

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: GCCorporation, 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 ($p < \text{or} = 0.05$). **RESULTS:** The best color stability after 72 h of UV-irradiation was shown by ConquestSculpture ($\Delta E^* = 1.0$), VitaZeta ($\Delta E^* = 0.8$) and Spectrum ($\Delta E^* = 0.9$). Lowest discoloration for the red wine storage was $\Delta E^* = 1.0$ for belleGlass, the highest $\Delta E^* = 9.8$ for ThermoresinLC. For all materials red wine storage caused more color change in the control than in the irradiated group. **SIGNIFICANCE:** Assuming values of $\Delta E^* < \text{or} = 3.3$ 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.

PMID: 15993940 [PubMed - indexed for MEDLINE]