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Removal forces of adhesively and self-adhesively luted implant-supported zirconia copings depend on abutment geometry

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- Short Communication -**Removal forces of adhesively and self-adhesively luted implant-supported zirconia copings depend on abutment geometry**

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Abstract

This in vitro study evaluated the effects of different abutment axial heights on the retentiveness of adhesively and self-adhesively luted zirconia copings. Ankylos implants were embedded in resin blocks. Two groups of titanium abutments ("long", height: 6.79 mm, taper: 4.8°; "short", height: 4.31 mm, taper: 4.8°; Compartis-ISUS, DeguDent) were used for the luting of CAD/CAM-fabricated zirconia copings (Compartis, DeguDent) with an adhesive (Multilink Automix; Ivoclar Vivadent) and a self-adhesive (RelyX Unicem; 3M ESPE) composite. After water storage and 5,000 thermocycles (5°C/55°C), retention forces were evaluated using a universal testing machine (Zwick). Significant differences were determined via two-way ANOVA and t-tests with Bonferroni-Holm correction. Significant interactions between abutment geometry and luting agents were observed. RelyX Unicem showed the highest levels of retentiveness, irrespective of the varying abutment geometries (mean values long/short: 487.7 N/447.9 N). When Multilink Automix was used, removal forces were significantly lower (311.7 N/101.1 N) and negatively affected by the use of the shorter

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