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Effects of bleaching agent on physical and aesthetic properties of restorative materials

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This is to investigate the effect of bleaching agent on micro-hardness, color and light transmission of different restorative materials. Specimens (n=20) of Tetric EvoCeram (TEC), Tetric EvoCeram Bulk Fill (TECBF) and Equia Fill (EQUIA) were treated with either 40% hydrogen peroxide opalescence boost or distilled water for 45 min. Specimens were stained in tea solution or stored in deionized water for one and two weeks. Color, micro-hardness and light transmission were monitored at the baseline, after the bleaching and after the tea immersion or storage in deionized water. After the bleaching a significant reduction in surface micro-hardness ($p < 0.001$) was recorded for all materials. Clinically visible color change ($\Delta E > 3$) was observed after the bleaching and after treatment in tea solution, but only in EQUIA samples. The absorption coefficient was the largest for the samples stained in tea solution. Bleaching can affect the micro-hardness and color of fillings; therefore, they should be sometimes replaced.

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