

Streptococcal adhesion to novel low-shrink silorane-based restorative.

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OBJECTIVES: The aim of the present study was to compare the susceptibility of one novel silorane-based and four widely used conventional methacrylate-based resin composites to adhere oral streptococci and to relate any differences to surface roughness, hydrophobicity and type of matrix. **METHODS:** Specimens of restoratives Filtek Silorane, Filtek Z250, Tetric EvoCeram, Quixfil and Spectrum TPH were prepared (10.0-mm diameter, 2.0-mm height). Surface roughness was assessed by perthometer measurements and hydrophobicity according to water contact angles was determined by computerized image analysis. Bacterial suspensions of *Streptococcus oralis*, *Streptococcus sanguinis*, *Streptococcus gordonii* and *Streptococcus mutans* were incubated for 2.5 h at 37 degrees C with 15 test specimens for each material and adhesion was quantified with fluorescence dye Alamar Blue/Resazurin and an automated multi-detection reader. Glass served as reference. Statistical analysis was performed using the Mann-Whitney U-test ($\alpha=0.05$). **RESULTS:** Median roughness values of all composites ranged between 0.04 and 0.11 microm, median contact angles between 59.7 degrees and 92.1 degrees. Significantly lowest fluorescence intensities of all test materials were found on Filtek Silorane for three of four streptococcal strains. The fluorescence intensities of the four conventional methacrylate resin composites were significantly higher and comparable among each other. **SIGNIFICANCE:** When compared against four conventional methacrylate composite resins, a general significance to a lower quantity of adhering streptococci was found on the novel silorane-based composite resin, which might result from its increased hydrophobicity. The low adhesion potential of the silorane-based composite may potentially improve the longevity of direct fillings and reduce recurrent caries.