

# Rotator Cuff Tears

The rotator cuff is the network of four muscles and several tendons that form a covering around the top of the upper arm bone (humerus). These muscles form a cover around the head of the humerus. The rotator cuff holds the humerus in place in the shoulder joint and enables the arm to rotate.

Rotator cuff tear is a common cause of pain and disability among adults. Most tears occur in the supraspinatus muscle, but other parts of the cuff may be involved

## Cause

The rotator cuff can be torn from a single traumatic injury. Patients often report recurrent shoulder pain for several months and a specific injury that triggered the onset of the pain. A cuff tear may also happen at the same time as another injury to the shoulder, such as a fracture or dislocation.

Rotator cuff tears are most common in people who are over the age of 40. Younger people tend to have rotator cuff tears following acute trauma or repetitive overhead work or sports activity.

## Symptoms

Some of the signs of a rotator cuff tear include:

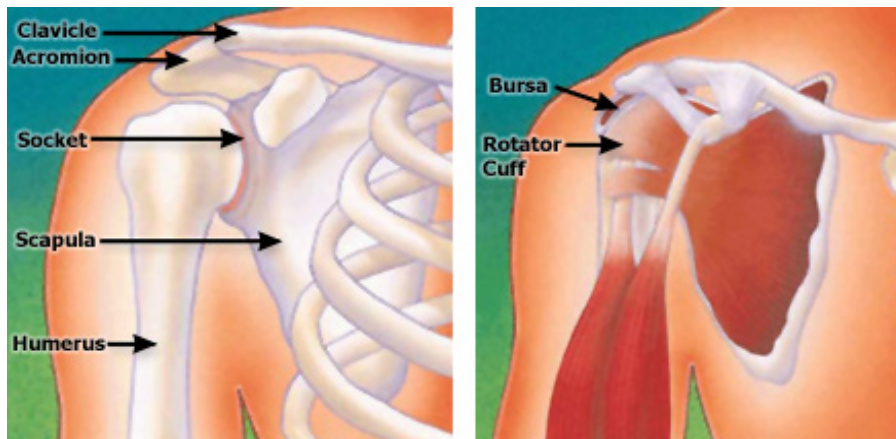
Atrophy or thinning of the muscles about the shoulder

Pain when lifting the arm

Pain when lowering the arm from a fully raised position

Weakness when lifting or rotating the arm

Crepitus or crackling sensation when moving the shoulder in certain positions



Symptoms of a rotator cuff tear may develop right away after a trauma, such as a lifting injury or a fall on the affected arm. When the tear occurs with an injury, there may be sudden acute pain, a snapping sensation and an immediate weakness of the arm. Symptoms may also develop gradually with repetitive overhead activity or following long-term wear. Pain in the front of the shoulder radiates down the side of the arm. At first, the pain may be mild and only present with overhead activities, such as reaching or lifting. It may be relieved by over-the-counter medication such as aspirin or ibuprofen.

Over time the pain may become noticeable at rest or with no activity at all. There may be pain when lying on the affected side and at night.

## Diagnosis

Diagnosis of a rotator cuff tear is based on the symptoms and physical examination. X-rays, and imaging studies, such as MRI (magnetic resonance imaging) or ultrasound, are also helpful.

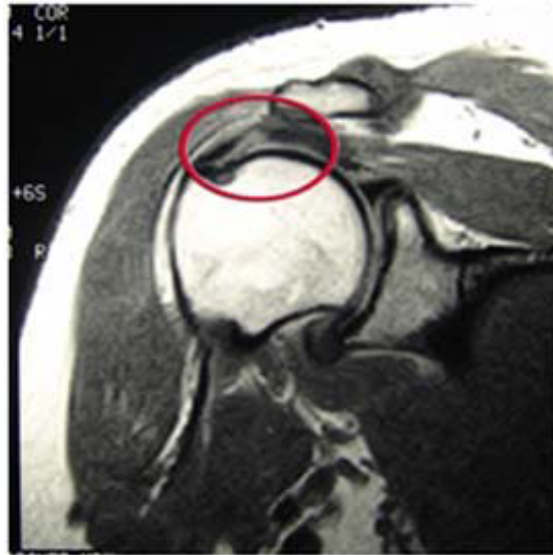
Your doctor will examine the shoulder to see whether it is tender in any area or whether there is a deformity. He or she will measure the range of motion of the shoulder in several different directions and will test the strength of the arm. The doctor will also check for instability or other problems with the shoulder joint.

*Magnetic resonance image shows a full-thickness rotator cuff tear within the tendon.*

The doctor may also examine the neck to make sure that the pain is not coming from a "pinched nerve" in the cervical spine and to rule out other conditions, such as osteoarthritis or rheumatoid arthritis.

Plain X-rays of a shoulder with a rotator cuff tear are usually normal or show a small spur. For this reason, the doctor may order an additional study, such as an ultrasound or MRI. These can better visualize soft tissue structures such as the rotator cuff tendon.

An MRI can sometimes tell how large the tear is, as well as its location within the tendon itself or where the tendon attaches to bone.



## Nonsurgical Options

In many instances, nonsurgical treatment can provide pain relief and can improve the function of the shoulder.

Nonsurgical treatment options may include:

- Rest and limited overhead activity
- Use of a sling
- Anti-inflammatory medication
- Steroid injection
- Strengthening exercise and physical therapy

## Surgical Treatment

Your orthopaedic surgeon may recommend surgery if

- Nonsurgical treatment does not relieve symptoms
- The tear has just occurred and is very painful
- The tear is in the shoulder of the dominant arm of an active person
- If maximum strength in the arm is needed for overhead work or sports

The type of surgery performed depends on the size, shape, and location of the tear. A partial tear may require only a trimming or smoothing procedure, called a "debridement." A complete tear within the thickest part of the tendon is repaired by suturing the two sides of the tendon back together. If the tendon is torn away from where it inserts into the bone of the arm (humerus), it is repaired directly to bone.

Many surgical repairs can be done on an outpatient basis.

In general, three approaches are available for surgical repair. These include:

**Arthroscopic Repair.** A fiberoptic scope and small, pencil-sized instruments are inserted through small incisions instead of a large incision. The arthroscope is connected to a television monitor and the surgeon can perform the repair under video control.

**Mini-Open Repair.** Newer techniques and instruments allow surgeons to perform a complete rotator cuff repair through a small incision, typically 4 cm to 6 cm.

**Open Surgical Repair.** A traditional open surgical incision is often required if the tear is large or complex or if additional reconstruction, such as a tendon transfer, has to be done. In some severe cases, where arthritis has developed, one option is to replace the shoulder joint.

## **Rehabilitation**

After surgery, the arm is immobilized to allow the tear to heal. The length of immobilization depends upon the severity of the tear. An exercise program will help regain motion and strength in the shoulder. This program begins with passive motion and advances to active and resistive exercises. Complete recovery may take several months.

- A strong commitment to rehabilitation is important to achieve a good surgical outcome. The doctor will examine the outcome to advise when it is safe to return to overhead work and sports activity.