

sample size. This study provides Level IV evidence that ultrasound and vibration screening may possibly indicate that the spine is the source non-specific LBP.

Yrjama et al⁸ later compared magnetic resonance imaging (MRI) and bony vibration test with discographic pain provocation findings in patients with LBP. Participants (n=33) underwent evaluation by MRI, bony vibration test and fluoroscopically-guided discography. The sensitivity and specificity of the bony vibration test was 0.88 and 0.50, respectively. The authors concluded that the addition of bony vibration stimulation

to MRI evaluation can provide more information on the origin of LBP compared to MRI alone. In critique of the methodology, the work group downgraded the level of evidence for this potential Level III study due to lack of a definition for evoked pain, poor reference standard, nonconsecutive patients and a small sample size. This study provides Level IV evidence that bony vibration provocation test may correlate with the presence of pain on provocative discography without manometry, although does not identify the segmental level of pain.

There is insufficient evidence to make a recommendation for or against the use of axial loaded magnetic resonance imaging (MRI) for the diagnosis of low back pain.

Grade of Recommendation: I

Hanna and Tommy⁹ investigated the relationship between high-intensity zones (HIZ) and pressure-controlled discography and aimed to determine if detection of HIZ was affected by axial load. Patients with chronic LBP were enrolled (n=41) and underwent pressure-controlled discography, CT, magnetic resonance imaging (MRI) and axial loaded MRI. Presence of HIZ was compared between MRI methods and provoked pain was recorded as none, unfamiliar, similar, or exact, on discography. There were no signifi-

cant correlations between HIZ and the pain response at discography. The sensitivity, specificity, positive predictive value and negative predictive value of HIZ in detecting discs with "exact pain" on discography was 0.49, 0.69, 0.39 and 0.76, respectively. The authors concluded that HIZ was not influenced by axial load. This study provides Level I evidence that pressure-controlled provocative discography does not correlate with the presence of abnormal findings on axial loaded MRI.

There is conflicting evidence that pressure controlled provocative discography correlates with nuclear T2 signal intensity on magnetic resonance imaging (MRI) in patients with low back pain.

Grade of Recommendation: I

O'Neill et al¹⁰ aimed to determine the accuracy of magnetic resonance imaging (MRI) for the diagnosis of discogenic pain in an observational report of patients with chronic LBP. Participants (n=143) underwent MRI which were evaluated for high intensity zone (HIZ), nuclear signal, disc height, disc contour and bony marrow intensity change. Participants were then evaluated using fluoroscopically-guided discography using a syringe with an integrated pressure transducer; pain provocation was classified as positive or negative at each disc. Moderate loss of nuclear signal combined with disc bulge has a sensitivity

of 79.8% and specificity of 79.3% for the diagnosis of discogenic pain. The authors concluded that MRI parameters are correlated with each other and with discography findings. This study provides Level I evidence that pressure-controlled provocative discography correlates with pain in the loss of nuclear T2 signal intensity on MRI.

Scuderi et al¹¹ prospectively studied patients with symptomatic lumbar degenerative disc disease to investigate the relationship between magnetic resonance imaging (MRI) grade, biochemical inflamma-