

The two studies summarized here provide useful information to Doctors of Chiropractic regarding diagnostic imaging and discography for the management of low back pain.

# Diagnostic Imaging and Discography for Low Back Pain

## Are These Procedures Safe and Do They Improve Outcomes?

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Doctors of Chiropractic and Doctors of Medicine routinely utilize diagnostic imaging for managing low back pain to help rule out serious pathology prior to administering interventions. In some cases, diagnostic imaging (e.g. plain film radiography) is also used to help guide treatment. Similarly, certain medical specialists use discography, an intradiscal injection procedure, to help rule out pathology and to guide treatment. Two recent studies help shed light on the value and safety of these diagnostic tests.

### Effects of Routine Diagnostic Imaging on Clinical Outcomes for Low Back Pain

#### Study Summary

Chou et al. (Chou, 2009) conducted a systematic review to compare the effects of usual medical care with and without routine, immediate lumbar diagnostic imaging on clinical outcomes in patients with primarily acute or sub-acute low back pain and no indication of serious underlying conditions. The authors uncovered six randomized controlled trials (RCTs) on the topic, which

enrolled a total of 1804 subjects. Four of these RCTs assessed plain film radiography and two assessed magnetic resonance imaging (MRI). It does not appear that evaluation or management in any of these RCTs was provided by Doctors of Chiropractic. Meta-analysis of the data obtained from these RCTs revealed no differences in pain, function, or quality of life outcomes between usual care with and without diagnostic imaging at short-term or long-term follow-up. The authors concluded that clinicians should avoid routine, immediate lumbar imaging for patients with acute or sub-acute low

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back pain without features of serious underlying conditions.

### **Implications for Doctors of Chiropractic**

While this study indicates that usual medical care for typical low back pain is not improved by the use of immediate diagnostic imaging, it is unclear if these findings can be generalized to the care provided by Doctors of Chiropractic, since chiropractic interventions were not assessed. Nevertheless, Doctors of Chiropractic should keep in mind that third party payers and other stakeholders may adopt the findings of studies like this when making treatment allocation and reimbursement decisions. Thus, it is imperative for doctors of chiropractic to justify the need for diagnostic imaging when used to help guide treatment (e.g. determine regions that are appropriate for adjustment) or to assist in documenting treatment outcomes.

## **Lumbar Discography and Disc Degeneration**

### **Study Summary**

Carragee and colleagues (Carragee, 2009) conducted a 10-year observational study on the effects of lumbar discography on lumbar disc degeneration. 150 patients without serious low back pathology underwent baseline MRI scans in 1997. Following baseline scans, 75 underwent lumbar discography at L3/4, L4/5, and L5/S1, while 75 served as matched controls. At 10 year follow-up, MRI scans were obtained from 50 subjects who received discography and 52 subjects who served as matched controls. Compared with controls, those who received discography had a greater progression of degenerative disc findings, higher incidence of new disc herniations, greater loss of disc height, and greater loss of disc signal intensity. The authors concluded that modern discography procedures using small gauge needles and pressurization resulted in increased pathological changes in the lumbar discs.

### **Implications for Doctors of Chiropractic**

There appears to be a casual relationship between receiving lumbar discography and the future incidence of accelerated disc degeneration at long

term follow up. Doctors of Chiropractic can use the information obtained from this study to help patients with persistent low back pain complaints makes decisions about which secondary and tertiary approaches may be useful for their condition. As primary care providers, Doctors of Chiropractic should be equipped with the knowledge base needed to discuss the risks and benefits of various diagnostic and treatment approaches with their patients, including approaches other than their own.

## **Conclusion**

The two studies summarized above provide useful information to Doctors of Chiropractic regarding diagnostic imaging and discography for the management of low back pain. Clinicians can use studies like these in the decision-making process to help provide optimal care for their patients and to help educate their patients on the safety and effectiveness of these approaches. ◀FCA

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