

## Taking your time while restoring Class V restorations seems to pay off in the long run (11/09)

Kim SY, Lee KW, Seong SR, Lee MA, Lee IB, Son HH, Kim HY, Oh MH, Cho BH. Two-year clinical effectiveness of adhesives and retention form on resin composite restorations of non-carious cervical lesions. *Oper Dent* 2009;34:507–515.

Laboratory investigations involving one-step, self-etch adhesives have identified deficiencies that suggest clinical performance may be impaired. As mentioned during many DECS literature reviews, the true test of any dental material is a well-designed, clinical evaluation. Early clinical evaluations involving one-step, self-etch adhesives have identified that these simplified adhesives may not perform as well as the more traditional, etch-and-rinse adhesives. In spite of this, manufacturers continue to promote these products in view of increased efficiency due to time savings and touted reduction in technique sensitivity. The current study reported the two-year clinical results involving Class V non-carious cervical restorations.

This randomized, evaluator-blinded evaluation involved three adhesives: an etch-and-rinse, three-step (ScotchBond Multi-Purpose, 3M/ESPE, St. Paul Minnesota); a one-step, self-etch (Adper Prompt, 3M/ESPE); and an experimental two-step, etch-and-rinse adhesive. This study also investigated two different retention forms.

The non-retentive form only involved the placement of a 0.5 mm enamel bevel, while the retentive form included an enamel bevel but had two dentin retentive coves placed in the incisive dentin and a groove paralleling the apical dentin margin. Both the coves and grooves were placed 0.5 mm from the respective margins using a low-speed handpiece and one-quarter round bur. One hundred and fifty restorations in 39 patients were evaluated per combination of adhesive and retentive form (six groups, n=25) at baseline, 6, 12, and 24 months using a modified United States Public Health Service (USPHS) criteria. Results at two years found that ScotchBond Multi-Purpose displayed significantly better marginal adaptation than Adper Prompt using a cumulative logistic regression analysis ( $p=0.0397$ ). Retentive form results reported that restorations with added dentin retention displayed significantly less marginal discoloration than those without retention form in all three adhesives ( $p=0.0336$ ). **The authors concluded that over a two-year observation period, ScotchBond Multi-Purpose was found to have significantly superior marginal adaptation compared to Adper Prompt. Furthermore, the dentin retentive form used in this evaluation resulted in significantly less marginal discoloration with all three adhesives.**



**DECS Comment: Some of the earlier *in vitro* findings involving the simplified, self-etch one-step adhesives seem to be making their *in vivo* consequences known. The marketed promises of increased time savings and decreased technique sensitivity involved with these simplified adhesives just may not be worth it, especially when one considers the future consequences involved with failing restoration replacement. This clinical study reinforces other clinical investigations which report that using the simplified, one-step adhesives contain vulnerabilities that may result in inferior long term clinical performance.**

### References

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