

Impact of interventions on work outcomes after musculoskeletal road traffic injuries: a systematic review

Authors: Charlotte L Brakenridge, Elise M Gane, Esther J Smits, Nicole E Andrews, Venerina Johnston

Background: Musculoskeletal injuries are the most common non-fatal injuries that result from road traffic crashes and can affect one's work capacity or ability to return to work post-crash. This review explored whether there are effective interventions that can improve work-related outcomes after musculoskeletal road traffic injuries.

Methods: A systematic search of 7 databases was conducted in August 2018. Studies were included if they involved adults with a musculoskeletal injury from a road traffic crash, evaluated an intervention with a comparison group, and reported on a work-related outcome (e.g., time to return to work, sick leave).

Results:

1349 records identified, 842 titles & abstracts reviewed, 69 full texts reviewed, and 26 studies were included.

Study breakdown:

Countries	Sweden (5 studies), UK (4 studies), Norway (3 studies), Italy (3 studies), Denmark (2 studies), The Netherlands (2 studies), Switzerland (1 study), Australia (NSW only, 4 studies), Canada (2 studies)
Sample	Whiplash only (20 studies), mixed musculoskeletal (4 studies), neck sprain/soft tissue injury (2 studies)
Primary outcome	Pain/symptoms/disability (12 studies), work and health (7 studies), other (7 studies)
Intervention type	Physiotherapy (12 studies), multicomponent (7 studies), emergency department delivered education (4 studies), workplace-based (0 studies), other (3 studies)



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Interventions typically only had small effects on work outcomes in participants with musculoskeletal road traffic injuries.

Studies were varied in terms of intervention type, primary focus and work outcome reported.



RECOVER Injury Research Centre
Herston Rd, Herston, Brisbane

Work outcomes:

7 studies (27%) reported at least one significant work outcome immediately after intervention, 1 additional study reported a significant work outcome at 3 year follow up. Intervention effect sizes were mostly small. Of the 7 studies, 3 studies also had a significant pain/disability intervention effect, 3 studies did not (1 did not report).

Common and/or significant intervention comparisons with intervention effects:

Comparison (# studies)	Intervention group was/had: (Effect size as Cohen's d or Cramer's V)
PT + OT/Psych/other vs. usual care (5 studies)	51% more likely to RTW (V = 0.27) 88% more likely to return to normal work (V = 0.23) 16 days quicker to RTW (d = 1.06) 3 weeks less sick leave (d = 0.20) 14% less likely to RTW (V = 0.09)
Mobilisation vs. neck collar (3 studies)	17 days quicker to RTW (d = 0.31) 21 days less sick leave at 3 years (d = 0.39) 21% less likely to be on sick leave (V = 0.07)
Supervised PT vs. unsupervised/advice only (3 studies)	5 days less sick leave (d = 0.18) No difference in sick leave (d = 0.00) 14% more likely to improve sick leave (V = 0.06)
Website/booklet vs. usual care (3 studies)	0.6 days less sick leave (d = 0.04) 0.27 lower work ability (d = 0.11) 8% more likely to RTW (V = 0.09)
PT + laser treatment vs. PT only (1 study)	28 days quicker to RTW (d = 0.63)
PT + Methylprednisolone vs. PT + placebo (1 study)	76% less likely to be on sick leave (V = 0.24)

Categorical intervention effects calculated as Relative Risk and reported as a percentage. Standardised effect sizes calculated as Cohen's d for continuous outcomes and Cramer's V for categorical outcomes. For Cohen's d, 0.2=small effect, 0.5=medium effect, 0.8=large effect. For Cramer's V, 0.10=small effect, 0.30=medium effect, 0.50=large effect (when df=1). Bold = significant intervention effect at p<0.05. OT = occupational therapy, PT = physiotherapy, RTW = return to work