

### Lumbar Disc Replacement?

**Siepe CJ, Korge A, Grochulla F, Mehren C, Mayer HM. Analysis of post-operative pain patterns following total lumbar disc replacement: results from fluoroscopically guided spine infiltrations. *Eur Spine J* 2008;17:44-56.**

**SYNOPSIS:** This was a prospective cohort study that examined the incidence of post-operative pain patterns in patients following lumbar disc replacement. The predominant complaint for the study participants was chronic low-back pain. Patients who reported unsatisfactory results received fluoroscopic diagnostics. Owing to serious post-operative pain, 33% of the 175 patients (58 patients) received fluoroscopic examination. At a mean follow-up of 29 months, 58 patients were not back at work. Lumbar facet and/or ISJ-pain were the most common reasons for unsatisfactory results.

**RESEARCH QUALITY:** Overall, this study had reasonable methodological rigor.

**Quality Details:** This study used the following: 1) appropriate design for the question; 2) acceptable sample size; 3) source of population identified and described, representative of the target; 4) high participation rate; 5) subjects started at "zero" point; 6) study factors clearly described; 7) valid and relevant measures; 8) suitable measurement period; and 9) minimal loss to follow-up.

**CONCLUSION:** Patients with chronic low-back pain ex-

perience high failure rates following lumbar disc replacement.

**COMMENTS:** *Lumbar fusion is frequently linked to a variety of adverse side effects and has been associated with increased stress distribution and motion adjacent to the fused segments.<sup>1</sup> The described rate of "fusion-related" pain patterns from posterior joint structures ranges from 32% to 61%.<sup>2-4</sup> Total lumbar disc replacement has become frequently used for the treatment of low-back pain in an endeavor to escape fusion-related negative side effects.<sup>5</sup>*

*Theoretically, lumbar disc arthroplasty should act to maintain motion and circumvent stress and degeneration of the adjacent segment. Shim detailed an aggravation of facet joint degeneration in more than 32% of disc replacement patients.<sup>6</sup> This high incidence of facet degeneration after an average follow-up of less than 4 years was too short to be explained by the natural course of degeneration. The results of other medical research teams have similarly moderated the early eagerness for this surgical method.<sup>7-9</sup> It appears that lumbar disc arthroplasty interferes with the delicate biomechanics of the spine. Spine surgeons need to be cautious about the continued use of this surgical technique in light of such serious adverse effects.*

**Warning.** Healthcare professionals should not automatically use information from research studies (especially abstracts) to

make decisions about patient care because health care literature suffers from inconsistent quality and frequently distorts research findings. To improve the likelihood of applying valid/appropriate research conclusions to practices and to avoid invalid/inappropriate research findings, health care professionals should use reviews that apply the following model: **Critical Appraisal & Previous Relevant Evidence (CAPRE)**. Reviewers using this model do the following: 1) assess the quality of the research methods used within the study under review to determine the level of bias, if any, and the impact of bias on the study's conclusion; 2) formally report on the quality (If a study doesn't report the quality of the research, a quality assessment was not performed); and 3) connect the present study with previously published research by formally discussing the research conclusions of the present and previous studies. ■

*This review is an excerpt from Direction of the Evidence, published by the Institute of Evidence-Based Chiropractic, whose aim is the integration of science into chiropractic practice in order to improve patient outcomes. Dr. Feise can be reached at [rjf@chiroevidence.com](mailto:rjf@chiroevidence.com).*

## Journal Review

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