

## Direction of the Evidence

### Does Orthopedic Surgery Provide Benefit to Patients With Osteoarthritis of the Knee?

By Ron Feise, DC

**Kirkley A, Birmingham TB, Litchfield RB, Giffin JR, Willits KR, Wong CJ, Feagan BC, Donner A, Griffin SH, D'Ascanio LM, Pope JE, Fowler PJ. A randomized trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med* 2008; 359:1097-107.**

**Synopsis.** This was a randomized, controlled trial of arthroscopic surgery in patients with moderate to severe osteoarthritis of the knee. Patients were randomly assigned to surgical lavage and arthroscopic debridement, together with physical therapy, or to treatment with physical therapy alone. Of the 92 patients assigned to surgery, 6 did not undergo surgery. Of the 86 patients assigned to control treatment, all received only physical and medical therapy. Analyses of pain and function measures over a two-year period failed to show superiority of surgery.

**Research Quality.** Overall, this study had reasonable methodological rigor.

**Quality Details.** This study used the following: 1) appropriate design; 2) clearly stated inclusion and exclusion criteria; 3) randomization assignment; 4) treatment methods described; 5) valid, reliable, and relevant outcome meas-

ures; 6) blind outcome observers; 7) suitable measurement period; 8) acceptable sample size; 9) groups clinically similar at the start of the trial; 10) acceptable loss to follow-up; and 11) intention-to-treat analysis.

**Conclusion.** Arthroscopic surgery for osteoarthritis of the knee failed to demonstrate benefit over physical therapy.

**Comment.** In 2002, Moseley published a quality RCT that found no benefit for arthroscopic surgery compared with sham surgery.<sup>1</sup> But organized orthopedics rallied the troops to try to discredit the study as much as possible.<sup>2</sup> Medicare decided in 2003 to stop paying for the operation based on Moseley's findings. But surgeons can still be reimbursed for the procedure by modifying their diagnoses. According to Dr. David T. Felson, a professor of medicine and epidemiology at Boston University School of Medicine, the operation seems to have "become even more popular."<sup>2</sup> This current study's findings, taken together with Moseley's, provide strong evidence that arthroscopic surgery delivers little or no therapeutic value for osteoarthritis of the knee. Conservative practitioners should consider several thera-

peutic strategies. There is high-quality evidence that exercise and weight reduction reduce pain and improve physical function in patients with osteoarthritis of the knee and that these should be the cornerstones of long-term osteoarthritic knee-pain management.<sup>3,4</sup> There is moderate-quality evidence that electroacupuncture, transcutaneous electrical nerve stimulation, and low-level laser therapy reduce pain.<sup>3,4</sup> It is recommended that these therapies be administered with optimal doses in an intensive 2- to 4-week treatment regimen for patients with x-ray grade 2 to 4 and pain intensity levels above 50 mm on VAS to achieve clinically relevant short-term pain relief for osteoarthritic knee pain. Additionally, a study published in the *New England Journal of Medicine* investigated glucosamine and chondroitin. The research team demonstrated a small effect for glucosamine and chondroitin at 6 months; however, in a subgroup of patients with moderate to severe knee pain, the benefit was large at 6 months.<sup>5</sup> Moreover, in another knee study, glucosamine showed a resistance to joint space narrowing at 3 years.<sup>6</sup> Note that glucosamine and chondroitin potency is incon-

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sistent and even non-existent in some products.

**Warning.** Practitioners 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. Before relying on the findings of a research study, practitioners

should perform a critical appraisal to determine whether the conclusion is supported by the study's data. They should also locate and examine previous relevant research in order to integrate the current findings and form a conclusion based on the preponderance of quality evidence. Even conclusions from multiple studies do not provide a definitive answer.

Instead, they indicate the *direction* of the evidence. ■

*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 to improve patient outcomes. Dr. Feise can be reached at [rjf@chiroevidence.com](mailto:rjf@chiroevidence.com).*

## References

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