

3 Tips to Avoid Post-Op Sensitivity

Post-op sensitivity has several different causes including malocclusion, periodontal disease, and improper bonding techniques. By pinpointing various challenges associated with bonding and applying our knowledge of adhesive dentistry, we can reduce the occurrence of post-op sensitivity.

Here are 3 tips to help avoid post-op sensitivity.

Tip 1: Use proper bonding techniques

No matter which bonding technique or material you use, be sure to follow proper protocols and read manufacturer's instructions. Here are a few pointers for each technique.

For total-etching

Total-etch will remove the smear deposited on dentin, which will open up the dentinal tubules and expose collagen. When this happens, collagen must be treated properly to avoid sensitivity.

It is also important to keep the collagen moist. When collagen is dried, it collapses, and the adhesive isn't able to penetrate the tubules, which could result in post-op sensitivity. After performing total-etch, avoid using air to dry. Instead, use hi-vac suction or a cotton pellet to remove excess water.

For self-etching

Self-etch does not remove the smear layer or open up the dentinal tubules; rather, the smear layer is dissolved and the adhesive gets incorporated into it. By leaving dentinal tubules sealed, there is less risk of post-op sensitivity. Dentin bond strength on self-etch mode is more reliable, however, it is less reliable on uncut enamel, where the bond isn't as strong.

Recommendation: Use selective-etch

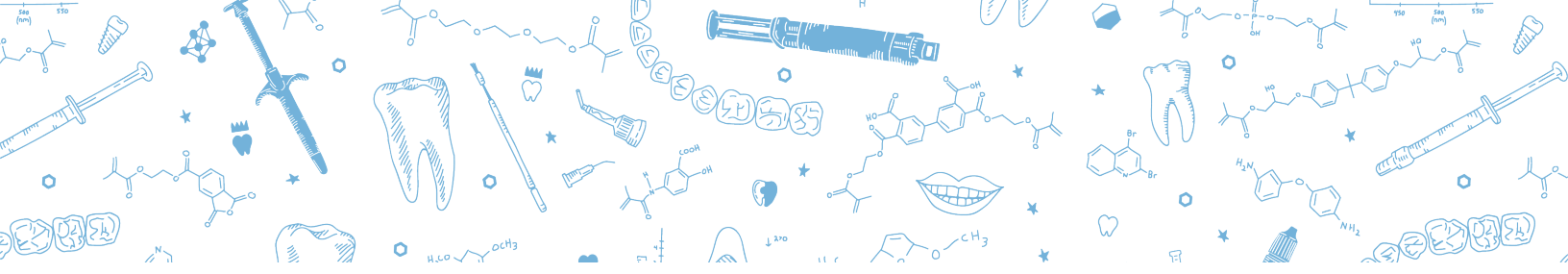
Selective-etch is our recommended protocol because it may diminish occurrence of post-op sensitivity. It combines the use of phosphoric acid etch on enamel with self-etch on dentin, allowing for a stronger bond to enamel and a safer bond to dentin. This way we avoid opening the dentinal tubules and still obtain an optimized bond.

Tip 2: Use a universal bonding agent

Universal bonding agents, such as All-Bond Universal®, offer versatility in compatibility as well as with bonding technique. All-Bond Universal has an ideal chemical balance for both total- and self-etch adhesion from one bottle, it is compatible with all light-, self-, and dual-cured resin composite and cement materials, and is not moisture sensitive so it can be used on wet, dry, or moist tooth structure. Because of its ease of use, it is less technique sensitive thereby reducing the risk of improper placement in bonding. Lessening improper bonding may reduce instances of post-op sensitivity.

Tip 3: Use liner and base materials that help protect the dentin

In deep preps, it may be beneficial to use additional materials that help protect the pulp. TheraCal LC® is a calcium-releasing* liner that creates thermal insulation around the pulp^{1,2} and stimulates^{3*} hydroxyapatite and secondary dentin bridge formation^{4,5}. You can then layer a base material on top of TheraCal LC, such as TheraBase®, which releases fluoride and calcium and will help protect against occlusal forces that may cause sensitivity.



Conclusion:

Using proper bonding techniques and materials designed to protect the pulp may help lessen the risk of post-op sensitivity.

*Bisco has, on file, the calcium release data for TheraCal LC.

1. Sangwan P; Sangwan A; Duhan J; Rohilla A. Tertiary dentinogenesis with calcium hydroxide: a review of proposed mechanisms. *Int Endod J.* 2013; 46(1):3-19
2. Selcuk SAVAS, Murat S. BOTSALI, Ebru KUCUKYILMAZ, Tugrul SARI. Evaluation of temperature changes in the pulp chamber during polymerization of light-cured pulp-capping materials by using a VALO LED light curing unit at different curing distances. *Dent Mater J.* 2014;33(6):764-9
3. Gandolfi MG, Siboni F, Prati C. Chemical-physical properties of TheraCal, a novel light-curable MTA-like material for pulp capping . *International Endodontic Journal.* 2012 Jun;45(6):571-9.
4. ADA definitions for direct and indirect pulp capping at: www.ada.org/en/publications/cdt/glossary-of-dental-clinical-and-administrative-ter
5. Apatite-forming Ability of TheraCal Pulp-Capping Material, M.G. GANDOLFI, F. SIBONI, P. TADDEI, E. MODENA, and C. PRATI *J Dent Res* 90 (Spec Iss A):abstract number 2520, 2011 (www.dentalresearch.org)

Sponsored by



www.bisco.com | 800-247-3368
1100 W Irving Park Rd Schaumburg, IL 60193