



@physicaltherapyresearch

RAPID RESEARCH

February 2023

Inside This Week: G.I.R.D. General Internal Rotation Deficit

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- ✓ GIRD & Injuries
-
- ✓ Risk Factors for Shoulder Injuries in Handball Players
-
- ✓ Efficacy of Physical Therapy in Overhead Athletes with GIRD



GIRD & INJURIES

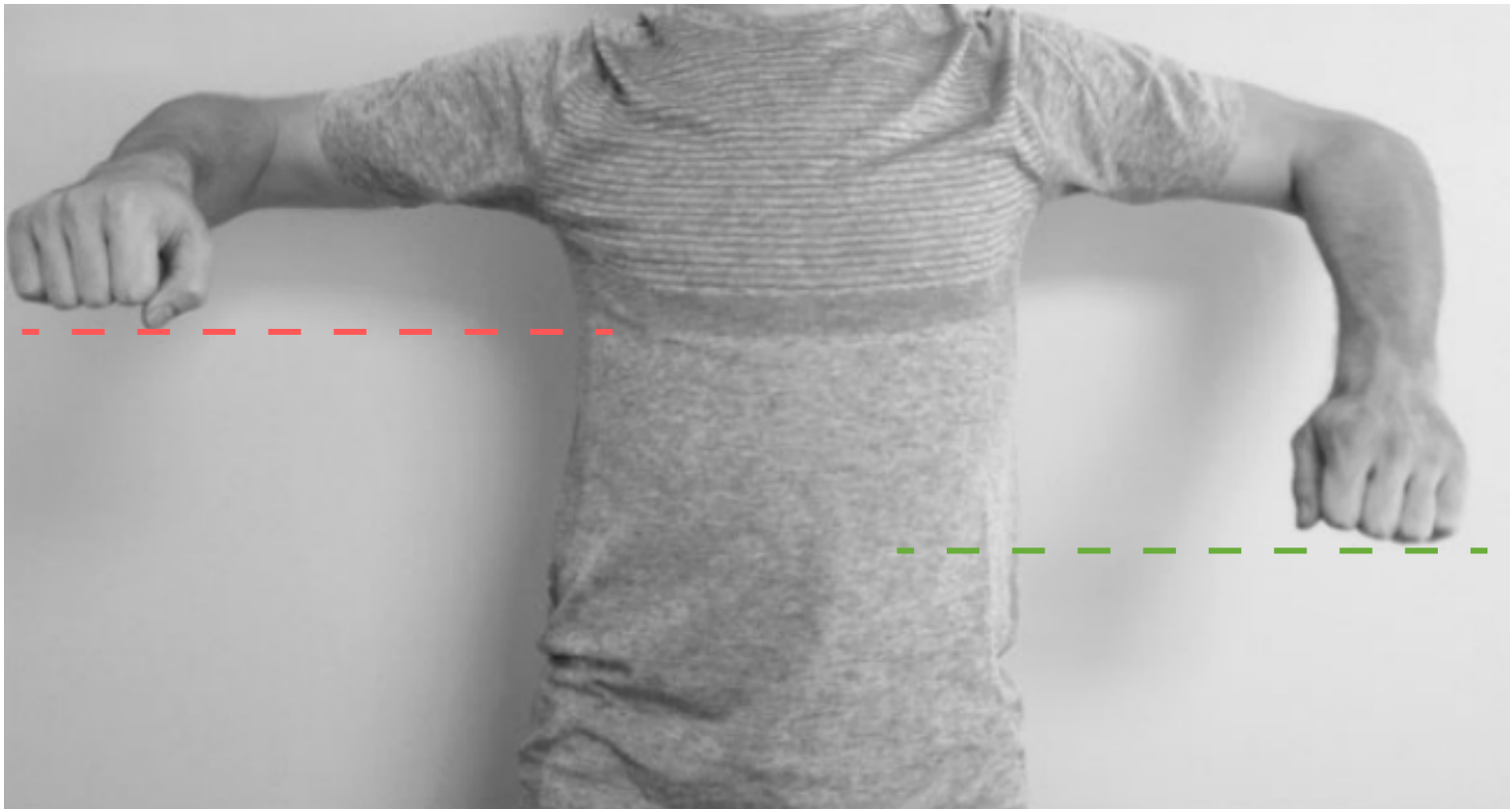
FEBRUARY 2023

[Click for Full Text
\(Johnson et al. 2018\)](#)

JBI 10/11 [90%]



This systematic review aimed to clarify the definition of GIRD diagnosis for adolescent and adult overhead athletes and to examine the association between GIRD and an increased risk of injuries in these athletes.



KEY FINDINGS

**9 studies included; 12 study groups (4 adolescent, 8 adult)
819 overhead athletes (226 injured, 593 uninjured)**

A consensus definition of GIRD suggests **a loss of 18-20 deg IR.**

Statistically significant difference in GIRD existed between the injured group and uninjured groups.

Average GIRD among athletes:

All injured [13.8 ± 5.6 deg]

Not injured [9.6 ± 3.0 deg]

Injured adult athletes [15.0 ± 13.1 deg]

Uninjured adult athletes [9.9 ± 7.9 deg]

Injured adolescent athletes [11.4 ± 7.8 deg]

Uninjured adolescent athletes [9.0 ± 3.5 deg]

MAIN TAKEAWAYS

With a consensus defining GIRD as 18-20 IR deficit, means some athletes are likely overlooked.

Average GIRD in the adult athlete who sustained an injury [15.0 deg], was lower than the current consensus and was significantly different compared with the uninjured adult athlete [9.9].

Youth and adolescent athletes with GIRD and injury, though not statistically significant, still demonstrated less GIRD [11 deg].

The data indicates a link between GIRD and upper extremity injuries in overhead athletes.

RISK FACTORS FOR SHOULDER INJURIES IN HANDBALL PLAYERS

[Click for Full Text \(Hadjisavvas et al. 2022\)](#)

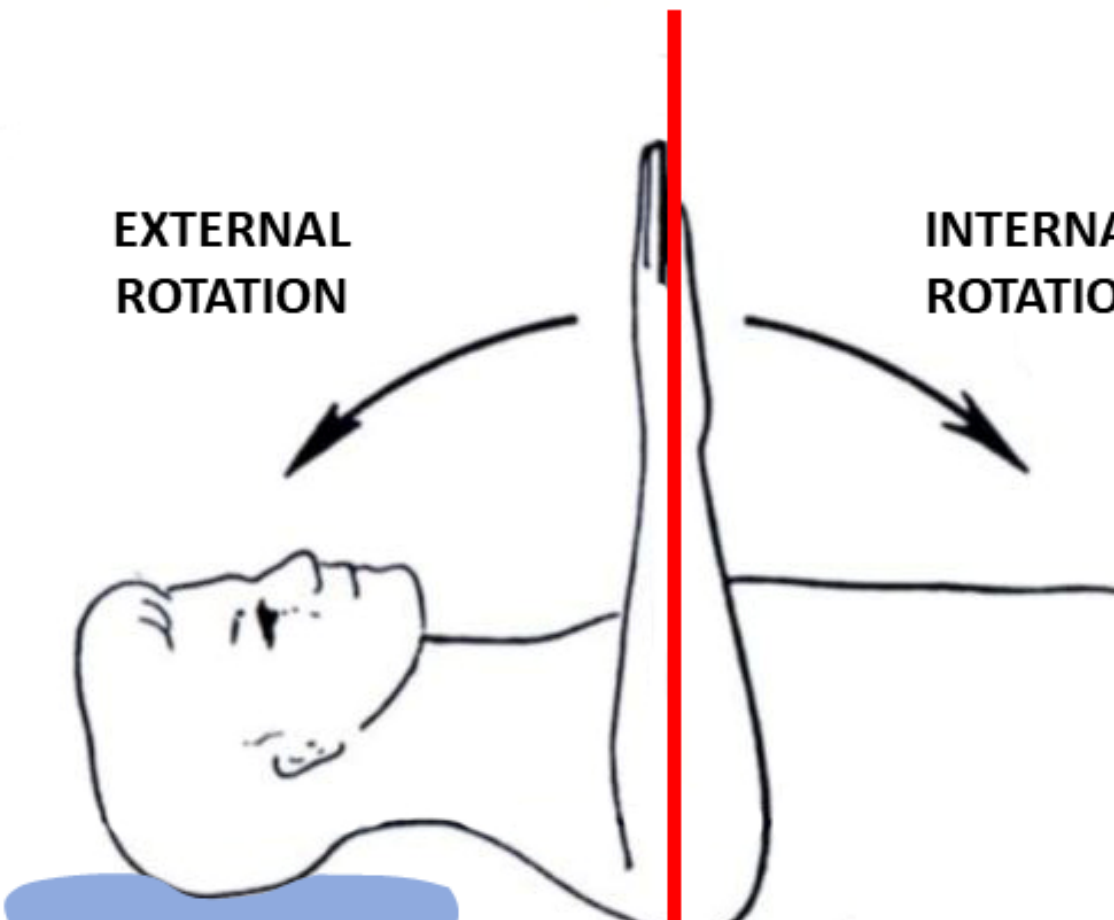
JBIR 10/11 [90%]



This systematic review identified the most significant risk factors related to shoulder injuries in handball.

EXTERNAL ROTATION

INTERNAL ROTATION



8 studies were included, 2536 participants of which 2522 were handball athletes

4/8 studies were rated as high quality, 4/8 rated as medium quality.

Risk factors for shoulder injuries in handball:

Strength imbalances (n=6)

Glenohumeral range of motion (ROM) imbalances (n=5)

Scapular dyskinesis (n=5)

Incorrect dosage of training load (n=2)

Previous injury (n=1)

Male / Female Gender (n=2)

Player's position, school grade, playing level (n=1)

Altered shoulder joint position sense (n=1)

MAIN TAKEAWAYS

Several risk factors for shoulder injuries in Handball players were identified.

Strong evidence was found for one main modifiable risk factor (External Rotation Strength) and one main non-modifiable risk factor (Female Sex).

Moderate evidence was found for Glenohumeral ROM imbalances, incorrect dosage of training load, previous injury, player's position, school grade and playing level.

Training load in particular seems to be related to shoulder injuries both independently and by interacting with other factors such as ER strength and scapular dyskinesia

EFFICACY OF PHYSICAL THERAPY IN OVERHEAD ATHLETES WITH GIRD

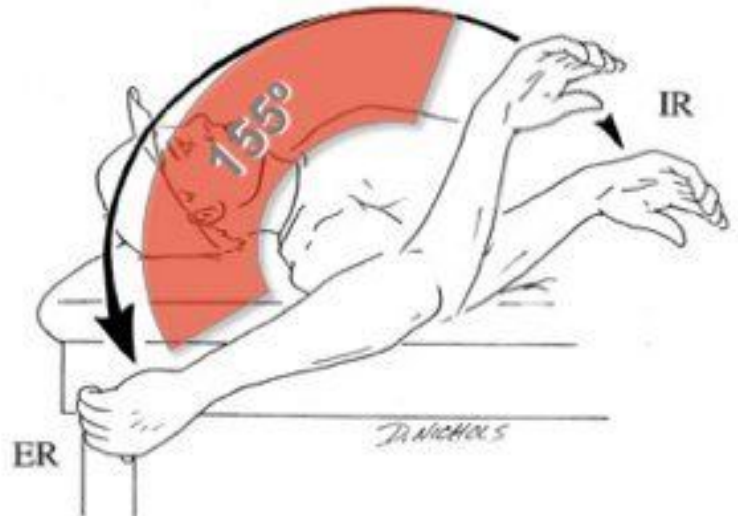
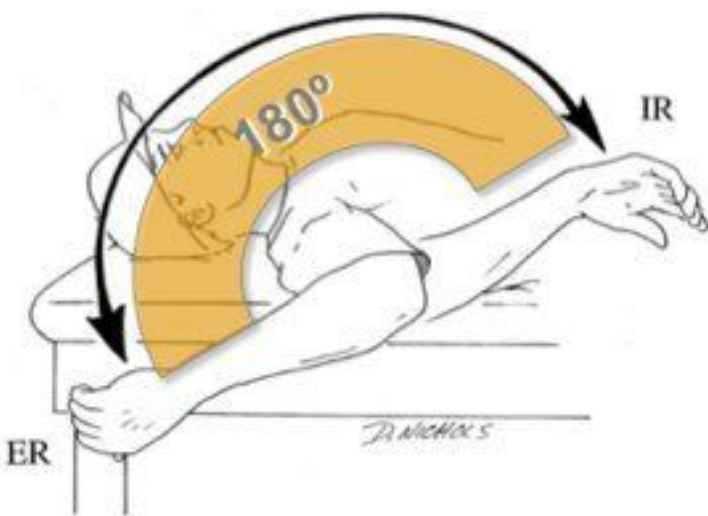
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[Click for Full Text](#)
(Jiménez-del-Barrio et
al. 2022)

JBI 10/11 [90%]



This systematic review evaluated the effectiveness of conservative therapy in range of movement (ROM), strength, pain, Subacromial space, and physical function, in overhead athletes with GIRD.



KEY FINDINGS

11 studies included; 514 over-head athletes.

Range of Movement:

Stretching and mobilizations significantly improved internal rotation and adduction, but not external rotation.

Strength:

Neither Internal or External rotation had significant improvements.

Pain:

Compared to no treatment or sham, there were no between group differences in pain.

Function:

Significant improvement were seen in functional levels.

Subacromial Space:

Significant improvements were found to improve SA space.

MAIN TAKEAWAYS

High-quality evidence shows **conservative therapy based on stretching, manual therapy and soft tissues mobilization are more effective than control, sham or other conservative therapies** for improving:

Internal rotation and adduction ROM and subacromial space;

Moderate-quality evidence suggests subacromial space improves with conservative approaches.

Low quality of evidence suggests improvements for physical function in overhead athletes with GIRD.

GIVE US YOUR FEEDBACK!

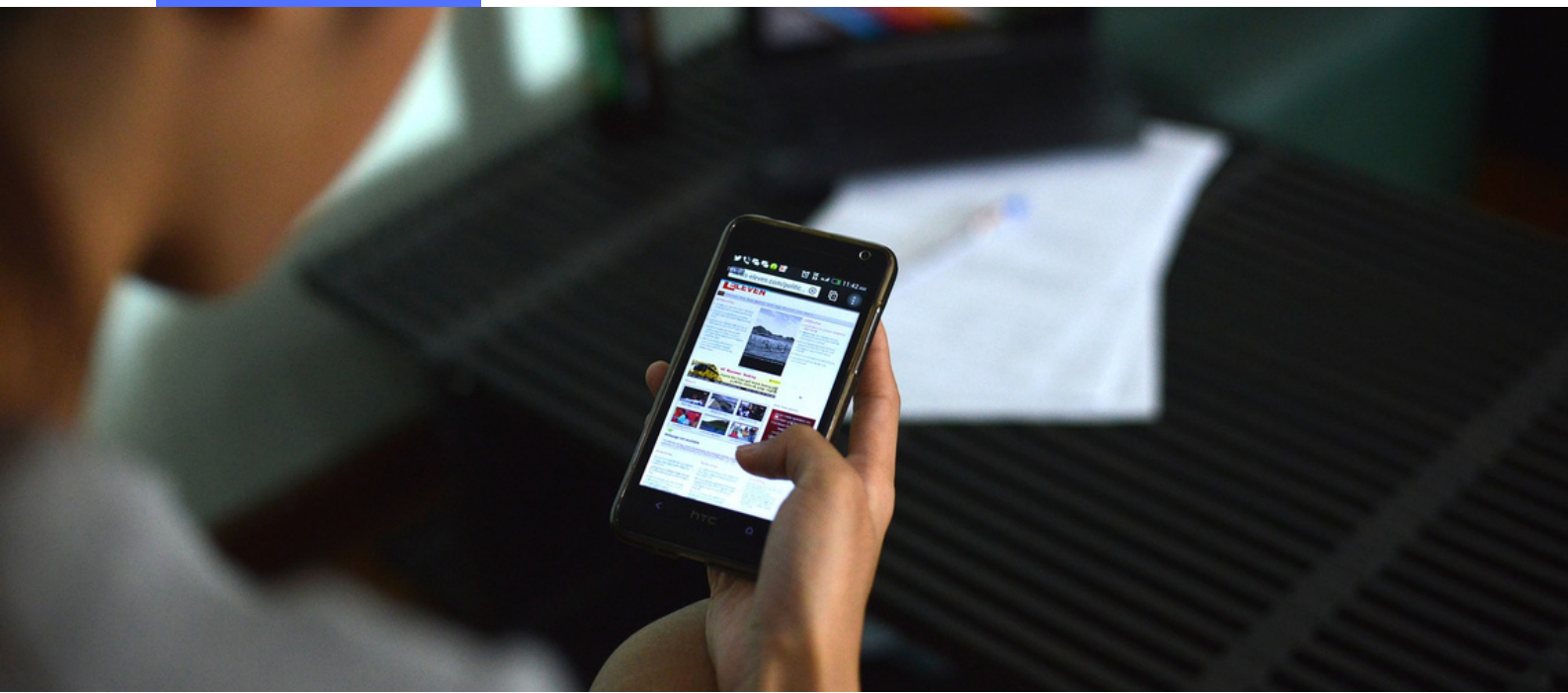
MEMBERS

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](#)



JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Jiménez-del-Barrio et al. Year: 2022

	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:

Insufficient sample size, that could overestimate the results.

Lack of follow-up measurements of the studies; none of the studies assessed the follow-up.

Heterogeneity of included studies

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Johnson et al. Year: 2018

	Yes	No	Unclear	Not applicable
1. Is the review question clearly and explicitly stated?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Overall appraisal: 10/11 (90%)

LIMITATIONS:

Asymmetric pattern was observed in the funnel plot, suggesting that there could be some combination of heterogeneity and bias in the studies included.

Overall low quality of evidence available.

There was a wide definition of injury in the studies used for the analysis.

JBI CRITICAL APPRAISAL CHECKLIST FOR SYSTEMATIC REVIEWS AND RESEARCH SYNTHESSES

Author: Hadjisavvas et al. Year: 2022

	Yes	No	Unclear	Not applicable
1. Is the review question clearly and explicitly stated?	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Overall appraisal: 10/11 (90%)

LIMITATIONS:

Only published studies that were written in English were used.

Differences in the risk factors assessed, and the considerable variability in methods and sample characteristics made it difficult to combine them in a meta-analysis.

Heterogeneity of included studies was present.
