

Publication:

International Journal of Prosthodontics

January/February 2009

Volume 22 , Issue 1

Strength Investigation of Artificial Substitutes for Human Teeth in In Vitro Studies

Martin Rosentritt, Dipl-Ing (FH)aMargarete Reill, DDS/Michael Naumann, DMD/Arnold Nowak, DDS/ Gerhard Handel, DDS, MS, PhD

This study investigated whether metals or resins can replace human teeth in in vitro fracture tests of endodontically treated teeth (ETT), as ETT show high heterogeneity and small availability. Eight incisor-shaped roots per group were adhesively restored with fiber-reinforced composite posts, composite core build-ups and Co-Cr-Mo crowns. Specimens were thermally cycled and mechanically loaded (TCML) and fracture strength was determined. The results varied between 0 N and 348 N. Extracted ETT may show comparable strength and survival during TCML to teeth in situ and therefore are the first choice for in vitro testing. Substitutes show comparable fracture patterns but different fracture values. Int J Prosthodont 2009;22:62–64.