

# Are Smoking, Obesity Risky With Spinal Cord Stimulation for Pain?

Pauline Anderson

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PALM SPRINGS, California — Contrary to expectations, smoking and obesity do not appear to affect the efficacy of, or increase the infection rate related to, spinal cord stimulator implantation, a new study shows.

"It's very well known that smoking, for example, can increase the risk of infection and of complications in different types of major surgery, especially spinal surgery," but there are few data on smoking and spinal cord stimulation, said lead author N. Nick Knezevic, MD, PhD, vice chair for research and education and clinical associate professor, Advocate Illinois Masonic Medical Center, Chicago.

"We advise our patients to stop smoking before we do this procedure because we're afraid of infections and complications," he said. And despite these new findings, physicians should still advise smokers to quit and overweight patients to lose weight, said Dr Knezevic.

"We showed that there's really no difference in the efficacy of the spinal cord stimulation in all of the groups we looked at," he told *Medscape Medical News*. "That doesn't mean that we should not encourage patients to stop smoking and lose some weight, but that should not be the limiting factors when planning to do spinal cord stimulation."

He presented his study here at the American Academy of Pain Medicine (AAPM) 2016 Annual Meeting.

The retrospective analysis included records of 64 patients who had a spinal cord stimulator implanted between January 2013 and July 2014 and were followed-up for at least a year.

The largest group of patients (53%) had the implantation for failed back surgery. Most stimulators (80%) were implanted in the lower thoracic region, with 10% being implanted in the upper thoracic region, 7.5% in the cervical region, and 2.5% in other regions.

Researchers compared smokers and nonsmokers. The average numeric rating scale pain scores on a 10-point scale were similar between these groups both before (7.6 for both) and after (3.2 for smokers and 3.89 for nonsmokers;  $P = .242$ ).

Smoking did not predispose to infection at the procedure site.

However, smokers were more likely than nonsmokers to have lead migration (22.2% vs 2.1%;  $P = .006$ ). It is not clear why this might be, but Dr Knezevic thinks it is possible that smokers cough more, which might help dislodge the lead.

## Body Mass Index

The researchers also looked at three body mass index (BMI) groups: 24.9 kg/m<sup>2</sup> and less (normal), 25 to 29.9 kg/m<sup>2</sup>, and 30 kg/m<sup>2</sup> and higher. The average preprocedure pain scores for these groups were 8.3, 7.1, and 7.4, respectively. A year after the stimulator implant, average pain scores were 3.9, 3.9, and 3.3, respectively.

There were no statistically significant differences in infection risk or complications with increasing BMI.

The most important finding was that the risk for infection was not increased, commented Dr Knezevic. "All infections were superficial implantation site seromas, and there were no deep infections at all," he said.

A possible limitation of the study was that the highest BMI was 40 kg/m<sup>2</sup>, said Dr Knezevic.

For comment, *Medscape Medical News* contacted Timothy R. Deer, MD, president and chief executive officer, The Center for Pain Relief, Charleston, West Virginia; clinical professor of anesthesiology and pain medicine, West Virginia University School of Medicine, Morgantown; and president, International Neuromodulation Society.

The implants were done in a "high-quality" center where a low complication rate would be expected, said Dr Deer.

That the same overall complication rates were found among smokers and nonsmokers is not surprising, given the small number of study subjects, said Dr Deer. "Even if the difference is 1%, it would take a larger number of patients to be treated to see a statistical difference."

He added that "with this in mind, we still would recommend smoking cessation in all patients."

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