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RAPID RESEARCH

April 2023

Inside This Week: Motor Vehicle Accident; Injuries & Recovery

-
- ✓ What Factors Predict Outcomes in Whiplash Injuries?

 - ✓ Thoracic Dysfunction in Whiplash Associated Disorders

 - ✓ MVA injuries & Work Related Outcomes



[Click for Full Text](#)
(Sarrami et al. 2017)

WHAT FACTORS PREDICT OUTCOMES IN WHIPLASH INJURIES?

JBIR 10/11 [90%]



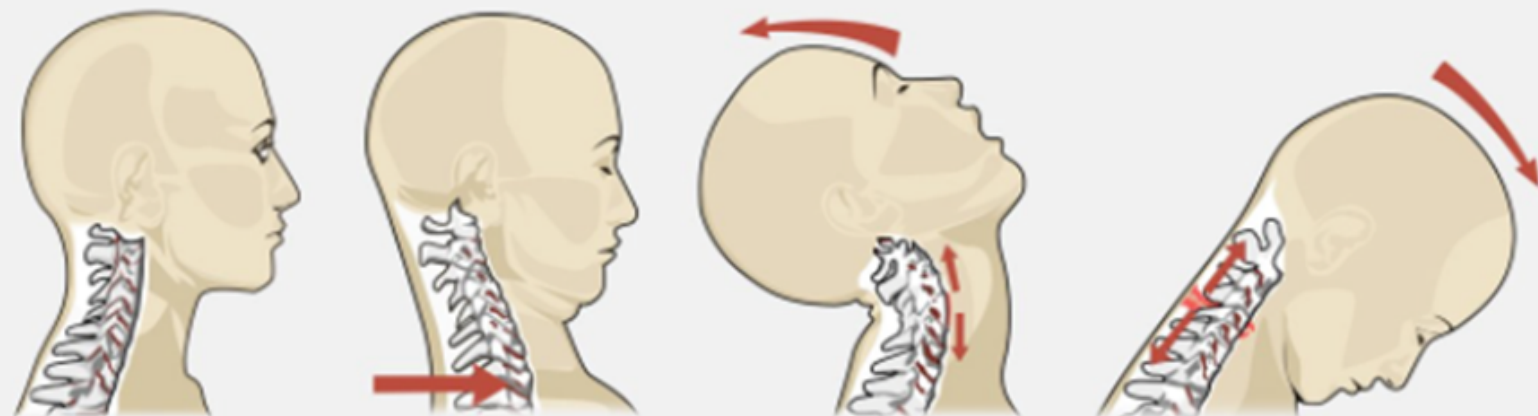
This systematic review assessed which factors predict outcome after acute whiplash injury?; and the quality of the research on this topic.

RESTING

IMPACT

HYPEREXTENSION

HYPERFLEXION



KEY FINDINGS

12 studies included; 99,535 participants

Factors Associated with Chronic Pain & Disability:

Post-injury pain and disability

Whiplash grades

Cold hyperalgesia

Post-injury anxiety

Catastrophizing

Compensation and legal factors

Early healthcare use

Factors NOT Associated with Chronic Pain & Disability:

Post-injury MRI or X-ray findings

Motor dysfunctions

Factors related to the collision

MAIN TAKEAWAYS

This meta-review provides a comprehensive overview of the state of the high-level evidence available concerning the factors associated with the outcome of patients with whiplash injuries.

The predictors of poor outcome after acute whiplash injury are early pain & some psychosocial factors

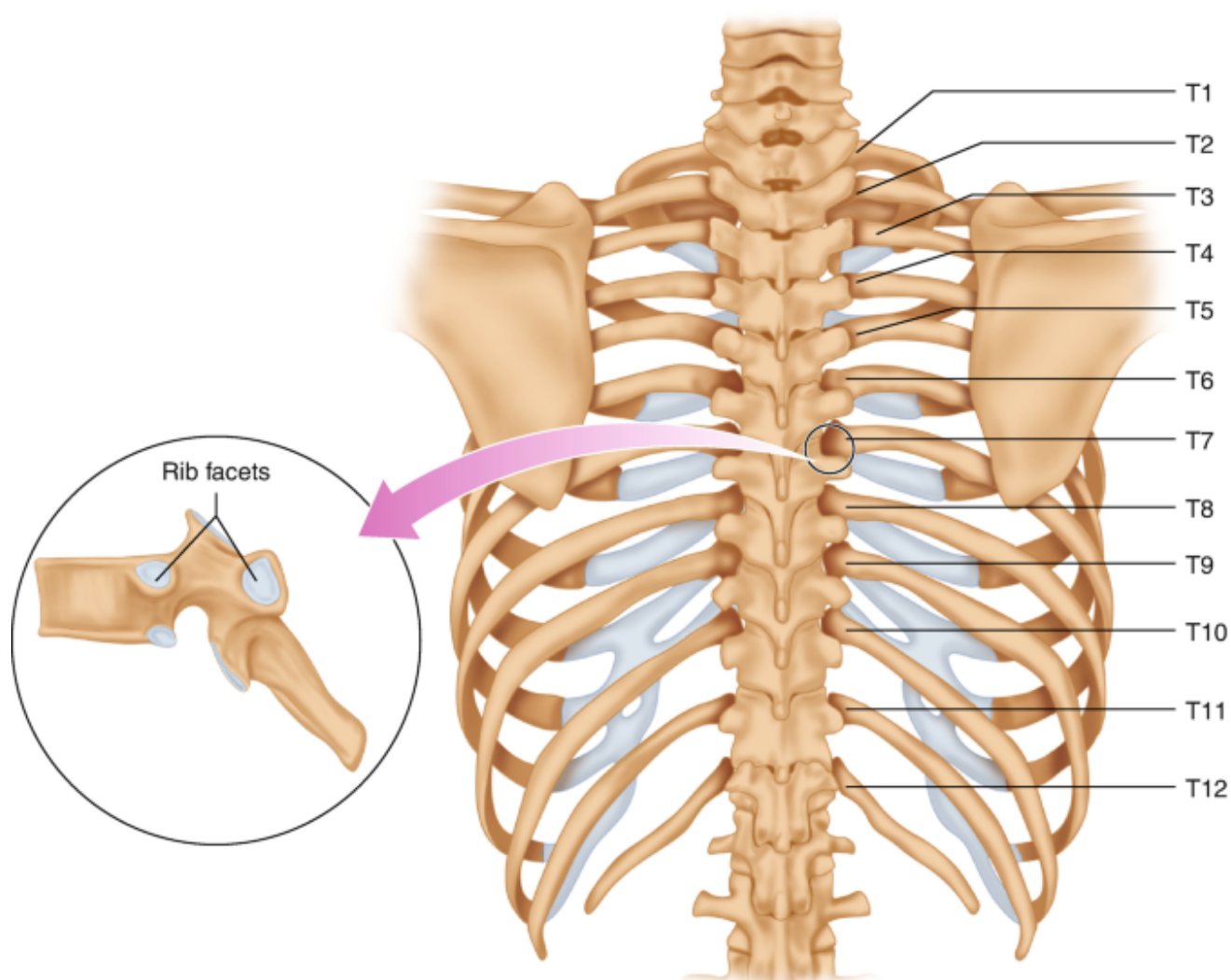
Whereas physical factors are not associated with the outcome of acute whiplash.

THORACIC DYSFUNCTION IN WHIPLASH ASSOCIATED DISORDERS

JBI 10/11 [90%]



This systematic review examined the scope and nature of dysfunction/impairment in the thoracic spine region following whiplash injury and in WAD.



38 studies were included; >50,000 Participants

Thoracic Spine Findings Post Whiplash:

High prevalence of thoracic pain (>60%), especially when more severe in acute stage

Low prevalence of chest pain (<22%)

Thoracic outlet syndrome common, involved & associated with brachial plexus

Common Muscular Dysfunctions:

Heightened activity of Sternocleidomastoid

Delayed onset of action of the Serratus Anterior

High Prevalence of Myofascial Pain and Trigger Points in:

Scalene muscles

Sternocleidomastoid

Mid/lower fibres of trapezius muscle (48-65%)

MAIN TAKEAWAYS

Considerable evidence of thoracic pain and dysfunction in patients at all stages following whiplash injury.

A more extensive clinical evaluation of patients presenting with WAD is necessary.

There is a high degree of thoracic spine symptoms and muscular dysfunction associated with WAD.

Additional high quality research is required to further characterize dysfunction across other structures in the thoracic region.

MVA INJURIES & WORK RELATED OUTCOMES

[Click for Full Text](#)
(Gane et al. 2021)

JBI 10/11 [90%]



This systematic review determined the impact of sustaining a musculoskeletal injury during a MVA on 5 work-related outcomes: Rate of RTW following injury, the utilization of sick leave, work capacity, work ability, and health-related work productivity loss.



KEY FINDINGS

53 studies included, 28 in meta-analysis; >100k participants

Pooled Rate of Return To Work:

1 Mo: [70%] | 3 mo: [67%] | 6 mo: [76%] | 12 mo: [83%] | 24 mo: [70%]

Pooled Rate of Sick Leave:

1 Mo: [27%] | 3 mo: [13%] | 6 mo: [23%] | 12 mo: [36%] | 24 mo: [22%]

Most factors associated with work outcomes were health-related, with some evidence for socio-demographic factors.

70% of people with MVA-related musculoskeletal injury RTW with 1 month after accident, many still have not RTW 2 years later.

MAIN TAKEAWAYS

Pooled RTW rate increases in the first-year post-injury, from 70% at 1 month to 83% at 12 months.

Approximately 1/3 of injured workers use sick leave in the year after RTC.

Approximately 1/6 used more than 4 weeks of sick leave.

<50% of injured persons used modified duties at work following RTC-related musculoskeletal injury.

GIVE US YOUR FEEDBACK!

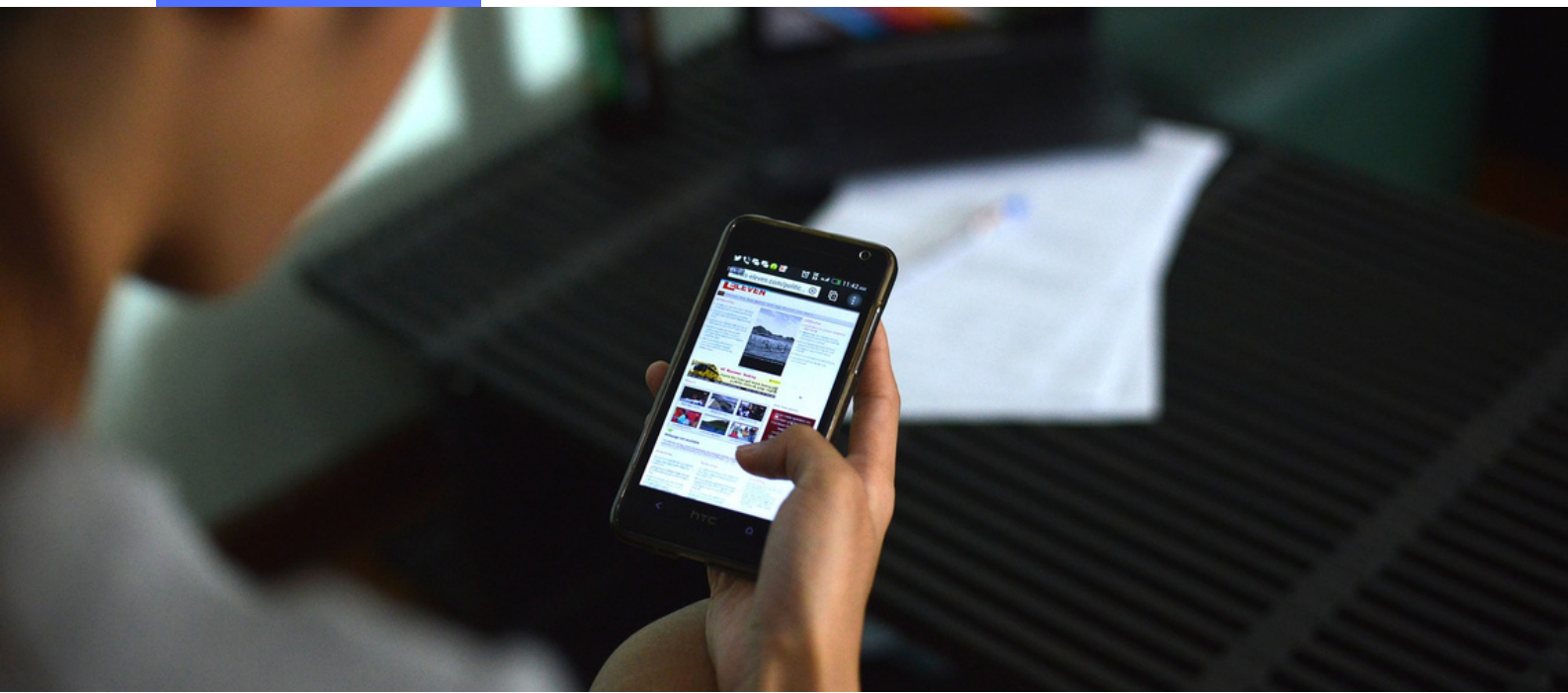
MEMBERS

We are on a mission to make research more accessible, easier to interpret, and quicker to implement.

Help us by giving 1 minute of your time to leave feedback for us.

We would greatly appreciate any feedback you have, as it helps us continually improve!

[Leave Review](#)



JBICRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Gane et al. Year: 2021

	Yes	No	Unclear	Not applicable
1. Is the review question clearly and explicitly stated?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were the inclusion criteria appropriate for the review question?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the search strategy appropriate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were the sources and resources used to search for studies adequate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Were the criteria for appraising studies appropriate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was critical appraisal conducted by two or more reviewers independently?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Were there methods to minimize errors in data extraction?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Were the methods used to combine studies appropriate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Was the likelihood of publication bias assessed?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
10. Were recommendations for policy and/or practice supported by the reported data?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were the specific directives for new research appropriate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall appraisal: 10/11 (90%)

LIMITATIONS:

High levels of heterogeneity in the results of the meta-analyses.

Restricted to studies published in English which may have contributed to the under-representation of results from developing countries.

Many studies recruited only patients with whiplash injuries post-RTC, making these results more applicable to injured persons with this particular musculoskeletal condition.

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Sarrami et al. Year: 2021

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2. Were the inclusion criteria appropriate for the review question?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Overall appraisal: 10/11 (90%)

LIMITATIONS:

More recent studies would not have been captured by the included reviews.

In addition, by including all the prognostic factors explored by the systematic reviews, this meta-review maps the field and provides an overall picture, but in doing so, it necessarily reduces the depth of analysis for each individual factor.

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Heneghan et al. Year: 20218

	Yes	No	Unclear	Not applicable
1. Is the review question clearly and explicitly stated?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Were the inclusion criteria appropriate for the review question?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Was the search strategy appropriate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Were the sources and resources used to search for studies adequate?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Overall appraisal: 10/11 (90%)

LIMITATIONS:

Lack of high quality evidence and compounding this was that few authors responded to requests for additional information or data.