

Effect of Coffee on Color Discoloration of Three Nano Composites(in vitro)

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Abstract

Background and Aim: One of the major influential factors in the success of composite restorations is color stability over time. Discoloration of composite restorations can result in patient dissatisfaction and treatment failure in the long term. Lack of adequate information and contradictory reports regarding this issue lead to the current study which was performed to evaluate the effects of coffee on discoloration of three nanocomposites using spectrophotometry method.

Materials and Methods: In this experimental study, 30 disc-shaped specimens (8.5×2mm) of three composite brands (Z350 XT (3M ESPE), Grandio (VOCO, Germany) and Herculite XRV Ultra (Kerr Co., USA) were prepared. All specimens were of A2 shade. Ten samples of each brand were divided into two subgroups, 5 to be stored in coffee and 5 in distilled water for 72 hours. Color measurements were obtained using a Spectrophotometer before and after immersion in solutions. The two-way ANOVA test was used to evaluate the results.

Result: All composite samples immersed in coffee showed significant discoloration compared to baseline values ($P < 0.05$). Discoloration in samples immersed in distilled water was not significant compared to baseline ($P > 0.05$). The difference in composite discoloration within the three sample groups immersed in coffee was significant ($p = 0.0001$), however, no significant difference in discoloration was reported within sample groups immersed in distilled water ($p = 0.1$).

Conclusion: Based on the results of this study, some degree of discoloration was reported in all three composite brands immersed in coffee. The degree of discoloration was clinically unacceptable.

Keywords: *Spectrophotometer; Stainability; Discoloration, Composite*