

Brazilian Oral Research

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Abstract





[PARADELLA, Thaís Cachuté](#) and [FAVA, Marcelo](#). Bond strength of adhesive systems to human tooth enamel. *Braz. oral res.* [online]. 2007, vol.21, n.1, pp. 4-9. ISSN . doi: 10.1590/S1806-83242007000100001.

The purpose of this study was to evaluate *in vitro* three adhesive systems: a total etching single-component system (G1 Prime & Bond 2.1), a self-etching primer (G2 Clearfil SE Bond), and a self-etching adhesive (G3 One Up Bond F), through shear bond strength to enamel of human teeth, evaluating the type of fracture through stereomicroscopy, following the ISO guidance on adhesive testing. Thirty sound premolars were bisected mesiodistally and the buccal and lingual surfaces were embedded in acrylic resin, polished up to 600-grit sandpapers, and randomly assigned to three experimental groups (n = 20). Composite resin cylinders were added to the tested surfaces. The specimens were kept in distilled water (37°C/24 h), thermocycled for 500 cycles (5°C-55°C) and submitted to shear testing at a crosshead speed of 0.5 mm/min. The type of fracture was analyzed under stereomicroscopy and the data were submitted to Anova, Tukey and Chi-squared (5%) statistical analyses. The mean adhesive strengths were G1: 18.13 ± 6.49 MPa, (55% of resin cohesive fractures); G2: 17.12 ± 5.80 MPa (90% of adhesive fractures); and G3: 10.47 ± 3.14 MPa (85% of adhesive fractures). In terms of bond strength, there were no significant differences between G1 and G2, and G3 was significantly different from the other groups. G1 presented a different type of fracture from that of G2 and G3. In conclusion, although the total etching and self-etching systems presented similar shear bond strength values, the types of fracture presented by them were different, which can have clinical implications.

Keywords : Shear strength; Dentin-bonding agents; Dental enamel.

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