

## **Cannabis Use Is Associated with Comparable Postoperative Complications Compared to Cigarette Smoking Following Cervical Spine Surgery: A Propensity-Matched Analysis**

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**INTRODUCTION:** While the perioperative risks of cigarette smoking are well established, the impact of cannabis use on surgical outcomes remains poorly defined. This study compares postoperative complications between cannabis users and exclusive cigarette smokers undergoing cervical spine surgery.

### **METHODS:**

A retrospective cohort analysis was performed using the TriNetX Research Network to identify adults who underwent cervical spine procedures through 2023. Cannabis users (n = 989) were 1:1 propensity score-matched to exclusive cigarette smokers (n = 989) based on age, sex, race, body mass index (BMI), and hemoglobin A1c (HbA1c). Postoperative outcomes were assessed over 12 months using odds ratios (ORs), hazard ratios (HRs), and Kaplan-Meier survival analysis.

**RESULTS:** Cannabis users experienced significantly higher rates of multiple complications compared to cigarette smokers. These included neurogenic bladder (OR 2.04; 95% CI: 1.09–2.26; HR 1.99), chronic pain (OR 1.52; 95% CI: 1.06–2.19; HR 1.48) and emergency department utilization (OR 1.22; 95% CI: 1.01–1.47). No significant differences were observed between cohorts in mortality, pseudoarthrosis, surgical site infection, myocardial infarction, readmission, stroke, cervical radiculopathy, opioid use, myelopathy, paralysis, dysphonia, dysphagia, pneumonia, transfusion, hematoma, or venous thromboembolism.

**DISCUSSION AND CONCLUSION:** Preoperative cannabis use is associated with increased and earlier-onset postoperative complications following cervical spine surgery, including higher rates of neurogenic bladder, chronic pain, and emergency department visits. These findings suggest that cannabis use may confer perioperative risks comparable to cigarette smoking and underscore the importance of incorporating cannabis use into preoperative risk assessments and patient counseling.