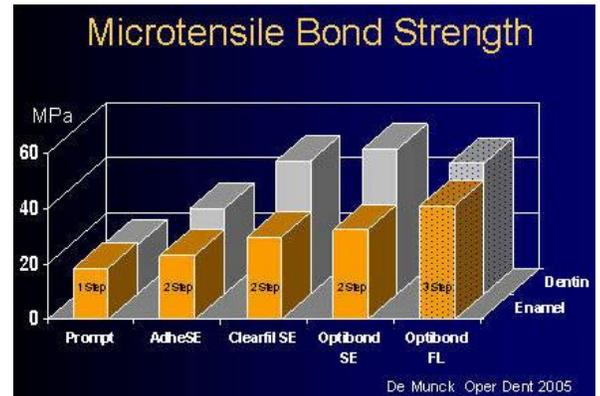


## Bonding Effectiveness of Self-Etch Adhesives (3/05)

De Munck J, Vargas M, Iracki J, Van Landuyt K, Poitevin A, Lambrechts P, Van Meerbeek B. One-day bonding effectiveness of new self-etch adhesives to bur-cut enamel and dentin. *Oper Dent* 2005;30:39-49.

A trend exists toward simplified adhesive application procedures for bonding of resin composites. The purpose of this article was to compare the bonding effectiveness of one- and two-step self-etch adhesives to a more traditional three-step etch-&-rinse adhesive. One 1-step self-etching adhesive (Adper Prompt, 3M ESPE) and three 2-step self-etching adhesives (AdheSE, Ivoclar Vivadent; Optibond Solo Plus Self-Etch, Kerr; Clearfil SE, Kuraray) were compared with a three-step etch-&-rinse adhesive (Optibond FL, Kerr). Microtensile bond strength to enamel and dentin was determined using extracted non-carious human third molars. The bonding mechanism to enamel was morphologically assessed by Field-emission Scanning Electron Microscopy (Fe-SEM) and to dentin by Transmission Electron Microscopy (TEM). **The one-step adhesive, Adper Prompt, scored the lowest bond strength. The two-step self-etch adhesives, Clearfil SE and Optibond Solo Plus Self-Etch, approached the values obtained by the three-step etch-&-rinse adhesive, Optibond FL.**



**DIS Comment:** Self-etch adhesives were introduced to reduce the difficulties associated with the application of etch & rinse adhesives by being less technique sensitive and less time consuming. The authors stated that for enamel bonding, etch-&-rinse adhesives still remain the "gold standard", but when bonding to dentin some two-step self-etching adhesives are able to compete with etch & rinse adhesives. The authors speculate that two-step self-etching adhesives may someday become the future standard of adhesion due to the lower technique sensitivity, faster application, and lower risk of leakage. However, the authors questioned the long-term durability of the one-step self-etching adhesive, Adper Prompt. An original version of Adper Prompt was reported in a clinical study as having low retention of composite restorations in non-carious cervical lesions.<sup>1</sup> Currently, no clinical data is yet available for AdheSE or Optibond Solo Plus SE. Optibond FL and Clearfil SE have both performed well in clinical trials.<sup>2-6</sup> Caution is advised with new adhesive systems until multiple longer-term controlled clinical studies are available.

### References

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