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Topic Review

Smoking and the Human Vertebral Column: A Review of the Impact of Cigarette Use on Vertebral Bone Metabolism and Spinal Fusion

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Abstract

CHRONIC CIGARETTE CONSUMPTION has significant adverse effects on the human spinal column. Multiple mechanisms induced by tobacco use lead to less strong, less healthy, mineral-deficient vertebrae with reduced bone blood supply and fewer and less functional bone-forming cells among chronic smokers. Compared to nonsmokers, chronic smokers develop advanced bony degradation, are more likely to suffer from spinal column degenerative disease, and seem more susceptible to traumatic vertebral injury. Spinal fusion procedures in chronic smokers are less often clinically and radiographically successful, compared to similar procedures performed among nonsmokers for definitive biological, physiological, and mechanical reasons.

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