

Use of back belts to prevent occupational low-back pain

Recommendation statement from the Canadian Task Force on Preventive Health Care

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Recommendation

- The Canadian Task Force on Preventive Health Care concludes that the existing evidence is conflicting and does not allow the task force to make a recommendation for or against the use of back belts to either prevent occupational low-back pain or to reduce lost work time due to occupational low-back pain (grade C recommendation).

In Canada, back injuries account for over 25% of all lost time claims, the largest single claims category in most workers' compensation jurisdictions.¹ Low-back pain (LBP), which is often seen initially in primary care practice, is estimated to be the most costly ailment in working-age adults.² Disability resulting from LBP is the most common chronic health problem in adults under the age of 45 years and is second only to arthritis in those aged 45–65.³ Of the more than 90% of workers who return to work within 6 months of their injury, 20%–44% will experience recurrences resulting in further time off work and 15%–20% of patients will continue to experience back pain for at least 1 year from the initial onset.⁴

Potential risk factors for occupational LBP fall into 3 main categories: individual, biomechanical and psychosocial.⁵ The strongest risk factor is a previous history of LBP. In addition, the greater the severity of a given episode, the greater the risk that another episode will occur in the future.² Weaker associations exist for age, obesity and sex.² There is no evidence that strength, flexibility or aerobic capacity is an important risk or protective factor in back pain.⁶ Among biomechanical risk factors, the most consistent associations are with exposure to lifting or carrying heavy loads, whole body vibration and frequent bending and twisting.^{2,7,8} Finally, there is growing empirical evidence linking psychosocial stressors, such as perceived high workload, time pressure, lack of intellectual discretion and job dissatisfaction, with an increased risk of occupational LBP.^{6,7,9}

Manoeuvre

- Use of mechanical back supports (e.g., belts or corsets)

Potential benefits

- Reduction in occurrence or recurrence of LBP

Evidence and clinical summary

- Three out of the 5 randomized controlled trials (RCTs) reviewed failed to show positive results with the use of a back belt.^{10–12} The fourth RCT¹³ showed decreased time lost by workers who received training and used a back belt, but possibly only among workers with a previous history of LBP. The other RCT¹⁴ found a marginally lower rate of back injury among employees assigned to a back belt group than among controls.
- Those with a previous history of LBP may experience some benefit from back belt use. However, before back belt prescription, patients should be screened for cardiovascular risk and receive training in the mechanics of lifting.¹⁵
- Although some laboratory evidence suggests possible concern over adverse effects of long-term use, these risks have not been proven; however, given the combination of questionable benefits and the potential for negative effects, back belts should be prescribed only for short-term use.¹⁵
- The reviewed studies used diverse styles of back belts. Because no one style produced beneficial results, it is unlikely that design differences were a factor.
- The lack of consistent conclusions from the reviewed studies is not surprising given the conflicting laboratory evidence of how back belts are thought to prevent LBP.^{16–18} Controversy over back belt use extends into the area of treatment, where results from RCTs are also conflicting.
- Further well-designed RCTs are required to determine the effectiveness of back belts to prevent LBP in high-risk groups, in particular those with previous LBP. This finding is similar to that of a recent Cochrane review.¹⁹

- Reduction in time lost from work owing to LBP

Potential harms

- Rubbing, pinching or bruising of ribs; hampered sitting and driving; excessive sweating
- False sense of security
- Laboratory studies show increases in blood and intra-abdominal pressure, back muscle weakening and abdominal hernia

Recommendations by others

The Canadian Centre for Occupational Health and Safety²⁰ and the United States National Institute for Occupational Safety and Health^{16,21} do not support the use of back belts as a preventive measure. In contrast, the United States Occupational Safety and Health Administration's recent ergonomics regulation²² classified lumbar supports as personal protective equipment and suggested that they may prevent back injuries in certain industrial settings.

This article has been peer reviewed.

The Canadian Task Force on Preventive Health Care is an independent panel funded through a partnership of the federal and provincial/territorial governments of Canada.

This statement is based on the technical report: "The use of back belts for prevention of occupational low back pain: systematic review and recommendations," by C. Ammendolia, M.S. Kerr, C. Bombardier, with the Canadian Task Force on Preventive Health Care. CTFPHC Technical Rep no 02-1. London (ON): Canadian Task Force; 2002. [To obtain the full technical report, please contact the task force at ctf@ctfphc.org]

Competing interests: None declared.

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