

## WSCC MEDICAL BULLETIN – JUNE 2022

### ROTATOR CUFF TEARS

This bulletin provides information and resources about one of the most common causes of shoulder pain after the age of forty years: rotator cuff tears. Many individuals with rotator cuff tears have little or no functional deficits or symptoms. The presence of a rotator cuff tear does not necessarily correlate with symptoms or functional impairment, and may be incidental. Clinical correlation is necessary.

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#### ANATOMY:

The supraspinatus, infraspinatus, subscapularis, and teres minor are the four muscles and tendons that form the rotator cuff. The cuff surrounds the head of the humerus and holds it within the glenoid/shoulder socket while allowing full mobility. The supraspinatus muscle contributes to abduction; the infraspinatus and teres minor externally rotate the humerus, and the subscapularis internally rotates the humerus (Vaughan & Hulkower, 2022).

#### CAUSE:

Rotator cuff tears most commonly involve the supraspinatus tendon and/or the infraspinatus tendon. They are typically the result of progressive degeneration, traumatic injury, or chronic subacromial impingement from the compression and pinching of muscles, nerves, or bursa from structures around the glenohumeral joint (Simon et al, 2022).

**Workers who perform a number of activities at or above the level of the shoulder are at greater risk for this injury.**

The size of a tear is defined as:

- **Small** = Less than 1 cm
- **Medium** = Between 1 to 3 cm
- **Large** = Between 3 to 5 cm
- **Massive** = Greater than 5 cm (ACOEM 2021)

#### DIAGNOSIS:

The signs and symptoms of a rotator cuff tear are the same as rotator cuff tendinopathy, often with the addition of weakness with resisted abduction and/or external rotation.

If the diagnosis is related to trauma, symptoms should be present for less than 2 weeks.

## Signs and Symptoms may include:

- Weakness with supraspinatus testing and/or external rotation.
- Pain over the anterolateral shoulder and sometimes the upper back.
- Popping sensation or crepitus with shoulder movement.
- Pain with Apley scratch tests.
- Increased pain when reaching.
- Normal ROM with pain on abduction and/or external rotation.
- Weakness with resisted abduction and/or external rotation otherwise normal strength.
- Positive Neer and Hawkins Test (impingement testing).
- Difficulty sleeping at night because of pain.

X-rays have limited benefit in detecting tears. MRI is the best form of imaging. An MR Arthrography is appropriate with clinical presentation highly suspicious of a rotator cuff tear, but the MRI result is normal.

## TREATMENTS:

### Non-surgical Treatment:

**Partial-thickness tears** with limited weakness can be treated with rest up to a week, ice, and NSAIDS. Worker may benefit from a corticosteroid injection. Six weeks of physiotherapy can be prescribed to increase strength, range of motion (ROM), and help stabilize the scapula.

### Surgery:

Surgery may be indicated for both **partial-thickness tears and full-thickness tears** with weakness and/or if the injury is interfering with the individuals' daily living activities. A person's age, general health, activity level, and the size of the tear should be considered. Medium and large tears can increase over time, and should be monitored if the worker remains symptomatic.

### Post-Op Rehabilitation:

Passive ROM is typically prescribed for the first six weeks, followed by 6 to 20 weeks of physiotherapy for ROM, muscle strength, and endurance. A return to modified or normal activity characteristically happens at the 20-week mark for large or complicated tears.

## RETURN TO WORK

Most workers achieve excellent functional outcomes and the ability to return to work (RTW).

Temporary limitation and restriction of lifting, overhead work, and reaching will likely be necessary following this injury. The worker should be able to perform activities with the affected arm by their side as long as they do not require lifting, pushing, pulling, or carrying. Recovery from surgery would cause the most restrictions to activities, with initially no use of the arm and shoulder, and a gradual increase of activities as per their physiotherapist's and surgeon's recommendations.

The larger the tear and the longer the interval from injury to surgery (if required), the more likely there will be some permanent weakness of the rotator cuff. Some workers may not be able to return to heavy or overhead work. (AECOM)

An ergonomic assessment can help to identify ways to reduce and eliminate reaching, repetitive motions, and physical demands. Modifications could include forearm supports, headsets, desk height, breaks, job organization, lifting devices, and more.

Ensure medical limitations and restrictions are communicated. The employer will work with the worker and WSCC to determine if modified or alternate duties can be identified. The WSCC will also work with the employer to determine if any ergonomic design or tools can be implemented to allow the worker to perform job duties.

The following table, adapted from ACOEM MD Guidelines, shows the expected disability duration for differing job demands:

	<b>Job Class *</b>	<b>Minimum Recovery (days)</b>	<b>Optimum Recovery (days)</b>	<b>Maximum Recovery (days)</b>
<b>Medical Treatment: Rotator Cuff Tear</b>	Sedentary	0	3	4
	Light	0	3	7
	Medium	14	21	42
	Heavy	28	42	84
	Very Heavy	28	42	84
<b>Surgical Treatment: Arthroscopic rotator cuff repair</b>	Sedentary	7	10	21
	Light	10	21	42
	Medium	28	56	84
	Heavy	56	84	112
	Very Heavy	84	112	140
<b>Surgical Treatment: Open rotator cuff repair</b>	Sedentary	7	14	70
	Light	14	21	84
	Medium	42	84	112
	Heavy	70	98	140
	Very Heavy	84	112	154

\* See the Appendix at the end of this document for specific information about job class definitions.

## WSCC Assistance

The WSCC has a [Return to Work Specialist](#) that can assist in working with the employer to make appropriate work modifications.

If you have any questions about how WSCC can assist you in treating patients with workplace injuries or illnesses, or would like to discuss the above information with WSCC's Medical Unit, contact them [here](#).

## REFERENCES

- American College of Occupation Environmental Medicine (2021). Rotator Cuff. *MD Guidelines*. Retrieved May, 2022.
  - American College of Occupation Environmental Medicine (2021). Rotator Cuff Tear. *MD Guidelines*. Retrieved May, 2022.
  - Simon, S.M., Dixon, J.B., & Kruse, D. (2022). Presentation and diagnosis or rotator cuff tears. *UpToDate*. Retrieved May 4, 2022.
  - Vaughan, A. & Hulkower, S. (2022). Evaluation of the adult with shoulder complaints. *UpToDate*. Retrieved May 4, 2022.
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## APPENDIX

Job class definitions, as defined by ACEOM, MD Guidelines:

- **Sedentary Work:** Exerting up to 10 pounds (4.5 kg) of force occasionally and/or a negligible amount of force frequently or constantly to lift, carry, push, pull, or otherwise move objects, including the human body. Sedentary work involves sitting most of the time, but may involve walking or standing for brief periods of time. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.
- **Light Work:** Exerting up to 20 pounds (9.1 kg) of force occasionally and/or up to 10 pounds (4.5 kg) of force frequently, and/or negligible amount of force constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Light Work usually requires walking or standing to a significant degree. However, if the use of the arm and/or leg controls requires exertion of forces greater than that for Sedentary Work and the worker sits most the time, the job is rated Light Work.
- **Medium Work:** Exerting up to 50 (22.7 kg) pounds of force occasionally, and/or up to 25 pounds (11.3 kg) of force frequently, and/or up to 10 pounds (4.5 kg) of forces constantly to move objects.
- **Heavy Work:** Exerting up to 100 pounds (45.4 kg) of force occasionally, and/or up to 50 pounds (22.7 kg) of force frequently, and/or in excess of 20 pounds (9.1 kg) of force constantly to move objects.
- **Very Heavy Work:** Exerting in excess of 100 pounds (45.4 kg) of force occasionally, and/or in excess of 50 pounds (22.7 kg) of force frequently, and/or in excess of 20 pounds (9.1 kg) of force constantly to move objects.