Staining- and Aging-dependent Gloss of Cloud-shade and One-shade Resin Composites

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Objectives: To compare gloss retention of two "cloud-shade" and two "one-shade" resin composites exposed to staining and aging.

Experimental Methods: The "cloud-shade" composites were 3M experimental composite(EX) and SimpliShade(SS) – 3 shades each(light, medium and dark), while the "one shade" composites were Admira Fusion x-tra(AD) and Venus Diamond One(VE). Polymerized composite specimens (10 mm in diameter, 2-mm thick) were polished using PoGo disks for 40 seconds. Gloss measurements were performed before and after exposure to 3.8-day staining in coffee or wine, or 150 kJ/m2 of accelerated aging (n=15 per shade), using a glossmeter. The gloss retention percentages were calculated. A two-way ANOVA was used to compare the effect of material and procedure, while a Tukey's post hoc multiple comparison test was used to assess differences among levels within each variable (a=0.05).

Results: Gloss (GU – gloss units) (SD) of cloud-shade and one-shade resin composites before and after staining in coffee (C) and wine (W) and artificial accelerated aging (A).

Material	GU Before			GU After			Gloss retention, %		
	C	W	A	C	W	A	C	W	A
AD	70(7)	64(6)	67(10)	68(6)	58(9)	66(9)	98(7)	91(14)	100(9)
EX	79(13)	77(14)	82(11)	82(13)	79(15)	79(12)	103(7)	102(7)	97(4)
SS	83(7)	83(5)	83(5)	87(7)	85(5)	80(9)	105(4)	102(4)	96(3)
VE	77(3)	79(6)	78(5)	77(5)	75(6)	73(6)	100(4)	95(8)	95(2)

Statistically significant differences were recorded among materials, procedures, and their interactions (p<0.001). The highest gloss was recorded for SS, followed by EX, VE and AD. Gloss retention (GR%) upon staining and aging ranged from 91 and 105%.

Conclusions: Staining in coffee and wine, and artificial accelerated aging provoked material- and procedure-dependent changes in gloss-retention of cloud-shade and one-shade resin composites. However, the overall gloss retention was very high.