

## ***Are Imaging studies really telling us what's wrong with the patient?***

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***MRI of the spine may be very misleading because of the well-documented prevalence of disc disease in asymptomatic patient***

***MRI STUDIES HAVE REVEALED LUMBAR DISK ABNORMALITIES IN UP TO THREE QUARTERS OF ASYMPTOMATIC SUBJECTS INCLUDING THOSE WITH NO PREVIOUS HISTORY OF LOW BACK PAIN, SCIATICA OR NEUROLOGIC CLAUDICATION.***

- Boden SD, Davis DO, Dina TS, et al. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. *J Bone Joint Surg Am* 1990;72 A:403-408.
- Boos N, Rieder R, Schade V, et al. 1995 Volvo Award in clinical sciences. The diagnostic accuracy of magnetic resonance imaging, work perception, and psychosocial factors in identifying symptomatic disc herniations. *Spine* 1995;20:2613e25.
- Boos N, Semmer N, Elfering A, et al. Natural history of individuals with asymptomatic disc abnormalities in magnetic resonance imaging: predictors of low back pain-related medical consultation and work incapacity. *Spine* 2000;25:1484e92.
- Jarvik JJ, Hollingworth W, Heagerty P, et al. The Longitudinal Assessment of Imaging and Disability of the Back (LAID Back) Study: baseline data. *Spine* 2001;26:1158e66.
- Magnetic resonance imaging of the lumbar spine in people without back pain, Jensen MC et al. *NEJM* 1994; Jul 14;331(2):69-73.
- MRI of Thoracic Spine, Wood KB et al. *JBoneJointSurg* 1995; 77A:1631-1638.
- Abnormal MRI of the Cervical Spine in Aymptomatic Subjects, Boden SD et al. *JboneJointSurg* 1990; 72A:1178-1184.

***Disk degeneration at least one lumbar level is universal in asymptomatic subjects over 60 years old. The prevalence of degenerative disc findings in lumbar MRI among young adults (age 21 years), almost 50% have at least one degenerated disc and a quarter had a bulging disc***

- Boden SD, Davis DO, Dina TS, et al. Abnormal magnetic-resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. *J Bone Joint Surg Am* 1990;72:403e8.
- Takatalo J, Karppinen J, Niinimäki J, et al. Prevalence of degenerative imaging findings in lumbar magnetic resonance imaging among young adults. *Spine*, 2009 Jul 15;34(16):1716-21.

**Degenerative findings of the facet joints on radiographic studies have not been found to correlate with Z-Joint mediated pain since they are frequently found in asymptomatic.**

- Jarvik JG, Hollingworth W, Heagerty PJ, et al. Three-year incidence of low back pain in an initially asymptomatic cohort: clinical and imaging risk factors. *Spine* 2005;30:1541-8
- Schwarzer AC, Wang SC, O'Driscoll D, et al. The ability of computed tomography to identify a painful Zygapophyseal joint in patients with chronic low back pain. *Spine*. 1995;20:907-912
- Maus T. Imaging the back pain patient. *Phys. Med Rehab Clin N Am* 2010 Nov; 21 (4):725-66

Imaging studies of the spine are indicated and appropriate if the history and the physical examination findings are consistent with nerve root compromise and symptomatic spinal stenosis with neurogenic claudication.

However, considering the high incidence of asymptomatic abnormalities on imaging studies it is imperative to correlate imaging findings with history, mechanism of injury and objective findings on physical examination in order to establishing causation, provide appropriate necessary treatment interventions and avoid unnecessary treatments.