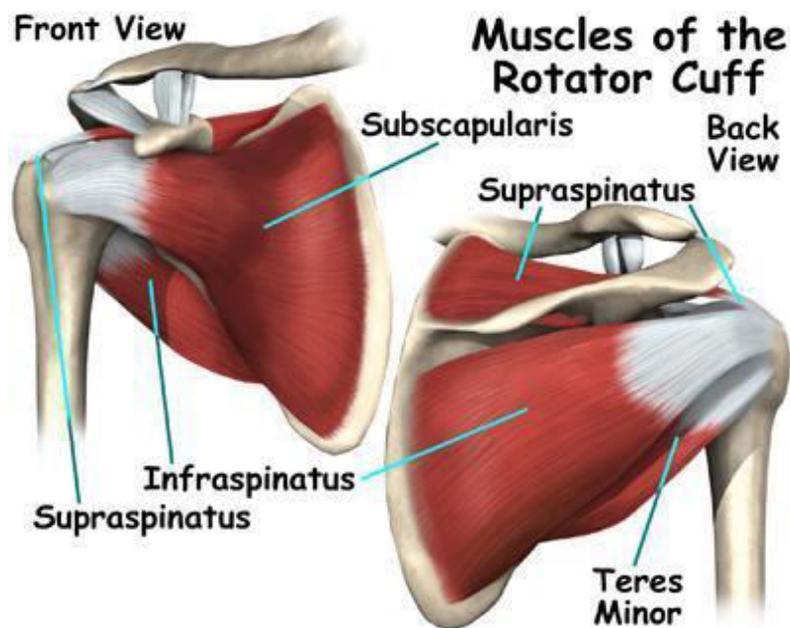


The Rotator Cuff

Your rotator cuff is made up of four small muscles arising from your shoulder blade. As these muscles travel from the shoulder blade towards your shoulder joint, they join together forming one tendon that attaches to the ball portion of the ball and socket joint. Three of the muscles are located on the top and back of your shoulder. The other muscle is located in the front of your shoulder. This complex is called a “cuff” because the tendons join together form a hood surrounding the joint. These muscles are responsible for normal shoulder strength and stability. Tears of the rotator cuff tendon are the most common shoulder injury. These tears usually occur at the attachment of the tendon to the bone rather than within the muscle.



This a a diagram of normal shoulder anatomy.

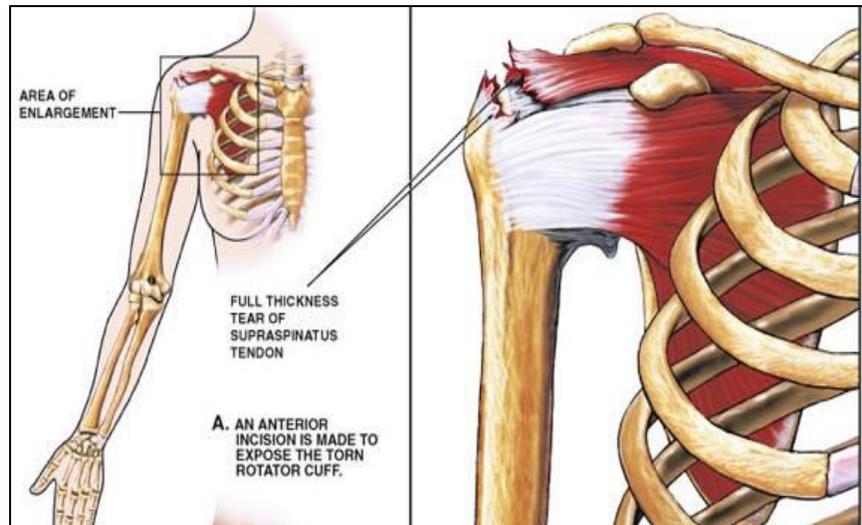
Most rotator cuff tears are age-related. There are changes in the quality of the tendon tissue as we age. As a result, by the age of 60, approximately 30% of people will have a tear that may or may not cause pain, and over 50% of people will have some abnormality of the rotator cuff. A full-thickness tear occurs when the tendon tear is complete, allowing some retraction of the tendon from the end to the bone. A partial-thickness tear is a tear which leaves a portion of the tendon attached. A partial-thickness tear is where some fibers of the tendon, usually on the deep surface, are torn such that the attachment is thinner than it was originally. While most tears are age related, some result from an injury. Occasionally a rotator cuff tear may be caused by or irritated by bone spurs that form above the tendon.

Concerns Regarding Rotator Cuff Tears – Why Operate?

Once a rotator cuff tendon is torn, it does not heal by itself. Because the tendon is attached to muscle, the muscle pulls on the tendon and causes a certain degree of retraction leaving a gap. This gap never fills in and the tendon remains torn unless a surgical repair is performed. Full-thickness tears result in progressive muscle wasting (atrophy) over time. Advanced stages of muscle wasting are irreversible, even with surgery - one reason why your surgeon may recommend early surgery once the diagnosis is made.

There are many factors that affect rotator cuff tendon healing after surgery. Tears are easier to repair earlier rather than later and when they are smaller rather than larger. Tears occurring in younger patients (<65 y/o) are much more likely to heal than

tears in older patients. In some cases tears can be so large and have been present for so long that they are not repairable. Often, this cannot be determined until the time of surgery. Tobacco use has been shown to impair healing after rotator cuff surgery and in some cases may have contributed to the original tear.



Rotator cuff tears can be painful and can often lead to weakness as well. Pain may result from the tear itself or bursitis that forms as a result of the tear. A rotator cuff repair is a very reliable operation for pain relief and restoration of shoulder strength and function. Tendon tissue heals much more slowly than other tissues in your body. For example, if you cut your skin, it will fairly reliably be healed in 7 to 10 days. Rotator cuff tendon tissue, however, heals over a period of six to twelve weeks. While the goal of surgery is to restore a pain-free and functional shoulder there may be some limitation based on the age and the size of the tear. In larger tears or tears in older patients, the tendon repair may not heal. In these cases, pain relief and function are usually good; however, some weakness usually remains in the shoulder. In general, about 90% of

patients are satisfied with their shoulders after rotator cuff repair and have significant improvements in pain and function after surgery.

Biceps Tendon.

The biceps muscle has two attachments at your shoulder. One is outside the joint and rarely ruptures. The other attachment (the long head) is formed by a long, thin tendon which runs up a very shallow groove on the front part of the humerus (arm bone). Once it reaches shoulder level it turns into the ball and socket joint and attaches to the top of the socket. The biceps tendon is often injured or torn in conjunction with rotator cuff tears. We always examine the biceps tendon carefully as part of arthroscopic shoulder surgery. Generally if there is a problem with the tendon, it is best to fix this at the time of surgery rather than leave it as a source of pain in the shoulder joint.

Acromioclavicular Joint.

The acromioclavicular (AC) joint is located between the collarbone and the shoulder blade at the top of your shoulder. There is very little motion at the joint. Rather, it is a strong junction between these two bones held together by very strong ligaments. This joint can develop painful arthritis that is often associated with rotator cuff disease. If this joint is painful, then we address this problem as well. This portion of the surgery involves removal of the outer 5-7 mm of the collarbone preventing painful contact of the collarbone with the shoulder blade. The ligaments are left intact in order to preserve stability and there is no loss of shoulder function. Not everyone with a

rotator cuff tear requires surgery on their AC joint and this will be discussed with you by Dr. Omid.

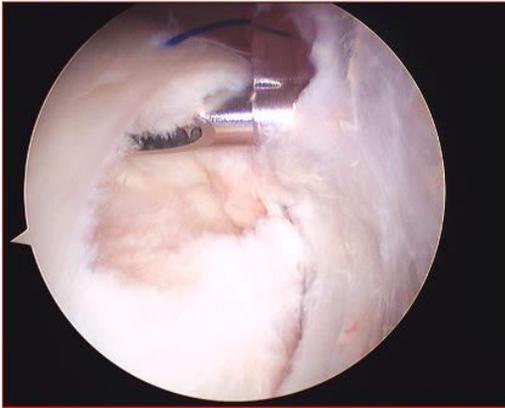
Rotator Cuff Surgery

The rotator cuff surgery you have been scheduled for is to correct the problems that you have been having in your shoulder. Dr.Omid has discussed with you the possible surgeries that may assist in helping correct your problems. Your surgeon has elected to perform the following surgery for you:

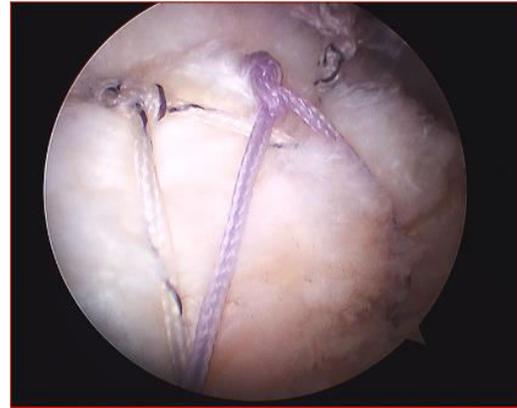
Rotator Cuff Repair

A rotator cuff repair involves reattaching the end of the torn tendon to the bone. This can, in the majority of cases, be performed as an arthroscopic outpatient procedure. An arthroscopic rotator cuff repair requires a few small (1 cm or less) incisions. We make a small incision in the back of the shoulder and a camera is placed inside the shoulder joint. We make a small incision in the front of the shoulder and working instruments are placed through this incision. We examine all the structures in the shoulder at the time of surgery and address any problems that we may see. The camera is then repositioned above the rotator cuff and another incision is made on the side of the shoulder. Instruments are used to remove the inflamed bursa. The rotator cuff tear is then repaired: One or two small incisions are made on the top of the shoulder in order to place anchors. Anchors look like very small screws that have an eyelet through which a couple of sutures are passed. The anchors are placed into the bone where we wish to reattach the tendon. Instruments are used to pass the sutures through the tendon and knots are tied restoring an anatomic tendon insertion to the

bone. The number of anchors required depends on the size of the tear. In some cases of larger cuff tears or tears in front of the rotator cuff tendon, an open (larger incision) may need to be performed. This decision is made at the time of surgery.



Rotator cuff tear



Surgically Repaired Rotator Cuff

Subacromial Decompression

A subacromial decompression involves removal of inflamed tissue within the space above the shoulder joint between the rotator cuff and the acromion which is part of the shoulder blade on the top of the shoulder. If there are any bone spurs present, we smooth them with a small burr. This is a standard part of rotator cuff surgery.

Biceps Tenotomy or Tenodesis

Surgery for a torn biceps tendon involves removing it from inside the joint and reattaching it where it exits the joint. In some cases, we simply cut the tendon and allow it to retract from the joint. The negative consequences of this procedure are possible asymmetry of the biceps muscles (that it will look different from side to side)

and possibly some spasm in the muscle belly which routinely resolves. This rarely causes a problem, and removing the long head of the biceps tendon from the shoulder does not affect shoulder function. The biceps muscle continues to work at the elbow and moving or releasing this tendon does not affect motion or strength of the shoulder. Sometimes a biceps tenodesis can be performed arthroscopically. However, in younger or more active patients, an open biceps tenodesis surgery may be recommended. Your surgeon will discuss this with you prior to surgery. A biceps tendon procedure is only performed if there is a problem with the biceps tendon which is felt to be significant enough to remain a source of shoulder pain after rotator cuff surgery.

Distal Clavicle Resection

A distal clavicle resection is performed if there is pain at the acromioclavicular joint. The decision to perform a distal clavicle resection is based on symptoms. Many patients have changes of this joint on radiographic studies (x-rays or MRI). If the joint is not painful, there is no reason to perform surgery on it, regardless of x-ray/MRI reports. If the joint is painful, surgery is performed to debride the joint and remove about 5-7 mm of the bone. The ligaments are left attached to preserve stability. Performing a distal clavicle resection will not lengthen your recovery period.

Preoperative Planning

Depending on the location of your surgery it may be required to have preoperative testing. In some cases blood work, EKG (heart tracing), or a chest X-ray may be needed. If any of these tests are needed they will be scheduled for you and will be done during pre-testing when you meet with the anesthesia staff. If it has been

some time since you have seen your primary care physician and you have several medical problems, it would be best that you see your medical doctor before your pre-test date.

You will arrive at the hospital approximately two hours before your scheduled surgery time. Procedures are performed on a “to follow” basis. Occasionally, a procedure scheduled ahead of yours may take longer than expected, so there may be some delay before your surgery. Regardless, it is important that you arrive on time.

You should not have anything to eat or drink after midnight the night before surgery. You may be advised to take some of your medications with a sip of water only. The anesthesia staff will discuss this with you at the time of your pre-testing. Upon arrival to the hospital you will go through a check-in process. A nurse will see you, review your records, and an IV will be started. A member of the anesthesia team will meet with you to discuss any anesthesia concerns and anesthetic options. Your surgery will be performed under general anesthesia (you will go to sleep.) In addition, the anesthesiologist may recommend a regional block if they think that you are a good candidate. This involves an injection of local anesthetic (numbing medicine) or placement of a catheter near the nerves at the base of the neck. These blocks are generally recommended to help control your pain following surgery. The anesthesiologist will discuss the risks of the block and the decision to perform this is a mutual decision between the patient and the anesthesiologist.

You can anticipate that your surgery will last approximately 1 ½ to 2 ½ hours, although this varies from case to case. If you have family members with you they will

wait for you in the waiting room. Dr. Omid will speak with them immediately after your surgical procedure to let them know that you are finished. During your surgery, family members should plan on remaining in or near the waiting area in order to be accessible at the completion of the procedure. Belongings will be stored in a locker in the pre-operative area.

When you wake from surgery you will be located in the post-operative recovery room. Once you have been stabilized and are comfortable family members will be invited to sit with you while you continue recovering from surgery. Criteria for discharge include that your pain is under control and that you are eating, drinking, and able to walk to the bathroom with minimal assistance. You will have a dressing on your shoulder and your arm will be immobilized in a sling.

POST-OPERATIVE CARE

After surgery your shoulder will be placed in a sling as directed by your Dr. Omid. The sling is used to limit motion of your shoulder so that the rotator cuff tendon can incorporate and heal. In some cases where the repair must be carefully protected, your arm may be placed in a sling with a pillow that is attached around your waist. It is very important to wear your sling as directed by your Dr. Omid after surgery. The sling is typically used for 4 to 6 weeks after surgery. You may remove your arm from the sling to bend and straighten your elbow and to move your fingers several times a day. **You should not do any reaching, lifting, pushing, or pulling with your shoulder during the first six weeks after surgery.** You may remove the sling to bathe, dress, and perform elbow range of motion several times a day.

Risks and Complications

The list below includes some of the common possible side effects from this surgery. Please note that this list includes some, but not all, of the possible side effects or complications. Complications may include complications from anesthesia, infection (very rare with arthroscopic procedures) , nerve injury (extremely rare), blood vessel injury (extremely rare), bleeding (extremely rare), shoulder stiffness, failure of repair (failure of the tendon to completely heal to bone), failure of the anchors or sutures, failure to improve your symptoms as much as you had hoped, a blood clot can form in your arms or legs and very rarely travel to your lungs, complex regional pain syndrome (a painful condition involving the arm).

Postoperative Care

1. Sling instructions. Your sling must be worn for approximately six weeks after surgery. It is for your comfort. Wear your sling while sleeping or riding in a motor vehicle. You may remove your sling while resting or sitting with your arm at your side, however, when you are up and about we recommend wearing this as a reminder to avoid any reaching, lifting, pushing, or pulling. You should make it a point to remove your arm from the sling three to four times a day to bend and straighten your elbow and move your wrist and hand. Otherwise you may walk around and sit up as much as you like.
2. Diet. We recommend that you eat a light diet the evening of surgery and the next day but you may resume eating a regular diet as soon as you tolerate it.

3. Pain control. When you are discharged from the hospital you will be given a prescription for pain medicine. You may take this medicine as prescribed. You will be given the option to purchase a cold pack machine. This machine has a sleeve which is attached to an ice cooler. You place ice and some water in the cooler and plug this in to a regular outlet. This circulates cold water through the shoulder sleeve providing relief of pain and swelling after surgery. You should keep ice on the shoulder frequently for the first 48-72 hours after surgery. We recommend icing 2-3 times per day for the first week especially before sleep. We do recommend that you put a t-shirt or a thin towel between you and the sleeve so that it doesn't injure your skin.

4. Wound care. You may remove your dressing and shower 48 hours after surgery if you do not have a pain catheter. If you have a pain catheter, this should be removed by a family member 72 hours after surgery along with the shoulder dressing. You may then shower. You may not get in a tub or pool and immerse the incisions underwater for six weeks but you may get in the shower and let the water run over them. Pat the incisions dry afterwards, and place band-aids over the incisions. There is no need to place any ointment over the incisions. If you notice drainage, swelling or increased pain 5 days after surgery please call the office. Redness around the incision is very common and should not be a concern unless it is associated with drainage 5 days after surgery, redness spreading away from the incision or fevers.

5. Sleep. It is often very difficult to sleep in the week or two following rotator cuff surgery. The surgery itself may interfere with your sleep-wake cycle. In addition, many patients have increased shoulder pain lying flat on their back. We recommend that you

try sleeping in a recliner or in a reclined position in bed. You may place a pillow between your body and your arm and also behind your elbow in order to move your arm away from your body slightly. You should wear your sling when you sleep.

6. Driving. Operating a motor vehicle may be difficult due to your inability to use your operative arm. If you should have an accident or get pulled over while wearing a sling, the authorities may consider that driving while impaired. The decision to drive is based on your comfort level with driving essentially one-handed. If you need to drive, and a rotator cuff repair has been performed, you should wait at least until you have seen your doctor at the first postoperative visit. No one should operate a motor vehicle while taking narcotic medications.

7. Physical therapy. The decision to prescribe physical therapy and when to start these activities is made on a case by case basis. This will be discussed with you on your first postoperative visit. You may be instructed by your surgeon /recovery room nurse to begin gentle range of motion exercises on the day of surgery. These will be self directed exercises that you start on your own.

Medications to Avoid Before and After Surgery

Medications that increase the chances that you will bleed excessively after surgery include:

1. Aspirin, enteric-coated, baby, and plain aspirin or any other product containing aspirin. In some cases, we may recommend stopping your aspirin 1 week before surgery. In other cases, low-dose aspirin may be continued based on your medical condition. Please discuss with your surgeon.

2. Coumadin – discuss this with the prescriber as to the best time to stop this medication before surgery.
3. Celebrex.
4. Ibuprofen (Advil, Motrin) - stop 1 week prior to surgery
5. Naprosyn (Aleve) - stop 1 week prior to surgery
6. Plavix – discuss this with the prescriber as to the best time to stop this medication before surgery.

Some over-the-counter herbs can also effect bleeding. These include chondroitin, danshen, feverfew, garlic tablets, ginger tablets, ginko, ginseng, and quilinggao and fish oil.

After rotator cuff repair, you should avoid all anti-inflammatory medications including ibuprofen (Advil, Motrin) and naprosyn (Aleve) and any other prescription anti-inflammatories, unless your surgeon prescribes them. Do not resume these medications until your doctor says that it is okay. You may take Tylenol unless otherwise instructed not to do so.