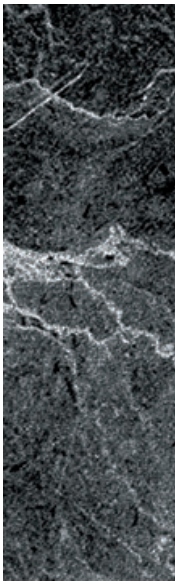

Ask the Experts

DENTIN BONDING: EFFECTS OF HEMOSTATIC AGENTS AND CARIES DETECTORS

Guest Expert
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QUESTION: Do hemostatic/astringent agents or caries detectors have any adverse effects on the bonding of resin-based materials to dentin?

ANSWER: Contamination with astringent or hemostatic agents can have a detrimental effect on the bond strength of self-etching adhesive systems to dentin. Furthermore, rinsing after contamination does not restore the original bond strength. One study found that rinsing improves the bond of uncontaminated dentin by only about 50%. However, it has been reported that the use of a chlorhexidine solution, such as Consepsis (Ultradent Products, South Jordan, UT, USA), or aggressive cleaning with pumice and rinsing will improve adhesion.

In contrast, etch-and-rinse adhesives do not seem to be affected by astringent agents. Apparently, the acid-etch treatment produces a cleaning effect of contaminated surfaces resulting in bond strengths equal to noncontaminated surfaces.

As for caries detectors, several solutions and dyes are used to help identify caries in cavity preparations. These dyes are designed to interact with carious dentin. Most studies have shown that caries-disclosing solutions, used according to manufacturers' instructions, do not have adverse effects on the bond of adhesive systems to tooth structure. However, one in vitro study showed that, when the caries detector was allowed to dry on the dentinal surface and was not rinsed before adhesive application, the dentin bond strength of two adhesives—Clearfil SE Bond (self-etch; Kuraray, Osaka, Japan) and Single Bond (etch-and-rinse; 3M ESPE, St. Paul, MN, USA)—was compromised. It appears that thoroughly rinsing the caries detector before adhesive procedures is the primary factor in obtaining a good bond.

SUGGESTED READING

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Editor's Note: If you have a question on any aspect of esthetic dentistry, please direct it to the Associate Editor, Dr. Edward J. Swift Jr. We will forward questions to appropriate experts and print the answers in this regular feature.

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