

**AN INVESTIGATION INTO THE RELATIVE  
RETENTIVITY OF TWO LUTING CEMENTS**

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## AN INVESTIGATION INTO THE RELATIVE RETENTIVITY OF TWO LUTING CEMENTS

This investigation was made in order to compare between the ability of polycarboxylate and phosphate cement to retain cast gold restorations. As well as the relative influence of water immersion and load application on the retentivity of both cements.

100 freshly extracted teeth were employed. Their surfaces were grinded to have constant flat and smooth surface of enamel and dentine.

identical gold castings were obtained.

The cements were manipulated in accordance with manufactures directions to obtain mixes of standared consistency required for luting purposes.

The gold restorations were cemented to the respective tooth surface and the cement was allowed to hardened for a period of 5 minutes under a constant load of 5 kgms. The cement line was painted on with a copal varnish.

Testing for retentivity included application of progressive tensile force to dislodge the cemented castings in an Instron testing machine at a cross head speed of 1.0 mm/min and the retentivity was measured in terms of the load required to dislodge the gold castings from the test tooth surface.

Testing included the effect on retentivity of both cements of application of 10 and 15 kgms to the cemented castings, the effect of immersion in water for 24 hours and 7 days, and the combined effect of both variables.

The data obtained indicated the superiority of polycarboxylate to the phosphate cement in the ability to retain the cast gold restorations under all control and test conditions.

Furthermore, it showed a significant effect on retentivity of loading and water immersion. The influence was variable for both cements.

The 24 hours and 7 days water immersion showed marked drop in the retentivity of both luting cements. However, the retentivity of polycarboxylate was superior than the phosphate cement.

Moreover, 10 and 15 kgms load application associated with dropping of retentivity of both luting cements and still the retentivity of polycarboxylate was greater than the phosphate cement.

It was noted that the retentivity of both cements was more markedly affected by water immersion than the load application and on exposure to both variables together the phosphate cement showed a marked drop in its retentivity so that, detachment of the gold castings of some specimens faced before mounting in the instron testing machine. On the other hand, polycarboxylate cement showed only dropping in retention with 10 kgms load application and 24 hours water immersion, while the 10 kgms load application with 7 days water immersion and 15 kgms load application with 24 hours and 7 days water immersion showed improving in its retentivity.