Rotator Cuff Rehabilitation Exercises Improving Athletes' Functional Activity: A Systematic Review

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Condition

- The shoulder is a very complex joint with many different moving parts, this includes the scapula, humerus, and clavicle. The rotator cuff stabilizes the shoulder with the help of four muscles (subscapularis, supraspinatus, infraspinatus, and teres minor) and their respective tendons and ligaments. Rotator cuff tears and injuries occur when these muscles and tendons fail due to injury or disease.
- Rotator cuff problems can happen suddenly such as when falling on an outstretched hand (FOOSH) or it can develop over time from repetitive activities for example throwing a baseball. Injuries can also occur from collision sports like football, lacrosse, or ice hockey. The rotator cuff can also have problems due to degeneration as part of the aging process.
- Mechanisms of injury include repetitive overhead motions, acute trauma, degenerative changes, imbalance in shoulder muscles and biomechanical factors.
- Signs/symptoms of a rotator cuff injury includes pain, limited ROM, weakness, swelling, and reduced functionality of the limb. Precautions for a rotator cuff injury include limiting repetitive overhead movements, ensuring proper flexibility, and maintaining proper technique when using the shoulder.

OT Assessments/Special Tests

Strength: dynamometer, Constant Murley (CM), raw electromyography (EMG) signals, expert recommendation rates

ROM: CM, goniometer

Pain: QuickDash, Western Ontario Rotator Cuff (WORC) Index, Visual Analogue Scale (VAS), Self-reported Pain Scale

Evidence-Based Interventions & HEP

Strength & Range of Motion: Exercises

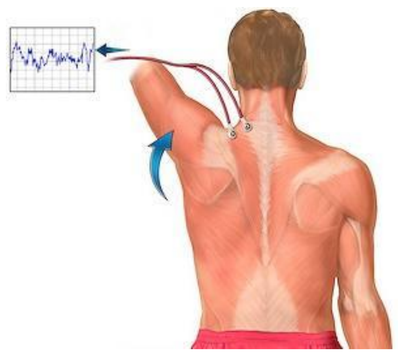
- Rehabilitative exercise (eccentric and conventional) (Dejaco et al., 2017; Dube et al., 2023; Singh et al., 2018)

Pain: Exercises

- Pain reduction exercises (Christensen et al., 2016; Dube et al., 2023)

PAMs & Orthoses

- Kinesiotaping (Jacobs & Austin, 2013)
- Therapeutic ultrasound (Adams, n.d.)
- Static or dynamic shoulder orthoses (Park, 2024)



Figures 1-4: RC Exercises & Assessments
(FMH, 2022; Hyde & Geiger, 2021; Larsen, 2014; Vermeulen et al., 2005)

Research Question

In athletes with rotator cuff injuries, do rehabilitative exercises improve functional activity?

Method

The focus of this research study was on athletes and rehabilitation exercises for rotator cuff injuries. Academic databases such as Google Scholar, EBSCO, and AJOT were utilized to find relevant articles. The articles included peer reviewed articles with the outcome of functional activity, interventions of exercise rehabilitation, and the population of athletes. From the search, five articles were reviewed to determine functional activity improvement for rotator cuff injuries. Our objective was synthesizing and critically appraising knowledge around rotator cuff injury and rehabilitation exercises.

Results

- 5 studies met inclusion criteria
- Rehabilitative exercises yield **positive outcomes** for RC injuries
  - improve **strength**
  - improve **ROM**
  - decrease **pain**

Discussion & Implications for OT Practice

This systematic review suggest that rehabilitative exercises are effective to improve functional activity for individuals with rotator cuff injuries. With the success of occupational therapy interventions, future studies should be done in relation to the reduction of surgery with delaying recovery and early intervention. In addition, other individuals with rotator cuff injuries and who are non athletes, would similarly be able to improve functional activity.

HEP

References

Contact Info