

## The Effect of Screw Parameters on Pullout Strength of Screw Fixation in Cervical Spine

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**Abstract :** The pullout strength had an effect on the stability of plate screw fixation when inserted in the cervical spine. Nine different titanium alloy bone screws were used to test the pullout strength through finite element analysis. The result showed that the Moss Miami I can bear the highest pullout force at 1,075 N, which causes the maximum von Mises stress at 858.87 MPa, a value over the yield strength of titanium. The bone screw should have large outer diameter, core diameter and proximal root radius to increase the pullout strength.

**Keywords :** pullout strength, screw parameter, cervical spine, finite element analysis

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