

# Is Spinal Mechanical Load a Risk Factor for LBP?

Bakker EW, Verhagen AP, van Trijffel E, Lucas C, Koes BW. Spinal mechanical load as a risk factor for low back pain: a systematic review of prospective cohort studies. *Spine*, April 15, 2009;34(8):E281-93.

## Abstract

Study Design: Systematic review. □□

Objective: To review and critically evaluate the past literature for spinal mechanical load as risk factor for low back pain (LBP). □□

Summary of Background Data: LBP is a costly health problem worldwide, and treatments are often unsuccessful. Therefore, prevention might be more beneficial in the management of LBP. With respect to prevention, the knowledge of risk factors is essential. From the literature, exposures involving spinal mechanical load is frequently discussed as a potential risk factor for LBP. For a better understanding of this risk factor, we performed a systematic review of the literature. Additionally, we evaluated exposures of spinal mechanical load for possible dose-response relations with LBP. □□

Methods: We systematically searched Medline, Embase, PsycINFO, and CINAHL databases (without language restriction) for full-report publications of prospective cohort studies, evaluating spinal mechanical load during work and/or leisure time activities as risk factors for nonspecific LBP in patients (>18 years of age) free of LBP at baseline. We assessed the methodology of each article and extracted information on population, response rates, characteristics of LBP, exposures, and estimated association(s), using standardized forms. We performed a best evidence synthesis of the obtained information.

Results: In total, 18 studies were eligible (all rated as high methodologic quality), reporting on 24,315 subjects. □□

Conclusion: We found strong evidence that leisure time sport or exercises, sitting, and prolonged standing/walking are not associated with LBP. Evidence for associations in leisure time activities (e.g., do-it-yourself home repair, gardening), whole-body vibration, nursing tasks, heavy physical work, and working with ones trunk in a bent and/or twisted position and LBP was conflicting. We found no studies, thus no evidence, for an association between sleeping or sporting on a professional level and LBP.

*SOURCE:* Foundation for Chiropractic Education and Research. *The Week in Chiropractic*, Friday, April 24, 2009.