



# LUMBAR SPINE: Study #2

Weishaupt D, Zanetti M, Hodler J, and Boos N. MR Imaging of the Lumbar Spine: Prevalence of Intervertebral Disk Extrusion and Sequestration, Nerve Root Compression, End Plate Abnormalities, and Osteoarthritis of the Facet Joints in Asymptomatic Volunteers. Radiology 1998; 209:661-666.



# Background Information

- Typical diagnosis such as herniated discs are found in both the symptomatic & the non-symptomatic population
- Disk herniations can be classified as normal, bulging, protrusion, extrusion, and sequestration
- This classification is based on the degree of displacement of the intervertebral disc



# Purpose of this Study

- Investigate abnormal findings on MRI's that are less common among non-symptomatic individuals
- Discover possible predictors of LBP



# Study Design

- 50 adults volunteers (50% ♂ 50% ♀ )
- Age: 20-50 (mean age: 35)
- Participants chosen must not have..
  - history of low back pain(LBP)
  - seen a healthcare professional due to LBP
  - and had work absences due to LBP



# Abnormalities Evaluators Were Looking For...

- MRI's were evaluated for intervertebral discs & end plate abnormalities, nerve root compression, & osteoarthritic changes with the facet joints

# Outcome of this Study

Prevalence Of Abnormal Findings Found In The Non-symptomatic Participants:

Classification/ Findings	Notes	Ratio	Percentage
Disc Degeneration		42/60	72%
Disc Bulging		15/60	25%
Disc Protrusion		24/60	40%
Disc Extrusion		11/60	18%
Disc Sequestration		0/60	0%
High-signal-intensity zones	Believed to be correlated with annular tears	20/60	33%



These are all common MRI findings in non-symptomatic population under 50 years old



# Findings

- Disc sequestration or extrusion, end plate abnormalities, nerve root compression, and osteoarthritic changes with the facet joints are rarely found in this study
- Findings such as bulging, protrusion, or high intensity zones **are in fact very common among the non-symptomatic population**



# Conclusion

- Rare findings on MRI have a better chance of being the culprit for LBP in the symptomatic individual; herniated discs are not always responsible for back pain
- Your life is not over just because of it shows disc bulge or protrusion on your MRI; these are **common findings found even among individuals who do not suffer from pain**

# Other Remarks

- Sample size, being 60 volunteers, may not be large enough to detect rarer findings on MRI's
- Nevertheless, we now have a better idea of what not to panic about by studying the non-symptomatic participants
- MRI's are precise at taking 3 dimensional images of our body, but we must know what we are looking for to begin with!