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## Rotator Cuff Tears

The shoulder allows us to reach and use our hands in many different positions. However, while the shoulder joint has great range of motion, it is not very stable. This makes the shoulder vulnerable to problems if any of its parts aren't in good working order.

The rotator cuff tendons are key to the healthy functioning of the shoulder. They are subject to a lot of wear and tear, or degeneration, as we use our arms. Tearing of the rotator cuff tendons is an especially painful injury.

A torn rotator cuff creates a very weak shoulder. Most of the time patients with torn rotator cuffs are in late middle age. But rotator cuffs tears can happen at any age.

### What is the rotator cuff, and what does it do?

#### Rotator Cuff Tears



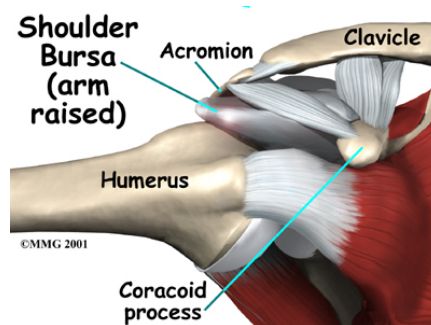
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The shoulder is made up of **three bones**: the scapula (shoulder blade), the humerus (upper arm bone), and the clavicle (collarbone).

The rotator cuff connects the humerus to the scapula. The **rotator cuff** is formed by the tendons of four muscles: the supraspinatus, infraspinatus, teres minor, and subscapularis.

As the arm is raised, the rotator cuff also keeps the humerus tightly in the **socket of the scapula**. The upper part of the scapula that makes up the roof of the shoulder is called the acromion.

A bursa is located between the acromion and the rotator cuff tendons. A bursa is a lubricated sac of tissue. In this case, the bursa protects the acromion and the rotator cuff from grinding against each other.



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## What causes the rotator cuff to tear?

The rotator cuff tendons have areas of very low blood supply. The more blood supply a tissue has, the better and faster it can repair and maintain itself. The areas of poor blood supply in the rotator cuff make these tendons especially vulnerable to degeneration from aging.

The degeneration of aging helps explain why the rotator cuff tear is such a common injury later in life. Rotator cuff tears usually occur in areas of the tendon that had low blood supply to begin with and then were further weakened by degeneration.

This problem of degeneration may be accelerated by repeating the same types of shoulder motions. This can happen with overhand athletes, such as baseball pitchers. Tennis players. But even doing routine chores like cleaning windows, washing and waxing cars, or painting can cause the rotator cuff to fatigue from overuse.

Excessive force can tear weak rotator cuff tendons. This force can come from trying to catch a heavy falling object or lifting an extremely heavy object with the arm extended. The force can also be from a fall directly onto the shoulder. Sometimes injuries that tear the rotator cuff are painful, but sometimes they aren't. Researchers estimate that up to 40 percent of people may have a mild rotator cuff tear without even knowing it.

## What does a rotator cuff tear feel like?

The typical patient: late middle age

Patient has had problems with the shoulder for some time.

This patient then lifts a load or suffers an injury that tears the tendon.

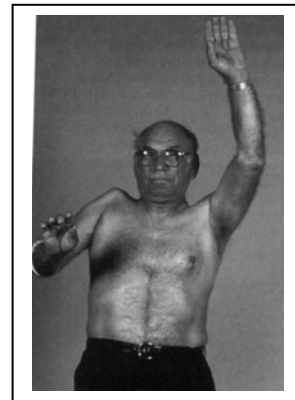
Overuse or injury at any age can cause rotator cuff tears.

The shoulder may be painful, but you can still move the arm

In general, the larger the tear, the more weakness it causes and

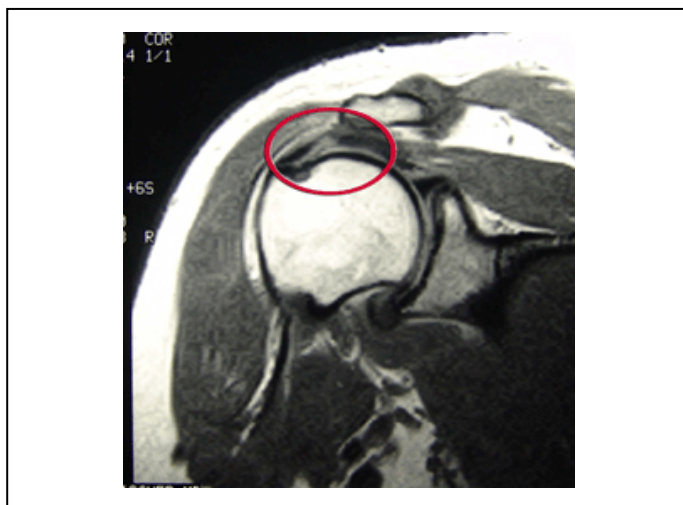
the patient is unable to raise the arm.

Most people say they can't sleep on the affected side due to the pain.



## What tests will my doctor run?

1. Medical history, your injury, and your pain.
2. Your doctor will then do a physical examination of the shoulder
3. Assess Weakness when you lift or rotate your arm
4. :X-rays : any bone spurs, a loss of joint space in the shoulder, or a down-sloping (hooked) acromion. An X-ray can also show if there are calcium deposits in the tendon.
5. Your doctor may ask you to have a magnetic resonance imaging (MRI) scan.



The MRI scan shows tendons as well as bones.

This test is painless and requires no needles or injections.

MRI is an ideal investigation for the rotator cuff tear

6. Ultrasound examination is useful in diagnosing cuff tear

## What treatment options are available?

### Nonsurgical Treatment

Rest and limited overhead activity

Use of a sling

Strengthening exercise and physical therapy

Anti-inflammatory medication, such as aspirin or ibuprofen.

May suggest a **cortisone injection** if you have trouble getting your pain under control. Cortisone is a very effective anti-inflammatory medication.

Your doctor will probably have a physical or occupational therapist direct your rehabilitation program.

### Surgery

Complete ruptures usually require surgery if your goal is to return your shoulder to optimal function.

There is some evidence that repairing the rotator cuff within three months of the injury results in a better outcome.

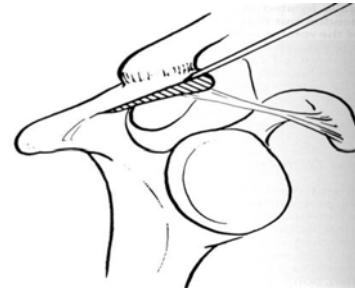
#### 1. Arthroscopic Debridement and repair

Small tears can be sometimes be treated with a smaller operation. The surgeon may simply use an **arthroscope** to see and remove (debride) torn or degenerated fibers within the tendon. An arthroscope is a tiny TV camera that can be inserted into a very small incision. It allows the surgeon to see the area where he or she is working on a TV screen

#### 2. Acromioplasty

For minor partial tears on the undersurface of the rotator cuff tendon, surgery may include arthroscopic debridement (described above) and acromioplasty. In acromioplasty, the end of the acromion is cut and shaped to take pressure off the rotator cuff beneath the acromion.

This is a simpler method than repairing the tear, and the results are generally excellent. The tear will probably require sutures if it is in the top surface of the tendon.



#### 3. Arthroscopic Repair

Some surgeons usually get excellent results using an arthroscope to repair a torn rotator cuff. However, results not better in case of big ruptures

#### 3. Open Repair

In some instances, open surgery is necessary. In open surgery, the surgeon gets to the rotator cuff tendon by cutting through muscles and tissues on the front of the shoulder. After repairing the tendon, the muscle on the front is reattached to the bone. This surgery is usually combined with acromioplasty

#### 4. Salvage Procedure [Debridement surgery]

In other cases, the tendon tissue has simply worn away, and the remaining tendon is not strong enough to hold the necessary stitches. In these instances, simply removing all the torn tissue and fixing any other problems in the shoulder may reduce your pain. But this will probably not increase the strength or motion of your shoulder.

#### What should I expect after treatment?

Even if you don't need surgery, you may need to follow a program of rehabilitation exercises. Your doctor may recommend that you work with a physical or occupational therapist. It is very important to improve the strength and coordination in the rotator cuff and shoulder blade muscles.

Therapy goes slower after surgeries where the front shoulder muscles have been cut. Exercises begin with passive movements. During passive exercises, your shoulder joint is moved, but your muscles stay relaxed. Your therapist gently moves your joint and gradually stretches your arm. You may be taught how to do passive exercises at home.

Active therapy starts 6 weeks after surgery. You use your own muscle power in active range-of-motion exercises. You may begin with light isometric strengthening exercises. These exercises work the muscles without straining the healing tissues.