

# Early Predictors of Lumbar Spine Surgery after Occupational Back Injury: Results from a Prospective Study of Workers in Washington State

## Spine

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### KEY POINTS FROM THIS STUDY:

- 1) This is a prospective population-based cohort study whose objective is to identify early predictors of lumbar spine surgery within 3 years after occupational back injury.
- 2) Back injuries are the most prevalent occupational injury in the United States.
- 3) "Back pain is the most costly and prevalent occupational health condition among the U.S. working population."
- 4) After adjustment for medical and general inflation, costs for occupational back pain increased over 65% from 1996 through 2002. Spine surgeries represent a significant proportion of these costs. "Spine surgeries are associated with little evidence for improved population outcomes, yet rates have increased dramatically since the 1990s."
- 5) "Reducing unnecessary spine surgeries is important for improving patient safety and outcomes and reducing surgery complications and health care costs."
- 6) "9.2% of workers receiving temporary total disability compensation soon after an occupational back injury went on to have lumbar spine surgery in the next three years."
- 7) The following factors were found to be associated with an **increased** risk of having back surgery:
  - Higher Roland Disability Questionnaire scores
  - Greater injury severity
  - Missing at least 1 month of work due to a previous occupational injury
  - Pain radiating below the knee
  - Receipt of an opioid prescription for the injury
  - Using tobacco daily
  - A surgeon as first provider seen for the injury

- 8) “Workers with high baseline Roland Morris Disability Questionnaire (RMDQ) scores had six times the odds of surgery compared with those with low scores.”
- Workers with baseline RMDQ scores of 17 or higher on the 0–24 scale had 6 times the odds of surgery, as compared with those with scores of 0–8.
- [Suggesting we should be doing the Roland Morris Disability Questionnaire on patients]**
- 9) “The RMDQ has also been shown to be predictive of chronic work disability, longer duration of sick leave, chronic pain, and other measures of function.”
- 10) “Those with greater injury severity and those whose first provider seen for the injury was a surgeon also had significantly higher odds of surgery, after adjusting for all other variables.”
- 11) The following factors were found to be associated with a ***decreased*** risk of having back surgery:
- Being under age 35
  - Being female
  - Being Hispanic
  - “Those whose first provider was a chiropractor.”
- 12) “Factors associated with significantly reduced odds of surgery included age younger than 35 years, female gender, Hispanic ethnicity, and chiropractor as first provider seen for the injury.”
- 13) “42.7% of workers who first saw a surgeon had surgery, in contrast to only 1.5% of those who saw a chiropractor.” “There was a very strong association between surgery and first provider seen for the injury, even after adjustment for other important variables.” “It is possible that these findings indicate that “who you see is what you get.”
- 14) No measures in the employment-related, health behavior, or psychological domains were significant. **[Important]**
- 15) Radiculopathy:
- Radiculopathy influences back pain outcomes, including surgeries.
  - Surgeries may be appropriate treatment for radiculopathy.
  - “Odds of surgery were highest for workers with reflex, sensory, or motor abnormalities.”
- 16) “In Washington State worker’s compensation, injured workers may choose their medical provider. Even after controlling for injury severity and other measures, workers with an initial visit for the injury to a surgeon had almost nine times the odds of receiving lumbar spine surgery compared to those seeing primary care providers, whereas workers whose first visit was to a chiropractor had significantly lower odds of surgery.” [by 78%]

17) "Approximately 43% of workers who saw a surgeon had surgery within 3 years, in contrast to only 1.5% of those who saw a chiropractor."

18) Previous studies have shown:

- Those with occupational back injuries who first saw a chiropractor had lower odds of chronic work disability.
- Those seeing chiropractors for occupational back pain had "higher rates of satisfaction with back care."

19) Hispanic participants had lower odds of surgery (7.4% vs. 11.0% for whites), and these authors cite studies to explain this finding, including:

- Cultural barriers
- Less willingness to undergo surgeries
- Lack of familiarity or understanding of surgery
- Fewer physician referrals to surgery
- Discouragement of surgery
- Lack of information
- Employers' bias

#### COMMENTS FROM DAN MURPHY

These authors suggest that it is wise to use a "gatekeeper" for patients who suffer occupational back injury. This article presents substantial reason for why such a gatekeeper to be a chiropractor. The reduction of back surgeries in those consulting chiropractors for back pain represents a substantial costs savings, and also the highest levels of back care satisfaction.