ROBOTRON

AUTOMATED MRI LUMBAR SPINE REPORT

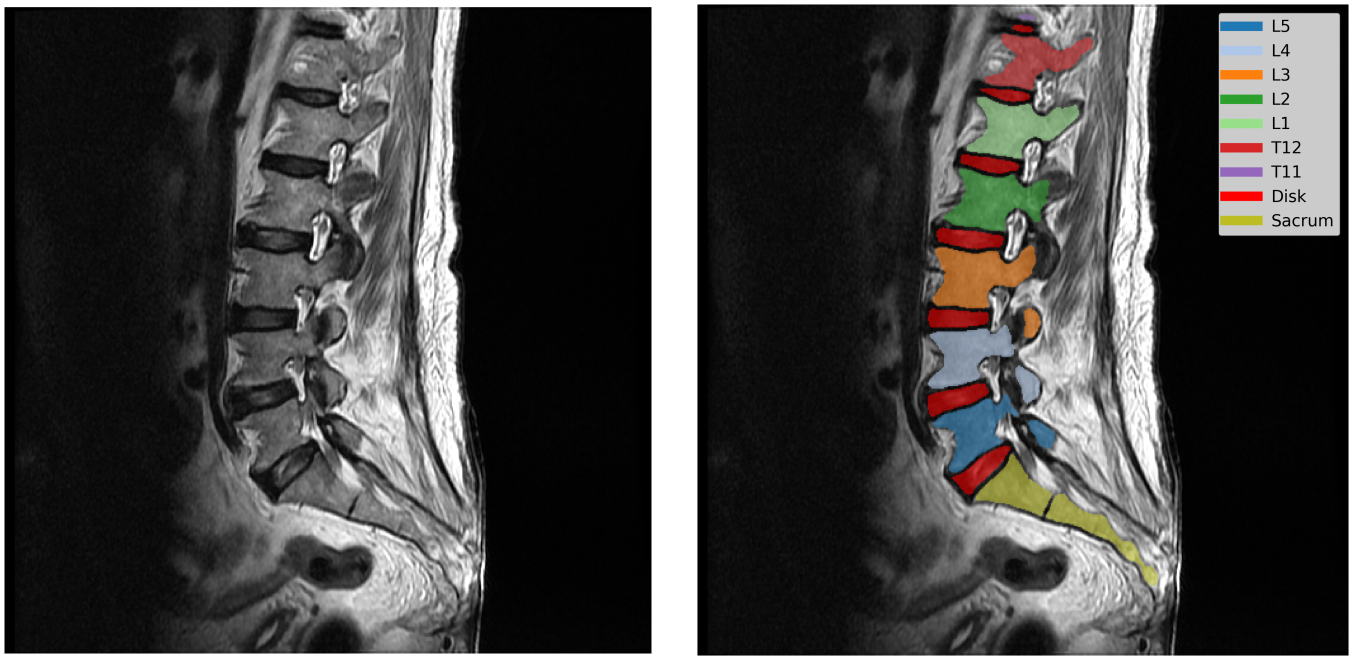
ML-Assisted Radiological Analysis

November 6, 2025

Patient Information	
John Doe	Date of Birth: 5/12/1980
Male	Date of MRI: 4/4/2025

SAGITTAL SPINE

Sagittal Spine Overview Visualization



QUANTITATIVE MEASUREMENTS

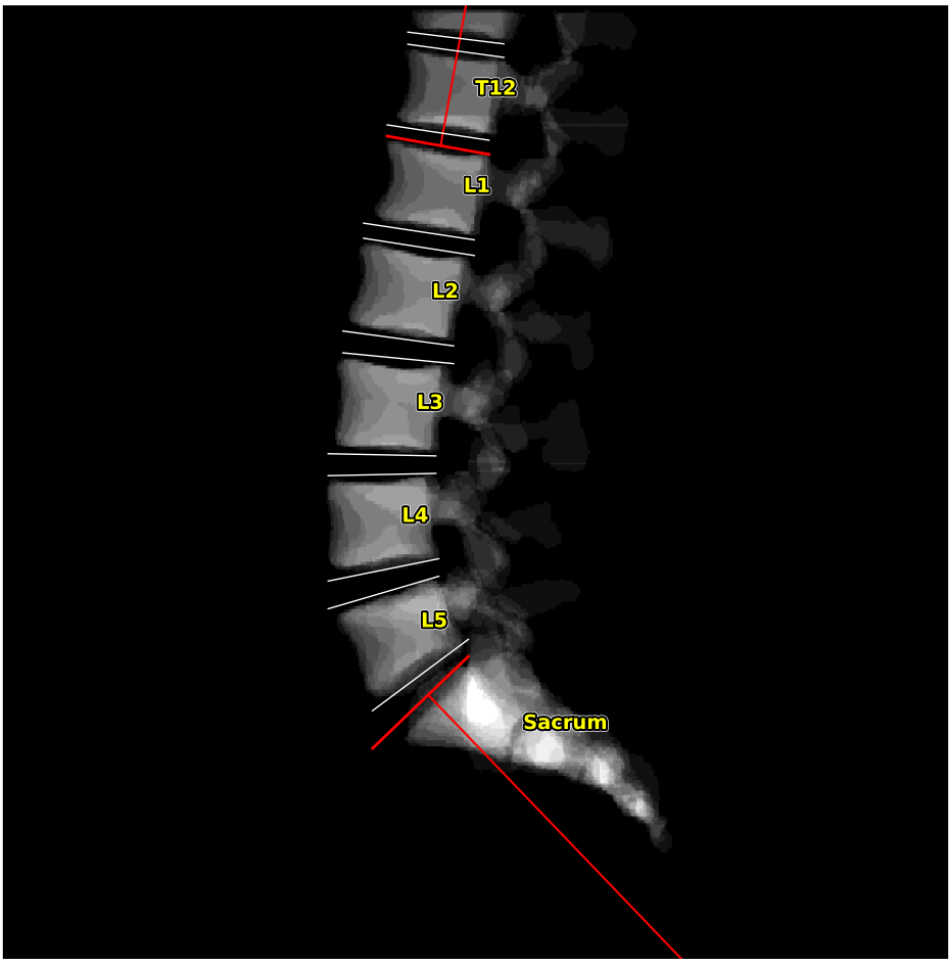
Disc Degeneration Assessment

Disc	Pfirrmann	Posterior disc height	Anterior disc height
L5S1	1	9.99mm	18.17mm
L4L5	3	11.39mm	17.69mm
L3L4	3	11.58mm	14.61mm
L2L3	3	12.39mm	15.26mm
L1L2	4	10.95mm	10.57mm
T12L1	5	9.27mm	7.47mm
T11T12	1	8.90mm	7.99mm

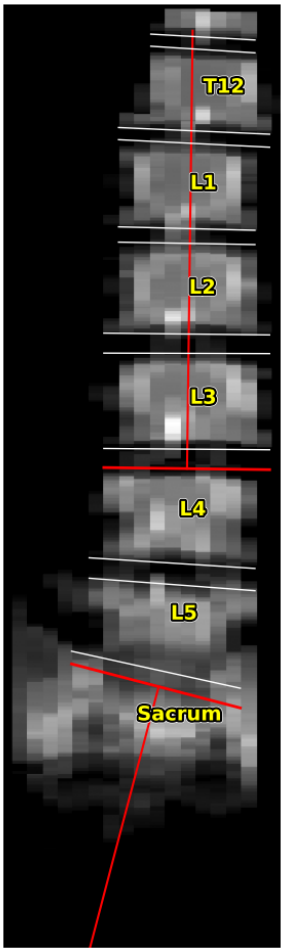
Pfirrmann Grade: 1 (normal) to 5 (severe degeneration)[1]

Cobb's Angle Measurements

Spine Overview Visualization



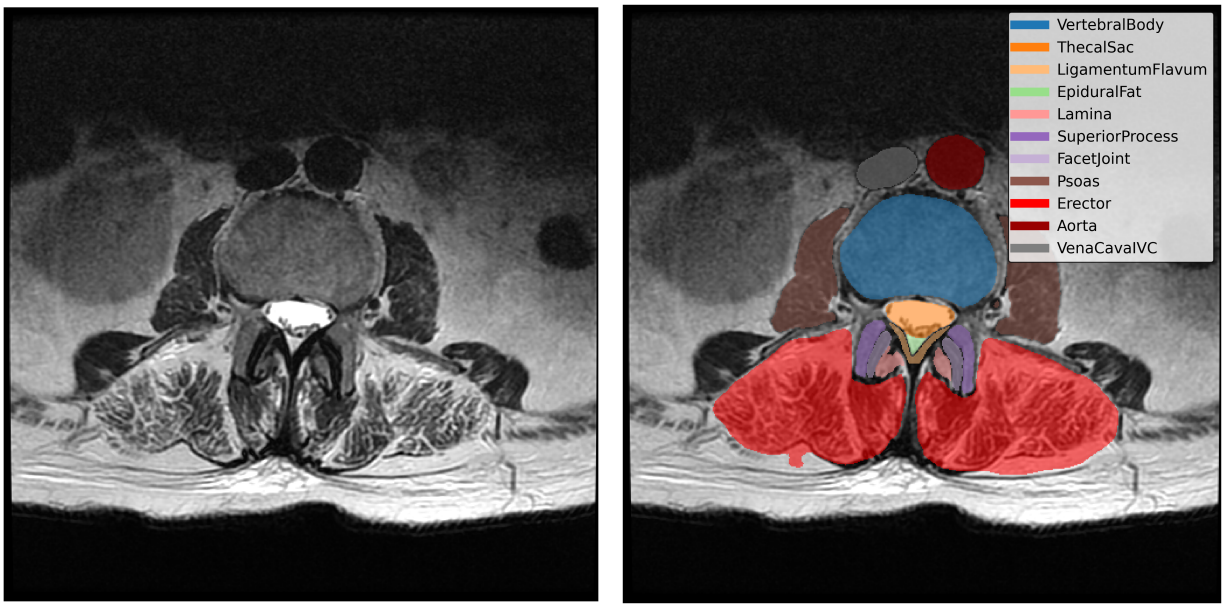
Lordosis angle : 52°



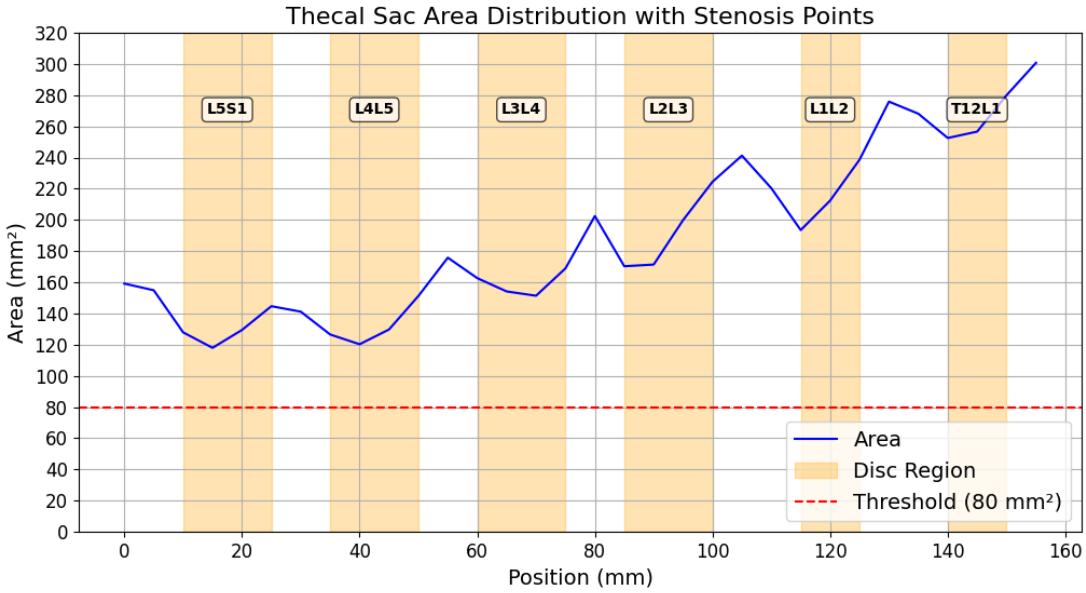
Scoliosis angle : 14°

AXIAL

Axial Spine Overview Visualization



Spinal Stenosis Measurements

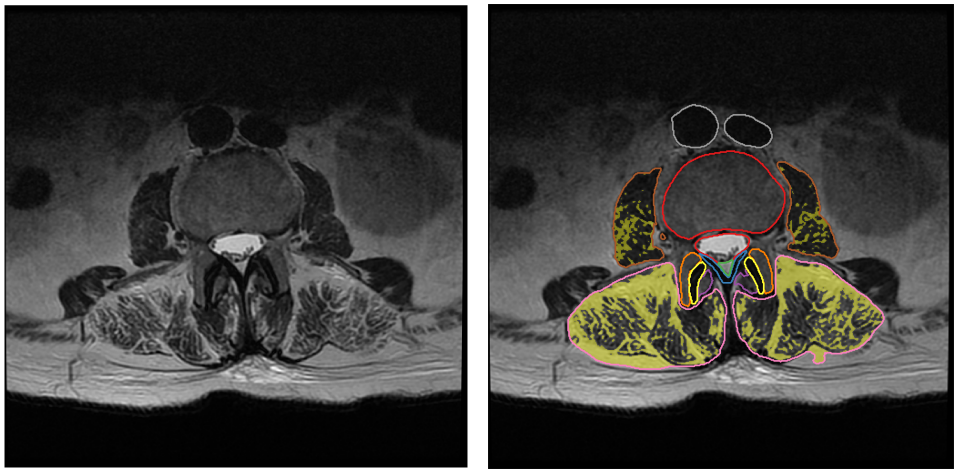


Spinal stenosis detection with threshold value at 80 mm^2 thecal sac area[23]
Stenosis not detected.

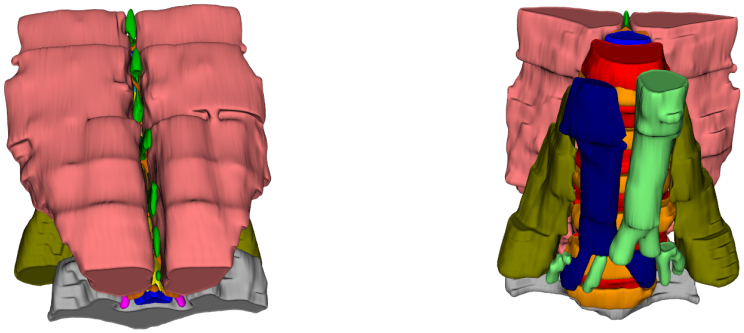
Muscle disproportion analysis

Erector Muscle		
Total volume: 529.05 cm^3		Ratio: 0.966
Left erector spinae: 269.13 cm^3	Right erector spinae: 259.92 cm^3	Fat: 45.71%
Psoas Muscle		
Total volume: 118.19 cm^3		Ratio: 0.880
Left psoas major: 62.88 cm^3	Right psoas major: 55.31 cm^3	Fat: 2.98%

Fat content in Psoas and Erector muscle groups



Posterior and Anterior views of axial lumbar spine



ML ASSESSMENT CONFIDENCE

AI Analysis Confidence Metrics

Segmentation accuracy:	*86%*
Classification accuracy:	
Bulging	*91%*
Pfirrman grading	*75%*
Endplate	*85%*
Disc space narrowing	*89%*

This report is generated using machine learning assistance and should be reviewed by a qualified radiologist.

CLINICAL INTERPRETATION

Clinical Significance

RADIOLOGIST_NAME, MD
INSTITUTION

REFERENCES

[1] C. W. Pfirrmann et al. “Magnetic resonance classification of lumbar intervertebral disc degeneration”. In: Spine 26.17 (Sept. 2001), pp. 1873–1878. ISSN: 0362-2436. DOI: 10.1097/00007632-200109010-00011. eprint: 11568697.

[2] G. Ehni. “Significance of the small lumbar spinal canal: cauda equina compression syndromes due to spondylosis. 1. Introduction”. In: J. Neurosurg. 31.5 (Nov. 1969), pp. 490–494. ISSN: 0022-3085. DOI: 10.3171/jns.1969.31.5.0490. eprint: 4900706.

[3] B. Coulier. “[Evaluation of lumbar canal stenosis: decubitus imaging methods versus flexion-extension myelography and surface measurements versus the diameter of the dural sac]”. In: JBR-BTR 83.2 (Apr. 2000), pp. 61–67. ISSN: 1780-2393. eprint: 10859898. URL: https://pubmed.ncbi.nlm.nih.gov/10859898.