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### **Effect of Repeated Firings on Bond Strength of CAD-CAM Ceramic**

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**Objectives** The aim of this in vitro study was to investigate the effect of repeated firing on shear bond strength of lithium disilicate glass ceramic.

**Methods** Fourty rectangular specimens (14 mm x 16 mm, 1.2 mm thickness) were cut from pre-crystalize computer-aided design-computer-aided manufacturing (CAD-CAM) block (IPS e.max CAD, Ivoclar Vivadent, Liechtenstein). These specimens were divided into four groups according to the numbers of firings (control group, 2F, 3F and 5F). After finishing firing cycles for each group, all specimens ultrasonically cleaned. Then, specimens were etched with 9.5% hydrofluoric (HF) acid gel (Royalry Acid Gel, Imicryl, Turkey) for 20 s, rinsed for 1 min, air dried, and conditioned by a silane coupling agent (Ceramica Silane Activator, Imicryl, Turkey) for 30 s and dried. Polyethylene mold having a tube were positioned over the disc surface, then cement (Nova Resin, Imicryl, Turkey) was injected into the tube through the mixing tip. Light curing was done through the tube for 40 s. The prepared test specimens were stored in incubator for 24 h at 37 °C. The shear bond strength (SBS) of the ceramic discs was evaluated using a universal testing machine with a crosshead speed of 1 mm/min. The value at which the ceramic disc and the resin material ruptured was recorded. Data were analyzed by Kolmogorov-Smirnov, Kruskal-Wallis and Mann-Whitney U test ( $p < 0,05$ ).

**Results** No significant difference was found between the values of different groups ( $p = 0,598$ ). The highest SBS (MPa) value was found in control group ( $20,7 \pm 1,4$ ), while the lowest value was found in 5F firing specimens ( $19,2 \pm 0,82$ ).

**Conclusions** Repeated firing did not affect the SBS of the lithium disilicate ceramic. However, clinician should away unnecessary firing process. All occlusal adjustments and characterization must be completed before final firing.