

Effects of artificial aging on surface roughness of resin composites

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evaluates differences between 24 h stored and aged samples ( $\alpha=0.05$ ). Results: Aging exhibited a significant effect on ISBS in mostly all groups, except the experimental-ormocer. Conclusions: The experimental ormocer showed the best stability to aging and significant lower DC compared to the commercial ormocer-based materials. Clinical relevance: Ormocers with dimethacrylat-diluent free matrix are promising materials for dental restorations.

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Category: Student's session

#### EFFECTS OF ARTIFICIAL AGING ON SURFACE ROUGHNESS OF RESIN COMPOSITES

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**Objectives** The aim of this in vitro study was to determine the effect of aging on surface roughness of resin composites with different fillers. The null hypothesis tested was that there is no difference in surface roughness in relation to the composite filler before and after artificial aging. **Materials and methods** Pressed round 2 mm-thick disks of each tested composite were prepared (n=6). Group 1: Venus Diamond (Heraeus Kulzer, Germany); Group 2: Opallis (FGM, Brasil); Group 3: Estelite (Tokuyama, Japan); Group 4: Filtek Supreme XTE (3M ESPE, USA); Group 5: Tetric Evoceram (Ivoclar Vivadent, Liechtenstein). The surface roughness (Ra) of all samples was measured using a RT-70 profilometer (ALPA-SM, Italy) with a 5  $\mu$ m diamond stylus. Measurements were performed after 24 h storage in artificial saliva and repeated after 12 months storage and thermocycling (6000 cycles at 5°C-55°C). The statistical analysis was performed with a Two-Way ANOVA and post-hoc Dunn's tests ( $p<0,05$ ). **Results** The mean roughness before and after aging of each group is reported in Table 1. The aging treatment statistically increased the roughness of all groups. **Conclusions** The null hypothesis was partially rejected since, no differences were found between the tested composites before the aging, while nano-filled and micro-filled composites showed a statistically higher roughness after aging and thermocycling. Conversely the descriptive analysis showed that the surface of micro-hybrid composites is less influenced

by aging. Clinical relevance Micro-hybrid composites seem to better maintain surface characteristics after aging and thermocycling.

Different superscript letters indicate statistical difference

Material	Filler	Mean roughness not aged ( $\pm$ SD)	Mean roughness after aging ( $\pm$ SD)	Mean roughness increase (%)
Venus Diamond	Nano-hybrid	0.276 ( $\pm$ 0.121)a	0.437 ( $\pm$ 0.163)b	60.4
Opallis	Micro-filled	0.212 ( $\pm$ 0.062)a	0.262 ( $\pm$ 0.085)a	23.7
Estelite Sigma Quick	Nano-hybrid	0.297 ( $\pm$ 0.132)a	0.407 ( $\pm$ 0.159)b	47.0
Filtek Supreme XTE	Nano-filled	0.250 ( $\pm$ 0.141)a	0.460 ( $\pm$ 0.201)b	89.4
Tetric Evoceram	Nano-hybrid	0.308 ( $\pm$ 0.133)a	0.519 ( $\pm$ 0.185)c	70.1

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#### INFLUENCE OF OPERATOR SKILLNESS ON ADHESIVE SYSTEMS OUTCOME: A RANDOMIZED CLINICAL TRIAL

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**Objectives:** The aim of this in vivo study was to evaluate the influence of operator skillness in adhesive application. The null hypothesis is that total-etch and self-etch adhesives performances are not related to operator experience. **Methods:** Fifty patients with 112 cervical lesions were included in the study. They were divided into two groups according to the operator (Experienced vs. Student) who performed the adhesive steps and divided into two subgroup according to the adhesive system employed: total-etch three-step (Optibond FL, Kerr, USA) or self-etch one-step (G-Bond, GC, Japan). Follow-up was made after 18 month evaluating several parameters and assigning a value of Alpha, Bravo, Charlie conforming to the method of valuation Ryge/USPHS: restoration retention, marginal integrity, marginal ditching, postoperative sensitivity, secondary caries and vitality. Data obtained during follow-up were statistically analyzed with chi-square test ( $p<0,05$ ). **Results:** Results did not showed a