



How do the bones change in scoliosis?

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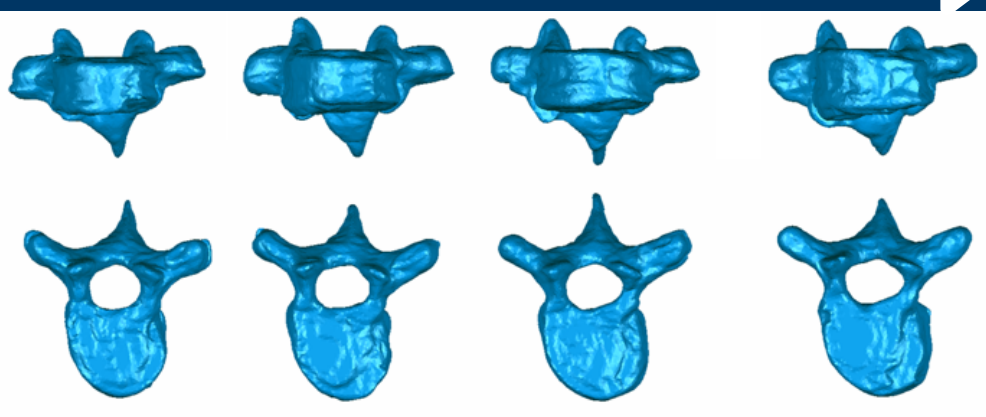
Adolescent Idiopathic Scoliosis **Scoliosis**

Adolescent Idiopathic Scoliosis (AIS) is a three dimensional deformity characterised by lateral curvature, axial rotation and usually thoracic hypokyphosis



Scan 1: Age: 11.2 years	Scan 2: Age: 12 years	Scan 3: Age: 12.7 years	Scan 4: Age: 13.1 years
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Increasing Wedge Deformity



3D

Reconstruction of apical vertebrae

MRI scans of 25 AIS patients were analysed to measure how much asymmetric growth occurred in the most deformed vertebra within the scoliotic deformity. By measuring these vertebra as the patient grew (up to four scans per patient) we showed a consistent pattern of asymmetric yearly growth in the vertebra and this growth correlated with the severity of the lateral scoliosis deformity. These results suggest that the asymmetric vertebral growth in AIS patients strongly contributes to progression of the AIS lateral deformity.