

Can back pain be prevented by instructing individuals how to lift heavy objects?

Article Background

'Back pain not prevented by instructing people how to lift heavy objects; reported by P Crosta for Medical News Today, 5 February 2008, (www.medicalnewstoday.com)

The origin of evidence:

This news report was based on a systematic review conducted by researchers from the: Finnish Institute of Occupational Health (Finland), Institute for Work and Health (Canada), and the Coronel Institute of Occupational Health (the Netherlands). Funding was received from the Department of Employment and Workplace Relations, Commonwealth of Australia.

The objectives of the evidence (research):

To determine whether advice and training on working techniques and lifting equipment can prevent back pain in occupations that involve heavy lifting tasks

The nature of the evidence (research):

Systematic review of randomised controlled trials (RCTs) and cohort studies with concurrent control groups; only data derived from RCTs was considered eligible for quantitative analysis.

Participants involved in the research:

Eligible trials involved: health workers who were engaged in the movement/lifting of patients, baggage handlers and postal workers.

Interventions utilised:

Eligible interventions were educative and interactive training sessions that aimed to modify the participants' lifting techniques at work inclusive of facilitating the use of any existent mechanical lifting aids. Comparators included: no intervention, minor advice (video), back-belt, and physical exercise.

Outcome measures:

Incidence of back pain; disability and sickness absence attributable to back pain

Key findings:

Eleven studies were considered eligible for analysis; six of these were RCTs (inclusive of four cluster trials), with five cohort studies. With regards to observations derived from the RCTs, at intermediate follow-up (3-12 months) there was no difference in back pain from training in comparison to no intervention (OR: 0.99; 95% CI: 0.54-1.81) or related disability (effect size: 0.04; 95% CI: -0.50-0.58), nor any difference from training plus the use of lifting equipment in comparison to either training alone or no intervention (OR: 0.42; 95% CI: 0.04-4.99). In addition, one trial that compared training with physical exercise also failed to note any difference in the incidence of back pain at intermediate follow-up (OR not reported).

With regards to results attained from long-term follow-up (>1-year), one RCT showed no effect on back pain from training in comparison to no intervention (OR: 1.07; 95% CI: 0.06-17.96); another study observed no effect in comparison to video-advice (OR: 1.08; 95% CI: 0.56-2.08); whilst a further study failed to observe any effect in comparison to the use of a back belt (OR: 1.04; 95% CI: 0.06-17.38).



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Validity of methodology and reliability of the conclusions:

The researchers searched across multiple databases including: Medline, Embase, CENTRAL, CINAHL, Nioshtic, CISdoc, Science Citation Index and PsychLIT. Furthermore, trials were considered eligible irrespective of publication language. Methodological quality of RCTs was assessed using the criteria and classification recommended by the Cochrane back review group, whilst cohort studies were assessed using the MINORS tool (two of the RCTs and all of the cohort studies were classed as high quality (>50% of the critical appraisal criteria adequately fulfilled)). Of relevance, the authors indicated that studies included for analysis generally failed to describe in detail advocated lifting techniques. Additionally, only five studies monitored compliance with instructions and with the use of lifting equipment. Despite these limitations, there was concordance between observations derived from the RCTs and the cohort studies substantiating the overall conclusions.

Clinical implications:

Whilst there is no evidence that provision of advice on lifting and handling with or without lifting equipment prevents back pain or consequent disability it remains unclear whether the lack of an effect may be attributable to: the failure of interventions to adequately change lifting and handling techniques, and/or trialed interventions being inappropriate for the prevention of back pain.

References:

Martimo K-P, Verbeek J, Karppinen J et al (2008): Effect of training and lifting equipment for preventing back pain in lifting and handling: systematic review. *British Medical Journal* 336: 429-431.

Slim K, Nini E, Forestier D et al (2003): Methodological index for non-randomised studies (MINORS): development and validation of a new instrument. *ANZ Journal of Surgery* 73: 712-716.

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