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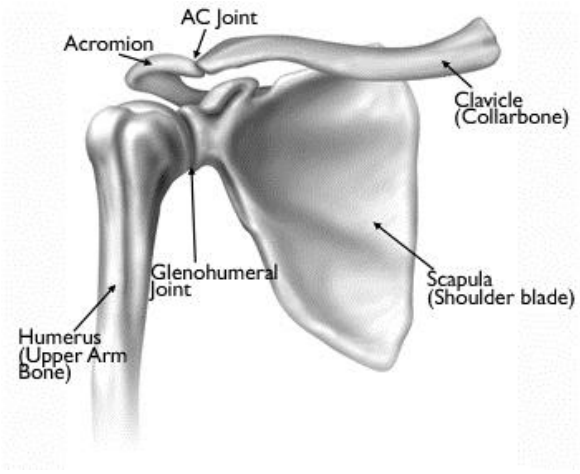
The Shoulder - Rotator Cuff injuries

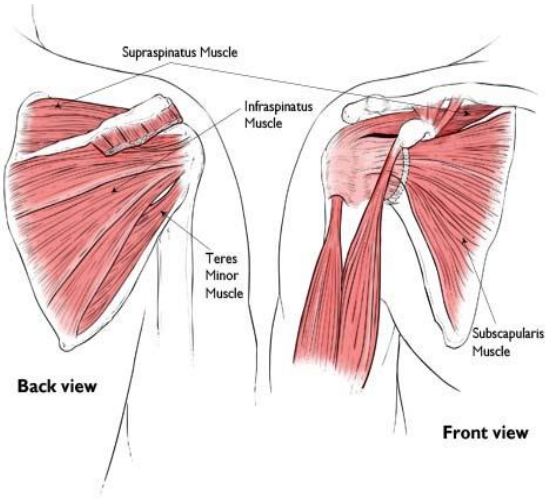
The shoulder is a ball and socket joint. The head of your upper arm bone (humeral head) articulates into the round socket (glenoid). These two bones form the glenohumeral joint. The articular cartilage covers the surface of the ball and the socket. It creates a smooth, frictionless surface for the humeral head and glenoid.



Rotator cuff. There are four muscles and tendons that surround the shoulder capsule that support the shoulder joint. These 4 muscles and tendons combined envelop the shoulder and are called the "Rotator cuff." The rotator cuff control the shoulders movements and helps keep the shoulder stable.
The supraspinatus tendon runs over the top of the humeral head. This is the most commonly injured rotator cuff tendon. The subscapularis runs across the front of the shoulder. The infraspinatus and teres minor run across the back of the humeral head.

Causes of Rotator cuff disorders

Rotator cuff disorders are mulifactoral:



1. Repetitive activity.
2. Recent trauma.
3. Old trauma.
4. Improper training patterns.
5. Age - As you get older the weaker the rotator cuff tendons become. Chronic degenerative tears can develop.
6. Genetic predisposition.

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Rotator cuff Tendinitis/Impingement. The rotator cuff tendons and/or subacromial bursa can be inflamed and swell with fluid in the bursa and cause pain. The symptoms may start out very mild. These symptoms may include, but not limited to, varying degrees of pain over the lateral side of the arm, sudden pain with lifting and reaching movements and pain at rest. Athletes of overhead sports may have pain with throwing or serving a tennis ball.

As the problem progresses, the symptoms can increase and you may experience night pain, loss of strength and difficulty with simple activities of daily living.

When you raise your arm to shoulder height (or 90 degrees), the space between the acromion and rotator cuff tendon (subacromial space) narrows. The undersurface of the acromion can rub against or "impinge" the rotator cuff tendon and the bursa, causing pain and inflammation.

Rotator cuff tears. Rotator cuff tendonitis can progress and worsen and eventually rotator cuff tears develop. This process can occur sooner as a result of injury.

Rotator cuff tears can be a variety of shapes and sizes - ranging from small partial tear to massive retracted tears. Treatment is varied based on the nature of the tear and individual differences in pain level, goals, etc.

Some rotator cuff tears are asymptomatic and require no treatment. Over 50 % of asymptomatic volunteers over age 60 have a partial or complete rotator cuff tears on a MRI.

We treat tears when they are symptomatic and effect someone's quality of life.

Most rotator cuff tears are the result of wear and tear of the rotator cuff tendon over time. Acute injuries such as falling on an outstretched arm, repetitive or sudden heavy lifting and jerking motion can cause a rotator cuff tear. Patients under 40 years old are more likely to have an acute rotator cuff tear where a patient 60 years and older is more likely to have a degenerative rotator cuff tear.

Activities that could contribute to rotator cuff tears: Throwing sports, tennis, rowing, and weightlifting can put a patient at risk for wear and tear of the rotator cuff. Painters, carpenters, and other jobs that require overhead work are at a greater chance of tearing the rotator cuff. A complete rotator cuff tear has no chance of healing back to the bone and requires surgical management.

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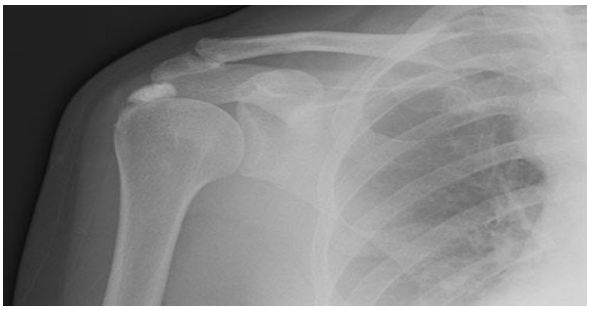
Calcific Tendonitis. Calcific tendonitis refers to a build-up of calcium in the rotator cuff tendon (calcific deposit). When calcium builds up in the tendon, it can cause a buildup of pressure in the rotator cuff tendon, as well irritation and shoulder pain. There is no known cause of calcific tendonitis. If conservative treatment does not relieve your symptoms, surgery may be recommended.



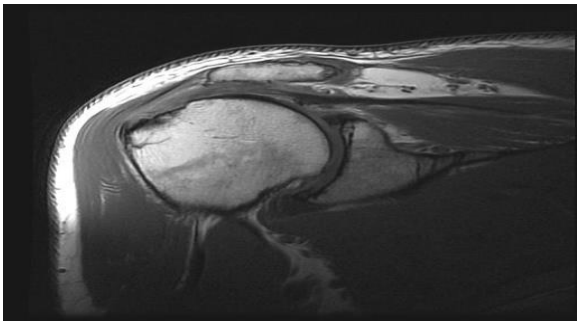
Non-operative treatment options

Non-steroidal anti-inflammatory drugs (NSAIDS). The most common side effects of NSAIDS include, but not limited to, nausea, vomiting, upset stomach, gastric ulceration/bleeding. You should not take NSAIDS while on blood thinners (i.e. Coumadin/Warfarin, Plavix, Xarelto, etc. If you have any questions, contact our office or your medical doctor.) It is recommended to take this medication with meals.

Formal Physical therapy - If physical therapy is recommended to treat your condition, you will choose a therapist to work with you. Not all conditions require or will be beneficial with formal physical therapy. If you are not familiar with a physical therapist in the area, we will help in assisting you find a therapist. If formal physical therapy does not resolve your symptoms, surgery may be recommended to treat your condition.

Cortisone injection - The goal of a cortisone injection is to decrease localized inflammation in your shoulder. A cortisone injection provides a quicker response than anti-inflammatory (NSAIDS) medications given by mouth. There is a slight risk (although rare) of infection, localized skin irritation, post injection soreness (which typically resolves within 48 hours - if this occurs at all) and there is also the chance that the injection will ultimately not relieve your pain.

Diagnostic Testing



We will begin by taking X-rays of your shoulder to evaluate the bony structures in your shoulder. You may need a MRI (magnetic resonance imaging) if rest and conservative treatment (NSAIDS and/or a cortisone injection and formal physical therapy) does not completely resolve your shoulder symptoms. A MRI allows for highly sensitive and specific imaging of the muscles, tendons and cartilage in your

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shoulder. A MRI will be scheduled by our office as well as a follow up appointment to review the MRI and discuss further management for your shoulder.

Surgical options for the rotator cuff

Shoulder arthroscopy may be the next step in your treatment. Usually, there is enough room between the acromion (a bone off our your scapula or shoulder blade) and the rotator cuff tendons so that the tendons slide easily underneath the acromion as the arm is raised. In patients with tendonitis/impingement who have not gotten well with non-operative treatment, we can surgically increase the space for the rotator cuff by removing bone from the roof of your shoulder. This is called an arthroscopic subacromial decompression. This is an out-patient procedure. Using an arthroscope and video camera, the structures in your shoulder will be evaluated. Once subacromial impingement has been confirmed, a subacromial decompression or acromioplasty will be performed. The underside of the acromion is flattened out to "make more space" for the rotator cuff tendon to glide smoothly under the acromion.

Rotator cuff repair

During arthroscopic rotator cuff repair, special instruments are utilized to sew the torn rotator cuff tendon back to the bone. This is also done arthroscopically through small incisions around the shoulder. Those stitches hold the rotator cuff down to bone.

Rotator cuff repair is completed on an out-patient basis. The day of the procedure, you will be seen by an anesthesiologist prior to surgery. The anesthesiologist will discuss a "nerve block" for your shoulder so that your whole arm goes to numb prior to the surgery and stays numb for anywhere between 12-24 hours after your surgery. The surgery is performed under general anesthesia. The surgery takes anywhere from 1 to 1 1/2 hours. When you wake up, you will have a shoulder immobilizer stabilizing your shoulder. You will stay in the recovery room until you are safe to go home.

Rehabilitation

The rehabilitation varies depending on the size and severity of the tear. In general, stitches are removed 3-5 days after surgery and physical therapy is begun at 5-10 days. The early goal of physical therapy is to restore motion. Most patients that have a rotator cuff repair use their sling/immobilizer, most of the time, for 3 weeks and then start weaning out of it. Patients can do most light day to day activities within 3-4 weeks after surgery. Active overhead activities begins 6-8 weeks post-op. Recreational activity like tennis and golf can begin around 4 months post-op.

Risks of surgery

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There are risks associated with surgery. These risks are rare, but can occur.

These risks are:

1. Infection.

2. Injury to nerves or blood vessels.

3. Risks of general anesthesia.

4. You can get blood clots in your legs or lungs. If you or an immediate family member have ever had a blood clot, it is important to inform our office so appropriate medical workup can be completed. This may require an evaluation and workup by a hematologist. Our office will set this up for you, if needed.

5. The most common risk of surgery is shoulder stiffness. This can be avoided with proper adherence to the post-operative rehabilitation protocol.

The surgery is **arthroscopic** - which is a minimally invasive procedure using tiny incisions in the skin to allow visualization of the shoulder joint and subacromial space.

This is an outpatient procedure.

Depending on your medical history, we may recommend surgical clearance by your primary care physician and/or cardiologist, hematologist, etc.

General Information

- You will be in a sling for 3 - 5 days for a shoulder arthroscopy (includes a subacromial decompression and/or distal clavicle excision - no rotator cuff tear)
- You will be in a sling for 3 weeks if you need a rotator cuff repair
- No driving while in the shoulder sling - Approximately 3 - 5 days after shoulder arthroscopy. Typically 3-4 weeks after rotator cuff repair.
- No driving for at least 6 hours after taking a pain pill (i.e. Percocet, Demerol, Dilaudid, Hydrocodone, etc.)
- Formal physical therapy 2 - 3 times/week. Duration of formal physical therapy is dependent on your surgery and progression with therapy. Typically 3 - 4 months of formal therapy.
- Your work status will be discussed at your post-operative appointments.