

The effect of orthodontic bonding in bleached human teeth.

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Abstract

INTRODUCTION: The purpose of this study was to determine the effect of enamel bleaching on the shear bond strength of orthodontic brackets bonded with a composite adhesive. **METHODS:** Two protocols were used on 60 human molars. In the at-home bleaching group (n = 30), Opalescence bleaching agent (Ultradent, South Jordan, Utah), which contains 10% carbamide peroxide, was brushed onto the teeth daily for 14 days and left for 6 hours each day. Teeth in the in-office group (n = 30) were treated with Zoom! (Discus Dental, Culver City, Calif), which contains 25% hydrogen peroxide gel, and then exposed to a light source for 20 minutes; these teeth were treated twice. After bleaching, the specimens were randomly divided into equal subgroups and stored in artificial saliva at 37 degrees C for 7 or 14 days before bonding. Shear bond strength testing was performed on all teeth. The Kruskal-Wallis test for nonparametric means was used to determine whether significant differences existed between the various subgroups and an unbleached control group. **RESULTS:** The mean shear bond strength for the control group was 5.6 +/- 1.8 MPa. Means for the at-home groups were 5.2 +/- 3.6 MPa and 7.2 +/- 3.2 MPa for the 7- and 14-day waiting periods, respectively. Means for the in-office groups were 5.1 +/- 5.3 MPa and 6.6 +/- 2.6 MPa for the 7- and 14-day waiting periods, respectively. The Kruskal-Wallis test ($X(2) = 8.089$) indicated no significant differences between the 5 subgroups ($P = .088$). **CONCLUSIONS:** The results showed that in-office and at-home bleaching did not affect the shear bond strength of orthodontic brackets to enamel.