

# Rotator Cuff Pathology

## What is the rotator cuff and rotator cuff pathology?

The rotator cuff is the group of four muscles and tendons that surround the shoulder joint, providing strength and stability. Above the rotator cuff there is a bursa, or sac of tissue, that covers and protects the rotator cuff as it comes into close contact with bones around the shoulder (see Figure 1). When the rotator cuff is injured or damaged, it can lead to inflammation of the bursa, called bursitis, which causes pain and loss of motion. Thickening of the rotator cuff and its bursa can lead to an impingement syndrome where these tissues impinge against the bones around the shoulder. This can cause pain and damage to the rotator cuff. While some rotator cuff injuries occur in younger people secondary to trauma, most injuries result from aging and degeneration of the cuff. Damage to the rotator cuff can vary from microscopic tears to large irreparable tears, and symptoms include pain, weakness, restricted motion, catching, locking and a feeling of instability. Rotator cuff pathology ranges from a normal, asymptomatic aging process to endstage arthritis and instability caused by absence of the rotator cuff.

## Signs and Symptoms

Rotator cuff tears increase in incidence with age, however not all rotator cuff tears are painful, and many individuals with rotator cuff pathology are completely asymptomatic. When it does become symptomatic it can present in a variety of ways ranging from minor problems to severe pain and limitation of function. Onset of symptoms can be related to ordinary activities of daily living, or they can be attributed to a single event. The symptoms are usually aggravated in certain positions, such as reaching backwards to fasten a seat belt or pick up a briefcase out of the back seat. Symptoms are worse when the arm is elevated overhead, especially if the elevated arm is loaded, such as picking up a stack of plates out of a cupboard. Overhead activities like pitching, throwing, tennis or racquetball) commonly worsen symptoms.

## How is rotator cuff pathology diagnosed?

History and physical examination are the best way to initially evaluate rotator cuff pathology. It is important for the doctor to differentiate shoulder pain coming from places other than the shoulder, such as the neck or even the heart. On the exam, pain can be provoked by overhead maneuvers, and there may be weakness of the shoulder muscles. Although plain x-rays do not show the rotator cuff muscles, they are helpful to look for calcifications, arthritis or bone problems such as spurs that can cause rotator cuff tears. MRI is the most common imaging method to diagnose rotator cuff tears (see Figure 2). It can be used to look for tears or inflammation of tissues and to help determine the size and character of the tear to direct proper treatment. Injections or arthroscopy may also be used to help diagnose rotator cuff tears.

## What are the treatment options?

Alterations in activities and learning to use the shoulder in a safer, more comfortable manner is important. Physical therapy may help improve mobility and strengthen shoulder muscles. Anti-inflammatory medications and injections are used for pain relief and to decrease inflammation. If these treatments fail, surgical intervention is a reasonable option. Arthroscopy is often used to remove inflamed bursa and impinging bone spurs. The end of the clavicle (collarbone) may be removed if it has impinging spurs. Arthroscopic techniques can often repair rotator cuff tears. Other tears require a larger incision and surgical exposure. Some large tears, particularly those associated with resultant arthritis, simply cannot be repaired and may require joint replacement surgery.

## Rehabilitation

Postoperative treatment depends on which surgical procedure was chosen, but therapy is a critical part of the recovery. Therapy can last from three to twelve months. A coordinated effort between the patient, surgeon and physical or occupational therapist is required.

Figure 1: Shoulder anatomy

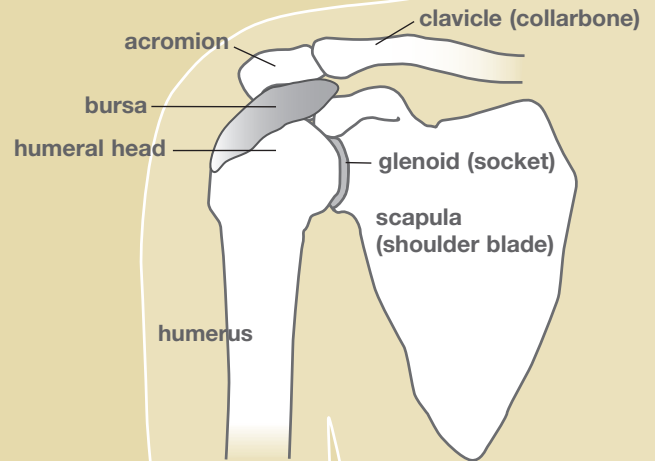


Figure 2: MRI of the shoulder

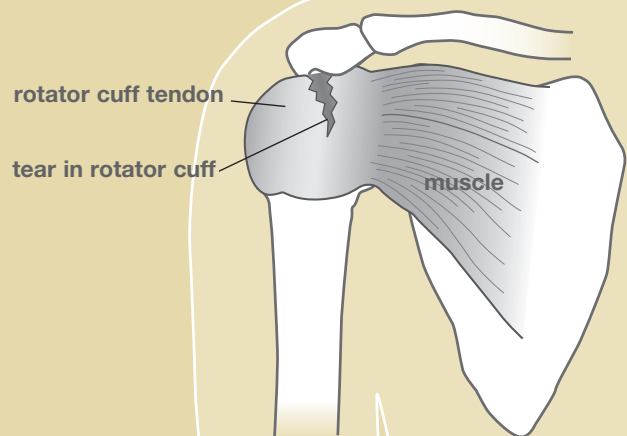


Figure 3: Pre- and post-surgery

