

**Bacterial adhesion of *Streptococcus mutans* to orthodontic adhesives with various filler-volume fractions.**

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**INTRODUCTION:** The aim of this in-vitro study was to investigate the effect of the filler-volume fraction of experimental composite adhesives on the bacterial adhesion of *Streptococcus mutans*. **METHODS:** Three experimental adhesive groups were created: an unfilled urethane-dimethacrylate (UDMA) adhesive, UDMA and a filler-volume fraction of 35%, and UDMA and a filler-volume fraction of 70%. The embedded filler was silicon dioxide. Additionally, 2 conventional orthodontic adhesives, Transbond XT (3M Unitek, Monrovia, Calif) and ConTec Duo (Dentaurum, Ispringen, Germany), were examined. *S mutans* suspensions were incubated with test specimens and examined with fluorescence dye and an automated multi-detection reader. Moreover, scanning electron micrographs were made to evaluate bacterial adhesion on substrata. **RESULTS:** The experimental adhesives consisting of UDMA and various filler-volume fractions of silicon dioxide showed no statistical difference in relative fluorescence intensities. Scanning electron micrographs demonstrated that greater bacterial colonization and more complex aggregates were found on adhesives with high relative fluorescence intensity. Relative fluorescence intensity values showed no correlation to the filler-volume fraction of the examined adhesives. **CONCLUSIONS:** The results indicate no relationship between the filler-volume fraction of UDMA-based orthodontic adhesives and the bacterial adhesion of *S mutans*.

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