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For Most Patients, Surgery Is Best Treatment for Spinal Stenosis

But Smokers Get Less Benefit from Surgery for Common Spinal Disorder, Reports Study in Spine

Philadelphia, Pa. (October 9, 2012) - Nearly all groups of patients with spinal stenosis—but not smokers—do better with surgery than with nonsurgical treatment, reports a study in the October 1 issue of [Spine](#). The journal is published by [Lippincott Williams & Wilkins](#), a part of [Wolters Kluwer Health](#).

"With the exception of smokers, patients who met strict inclusion criteria improved more with surgery than with nonoperative treatment," according to the study by Dr Adam Pearson and colleagues of The Dartmouth Institute for Health Policy and Clinical Practice. They suggest that patients who smoke should consider quitting before they undergo surgery for spinal stenosis.

For Nonsmokers, Better Results for Surgery for Spinal Stenosis

The researchers analyzed data from the Spine Outcomes Research Trial (SPORT)—one of the largest clinical trials of surgery for spinal disorders. In SPORT, patients meeting strict criteria for spinal stenosis (or other common spinal diagnoses) were randomly assigned to surgery or nonsurgical treatment (such as physical therapy and medications). Patients with spinal stenosis have narrowing of the spinal canal, causing back pain, leg pain, and other symptoms.

In the study, 419 patients with spinal stenosis underwent surgery while 235 received nonsurgical treatment care. The difference in scores on a 100-point disability rating scale was calculated to assess the "treatment effect" of surgery compared to nonsurgical treatment. A wide range of characteristics were analyzed for their ability to predict which groups of patients would do better with surgical or nonsurgical treatment.

The results consistently showed greater improvement after surgery. "Other than smokers, all analyzed subgroups including at least 50 patients improved significantly more with surgery than with operative treatment," Drs Pearson and coauthors write. With adjustment for other factors, smokers who had surgery gained only two points on the disability scale, compared to those who had nonsurgical treatment.

Some characteristics besides smoking predicted greater improvement with surgery, such as a lower initial disability score, the presence of neurological abnormalities, and certain types of spinal stenosis, and no lifting on the job. For patients with the six strongest favorable characteristics, the predicted treatment effect of surgery was a 24-point improvement in disability score, compared to nonsurgical treatment.

Findings Will Help to Guide Treatment Decision-Making

The SPORT study was designed to increase the scientific evidence for decisions about treatment for spinal disorders. The finding that most patients with spinal stenosis do better with surgery—including those with initially lower disability—contrasts with the "conventional wisdom" that surgery is most appropriate for patients with the worst initial symptoms. Dr Pearson and coauthors emphasize that their results apply only to patients meeting the strict SPORT criteria for spinal stenosis: persistent, typical symptoms with imaging studies to confirm narrowing of the spinal canal.

The "most striking finding" is the importance of smoking—with smokers getting about the same improvement with or

without surgery. It's not clear whether smoking is the cause of the decreased response to surgery or "simply a marker for other characteristics responsible for the association," the researchers write. Until that question is answered, they believe that "Smoking cessation should be considered prior to surgery for spinal stenosis."

The findings also highlight the importance of considering individual characteristics when making treatment decisions—with patients participating in the decision as much as possible. Dr Pearson and coauthors conclude, "These data can be used to help individualize shared decision making discussions about likely outcomes following surgical or nonoperative treatment for spinal stenosis."

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