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Flexural properties of prosthetic provisional polymers.

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In this in-vitro study, the flexural strength and Young's-modulus of five resin-based provisional materials were compared after repair. A three-point bending test and a fracture test of 3-unit fixed partial dentures (FPDs) were performed. Temphase (53.1 +/- 7.9 MPa), Luxatemp (45.2 +/- 7.8 MPa) and Trim (17.8 +/- 2.5 MPa) showed significantly lower initial flexural strength compared to Provipont (54.3 +/- 10.5 MPa) and Protemp 3 Garant (58.9 +- 5.9 MPa). A significant decrease of flexural strength was found after the repair of Luxatemp and Temphase with provisional material on the oxygen-inhibited surface, and additionally, for Temphase with composite on mill-cut surface. The fracture strength of the FPDs varied between 655N for Trim and 1258N for Protemp3. After the repair, the results did not change significantly. The effectiveness of the repair using temporary materials was highly dependent on the type of material and the repair material. However, the repair of the FPDs with provisional resin may lead to minor changes in the fracture resistance. The high flexural strength and fracture resistance would favor Protemp3 and Provipont for long term clinical application.

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