

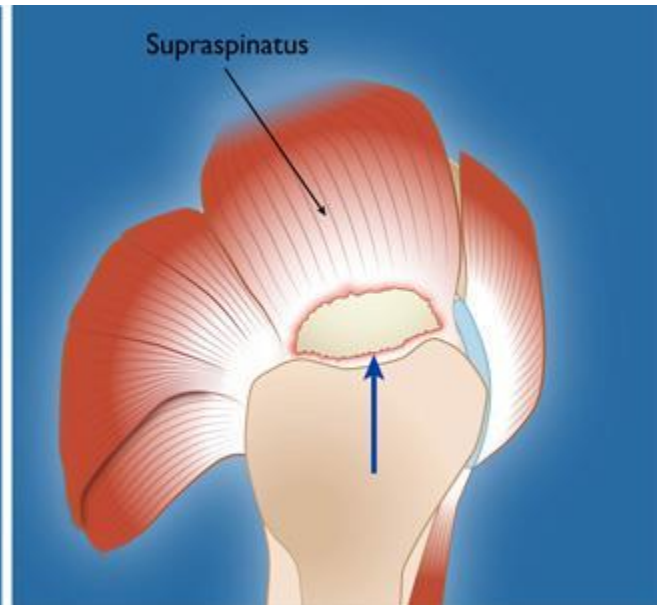
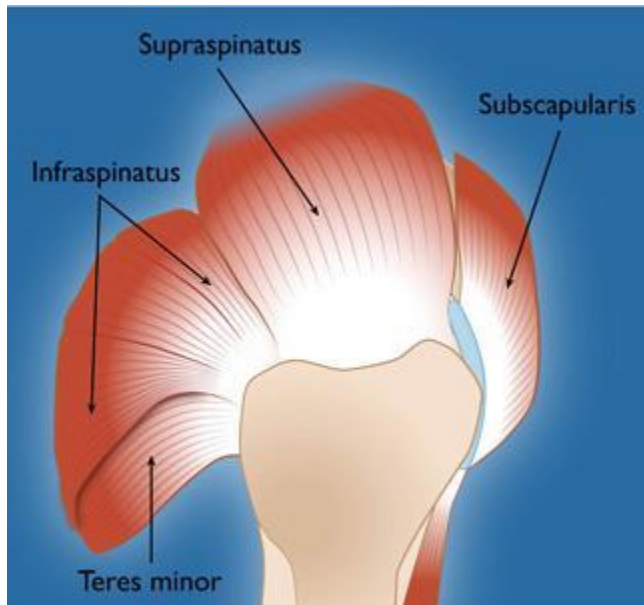
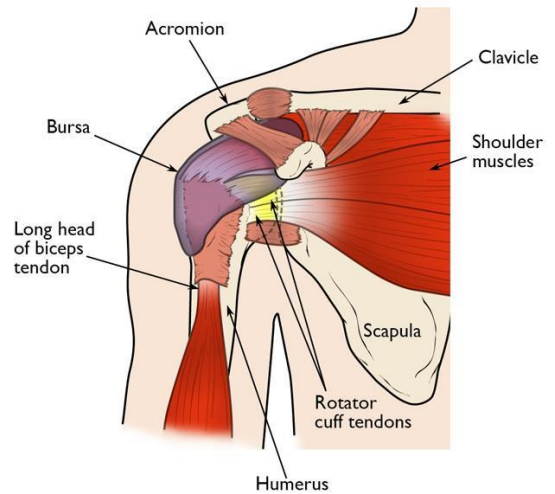
## **A PATIENT'S GUIDE -- ARTHROSCOPIC ROTATOR CUFF REPAIR**

*This is a brief overview of what an Arthroscopic Rotator Cuff Repair entails. If you have any questions, please write them down and bring them to your next clinic visit so I can answer them for you in detail.*

### **WHAT IS A ROTATOR CUFF TEAR?**

The rotator cuff is a collection of four muscles that are responsible for shoulder motion. Each of the muscles attach to the humerus bone via the tendon. The tendinous portion is where most tears occur.

Injury to the rotator cuff tendon can be traumatic, typically with an acute onset, or gradual in nature, as in overuse or aging. The degree of injury can range from inflammation (tendinitis), to partial tearing, to complete or full-thickness tears. The location, type, and size of the tear will determine the course of treatment you will need.



**[Left] Overhead view of the four tendons that form the rotator cuff. [Right] A full-thickness tear in the supraspinatus tendon (Blue arrow).**

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### ***Impingement / Subacromial Bursitis***

When a rotator cuff is not torn but rather inflamed due to rubbing on the bone above it (the acromion), it is called impingement. Impingement can be painful and can reduce your ability to move your shoulder. When the bursa, a fluid-filled sac between the rotator cuff and the acromion, is inflamed, it is called bursitis. Bursitis is typically caused by overuse, as seen in racket sports, weightlifting, etc.

Depending on the level of irritation, age, and symptoms, subacromial bursitis can be treated with oral anti-inflammatories (NSAIDs), physical therapy, an injection, or surgery. Conservative treatment (PT, NSAIDs, injection) is usually the first line treatment. If conservative treatment does not improve one's pain, then surgery may be recommended. Surgery usually involves "cleaning up" the joint, removing the bursa, and, if necessary, removing some of the undersurface of the acromion (bone spur) to help create more space for the rotator cuff to move freely.

### ***Partial Rotator Cuff Tear***

When a rotator cuff tendon is partially torn, some amount of tendon is still connecting the muscle to the bone. The amount of tearing is usually described as a percentage (i.e.: a 50% tear means half of the thickness of the tendon). Partial tears can result in pain and loss of strength. Age, level of activity, and degree of tearing determine treatment. In some cases, low grade partial tears can heal or scar in place and symptoms can improve with time. In others, treatment is required and can consist of physical therapy, an injection, or surgery. Surgery consists of "cleaning up" the frayed tendon, repairing the torn tendon, or applying a patch to promote healing and increase the thickness of the tendon.

### ***Full-Thickness Rotator Cuff Tear***

Complete tears or often referred as a full-thickness tear. This means that the muscle is no longer connected to the bone. This results in pain, loss of shoulder function and strength. Full thickness tears are categorized based on their size. They can range from small (<1cm), medium (1-3cm), large (3-5cm), to massive (>5cm). Full thickness tears usually require surgery, and the tear size helps determine the treatment needed. Small to medium sized tears can usually be treated arthroscopically with suture anchors alone, while large or massive tears may need suture anchors as well as a tissue augment.

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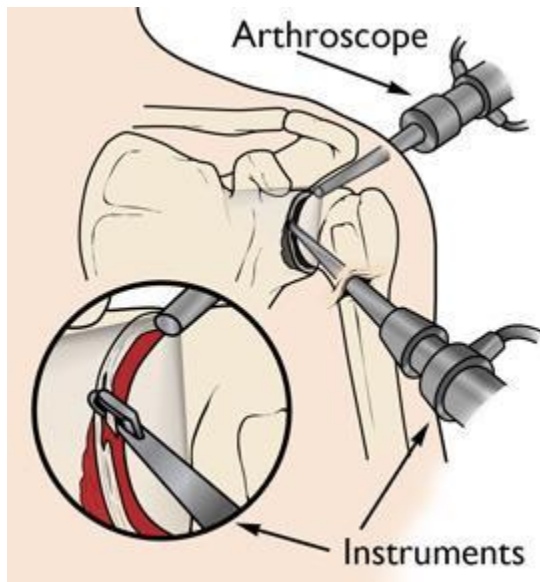


### HOW IS AN ARTHROSCOPIC ROTATOR CUFF REPAIR PERFORMED?

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Most rotator cuff repairs can be repaired using arthroscopic techniques. Arthroscopic rotator cuff repair is minimally invasive and uses multiple small incisions (<1cm), instead of one large incision used in open rotator cuff repairs. The arthroscopic incisions serve as access points for the arthroscope (narrow camera) and other pencil-thin surgical instruments. The real-time inside view of the joint is projected onto a high-definition monitor for the surgeon to see.

Arthroscopy has several benefits: less postoperative pain, faster healing time, and lower infection rates.



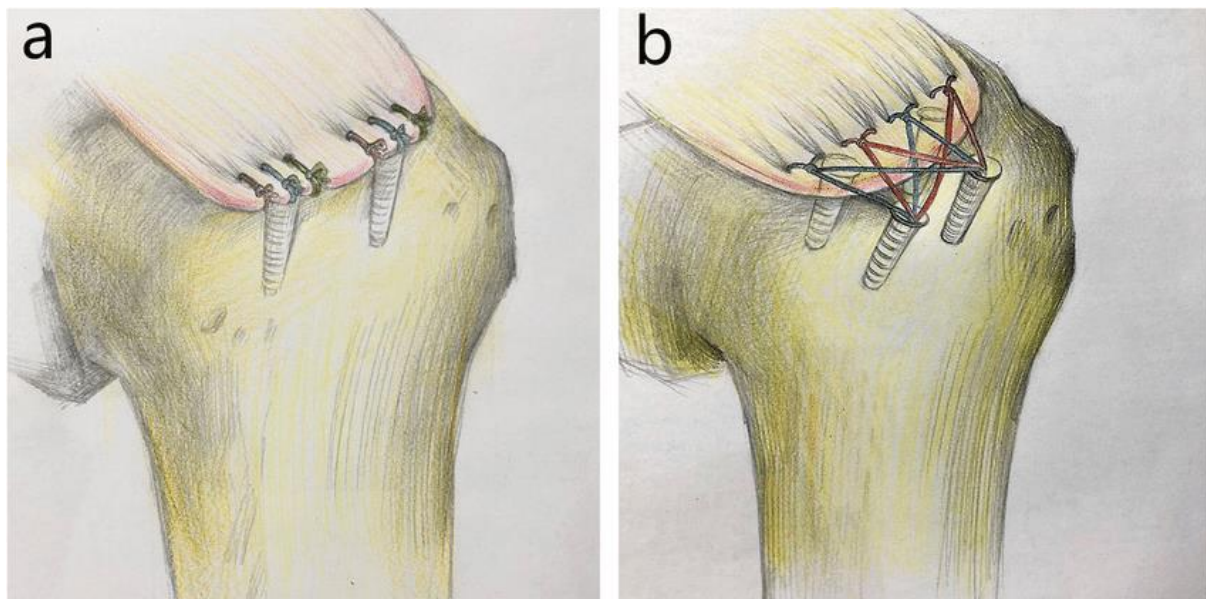
#### Arthroscopic Rotator Cuff Repair Steps

The initial step is to perform a diagnostic arthroscopy, in which the surgeon identifies the important structures inside the shoulder and assesses for injury. The diagnostic arthroscopy examines the bone /cartilage surfaces, the labrum (seal of socket), the biceps tendon, and the rotator cuff tendons. Often times the labrum will have degenerative tears which are "cleaned up" with a small shaver. If the biceps tendon is damaged, this is usually addressed with a biceps tenodesis (releasing the tendon at the origin and reattaching it to the arm bone).

If a partial rotator cuff tendon tear is identified, the damaged tissue is removed using shaver device. If a small amount of tendon is damaged (<50% of the thickness) this may be enough. If a

greater amount is damaged, however, the partial tear is fixed with either a biological patch (much like putting a patch on a torn pair of jeans) or by repairing it with sutures.

If the rotator cuff tendon is fully torn, multiple instruments are used to release and pull the tendon back to its original position on the humerus bone. The tendon is then reattached to the bone using anchors (screws) loaded with sutures (thread). The anchors are screwed into the bone and the suture is then passed through the tendon. The sutures are then tied on top of the tendon, compressing the tendon back onto the bone.



**[Left]: A schematic of a single row repair (used for small or tight tears) [Right]: A schematic of a double row repair (used for large or mobile tears)**

Anchors can be made of different types of materials such as metal, plastic, suture, or biodegradable composite materials. A variety of factors such as age, bone quality, and tear pattern determine which type of fixation is best. The number of anchors used is determined by the size of the tear, the tendon quality, the repair tension, and bone quality.

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### **SURGERY TIMELINE**

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#### **Prior to Surgery**

- You may need medical clearance from your medical specialist (primary care doctor, cardiologist, etc.) before surgery.
- Our office will contact you to book your surgical time and location. Typically, outpatient (same day) surgeries are done at the Hoag Orthopedic Institute (HOI) Surgery Center in Newport Beach and in-patient (overnight) procedures are done at the HOI Hospital in Irvine.
- You will receive a confirmation call from the hospital the day prior to surgery informing you at what time you should arrive. They will usually go over last-minute details such as hygiene tips, and let you know which medications to bring. It is normal to arrive several hours ahead of your scheduled time to allow for the check-in process.
- Do not eat or drink anything after midnight the night before surgery. You may take sips of water to swallow pills if required and cleared by your medical team. Your surgery may need to be canceled if you do not adhere to these instructions.

#### **Day of Surgery**

- Arrive at the hospital or surgery center at your instructed time.
- If possible, arrive with a family member or friend who can assist with your check-in and help you remember any last-minute questions. There will be a place for family and friends to wait while you are in surgery. You will require someone to take you home if you are leaving the same day of surgery.
- Dr. Dunphy will meet with you before you enter the operating room to obtain written consent for the surgery and to answer any questions you may have.
- The anesthesia team will meet with you to discuss their anesthesia plan during surgery and will be able to answer any questions you may have for them.

#### **After Surgery**

- Most patients having arthroscopic surgery leave the same day, several hours after surgery.
- During this time, your nurse and anesthesia team will help to manage your post-operative pain. It is important to know that you will have some pain, but the medications should help make your pain manageable. If you receive a nerve block, your

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arm may feel numb or heavy, this is normal, and will typically wear off in 6-8 hrs (up to 24hrs). It is recommended that you take your pain pills prior to the nerve block wearing off.

- You will need someone to take you home.
- Wear your sling at all times except for bathing and doing your gentle post-operative exercises (if instructed). These exercises include moving your hand and wrist and coming out of the sling to fully straighten and bend your elbow. You should do this 3-4 times a day.
- Keep your bandage dry while bathing. This may require covering it with a plastic wrap (i.e., "saran wrap") or taking sponge baths.
- Do not use your operative arm to carry or lift anything. Do not use your operative arm to push yourself up from a chair or when getting off the toilet.
- No driving while using your sling and while you are taking your narcotic pain medications.
- Do your best to wean off your narcotic pain medications. Over-the-counter medications such as Tylenol and Ibuprofen can be very helpful.
- Many people are most comfortable sleeping in a more upright position after surgery. You can opt to sleep in a recliner or prop yourself up on pillows in bed. You need to wear your sling while sleeping.
- If you receive an ice machine, please use it as instructed to help reduce swelling. You may also use ice packs or bags. Do not use for longer than directed and always avoid direct skin contact.

### **Follow-Up**

- Your first follow-up appointment is usually 10-14 days following surgery.
- At this visit we will discuss your progress and check your incision. We may also trim suture tails at this time.
- Dr. Dunphy will show you the arthroscopic pictures of the surgery, as well as provide you with a copy of your operative report.
- An outpatient physical therapy prescription and protocol will be provided, and typically starts at 4-6 weeks after date of surgery.
- We will then book your next follow-up visit before you leave, which is typically 4-6 weeks later.

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**Rotator Cuff Repair Milestones**

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- Weeks 0-6: Protect the repair, regain full elbow and hand range of motion, begin outpatient physical therapy (week 4 for small tears, week 6 for large tears).
- Week 6: Remove sling. Ok to begin driving. Work on shoulder motion -- progress from passive range of motion exercises, to active assist (pulley) exercises, to active range of motion exercises (lifting arm unsupported).
- Week 12: Achieve full shoulder range of motion. Begin shoulder strengthening exercises.
- Month 5-6: Regain full strength. Return to sport and normal activities without restrictions.

*It is a pleasure to take care of you, and I will do my very best to get you back to the activities and the quality of life you enjoy.*

Best,

A handwritten signature in black ink, appearing to read "T. Dunphy".

Taylor Dunphy, MD