

THE EFFECT OF FLUORIDE RECHARGING OF DIFFERENT IONOMER BASED RESTORATIONS ON ITS MECHANICAL PERFORMANCE

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ABSTRACT

This study investigated the diametral tensile strength (DTS) of three ionomer based restorative materials (Fuji II, Fuji II LC and Fuji IX) after the application of two fluoride recharging agents (1.23% APF gel and 0.4% SnF₂ gel) at time intervals: 24 hours and 28 days. A total of 90 samples were prepared using spilit Teflon moulds and stored in distilled water at room temperature. The diametral tensile strength was tested using a universal testing machine at a crosshead speed of 0.5 mm/min, and the maximum applied load was recorded and the (DTS) was calculated in (MPa). One way analysis of variance (Procedure ANOVA of SAS) followed by Duncan's multiple Range Test were used to test the effect of topical fluoride application on the (DTS) within each restorative material. The results of this study showed that the (DTS) of Fuji II after 24 hours was increased with both recharging gels, APF gel had no effect on DTS for Fuji II LC and DTS for Fuji IX was decreased. SnF₂ gel showed no effect on the DTS of Fuji IX and decreased it for Fuji II LC. After 28 days: APF gel had decreased DTS for Fuji II, no effect on DTS of Fuji II LC and increased it of Fuji IX. While , SnF₂ gel had no effect on DTS of both Fuji II & Fuji II LC but increased DTS of Fuji IX. By increasing the storage period up to 28 days: there was an increase of DTS for both Fuji II and Fuji II LC and decreased the DTS for Fuji IX.

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