

CONDITION OF GUMS DURING LONG-TERM USE OF FIXED BRIDGES

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Dental prostheses cause changes in the acid-base balance of saliva. Solid-cast prostheses without a titanium nitride protective-decorative coating have the least effect on it (pH 7.2 ± 0.03 , starting from the 12th month after prosthetics and until the end of the study). Metal-ceramic prostheses have a slight effect (pH 7.39 ± 0.02 starting from the 12th month after prosthetics and until the end of the study). Stamped-soldered bridge prostheses without a titanium nitride protective-decorative coating have a greater impact on the acid-base balance of saliva than other tested prostheses (by the 36th month after prosthetics, pH 6.85 ± 0.05 mmol/L; control - 7.22 ± 0.03). Solid-cast prostheses have a minimal effect on the periodontal tissues of supporting teeth (Russel index after 36 months of prosthetics was 0.66 ± 0.03 ; control - 0.5 ± 0.02). Metal-ceramic and solid-cast prostheses with a titanium nitride protective-decorative coating have a slight effect on periodontal tissues (Russel index after 36 months of prosthetics was 0.64 ± 0.04 and 0.67 ± 0.04 , respectively). Non-soldered stamped crowns and stamped-soldered bridge prostheses without and with a titanium nitride protective-decorative coating have a greater impact on the periodontium of supporting teeth than other tested constructions (Russel index after 36 months of prosthetics was 1.19 ± 0.03 ; 1.21 ± 0.04 ; 1.19 ± 0.05 and 1.23 ± 0.07 , respectively).

The smallest operational changes after 36 months of prosthetics were found in patients with metal-ceramic and solid-cast prostheses without a titanium nitride protective-decorative coating. Solid-cast prostheses with a titanium nitride protective-decorative coating do not have extensive changes in color and surface gloss; however, focal color changes were detected in 34.3% of cases. In patients with stamped crowns and stamped-soldered bridge prostheses with a titanium nitride protective-decorative coating, focal changes in color and surface gloss of the prostheses were 27% and 32.7% of cases, respectively, and extensive changes for each type of the aforementioned prostheses were found in 16.2% of cases.

Soldering the parts of a bridge prosthesis increases their wear. After 36 months of prosthetics, in the groups of patients with stamped-soldered bridge prostheses with and without a titanium nitride protective-decorative coating, the occurrence of pores, pitting, and erosion on the metal surface of the prostheses was noted in 16.1% and 21.6% of cases, respectively, while the absence of the above-mentioned changes was observed in all other studied groups. The titanium nitride protective-decorative coating of metal prostheses prevents significant changes in the concentration of mineral

elements and the pH of saliva only in the first 6 months after prosthetics. This coating is unstable (already 6 months after prosthetics, in patients with stamped crowns with a titanium nitride protective-decorative coating, stamped-soldered bridge prostheses with a titanium nitride protective-decorative coating, and solid-cast prostheses with a titanium nitride protective-decorative coating, its abrasion on the occlusal surfaces is observed in 19%, 16.2%, and 11.4% of cases, respectively, and by the end of the study, the absence of the coating was noted in 43.2%, 49.1%, and 34.3% of cases). It negatively affects periodontal tissues (the PMA index in patients with stamped crowns with a titanium nitride protective-decorative coating and stamped-soldered bridge prostheses with a titanium nitride protective-decorative coating by the end of the study is $55.37 \pm 0.27\%$ and $59.74 \pm 0.75\%$, respectively), negatively affects the metal structure of prostheses, and contributes to the development of intolerance to them (in patients with stamped-soldered bridge prostheses with a titanium nitride protective-decorative coating by the end of the study in 8.1% of cases).