



To seal or not to seal

In the editorial Real Change is Difficult (*Pediatr Dent.* 2002;24:95), I discussed the difficulty in changing long-held practices in pediatric dentistry. My review of the use of the rubber cup prophylaxis prior to topical fluoride application elicited many comments from readers, some of which appear in this issue as letters to the editor. Individuals presented their views with fervor, and while I might not agree with some of their positions, I do accept that individuals can look at things differently and legitimately hold differing opinions. Such might also be the case in regard to the use of pit and fissure sealants for children.

When sealants were first introduced in the early 1970s, I heeded the advice of a former teacher who always advised “be not the first, but be not the last” in adopting new ideas. After a few short years, I was won over, and following clinical research with sealants, I became an early proponent of that preventive technique. Yet, there were many practitioners who did not use sealants routinely, citing concerns with sealing dental caries, or the cost effectiveness of the procedure. Now after almost 30 years experience with the technique, there is still relatively low utilization of sealants by dentists throughout the United States.

There are various preventive procedures that are used with patients, including oral hygiene instruction, healthy diet education, topical fluoride application and sealant usage. The most effective technique by far is the sealant procedure, since it has been demonstrated that a sealed tooth surface remains caries free for as long as the sealant is in place. While hidden caries can develop in a small percentage of the population, that unusual phenomenon seems to be unrelated to the use of sealants and illustrates the need for regular routine oral examination of our patients. Although it has been well established that a sealed tooth surface is a caries-free tooth surface, there are estimated to be less than 20% of children who have sealants applied. Since the sealant procedure is so beneficial to children, it would be useful to discuss some of the reasons why practitioners do not use sealants more widely.

- **Undetected dental caries might be sealed:** This was an early concern; however, a variety of clinical studies has demonstrated that when minimal caries is sealed, the caries process stops and does not proceed any further.

- **A tooth surface might be more susceptible to decay if a sealant is partially or totally lost:** Clinical research has demonstrated that a pit or a fissure that is completely sealed will not decay. If part or all of a sealant is lost, the tooth surface reverts back to its original susceptibility for caries. It is not more and might even be slightly less susceptible if some sealant material remains in the deep pits or fissures. Enameloplasty, or mechanical preparation, should not be practiced routinely since such prepared surfaces will likely be more caries susceptible if a sealant is lost.

- **Sealants are not cost effective:** While cost effectiveness is important when community sealant programs are being considered for large numbers of children and resources are limited, it is not as important a concern when individuals are brought to the dental office. The best practice is to seal susceptible teeth, and parents should be encouraged to choose that preventive procedure. Cost-effectiveness analyses usually do not factor in the discomfort to a patient if a tooth must be restored. Also not factored into many analyses is the long-term outcome if restorations break down and require replacement. For routine patients, it is far preferable to seal susceptible areas, even recognizing that some of those areas might not become decayed if left unsealed.

- **Don't use sealants if patients cannot be examined regularly:** Although it is important that all children be examined by a dentist on a regular basis, if for some reason that was not possible, it would be far preferable to seal susceptible tooth surfaces rather than allow the possibility of decay. If my 8-year-old patient were being taken to a distant place for 4 years with no opportunity for an oral examination, I would certainly ensure that all susceptible teeth were sealed.

- **Do not use sealants if the patient has too much or too little tooth decay:** If a patient is highly caries active, that is all the more reason to seal susceptible areas. Not only might this contribute to control the active carious process, but also help to preserve the integrity of each individual tooth. If smooth surface caries develops, the tooth will be stronger and the subsequent restoration can be smaller if all of the pits and fissures are free of caries. For children with little caries experience, sealants are still indicated, since it cannot be determined when caries will commence. On the other hand, if an individual has been caries free for many years and the tooth anatomy exhibits shallow pits and fissures, it might be reasonable not to seal molar teeth that erupted many years previously.

- **Sealant use is not covered by insurance:** It is incumbent upon dentists to educate patients and insurance companies in regard to the value of the sealant procedure. When the public is educated, it will request that coverage from insurance companies. When insurance companies are educated, they begin to recognize the cost benefit of covering the sealant procedure. Many insurance companies now recognize that in the long run it is less expensive to provide reimbursement for sealants rather than pay for future restorative procedures.

In answer to the question “to seal or not to seal,” it is far preferable to perform a careful examination, use a careful technique and seal out tooth decay.