



LUMBAR SPINE: Study #1

Boden S, McCowin P, Davis D. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects: a prospective investigation. J Bone Joint Surg72A:403-8



Background Information

- MRI's are great at detecting supposedly damaged tissues and determining the severity of the damage
- Previous studies showed that a number of abnormalities are found on discograms, myelograms, & CT Scans even among non-symptomatic subjects



Purpose of this Study

- Investigate the prevalence of positive findings on MRI's in non-symptomatic subjects

Study Design

- 67 adults volunteers (45% ♂ 55 ♀)
- Age: 20-80 (average age: 42)
- Inclusion criteria:
- Participants must not have a history of back pain, neurogenic claudication, sciatic, episodes of low back discomfort lasting >24 hr or absence at work due to back pain



Study Design

- MRI's were evaluated for lumbar disc herniation, stenosis, disc degeneration, disc bulging, etc in the non-symptomatic subjects

Outcome of this Study

Abnormal Findings Present In The Non-symptomatic Participants:

Classification/ Findings	Notes	Ratio	Percentage
Abnormal Findings	*No significant difference between male & female	19/67	28%
Lx Herniated disc		16/67	24%
Lx Stenosis		3/67	4%



Over 25% of the non-symptomatic participants tested positive for either Lx herniated disc or Lx stenosis on the MRI!

Outcome of this Study

Prevalence Of Abnormal Findings As Classified By Age Groups:

Age Groups	Prevalence of Abnormal Findings	Ratio (Total of 67 participants)	Percentage
20-39		7/35	20%
40-59		4/18	22%
60-80	Herniated nucleus pulposus accounted for ~36% (5/14) & stenosis accounted for ~21% (3/14) of findings	8/14	57%



The prevalence of abnormal findings was the **same in asymptomatic men and women, but it varied greatly according to the ages of the subjects.**



Conclusion

- Approximately 30% of the non-symptomatic population presented with major abnormal MRI findings
- This puts patients at risk of operating on structure that may not be at fault if diagnosis solely base on magnetic resonance imaging (MRI)
- **Physical assessment is crucial for a thorough and complete assessment of orthopedic conditions!**

Conclusion

- Prevalence of abnormal findings spiking for participants over 60 y.o. indicates that degenerative changes and bulging of discs seem to increase with age
 - Abnormal findings in the older population may be less significant
 - However, abnormal findings in the younger population (<60 y.o.) may be a better predictor of the source of back pain