**Finite Element Study of the Biomechanical Consequences of Schmorl’s Nodes**

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Lower back pain is one of the world’s most disabling conditions. It is associated with spinal disc degeneration, which in turn is associated with the presence of Schmorl’s nodes (disc intrusion into the vertebral endplates). Previously published work has found that 20% of people with lower back pain have Schmorl’s nodes.  Due to the wide variety of Schmorl’s Node morphology and topology, the correlation with disc degeneration has been inconsistent. It is also unclear whether the presence of Schmorl’s nodes leads to disc degeneration, or vice-versa.  This study utilized a nonlinear finite element model to investigate the consequences of Schmorl’s node presence on intervertebral disc pressure and vertebral strain energy. Based on our results, presence of a Schmorl’s node significantly increases disc pressure, resulting in a 38% increase with respect to an otherwise identical control model.  Presence of a Schmorl’s node also induced significant increases in vertebral strain energy, especially in the endplate and cancellous bone regions immediately surrounding the Schmorl’s node.  These results are significant in that they identify that geometrical effects of Schmorl’s node presence may be a precipitating factor in disc degeneration for some patients.