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## Effect of Bleaching on Microleakage and Nanoleakage

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**Objective:** To test the hypothesis that bleaching agents will not affect microleakage and nanoleakage of composite restorations. **Methods:** 60 extracted human molars class I and class V cavities were restored with Scotchbond 1 and Filtek Z250 following the manufacturer's instructions. The teeth were randomly divided into 4 groups (n = 15 each) including a control group, which was not bleached, (1) and 3 different bleaching procedures either once daily with 20% carbamide peroxide gel for 8 h (2), 6% H<sub>2</sub>O<sub>2</sub> for 30 minutes twice a day (3) or 19% percarbonate gel for 8 h (4). The bleaching procedures were carried out at 37° C for 14 work days. Nail varnish was applied on the apical portion of the teeth only, prior to immersion in a 0.1% rhodamin-B-isothiocyanate for 24h at 37° C. After thorough rinsing with tap water the specimens were embedded in self-curing methacrylate resin. The blocks were sectioned with a water cooled microtome saw into 3 to 5 slices. The cuts were positioned centrally through the restorations and approximately parallel to the long axis of the tooth in mesiodistal direction. Microleakage was evaluated at the occlusal margins of the class-I-restorations using a stereo microscope. Nanoleakage was evaluated at the cervical margin of the class-V-restoration under a confocal laser scanning microscope. **Results:** Microleakage occurred in all groups: (1) 20%, (2) 11%, (3) 15% and (4) 23%. Nanoleakage was measured to be: (1) 250 ± 157µm, (2) 281± 159µm, (3) 278 ± 135µm and (4) 220 ± 142µm. The statistical evaluation (Kruskal-Wallis-test) showed no significant difference for both, microleakage (p = 0.537) and nanoleakage (p = 0.430). **Conclusion:** Bleaching with the materials tested has no influence on both microleakage and nanoleakage.

**blend-a-med**

**ipana**



**AZ**

**Crest**

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