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Effect of Saliva Contamination on Immediate Repair of Composite Resins

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Objectives To evaluate the effect of different surface treatment techniques on the bond strength between composite resin layers during the addition of new composite resins after abrasion of freshly cured composite resins with a diamond bur, under conditions with and without saliva contamination.

Methods Disc-shaped samples were prepared from Tetric N-Ceram Bulk Fill. The disks were subjected to repair procedures immediately after formed. All samples were abraded with a flame-tipped diamond bur. They were then divided into 4 groups (n=12) according to the applied surface treatments: 1- Noncontaminated SE Bond without primer (NCSEB), 2- Noncontaminated Asit+ SE Bond without Primer (NCASEB), 3- Saliva Contamination + SE Bond without Primer (SCSEB), 4- Saliva Contamination + Acid + SE Bond without Primer (SCASEB). Following the surface treatment, a composite cylinder block was created on the surface of the disc-shaped composite samples with the same composite resin used. The prepared samples were kept in distilled water at 37 C for 24 hours. Then shear bond strength (SBS) test was performed. Data were analyzed using one-way ANOVA and Tukey's multiple comparison test ($p < 0.05$).

Results Mean bond strength values of the groups: NCSEB: 22.28 ± 8 , NCASEB: $18.71 \pm 4,5$, SCSEB: $12.92 \pm 4,2$, SCASEB: $13.67 \pm 4,9$. The difference between groups 1 - 3 and groups 1-4 was found to be statistically significant. ($p < 0.05$)

Conclusions Saliva contamination after bur abrasion reduces bond strength. Applying acid before bonding did not increase bond strength in both contaminated and uncontaminated groups.