

Rotator Cuff Tears and Surgery

WHAT IS THE ROTATOR CUFF?

The rotator cuff is made up of four muscles and tendons around your shoulder (Figure 1). These include the subscapularis, supraspinatus, infraspinatus, and teres minor. These muscles originate on the shoulder blade (scapula) and attach to the ball of your shoulder (humeral head). Each muscle and tendon has its own specific function, but together, they help to stabilize and move the shoulder.

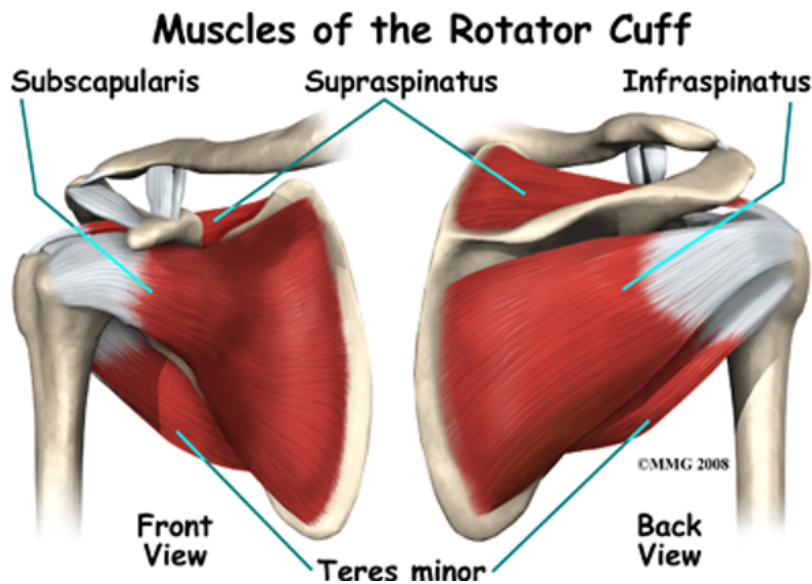


Figure 1

WHAT CAUSES A ROTATOR CUFF TEAR?

A rotator cuff tear may result from an acute injury such as a fall or may be caused by chronic wear and tear which results in degeneration of the rotator cuff tendons. In patients who have a large bone spur under their acromion (bone above the rotator cuff), there may be an increased risk of tear; this is known as subacromial impingement. Rotator cuff tears are a common aspect of aging and are found in 20-30% of patients age 60 or older, however, not all these rotator cuff tears will be symptomatic.¹ In about 50% of patients, asymptomatic tears may become symptomatic after several years.²

WHAT ARE THE SYMPTOMS OF A ROTATOR CUFF TEAR?

Common symptoms include pain in the front or side of the shoulder that radiates down the arm. This tends to be worse with overhead activities such as lifting or reaching away. Activities that require reaching above the head, such as brushing your hair or reaching up to a high shelf, may be difficult or painful. Other symptoms include weakness, limited motion, and an occasional catching sensation. Additionally, night pain is common and can affect sleep.

WHAT ARE NON-SURGICAL TREATMENT OPTIONS FOR ROTATOR CUFF TEARS?

Most patients with rotator cuff tears and injuries can be managed without surgery. Nonoperative management includes rest, activity modifications, non-steroidal anti-inflammatory medications, a home exercise program (see separate handouts), formal physical therapy, and injections such as corticosteroid or platelet rich plasma injections. While nonoperative management will not heal the torn rotator cuff tendon, symptom relief and improved function is experienced by most patients. Non-operative management of degenerative chronic rotator cuff tears can be successful in greater than 70% of patients for long term management of their condition.³

ARE CORTICOSTEROID INJECTIONS SAFE FOR ROTATOR CUFF TEARS?

In general, corticosteroid injections are safe when used appropriately and sparingly. There is some concern that multiple corticosteroid injections may further degenerate the rotator cuff tendon and surrounding tissue, resulting in worsening function and ultimately, inferior outcomes with future rotator cuff repair.⁴ Because of this, Dr. Schuette will typically recommend surgical intervention if lasting relief is not obtained after a single corticosteroid injection and other non-surgical treatments. In patients who are not surgical candidates, multiple injections may be considered. Lastly, surgical intervention will need to be delayed for 6 weeks following a corticosteroid injection due to the small increase in infection risk.

WHEN IS SURGICAL INTERVENTION FOR ROTATOR CUFF TEARS RECOMMENDED?

Generally, rotator cuff repair surgery is recommended for acute rotator cuff tears following an injury, large tears in younger patients, or chronic tears in patients who have undergone extensive non-surgical management without adequate symptomatic improvement.

HOW IS ROTATOR CUFF REPAIR SURGERY PERFORMED?

Rotator cuff surgery is most often performed arthroscopically (Figure 2). A camera is used to look inside the shoulder and small instruments are used to manipulate and repair the torn rotator cuff tendon back to the humeral bone (Figure 3). This is typically done using bone anchors and sutures. In some cases, where there is just a partial tear, a collagen patch (Figure 4) may be used instead of anchors and suture. And in cases where the tendon quality is poor, a collagen patch may be used in addition to a traditional repair. This technique of “patch augmentation” has been shown to decrease retear rates for full thickness tears and improve outcomes for partial thickness tears.^{5,6}

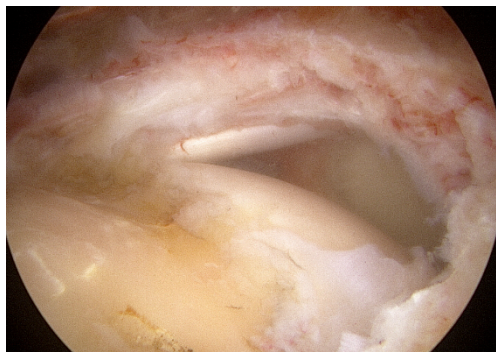


Figure 2: Arthroscopic view of a torn rotator cuff tendon



Figure 3: Arthroscopic view of a repaired rotator cuff tear

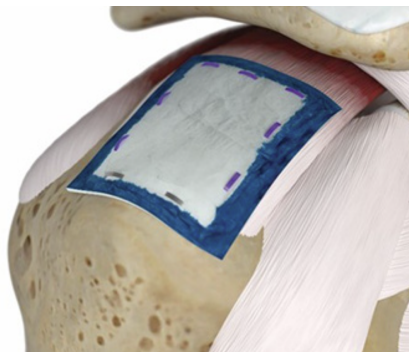


Figure 4: Schematic of a collagen patch

Often, the biceps tendon is torn or involved with the rotator cuff tear. If this is the case, a biceps tenodesis will be performed. This involves cutting the biceps tendon and reattaching it to the top of the humeral head with an anchor and sutures. Biceps tendon tears can be a frequent cause of pain if left untreated, and because of this, a biceps tenodesis is often recommended. Additionally, a bone spur on the acromion (bone above the rotator cuff) is frequently found and can cause impingement on the rotator cuff. If this is found, the bone spur will be removed at the time of surgery.

WHAT HAPPENS IF MY ROTATOR CUFF CANNOT BE REPAIRED?

In some cases, such as with very large or chronic tears, the rotator cuff tendon is unable to be repaired. This is often due to tendon loss, tendon retraction, or muscle atrophy. In this situation, there are several options to improve symptoms and function. These options include a partial repair, superior capsular reconstruction, subacromial balloon spacer, tendon transfer, or reverse total shoulder replacement. Each option has its own advantages and disadvantages, and, if indicated, Dr. Schuette will discuss which option he believes may be best for you.

WHAT ARE THE MOST COMMON COMPLICATIONS FOLLOWING ROTATOR CUFF REPAIR?

The most common complications following arthroscopic rotator cuff repair are stiffness and retear of the tendon. While stiffness is common following rotator cuff repair, this generally resolves and improves over time. In fact, studies have shown that initial stiffness following arthroscopic rotator cuff repair is indicative of rotator cuff healing and may decrease the risk of a retear.^{7,8} Typically, stiffness will resolve with physical therapy and conservative treatment; however, rarely repeat surgery to release scar tissue may be needed.

Rotator cuff retear can be a common complication following arthroscopic rotator cuff repair; however, even if retears do occur, significant symptomatic improvement is still experienced by most patients. Retimear rates vary significantly based on tear size, tendon quality, and patient specific factors. Retimear rates are typically 10%-50% but may be even higher for very large tears.⁹ If a retimear does occur, it will most often occur within the first 6 months. Because of this, it is important to protect the repair during the early postoperative period.

If a biceps tenodesis is performed, occasionally a biceps “popeye deformity” may be noted. This occurs in about 5-10% of patients.^{10,11} If this does occur, it is typically not associated with any pain or negative symptoms. For most patients, this is more of a cosmetic issue than a functional issue.

FREQUENTLY ASKED POSTOPERATIVE QUESTIONS

What type of anesthesia is used for an arthroscopic rotator cuff repair?

An interscalene brachial plexus nerve block along with general anesthesia is typically used for rotator cuff surgery. You can discuss options for anesthesia with your anesthesiologist prior to surgery. A nerve block numbs the shoulder and arm during and after surgery. Depending on the type of block, this may last between 12 hours and 3 days.

How is surgical pain managed?

Pain after a surgical procedure is unavoidable but appropriate medication and ice therapy is implemented to manage pain. Additionally, your interscalene brachial plexus nerve block will help with immediate post operative pain. Most patients successfully manage pain with narcotics, Tylenol, anti-inflammatory medication, and ice. It is our goal to wean patients off narcotic medication within 1-2 weeks.

How long do I need to wear a sling?

The sling is meant to protect, not strictly “immobilize” the arm. The sling should be used intermittently for approximately 6 weeks after surgery. It is especially important to sleep in the sling and use it when out in a public place the first 6 weeks after surgery. Unless instructed otherwise, the sling should be removed at least 3 times a day in order to bend and straighten the elbow as well as perform passive shoulders motion exercises. Performing gentle hand exercises such as lightly squeezing a ball helps minimize swelling that can occur in the hand and fingers.

What are common problems experienced immediately after surgery?

Most people have some difficulty sleeping after shoulder surgery; however, in most cases, patients will have experienced sleep disturbances from their shoulder prior to surgery. Sleeping in a recliner or propped up on pillows can help. Over time, most people are able to sleep on the side that was operated on and will find that their overall sleep is significantly improved compared to prior to surgery.

Is physical therapy necessary after my rotator cuff repair?

During the first few weeks following surgery, physical therapy (PT) will not be needed. However, you will be instructed on gentle passive shoulder range of motion exercises that may be performed during the first few weeks. At your first postoperative visit you will be provided with a PT order. We believe seeing a physical therapist is important so the progression of activity is done in a safe manner, leading to the best possible result.

When can I start strengthening after my rotator cuff repair?

While you will be able to progress your active motion and progressively return to most daily activities at 6 weeks, we refrain from any strengthening until 3 months. At 3 months, light strengthening will be allowed with progressive strengthening at 4.5 months.

Healing of the rotator cuff tendons takes time. As a guideline, one can assume that the strength of the repair is only 30% of normal at 6 weeks postop, 50% of normal at 3 months postop, and improves to 80% of normal at 6 months postop.¹² Because of this, we take a slow and gradual approach to strengthening in order to maximize our patients' outcomes.

When can I go back to my regular daily and physical activity?

The answer to this question varies for every individual depending on the activity. Cardiovascular exercise is important and encouraged after surgery; walking or riding a stationary bike without putting pressure on the operative arm are good activities to begin in the days or weeks after surgery. Most patients can independently perform all activities of daily living at 2-3 months following surgery.

When can I go back to work?

If work is more sedentary, such as computer-based work, returning a few days or weeks after surgery may be reasonable. For more physically demanding jobs it is important to discuss job requirements with Dr. Schuette to fully understand how the surgery may impact returning to work. Returning to a physically demanding job may take 4-6 months.

When can I return to activities such as golf, racket sports, jogging, and swimming?

In general, you will be allowed to chip and putt 3 months after surgery and return to full golf activities at 6 months. A similar progressive return to racket sports is recommended. Light jogging is allowed about 2-3 months after surgery. Swimming is allowed once full active shoulder range of motion has been achieved and light strengthening has begun; this is typically 3 months after surgery.

What is the typical rehab protocol following rotator cuff repair?

Please see Dr. Schuette's "Universal Shoulder Protocol", which is most frequently used. In certain cases, such as partial tears where the tendon is repaired with only a collagen patch the "Accelerated Shoulder Protocol" may be used. TCOmn.com/Hayden-Schuette

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