

Tobacco Smoking and the Incidence of Surgical Intervention for Lumbar Spinal Stenosis Cohort Study of 331,941 workers

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Introduction: Data Tobacco smoking is an injurious habit associated with a number of chronic disorders. Its influence on disc metabolism and degeneration including LSS has been investigated in the literature. We aimed to investigate whether tobacco smoking is an independent risk factor of undergoing surgical intervention for lumbar spinal stenosis (LSS).

Methods: A prospective cohort study using a Swedish nationwide occupational surveillance program for construction workers. We studied a cohort (n=389,132) derived from Swedish construction workers who participated in a nationwide occupational health surveillance program. At inclusion, age, sex, body mass index (BMI), workers' job title, and self-reported smoking habits were registered. The workers were divided into four categories: never smoked, former smoker, moderate current (1-14 cigarettes/day) and heavy current (≥ 15 cigarettes/day). Patients who underwent a surgically treated LSS were defined using the relevant ICD disease code derived from the Swedish National Patient Register.

Results: 331,941 participants were included in the analysis. 44% of the participants were nonsmokers, 16% were former smokers, 26% were moderate smoker, and 14% were heavy smokers. The vast majority of construction workers were males (95%). During the average follow-up of 30.7 years, 1623 participants were surgically treated for LSS. The IRRs of LSS varied across smoking categories, with the highest values found in heavy smokers. Compared with non-smokers, all smoking categories show an increased incidence of surgically treated LSS. The findings were consistent even when the comparison was performed for participants with BMI between 18.5 and 25 and for participants aged between 40 and 74 years.

Conclusion: Smoking causes increased risk for LSS. The effect seems to be dose-related, whereby heavy smokers have a higher risk than moderate or former smokers.