing a filling was not warranted. I elected to remove non-cavitated stains and debris from the exposed pits and fissures to allow refreshing of the sealants on 18 and 31. Given a low decay rate and risk, observing these teeth would have been acceptable. However, the appearance of a touched-up sealant may assure future clinicians that other restorative care is unnecessary.

With a growing emphasis on conservative management of non-cavitated occlusal lesions, the number of clinicians placing sealants should be universal. Payers should be urged to reimburse these evidence-based services and dentists should look to touch-up sealants as needed. ●

## References

1. Ahovuo-Saloranta A, Forss H, Walsh T, et al. Pit and fissure sealants for preventing dental decay in permanent teeth. Cochrane Database of Systematic Review 2017, Issue 7. Art. No.:DB001830.
2. Wright JT, Crall JJ, Fontana M. et al. Evidence-based clinical practice guideline for the use of pit-and-fissure sealants. A report of the American Dental Association and the American Academy of Pediatric Dentistry. JADA 2016;147(8):672-682.
3. Wright JT, Tampi MP, Graham L, et al. Sealants for preventing and arresting pit-and-fissure occlusal caries in primary and permanent molars. A systematic review of randomized controlled trials. A report of the American Dental Association and the American Academy of Pediatric Dentistry. JADA 2016;147(8):631-645.
4. O'Donnell JA, Modesto A, Oakley, M. et al. Sealants and dental caries: Insight into dentists' behavior regarding implementation of clinical practice recommendations. JADA 2013;144(4):e24-e30.
5. Scottish Dental Clinical Effectiveness Programme. Prevention and Management of Dental Caries in Children. Dental Clinical Guidance. 2nd edition. <https://www.sdcep.org.uk>; accessed 6/30/22.
6. Patel N, Griffin SO, Linabarger M, et. al. Impact of school sealant programs on oral health among youth and identification of potential barriers to implementation. JADA 2022 (in press).



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## About the Author

**Elliot Abt, DDS, MS, MSc**, is an adjunct associate professor of oral medicine at the University of Illinois. He teaches research methodology and biostatistics at the American Dental Association Advanced Evidence-based Dentistry Workshop. He has co-authored several ADA Clinical Practice Guidelines and he is a past chair of the ADA Council on Scientific Affairs, and maintains a private practice in general dentistry.



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