[Does Smoking Correlate with Low Back Pain and the Outcome of Spinal Surgery?]

Martin N. Stienen, Heiko Richter, N Prochnow & L F V Von Schnakenburg

BACKGROUND: For a long time, orthopaedic surgeons have suspected an influence of smoking on several musculoskeletal diseases. The aim of this review is to discuss the influence of smoking on low back pain (LBP) and the outcome of spinal surgery. LBP is a highly prevalent disease and plays an important economic role, as it is associated with high direct and indirect health-care costs. In order to be successful in prevention, risk factors for LBP must be identified. METHODS: A review of the literature (using PubMed with the search terms: smoking, low back pain and pathophysiology) was performed. Of the search results, 196 publications from peer-reviewed journals were analysed (including three randomised clinical trials, 134 clinical, 28 experimental articles and 31 reviews [including one Cochrane Database review and five systematic reviews]). Additionally, 11 official publications of the US Department of Health and Human Services, the International Agency for Research on Cancer (France) and the "Deutsches Krebsforschungszentrum" were used. RESULTS: While the evidence level for severe adverse effects of smoking on osteoporosis is good, many studies performed on LBP describe a statistical association, but are not useful to detect a causal link between smoking and lumbar disease. However, with plausible pathophysiological mechanisms and an overwhelming number of studies identifying a correlation it is suggested that smoking is likely to contribute to LBP and affects spinal surgery adversely. As for all diseases with multifactorial (including psychosocial) aetiology, it proves difficult to distract the confounding factors for analysis. CONCLUSION: A high number of studies performed to identify an association between smoking and LBP have not led to a final conclusion. But still, on the basis of the current knowledge, a negative contribution of smoking on LBP and spinal surgery seems probable.