Color changes in staining solutions of four light-cured indirect resin composites

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Abstrak

The purpose of this study was to investigate the effect of different staining solutions on the color coordinates of indirect light-cured resin composites. 112 discs were made using four indirect composites, Signum+/ Haraeus-Kulzer, Sinfony/3M-Espe, GC Gradia/GC, Ena HRi/Micerium, and divided into four groups which immersed in tea, coffee, chocolate and distilled water, at 37°C, for 4 weeks, was measured according to CIELAB system and AL*, Aa*, Ab and AE* values were calculated for all immersion periods. The effect of time, solution and material on primary and secondary color coordinates was estimated using two-way repeated ANOV As and pairwise comparisons, at a = 0.05. The results showed that coffee strongly affected all the materials ($p < 0.05$), followed by tea and chocolate. Sinfony presented the highest color change ($p < 0.05$), due to changes in b* and L* coordinates. Color coordinates were affected differently by material type and solution. In conclusion, this study showed that the color of indirect resin composites was affected by all three examined factors (immersion time, staining solution and material type), in a clinically appreciable level (AE* > 2.7 U) even from the first week, and in an unacceptable level (AE* > 5.5 U) in the second, third and fourth week, depending on the staining solution and the material.