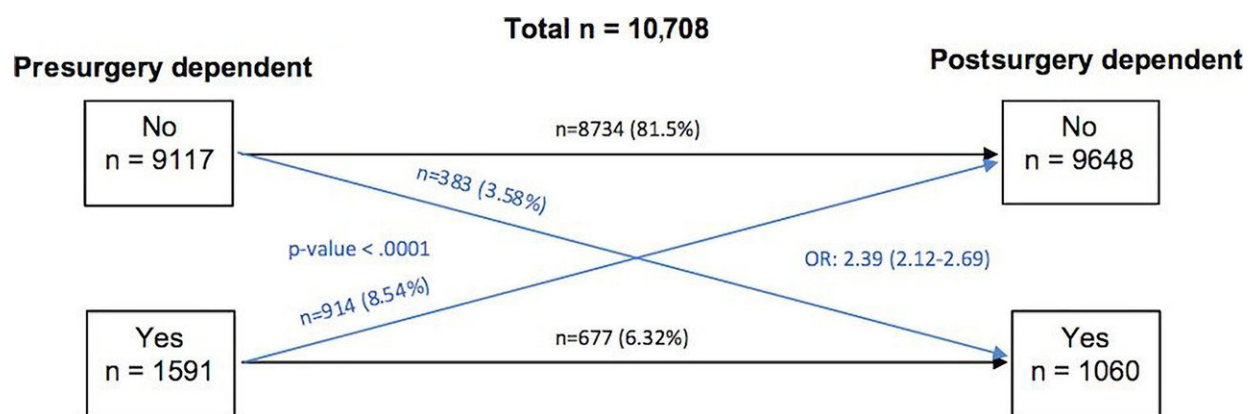


Opioid dependence in patients with degenerative spondylolisthesis: More likely to occur before than after surgery

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Flowchart showing changes in opioid dependence among patients who underwent surgery for degenerative spondylolisthesis. Credit: (c) American Association of Neurological Surgeons.

Researchers investigated risk factors for the development of opioid dependence in patients undergoing surgery for degenerative spondylolisthesis (DS). They found that, overall, patients were more likely to have a dependency on opioid medications before surgery than afterward. This finding and more appear in a new article published today in the *Journal of Neurosurgery: Spine*: "Factors predicting opioid dependence in patients undergoing surgery for degenerative spondylolisthesis: analysis from the MarketScan databases" by Mayur

Sharma, MD, MCh, and colleagues.

A cursory glance at headlines from news sources confirms the fact that the United States is in the midst of an [opioid epidemic](#). And it can be deadly. In 2015, [opioid overdose](#) was cited as a cause of more than 33,000 deaths. A large proportion of [opioid](#) addiction can be traced back to the misuse of physician-prescribed medications initially provided for the management of acute or chronic pain.

A common site of pain is in the lower back. Approximately 80% of adults experience low back pain at some time during their lives. In fact, low back pain has been cited as the single leading cause of disability.

In this article, the authors set out to identify what effect on opioid dependence [surgery](#) may have when used to treat patients with degenerative spondylolisthesis (DS), the forward slippage of a vertebra onto the vertebra beneath it. DS usually occurs in the lumbar spine and is due to a weakness in bones, joints, and ligaments that accompanies the aging process. Symptoms include pain in the lower back and legs, leg fatigue, muscle spasms, and irregular gait. Most of the time DS can be treated without surgery; however, surgery is indicated if there is progressive neurological damage or the patient's pain is disabling and does not respond adequately to nonsurgical treatment.

For their analysis, the authors defined indicators of opioid dependence as follows: continued opioid use, more than 10 opioid prescriptions, or either a diagnosis of opioid dependence disorder or a prescription for treating opioid dependence disorder during the period of 1 year before or 3 to 15 months after surgery.

The authors extracted de-identified data from the MarketScan databases on 10,708 patients who had undergone surgery for DS. The median age of these patients was 61 years (interquartile range: 54 to 69 years). Sixty-

five percent of the patients were women. In most cases (94%), the surgery was decompression with fusion, and in 76% of patients surgery involved multiple vertebrae. Many patients (54%) had one or more comorbidities. The majority of patients had commercial health insurance (61% as opposed to 35% with Medicare).

The authors were particularly interested in evaluating opioid dependence after surgery for DS, but they did examine preoperative opioid dependence to identify new cases of dependency. The authors identified a dependency on opioid medications in 15% (1,591) of the patients with DS before surgery. Between 3 and 15 months after surgery, however, the percentage of patients with a dependency on opioids was 10% (1,060).

After evaluating the impact of surgery, patient age and sex, comorbidities, and type of medical insurance held by the patients, the authors determined the following applied to patients who underwent surgery to treat DS:

- There was an association between surgical decompression with fusion and a decreased risk of postoperative opioid dependence. In this study, the opioid dependence was reduced by 5% after surgery for DS.
- Preoperative opioid dependence was associated with an increased risk of postoperative opioid dependence.
- Increased patient age was associated with a decreased risk of postoperative [opioid dependence](#).
- Following surgery for DS, these [patients](#) were twice as likely to become opioid independent than they were to become opioid dependent.

When asked to summarize the findings of the study. Dr. Sharma said, "Decompression and fusion for DS is associated with reduced risk of opioid dependency."

More information: Sharma M, Ugiliweneza B, Aljuboori Z, Nuño MA, Drazin D, Boakye B: Factors predicting opioid dependence in patients undergoing surgery for degenerative spondylolisthesis: analysis from the MarketScan databases. J Neurosurg Spine, published ahead of print June 19, 2018. [DOI: 10.3171/2018.1.SPINE171258](https://doi.org/10.3171/2018.1.SPINE171258)

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