

**Chiropractic Care and Risk for Acute Lumbar Disc Herniation:
A Population-based Self-controlled Case Series Study**

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This study cites 49 references.

The objective of this study was to “investigate the association between chiropractic care and acute lumbar disc herniation with early surgical intervention, and contrast this with the association between primary care physician care and acute lumbar disc herniation with early surgery.”

“To date, no valid epidemiologic assessment of the risk for acute disc herniation following chiropractic treatment is available in the scientific literature.”

“This study is the first population-based epidemiologic investigation of the association between chiropractic care and acute lumbar disc herniation.”

This study used a population of *more than 100 million person-years*. [amazing]

- Our study population included the entire population registered in Ontario's provincial healthcare system over an 11-year period, representing over 100 million person-years of observation. This allowed us to identify all early surgically managed cases of acute lumbar disc herniation, visits to chiropractors and PCPs.

BACKGROUND FROM DAN MURPHY

***Protopathic bias* is when a treatment for the first symptoms of a disease appear to cause or accelerate a deteriorating outcome, when, in fact, the disease process was following a natural progression, and the treatment intervention had nothing to do with the deteriorating outcome. It is a potential bias when there is a lag time from the first symptoms and start of treatment before actual diagnosis is understood/determined.**

These authors note that their research approach used the stroke analogy, stating:

Our findings are similar to a previous study examining the association between chiropractic care and vertebrobasilar stroke, in which similar associations were found between both chiropractic care and PCP care, and the outcome of vertebrobasilar stroke.

This study reported no evidence of excess risk for vertebrobasilar stroke associated with chiropractic care compared to primary medical care.

We reviewed this article:

Article Review 06-09:

Risk of Vertebrobasilar Stroke and Chiropractic Care

KEY POINTS FROM THIS ARTICLE:

- 1) "In North America, back pain is managed primarily by physicians, chiropractors, and physical therapists."
- 2) "Approximately 12% of American and Canadian adults seek chiropractic care annually, and about 95% of chiropractic visits involve spinal manipulation treatment."
- 3) Low back pain (LBP) is the leading cause of global disability. **[Important]**
 - LBP affects about 70% of all people in their lifetime.
 - LBP affects between 15% and 30% of all people on any given day.
- 4) "Chiropractic care is popular for low back pain, but may increase the risk for acute lumbar disc herniation."
 - "Low back pain is a common early (prodromal) symptom of lumbar disc herniation and commonly precedes lumbar disc herniation diagnosis."
 - One of the most recognizable presentations of lumbar disc herniation is low back pain.
 - Many patients present, in the early (prodromal) phase of lumbar disc herniation, with low back pain, which "then progresses to radicular leg pain with or without neurologic signs." **[Very Important]**
- 5) Symptomatic lumbar disc herniation tends to follow this course:
 - Individuals in the early prodromal phase of a symptomatic lumbar disc herniation often complain of back pain.
 - As the condition progresses, most develop sciatica.

- At different points in time along this course, they may seek healthcare for assessment and intervention.
 - “If chiropractic treatment occurs before a lumbar disc herniation progresses to radiculopathy or neurologic deficit and is thus diagnosed, then the treatment itself can be erroneously blamed for causing the lumbar disc herniation.”
 - “This systematic error—known as protopathic bias—is a type of reverse-causality bias due to processes that occur before a diagnosed or measured outcome event.”
 - “Given that deteriorating outcome can initially present as low back pain, it is possible that these patients seek chiropractic care in the prodromal phase of deteriorating outcome, implying that an observed association between chiropractic care and acute deteriorating outcome may not be causal.”
 - “Since patients also commonly see primary care physicians (PCPs) for back pain and this healthcare encounter is unlikely to cause disc herniation, an observed association between PCP visits and acute deteriorating outcome could be attributed to care seeking for the initial symptoms of deteriorating outcome (protopathic bias).”
- 6) The analysis “suggested a positive safety profile for chiropractic care relative to the baseline risk represented by PCP care.” **[Important]**
- 7) “Some patients with low back pain, a common early symptom of lumbar disc herniation, may have sought healthcare due to this prodromal symptom prior to lumbar disc herniation being diagnosed.”
- 8) “Patients with prodromal back pain related to a developing disc herniation seek healthcare from both chiropractors and PCPs before full clinical expression of acute lumbar disc herniation that is subsequently managed with early surgery.”
- 9) “Since PCPs would not plausibly cause lumbar disc herniation through their typical care for these patients, we posit that the observed association between recent PCP visits and acute lumbar disc herniation with early surgical management represents the background risk associated with patients seeking healthcare for early prodromal symptoms of lumbar disc herniation.”
- 10) “There are no clinical screening tests to identify patients with back pain that may be at increased risk of developing acute disc herniation, and the current evidence indicates poor diagnostic performance of most physical tests used to identify lumbar disc herniation.” **[Important]**
- 11) “The risk for acute lumbar disc herniation with early surgery associated with chiropractic visits was no higher than the risk associated with PCP visits.”

12) “Our analysis suggests that patients with prodromal back pain from a developing disc herniation likely seek healthcare from both chiropractors and PCPs before full clinical expression of acute lumbar disc herniation.”

13) “We found no evidence of excess risk for acute lumbar disc herniation with early surgery associated with chiropractic compared with primary medical care.”

COMMENTS FROM DAN MURPHY

This study presents the best evidence to date that chiropractic spinal adjusting does not increase the risk or incidence of lumbar disc herniation. These studies indicate that chiropractic adjusting is often effective treatment for lumbar disc herniation:

Article Review 27-15:

Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion:

Article Review 31-15:

Outcomes of Acute and Chronic Patients with Magnetic Resonance Imaging–Confirmed Symptomatic Lumbar Disc Herniations Receiving High-Velocity, Low-Amplitude, Spinal Manipulative Therapy:

Article Review 25-17:

Association of Spinal Manipulative Therapy With Clinical Benefit and Harm for Acute Low Back Pain

Article Review 40-17:

Low Back Pain and Pain Resulting From Lumbar Spine Conditions:

Article Review 1-18:

Manipulation in Back Pain