

An anatomical illustration of the right shoulder and upper arm, showing a significant tear in the rotator cuff. The tear is located at the insertion point of the supraspinatus muscle on the greater tuberosity of the humerus. The torn fibers are frayed and separated, with a blue suture line visible at the site of the injury. The surrounding structures, including the humeral head, acromion, and ribs, are rendered in a realistic, semi-transparent style. The rotator cuff muscles are shown in a reddish-pink color, while the bones and ligaments are in a light beige tone.

# Rotator Cuff Tear (RTC)

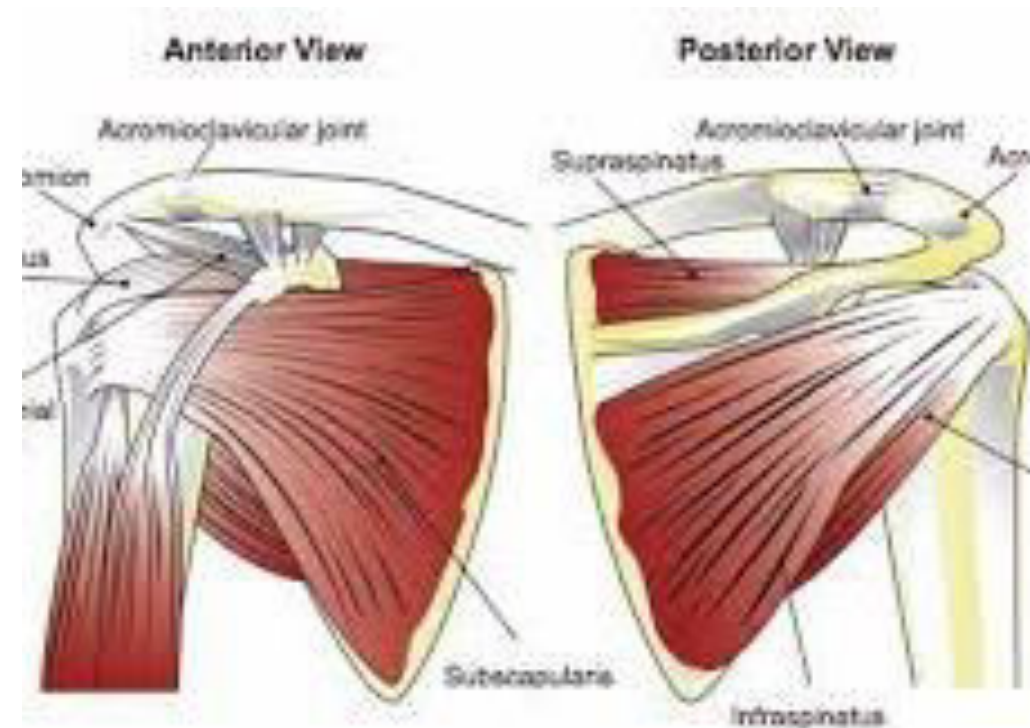
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# Objectives

- Anatomy of the rotator cuff muscles
- What does it mean to have a torn RTC
- Causes of a RTC Injury
- Diagnosis of the injury
- Be able to understand different treatment options

# Anatomy of the RTC muscles

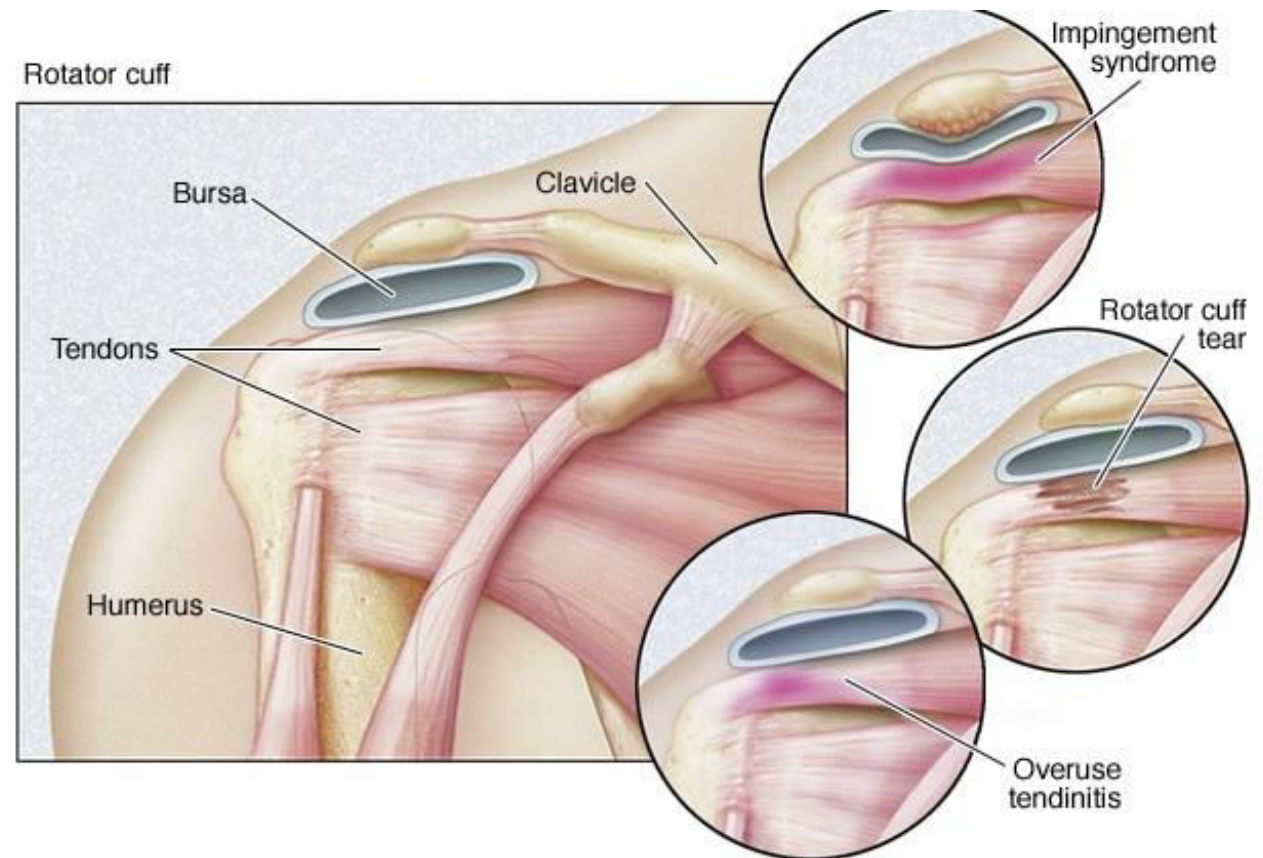
- The rotator cuff is made up of 4 muscles that help attach the scapula and the tuberosities of the humerus.
- Those 4 muscles are:
  - Supraspinatus
  - Infraspinatus
  - Teres minor
  - Subscapularis



A helpful mnemonic to remember these muscles is "SITS."

# What is a rotator cuff tear (RTC)

- The rotator cuff is a group of 4 muscles that form a tendon complex that attaches on the outer side of the shoulder.
- A rotator cuff injury can cause a dull ache in the shoulder, which often worsens with use of the arm away from the body.
- Rotator cuff injuries are common and increase with age.



# Roll of the Rotator Cuff

- The primary biomechanical role of the rotator cuff is to stabilize the glenohumeral joint (shoulder) by compressing the humeral head against the glenoid. These four muscles arise from the scapula (shoulder blade) and insert into the humerus.



## Causes of a RTC Tear

- Rotator cuff disease may be the result of either a substantial injury to the shoulder or to progressive degeneration or wear and tear of the tendon tissue.
- Repetitive overhead activity or heavy lifting over a prolonged period of time may irritate or damage the tendon.



# Diagnosis

- During the physical exam, your doctor will press on different parts of your shoulder and move your arm into different positions. He or she will also test the strength of the muscles around your shoulder and in your arms.



## Diagnosis Cont.

**X-rays.** Although a rotator cuff tear won't show up on an X-ray, this test can visualize bone spurs or other potential causes for your pain — such as arthritis.

**Ultrasound.** This type of test uses sound waves to produce images of structures within your body, particularly soft tissues such as muscles and tendons. It allows dynamic testing, assessing the structures of your shoulder as they move. It also allows a quick comparison between the affected shoulder and the healthy shoulder.

**Magnetic resonance imaging (MRI).** This technology uses radio waves and a strong magnet. The images obtained display all structures of the shoulder in great detail. The quality of the images depends greatly on the quality of the equipment used.





# Signs & Symptoms of a Tear

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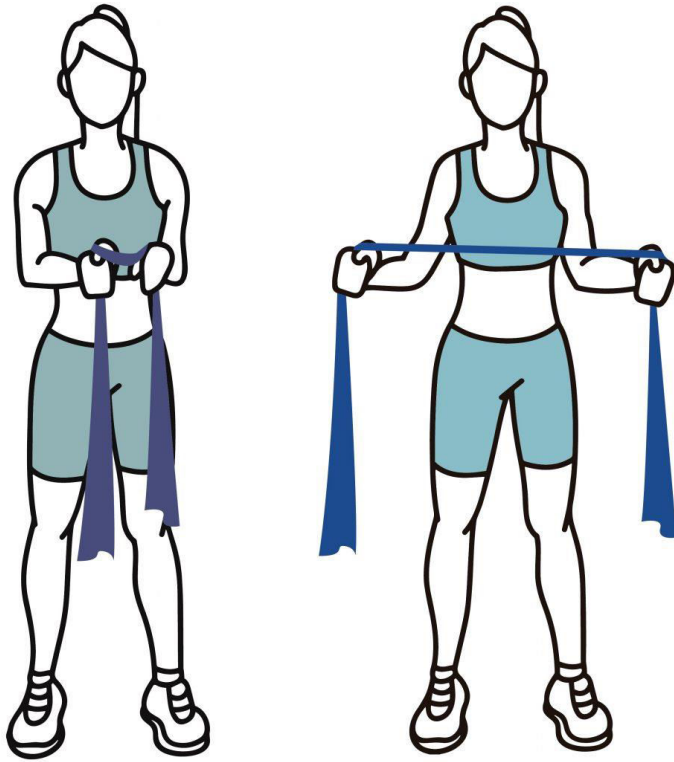
- Dull ache deep in the shoulder
- Disturbed during sleep
- Difficult to comb your hair or reach behind your back
- Be accompanied by arm weakness

# Treatment For minor Injuries

- Conservative Treatment → rest, ice and physical therapy; sometimes that's all that's needed to recover from a rotator cuff injury depending on the severity of it.



# Physical Therapy Treatment

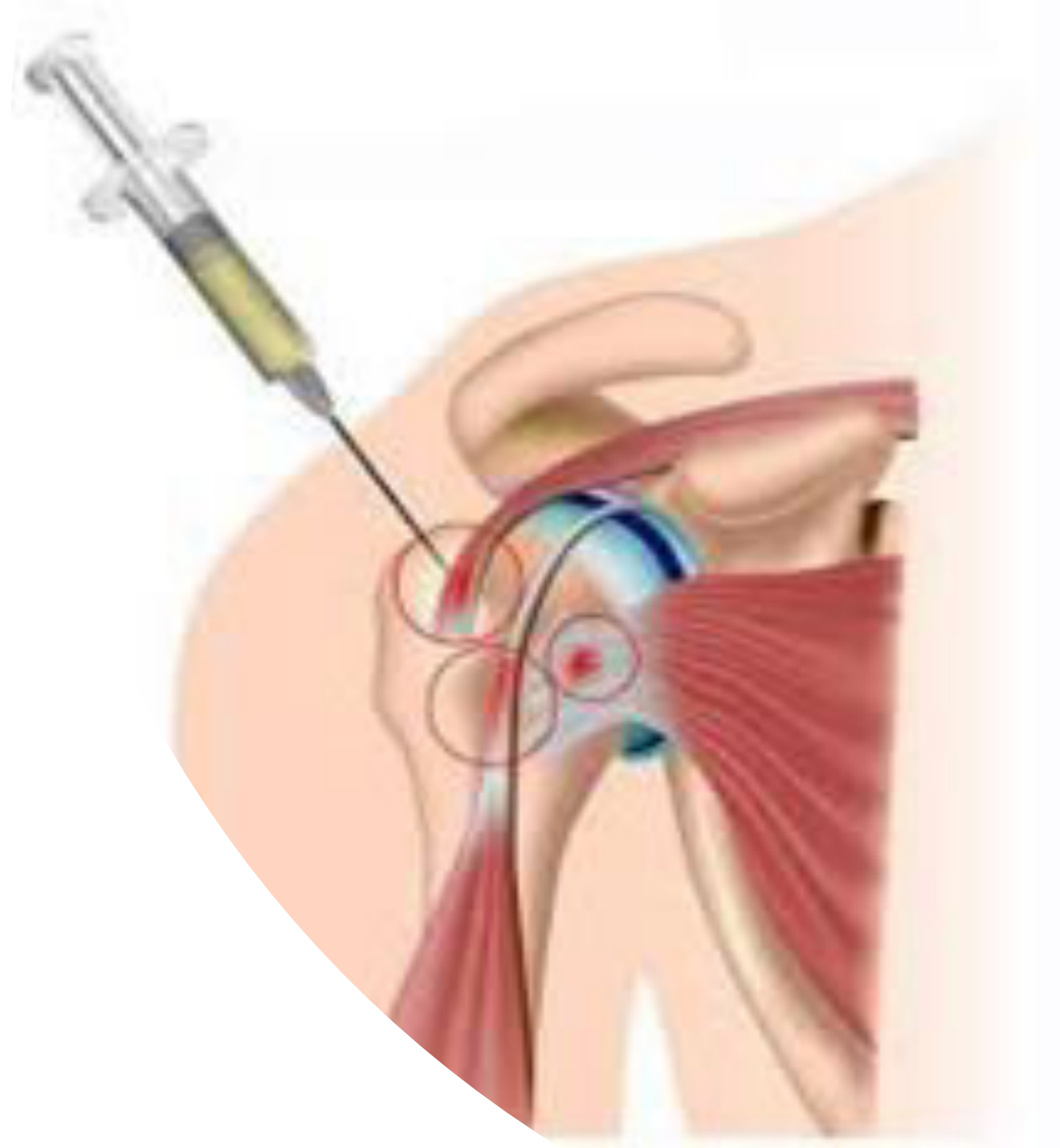


- Physical therapy is usually one of the first treatments your doctor may suggest. Exercises tailored to the specific location of your rotator cuff injury can help restore flexibility and strength to your shoulder. Physical therapy is also an important part of the recovery process after rotator cuff surgery

# Injections

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- If conservative treatments haven't reduced your pain, your doctor might recommend a steroid injection into your shoulder joint, especially if the pain is interfering with your sleep, daily activities or physical therapy.



# Surgery Treatment

- **Arthroscopic tendon repair.** In this procedure, surgeons insert a tiny camera (arthroscope) and tools through small incisions to reattach the torn tendon to the bone

Repaired tendon

