



Orthopaedic Specialists

Bryn Mawr Sports Medicine
& Hand Surgical Associates

Bryn Mawr • Devon • Newtown Square
www.orthspec.com

Phone: (610) 527-2727 • Fax: (610) 527-1588

Jack Abboudi, M.D.
Mark Baer, D.P.M.
Michael P. Duncan M.D.
William D. Emper, M.D.
Denice H. Franco, D.O.
Kevin B. Freedman, M.D.
Robert P. Good, M.D.
Christopher M. Jones, M.D.
William H. Kirkpatrick, M.D.
Eric A. Levicoff, M.D.
Bradley J. Smith, M.D.
Kevin M. Walsh, M.D.
Mark L. Wang, M.D., Ph.D.
Susan B. Ward, M.D.

PATIENT GUIDE TO ROTATOR CUFF INJURIES

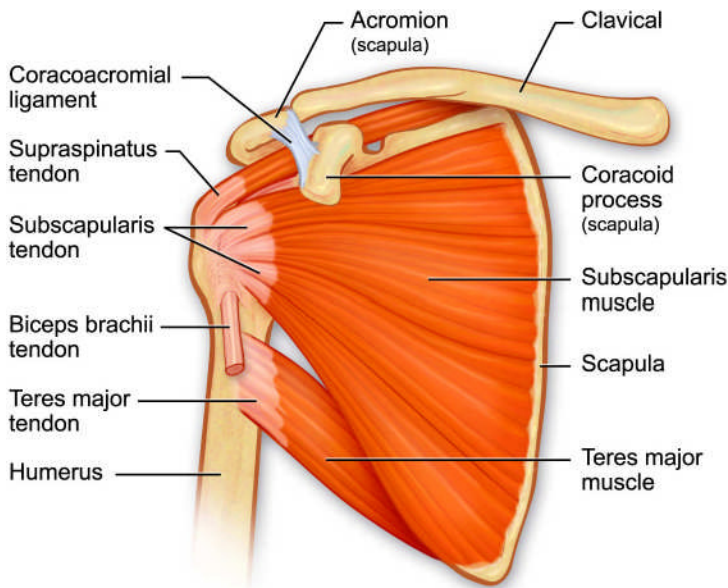


FIGURE 1: Anterior (front) view of shoulder

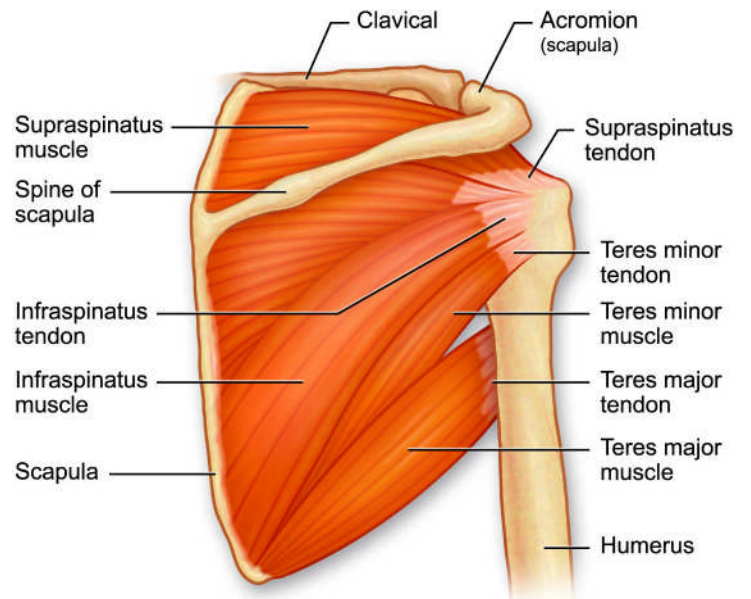


FIGURE 2: Posterior (back) view of shoulder

What is the rotator cuff?

The rotator cuff is a group of four (4) muscles and their tendons in the shoulder (**Figures 1&2**). These four muscles are the supraspinatus, subscapularis, infraspinatus, and teres minor. The muscles form a cuff around the shoulder joint and attach at the upper portion of the arm (humerus).

These four muscles help to elevate and rotate the arm. In addition, these muscles help to stabilize the ball of the shoulder joint (humeral head) in the shallow socket of the shoulder (glenoid) (**Figure 3**). When the arm is overhead, the rotator cuff works especially hard to stabilize the shoulder and provide power. This is why overhead activities, lifting, or throwing can cause pain in someone with a rotator cuff injury.

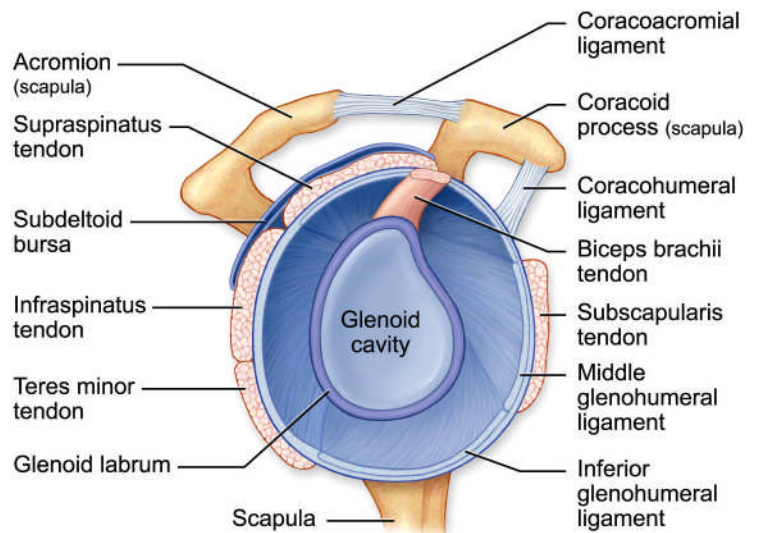


FIGURE 3: Open lateral (side) view of the shoulder joint

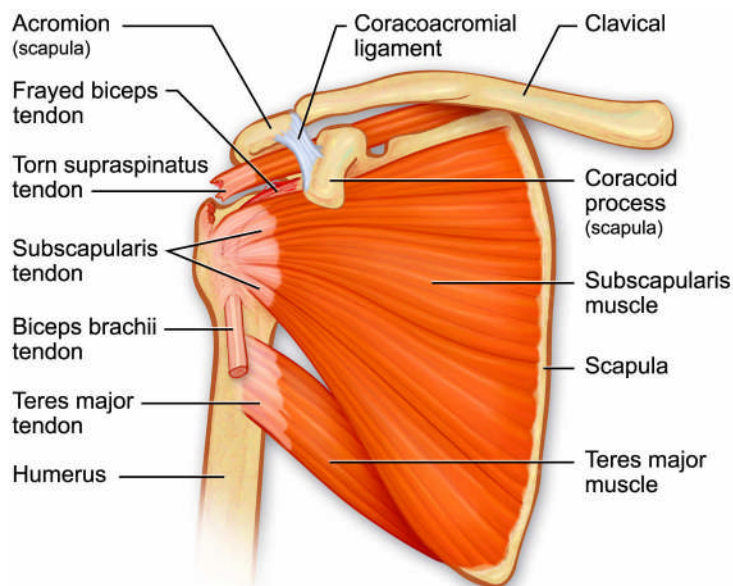


FIGURE 4: Torn supraspinatus (rotator cuff) tendon

What is a rotator cuff injury?

Most rotator cuff injuries are an inflammation of the tendon called a tendonitis (**Figure 4**). The tendon gets overworked or sometimes gets pinched between the bones of the shoulder and becomes inflamed. This is termed “impingement syndrome”. In addition, there is a bursa which lies between the rotator cuff and the bone of the scapula (acromion). The bursa is a fluid filled sac that reduces friction between the tendon and the bone. Sometimes the bursa becomes inflamed along with the tendon, a condition called “bursitis”.

Sometimes the tendonitis will progress to the point that the tendon becomes frayed or torn. Tears of the rotator cuff can be partial thickness or full thickness. Partial thickness tears only go part way through the tendon. Full thickness tears extend all the way through the tendon, and the tendon is detached from the bone.

How is the rotator cuff injured?

Most commonly, the rotator cuff tendons wear and weaken with repetitive use until they eventually tear. In addition, in a tendon that is already weak, a small amount of trauma, such as a pulling injury, can lead to a full tear of the tendon (**Figure 4**). Occasionally, there is a severe traumatic injury that causes the tear, such as an accident or fall. Rotator cuff tears occur most commonly in patients age 50 and older, and in people who play sports or work with the arms overhead.

How do I know my rotator cuff is injured?

Injuries to the rotator cuff most typically cause pain, especially with overhead activities. In addition, rotator cuff injuries or tears cause shoulder pain at night and lead to difficulty sleeping. With large rotator cuff tears, people notice weakness in doing overhead activities. You may also have difficulty with activities of daily living, such as dressing,

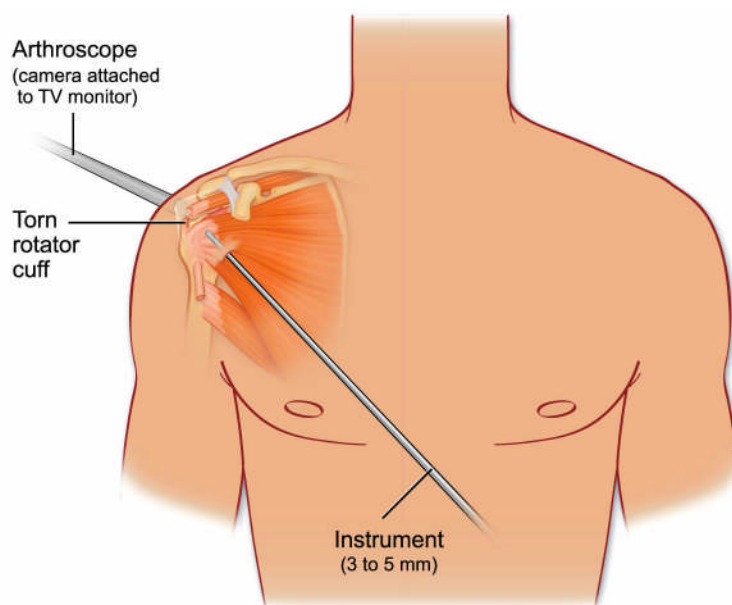


FIGURE 5: Arthroscopic evaluation of the rotator cuff tear

bathing, and reaching outward.

Do I need x-rays?

A set of x-rays is usually ordered to evaluate the bones around the shoulder. The bone above the rotator cuff, called the acromion, can be a bone spur that leads to pinching and irritation of the rotator cuff. The x-rays are also used to evaluate for arthritis of the shoulder joint and acromioclavicular joint (AC joint).

Do I need a MRI?

A MRI may be ordered if a rotator cuff tear is suspected. This can occur if there is severe trauma, or if there is significant weakness of the shoulder. In addition, if someone is not getting better with treatment, a MRI may be necessary. A MRI will usually show if a rotator cuff tear is present.

Is there other damage to the shoulder when the rotator cuff is injured?

There is frequently other damage to the shoulder that can occur with rotator cuff injuries. The biceps tendon, which runs from the muscle in the front of the arm to the top of the shoulder joint, can become frayed or torn (**Figures 4**). In addition, the AC joint, the joint on top of the shoulder where the clavicle (collarbone) meets the shoulder (acromion), can become damaged or arthritic.

What are the treatment options for rotator cuff injuries?

Many patient with a rotator cuff injury improve with conservative treatment. The treatment includes exercises, use of anti-inflammatory medications (NSAIDs), and possibly an injection of steroid. The exercise may include a program you can do at home or formal physical therapy. A steroid injection is commonly used in patients who do not get better

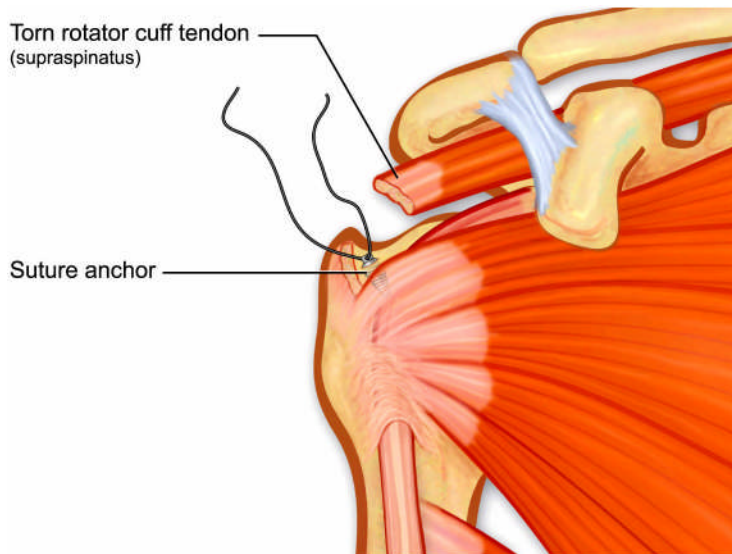


FIGURE 6: Suture anchor placed for rotator cuff repair

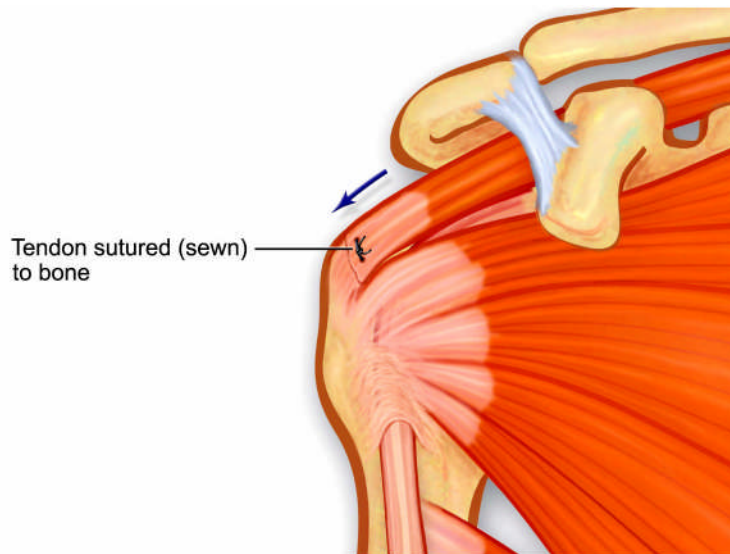


FIGURE 7: Repaired rotator cuff tendon

with therapy, or in severe cases. Many patients get better with these treatments and do not require surgery.

If patients do not get better with conservative therapy, or have a large tear or acute rotator cuff tear, surgery may be necessary.

How are rotator cuff injuries treated with surgery?

The surgery for rotator cuff injuries depends on the extent of the problem. Rotator cuff injuries are usually repaired with arthroscopic techniques. The arthroscope (**Figure 5**) is a fiber optic instrument which is put into the joint through a small incision. A camera is attached to the arthroscope and the image is viewed on a TV monitor. The arthroscope allows a full evaluation the entire shoulder joint, including the ligaments, the rotator cuff, and the cartilage surface. Small instruments ranging from 3-5 millimeters in size are inserted through additional incisions so that joint structures for any damage, an injury can be diagnosed, and damaged tissue can be repaired or removed.

For cases involving bad tendonitis or partial thickness rotator cuff tears, the entire procedure is done with the arthroscope. The under side of the acromion is shaved down (an acromioplasty) so it will not impinge (pinch) the rotator cuff. If the rotator cuff is frayed, it is cleaned (debrided).

For cases involving full thickness tears of the rotator cuff, the tear is usually repaired completely through the arthroscope. The bone is prepared for the tendon to be re-attached, and then rivets (suture anchors) are placed in the bone which contain sutures (**Figure 6**). These sutures are then weaved through the tendon, and the tendon is sewn back to bone (**Figure 7**). In most cases, bioabsorbable anchors are used, which are anchors that dissolve in the body. Occasionally, metal anchors are used. If so, the metal anchors do not need to be removed.

Occasionally, if the tear is severe or longstanding, the surgery needs to be performed with an open incision. This incision is placed in the area of the rotator cuff on the side of the shoulder, and the repair is performed in the same way that

is described above. This is called a “mini-open” rotator cuff repair.

What if I have pain or arthritis of my acromioclavicular (AC) joint?

Pain directly on top of the shoulder in the acromioclavicular (AC) joint can be treated with surgery. The surgery is to remove a small portion of the end of the clavicle bone, to eliminate rubbing between the bones. This then eliminates the pain. This procedure can be performed with the arthroscope. Occasionally, an open incision is used to remove the end of the clavicle. There is no significant problem with arm strength when the end of the clavicle is removed.

What are some of the possible complications of surgery?

Possible complications of the surgery include stiffness of the shoulder after surgery, recurrent tear of the rotator cuff, or continued pain. The use of arthroscopic techniques attempts to limit these complications. Other complications include an infection, bleeding, nerve damage, or problems with the anesthesia. If an open incision is necessary, the deltoid muscle can rarely detach from the bone. The risk of a complication of the surgery is small.

What kind of anesthesia is used?

Usually, the surgery is performed with a combination of general anesthesia (going to sleep) and regional anesthesia. Before the surgery, the anesthesiologist will inject some novocaine around the nerves of the shoulder. This numbs the arm and helps to control your pain after surgery. In addition, you go to sleep (general anesthesia) to help keep you comfortable during surgery.

What do I need to do to prepare for surgery?

Our staff will help to set up the surgery through your insurance company and will instruct you on any paperwork that may be necessary.

Prior to your surgery, you may be asked to get several medical tests, done on an outpatient basis. Most patients need some minor blood tests and a urinalysis. If you are over age 50, you may require an EKG and chest x-ray. Some patients need to see an internist or their family doctor to obtain clearance for surgery.

The night before the surgery, a member of our staff will contact you about what time to arrive for surgery. You may not eat or drink anything after midnight the night before your surgery.

How long will I be in the hospital?

Almost all patients are able to have surgery and go home the same day. Occasionally, patients will be admitted for an overnight stay.

What happens the day of surgery?

The day before surgery you will be told what time to report to the hospital. You will be admitted and taken to a pre-operative holding area where you are prepared for surgery.

You will be asked several times which extremity is being operated on, and the surgical site will be initialled. Please note that you are asked this question many times on purpose.

After the operation, you will be taken to the recovery room to be monitored. Once the effects of anesthesia have worn off and your pain is under good control, you will be taken to another area where you can see your family and finish recovering. You will be given all of your post-operative instructions and pain medication before leaving.

Please be aware that the process of getting checked in, prepared for surgery, undergoing the operation, and recovering from anesthesia takes the majority of the day. We would commend that you and your family members bring along some reading material to make the process easier for all.

How should I care for my shoulder after surgery?

Prior to your discharge, you will be given specific instructions on how to care for your shoulder. In general, you can expect the following:

Diet:

Resume your regular diet as soon as tolerated. It is best to start with clear liquids before advancing to solid food.

Medication:

You will be given a prescription for pain medication.

Bandage:

You will have a thick dressing on the shoulder. You will be instructed on when it can be removed, usually in 3 days.

Showering:

You may shower after your dressing is removed, after 2 – 3 days. You cannot take a bath until the wounds are completely sealed, usually 2 – 3 weeks after surgery.

Sling:

You will have a sling after surgery. How long you need to wear it will depend on the surgery performed. If your rotator cuff is repaired, you will use for 4 to 6 weeks. You can remove it for grooming and physical therapy.

Ice:

You may receive an ice machine that continually surrounds your shoulder with cold water. If not, you may apply ice over the dressings for 30 minutes every hour for several days. Do not use heat.

Suture removal:

Your stitches will be removed at your office visit 7-10 days after surgery. Occasionally, sutures are used which absorb and do not need to be removed.

Follow-up office visit:

You will be instructed on when to follow-up in the office. This is usually 7-10 days after surgery.

Exercise:

You will be instructed on exercises you can do immediately after surgery. You will start physical therapy within 1 to 2 weeks after surgery.

Return to work or school:

You can return to school or work within 3 – 5 days without using the affected arm. If you need the use of the arm to return, you may be out of work or school for a longer period of time.

What will rehabilitation involve?

The rehabilitation is based on several goals: 1) allowing the tissue to heal; 2) regaining motion; 3) regaining strength; and 4) return to sports. The rehabilitation protocol for the physical therapist is attached for you to review.

When can I return to sports?

In general, you will be allowed to return to sports in 6 months after surgery. You must have good motion, strength, and control of your shoulder and arm. How quickly you return to sports depends on several factors, including: 1) your own rate of healing; 2) the damage found at surgery; 3) if you have any complications; 4) how well you follow the post-operative instructions; 5) how hard you work in rehabilitation.

What is the success rate?

Overall, the success rate for rotator cuff tears ranges from 85 to 95% for attaining pain relief. If weakness is a significant problem, the results for regaining strength can be more variable.

Questions?

If you have questions about your injury or the possible need for surgery, please don't hesitate to contact our staff.

