

## Rotator Cuff Arthropathy

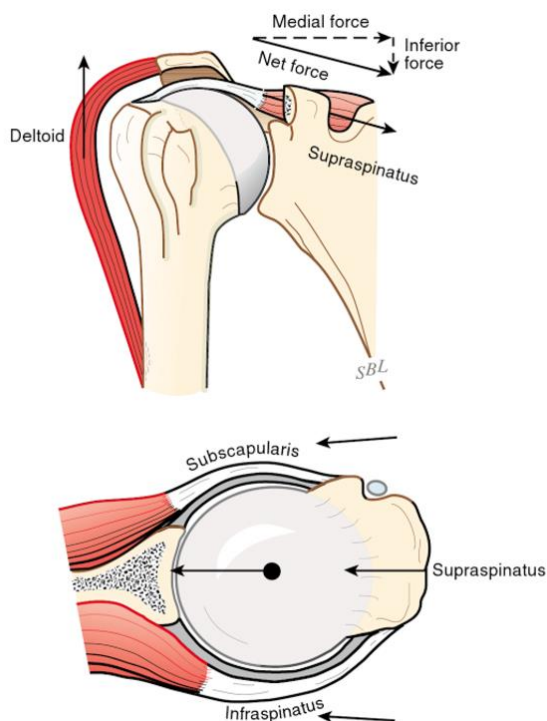
Jeff Horinek, MD

### Symptoms

Rotator cuff arthropathy, or shoulder arthritis with a chronic rotator cuff tear, causes pain and lack of function typically in people over the age of 60. The hallmark is pain and reduced overhead function. Typically, passive motion is preserved but active overhead motion is limited. If motion is not limited, weakness is present. This results in difficulty sleeping and difficulty with overhead activities from combing one's hair or simply shaving to sports such as tennis or golf. The diagnosis is typically obvious on X-rays which show a reduced joint space and superior migration of the humeral head.

### Causes and Anatomy

The shoulder is the most mobile joint in the body. Normally, the rotator cuff keeps the humeral head or ball centered within the joint by pulling the ball into the socket through a mechanism referred to as a concavity compression.



When the rotator cuff tear is chronically torn it enlarges to become a massive tear. This disrupts the stability of the joint. The loss of rotator cuff function allows the deltoid to pull the humeral head superiorly. This then results in arthritis over time as the humeral head hits the acromion. The humeral head then develops “adaptive” changes or rounds off.



**Rotator Cuff Arthropathy**



**Normal Shoulder**

### **Treatment**

In the case of mild rotator cuff arthropathy conservative treatment should be attempted. Severe rotator cuff arthropathy may require surgery if someone is in good health and has limitation in quality of life. Deciding to perform surgery is based on quality of life rather than X-rays. For the most part, rotator cuff tears and arthritis progress slowly over years. Age is also a factor in treatment, but in today’s world health is more important than age. Because the diagnosis is obvious on X-rays, an MRI or CT scan is only needed if surgery is being considered.

Treatment options include:

**Medications:** Anti-inflammatories such as ibuprofen (Motrin or Advil) and naproxen (Aleve) are used to reduce pain and inflammation. The max dose for ibuprofen is 800 mg three times per day. The max dose for naproxen is 500 mg twice daily. Prolonged usage should be avoided, and these should be taken with food since they can affect the stomach lining. If one experiences an upset stomach these should be stopped. Anti-inflammatories are generally contraindicated in patients who are taking blood thinners.

**Injection:** An injection of steroid (cortisone) into the shoulder is one of the most common means to provide pain relief. One of the keys is the location of the injection. I perform shoulder injections with an ultrasound machine. This allows direct visualization of the joint and improved accuracy of the injection. Up to 3 injections over a 2-year period are allowed. Beyond this there are typically diminishing returns and excessive injections may be detrimental to the tissue. Additionally, injections within 3 months of surgery raise the risk of infection so they should be limited if someone is seriously considering surgery.

Alternative injections include Toradol (an anti-inflammatory agent similar to ibuprofen), prolotherapy, or platelet-rich plasma (PRP). I use Toradol in people who do not tolerate steroids. Prolotherapy involves injecting a substance such as sugar into tissue to “stimulate a healing response.” I do not perform prolotherapy as it has not been shown to improve symptoms in shoulder arthritis.

PRP involves taking a small amount of blood from a patient, spinning in a centrifuge to separate the growth factors from the red blood cells, and then injecting the growth factors back into the shoulder to potentially decrease pain. This is done in the clinic and takes about 15-20 mins to perform. PRP is believed to have anti-inflammatory properties and the injection is a safe, low-risk procedure. However, this is mostly commonly used for arthritis without a rotator cuff tear.

**Stretching:** Physical therapy with strengthening is one of the mainstays of treatment of rotator cuff tears and rotator cuff arthropathy. Although therapy does not heal the rotator cuff, therapy can lead to substantial improvements in function with good patient satisfaction. The core exercises in strengthening the rotator cuff are provided at the end of this handout. These exercises can be performed twice per day, 5 days a week.

**Surgery:** In the event that symptoms do not improve with conservative care, surgery is an option. In most cases the most reliable option is reverse shoulder replacement. Many people have heard of a hip or knee replacement but don't know about shoulder replacement. While less common than hip or knee replacement, the surgery is very effective and has a lower risk of complication than hip or knee replacement. This procedure requires general anesthesia with an incision in front of the shoulder and takes about 1 hour to perform. The ball and the socket joint are resurfaced with a metal and high-strength plastic prosthetic implant in order to remove pain and improve range of motion. The reverse shoulder stabilizes the joint by placing a ball on the socket and a cup on the arm bone side to restore stability to the joint. This allows the deltoid and remaining shoulder muscles to work effectively and restore function in addition to providing pain relief.



This can be an outpatient procedure, meaning that people go home on the day of surgery. A sling is worn for 4 weeks after surgery with use of the elbow, wrist, and hand only for general activities. The success rate is over 90%. Range of motion improvement can be substantial and pain relief can be complete since the arthritis is removed. Risks include infection (less than 1% in my patients), and component loosening over time (90% of the implants are still in 10 years after surgery and 70-80% are in 20 years after surgery).

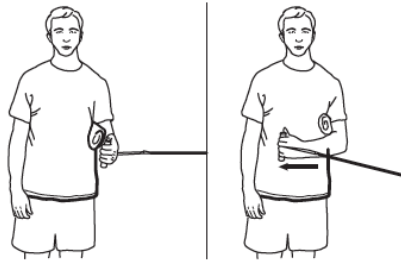
For more information see the handout on the list of commonly asked questions after shoulder replacement.

## Strengthening: The "4 pack" with Theraband

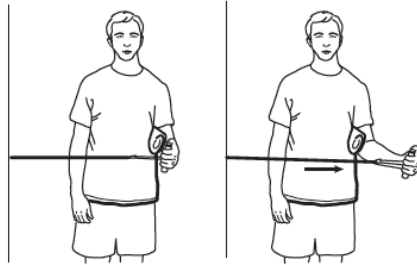
10 repetitions per set, 2 sets, twice daily

Therabands: red → green → blue

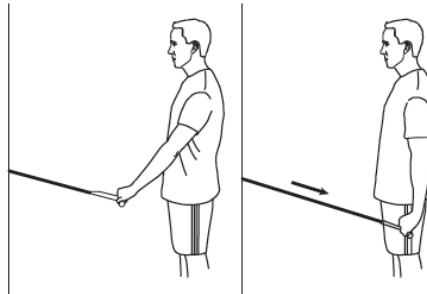
Inward rotation



Outward rotation



Low row



Biceps Curl

