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[\[Image PDF \(1120K\)\]](#) [\[References\]](#)**Stress Analysis of Endodontically Treated Anterior Teeth Restored with Different Types of Post Material**

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Abstract:

Finite element analysis was performed to evaluate stress distribution in maxillary central incisors treated endodontically and restored with a post and an all-ceramic crown. Tensile stress at tooth root was analyzed using two-dimensional finite element models with different post diameters and lengths. One post length was 1/3 of the root (short), while the other was 2/3 of the root (long); one post diameter was 1/3 of the root (narrow), while the other was 2/3 of the root (wide). The following combinations were used for posts and cores: gold alloy cast post and core, commercial stainless steel post and resin core, and fiber post and resin core. Results showed that the fiber post produced less stress on the root dentin around the post tip than did the metal posts. This finding thus suggested that to reduce the stresses that cause root fracture, a long, thin fiber post should be used.

Key words:

[Finite element analysis](#), [Post and core](#), [Fiber-reinforced composite](#), [All-ceramic crown](#)



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