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# Effects of COVID-19 Preoperative Mouthrinses and Different Beverages and on Surface Alteration of Polyetheretherketone (PEEK)

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## Abstract

**Objectives:** to compare the color change and surface roughness of polyetheretherketones (PEEK) immersed in various beverages and mouthrinses for 7 days.

**Methods:** the specimens were divided into 6 groups, 10 pieces per group, and each group was immersed in different solutions as followed: coffee, cola, red wine, distilled water, 0.5% povidone iodine, and 1% hydrogen peroxide. A color change ( $\Delta E^*ab$ ) was measured in each sample before and after 7 days of immersion in different solutions. At a significance level of 0.05, color change data were analyzed using one-way ANOVA and pairwise comparisons with the Games-Howell method, and surface roughness changes were analyzed using the Wilcoxon Sign-Rank test.

**Results:** immersion of PEEK in 0.5% povidone iodine caused the most color change, followed by red wine when continuously immersed for 7 days. However, immersion in different types of solutions did not affect the surface roughness of PEEK.

**Conclusions:** After 7 days of immersion, 0.5% povidone iodine and red wine caused color change in PEEK with no change in surface roughness.

**Keywords:** betadine gargle, COVID-19, discoloration, polyether ether ketone, stain