

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

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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.



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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