

# **EFFECT OF CORE BUILDUP MATERIAL ON THE IN VITRO FRACTURE OF CROWNED ENDODONTICALLY TREATED TEETH**

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## **ABSTRACT**

Core buildup materials are used to reconstruct fractured or broken down teeth and to restore endodontically treated teeth. This study was done to determine the effect of core buildup material on the fracture resistance and the mode of failure of endodontically treated teeth restored by all-ceramic crowns. Thirty two extracted intact single rooted second premolars were selected. They were divided equally into four groups and prepared for posts and cores as follows. Group I was prepared for parapost and amalgam core, group II was prepared for parapost and composite core, group III was prepared for cast post and core and group IV (control group) was prepared for parapost and dentin served as a core. Complete crown preparations were prepared. All-ceramic crowns (IPS-Empress) were fabricated and cemented on the prepared teeth. Continuous compressive force was applied to the restored specimens by a mechanical testing machine until failure occurred. The failure load and the mode of failure were recorded. The collected data were analyzed by one-way analysis of variance (ANOVA). Results revealed that the core buildup material did not affect the fracture resistance of teeth restored by post and cores and pressable IPS-Empress all-ceramic crowns. The mode of failure of the amalgam and composite core system was more favorable to the remaining tooth structure when compared with the cast post and core system.