

Simplified adhesives may not provide simple margins down the road . . . (8/09)

Perdigao J, Dutra-Corrêa M, Anauate-Netto C, Cstilhaos N, Carmo A, Lewgoy HR, Amore R, Cordeiro HJD. Two-year clinical evaluation of self-etching adhesives in posterior restorations. *J Adhes Dent* 2009;11:149–159.

The purpose of this study was to evaluate the two-year clinical performance of three self-etching dental adhesives and one etch-and-rinse adhesive (control) in posterior composite restorations. One hundred and twenty one restorations were placed in 38 patients. The three one-step, self-etch adhesives used were Adper Prompt L-Pop (3M/ESPE), Clearfil S³ Bond (Kuraray America), and iBond (Heraeus Kulzer). The control etch-and-rinse, two-step adhesive was One-Step Plus (Bisco). All adhesives were applied according to manufacturers' instructions and preparations were restored with a nanofilled composite resin (Filtek Supreme, 3M/ESPE) and evaluated at baseline, six months, one year, and two years. Each patient had up to four restorations placed with different adhesives used on each tooth. All preparations involved either middle or deep dentin in premolar and molars. At the recall appointments the restorations were evaluated using modified USPHS criteria. Statistical analyses included the McNemar and the Mann-Whitney non-parametric tests ($p < 0.05$). At two years 91 out of 121 restorations were evaluated. In the categories for color match, marginal staining, and marginal adaptation the number of alpha ratings decreased significantly from baseline for Adper Prompt L-Pop, Clearfil S3 Bond, and iBond. For One-Step Plus, only marginal staining was significantly worse at two years than at baseline. When the two-year evaluation criteria were pooled by adhesive pairs, One-Step Plus displayed a significantly greater number of alpha ratings for marginal adaptation than the other three adhesives. iBond resulted in a significantly lower number of alpha ratings than any of the other three adhesives for color match and marginal staining, with no difference between the other adhesives in the same categories. **The authors concluded that only One-Step Plus, the etch-and-rinse adhesive, resulted in good marginal adaptation at two years. One of the self-etching adhesives, iBond, resulted in unacceptable clinical performance.**



DECS Comment: The simplified, self-etch one-step adhesives are marketed with the promise of lowering technique sensitivity while saving time. However, studies have suggested that the self-etch one-step adhesives contain vulnerabilities that may result in long term inferior clinical performance. This study provides continuing evidence of potential problems that may be encountered with different one-step, self-etch adhesives.

References

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