

## **EFFECT OF EXTERNAL BLEACHING AGENT ON THE BOND STRENGTH OF COMPOSITE RESIN TO HUMAN ENAMEL**

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### **ABSTRACT**

This investigation evaluated the effect of an In office bleaching regimen on the shear bond strength composite resin to bleached enamel with 25% hydrogen peroxide gel (lower concentrated than commonly used). Sixty five freshly extracted human incisor teeth were used in this study. They were divided into three groups of 20 teeth each. Five teeth was served as a control. Enamel surfaces of the control were etched, bonding resin was applied and composite resin bonded to them (without prior bleaching). Enamel surfaces of the other three groups were subjected to bleaching for 20, 40. 60 minutes exposure time to 25% hydrogen peroxide. Each group was then subdivided into four subgroups of 5 teeth each. In subgroup 1 composite resin was bonded immediately following bleaching. In subgroups 2,3,4, the teeth were stored in water at 37CC for one day, one week and one month respectively following bleaching and before composite bonding. The specimens were then shear tested and examined with SEM. The results indicated highly significant reduction in the adhesive bond strength of the resin when ii was bonded immediately to the bleached enamel regardless of the exposure time of enamel to the hydrogen peroxide. Storage of peroxide treated enamel in water at 370 C for one day eliminated the reduction in the bond strength and returned its values to pre bleach levels which remained constant for one month. Ii can be concluded that low concentration hydrogen peroxide had an adverse effect el the immediate bond strength between the composite resin and bleached enamel.