

# The Association of Pre-operative Narcotic Use on Length of Hospital Stay and One Year Return to Work, Pain, Disability, and Quality of Life After Elective Surgery for Degenerative Spine Disease

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## Introduction

High dose or prolonged narcotic use is associated with altered pain perception and response to pain management strategies in patients with chronic pain syndromes. We set out to determine if the amount of pre-operative narcotic use for spine-related pain predicted short-term and one-year outcomes after spine surgery.

## Methods

583 consecutive patients undergoing elective surgery for degenerative spine pathologies at a single institution were prospectively enrolled into a registry and followed for one year. Narcotic use was recorded during the patients pre-operative clinic visit and converted to daily morphine equivalent amount (MEA). SF-12, ODI/NDI, EQ-5D, return to work, and narcotic use (MEA) were recorded at 3 and 12-months after surgery. The independent association of narcotic use (MEAs) with length of stay (LOS), re-admission, return to work (RTW), and 12-month patient reported outcomes were assessed via multivariate regression analysis.

## Results

583 patients underwent lumbar (60%), thoracic (11%), or cervical (29%) surgery. Mean length of hospital stay was 4.5 days and 12.7% patients were re-admitted within 90-days after surgery. Overall, pain-related disability (ODI/NDI), quality of life (SF-12), and health utility (EQ-5D) significantly ( $p < 0.001$ ) improved after surgery. Amount of pre-operative narcotic use (MEA) was independently associated with increased LOS ( $p < 0.05$ ), increased narcotic use 3- and 12-months after surgery ( $p < 0.001$ ), and markedly worse ODI, NDI, SF-12, and EQ-5D ( $p < 0.001$ ) one-year post-operatively, but was not associated with 90-day readmission or RTW. Every 10mg increase in pre-operative MEA was associated with 0.22 decrease in SF-12, 0.06 decrease in EQ-5D, and 0.5 increase in ODI or NDI one-year postoperatively.

## Conclusions

Increasing levels of pre-operative narcotic use was associated with worse short and long-term outcome after elective surgery for degenerative spine pathology. Pre-operative narcotic use in morphine equivalents may help hospitals and providers more appropriately risk stratify for surgical selection and indications. Efforts should be made to address narcotic dependence prior to elective spine surgery.