Discoloration of facing and restorative composites by UV-irradiation and staining food.

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OBJECTIVES: The purpose of this study was to investigate the color stability of five facing (ConquestSculpture: JenericPentron, USA; ThermoresinLC: GC Corporation, J; VitaZetaLC: Vita, G; CompoPlus: Degudent, G; belleGlassHP: SDSbelle, G) and three restorative (Definite: DeguDent, G; AristonpHc: Ivoclar-Vivadent, FL; SpectrumTPH: DeTreyDentsply, G) composite materials subject to UV-irradiation and storage in red wine. METHODS: 16 cylindrical specimen (height 5 mm, diameter 6 mm) of each material were fabricated. Baseline measurement of the CIE-L*a*b* color data was carried out in a reflection spectrophotometer. Artificial aging was performed with a filtered xenon lamp (irradiation value: 765 W/m²). Eight samples of each group were aged and color measured after 24 and 72 h. Eight specimens were stored in deionized water under light exclusion as a control for 10 days. Afterwards all specimen were stored in red wine and color measurement took place again after 10 days. Statistical analysis was performed using the Mann-Whitney-U-test (p < or = 0.05). RESULTS: The best color stability after 72 h of UV-irradiation was shown by ConquestSculpture (ΔE* = 1.0), VitaZeta (ΔE* = 0.8) and Spectrum (ΔE* = 0.9). Lowest discoloration for the red wine storage was ΔE* = 1.0 for belleGlass, the highest ΔE* = 9.8 for ThermoresinLC. For all materials red wine storage caused more color change in the control than in the irradiated group. SIGNIFICANCE: Assuming values of ΔE* < or = 3.3 as clinically acceptable, all tested materials showed sufficient color stability during aging. For the facing materials UV-irradiation might be recommended to approve resistance to discoloration by staining foods.

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