



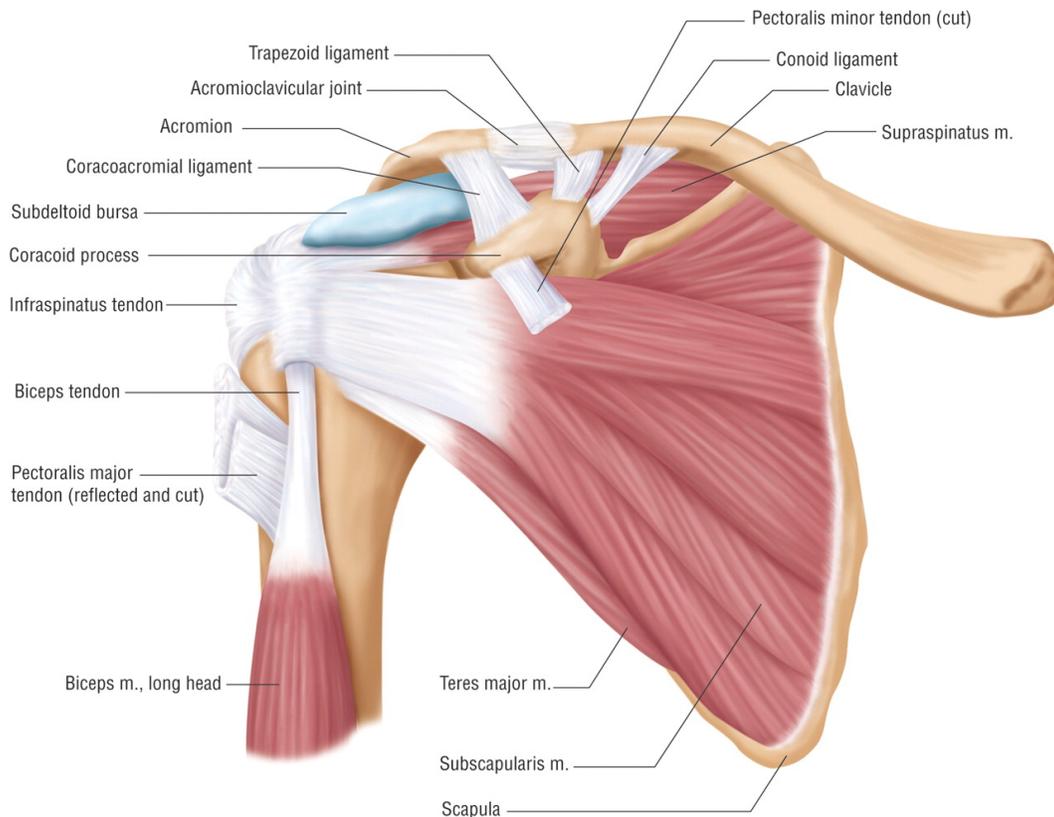
Rotator Cuff Repair Book

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Normal shoulder function

The shoulder is the most flexible joint in the body, allowing you to move and rotate your arm in many different positions. Due to this extensive flexibility, the shoulder joint is susceptible to injury and instability.

The shoulder is made up of three bones: the humerus (arm bone), scapula (shoulder blade), and clavicle (collar bone). These three bones create two separate joints within the shoulder.

The shoulder joint is a ball and socket joint. It is created by the ball at the upper end of the humerus fitting into the shallow socket (glenoid) of the scapula. To improve the stability of the shoulder joint, there is a tough cartilage ring around the socket called the labrum. These structures make up the glenohumeral joint.

The glenohumeral joint is surrounded by a thick capsule that helps keep the joint fluid within the joint. The joint fluid helps nourish the articular cartilage, the smooth cartilage on the ends of your bones that help keep your shoulder movements smooth and friction-free.

Outside of the capsule there is a group of four muscles and tendons that surround the shoulder joint to help keep the upper part of the arm attached to the scapula. These muscles are the rotator cuff muscles and are important for raising and rotating your arm, as well as other, more complex movements like throwing or swimming.

A bony portion of the scapula (acromion) projects over the shoulder joint to help protect the joint and allow for attachments of different muscles in and

around the shoulder. The lateral aspect of the clavicle attaches to the acromion just above the shoulder joint, creating the acromioclavicular, or AC joint.

There are areas of potential high friction within the shoulder. The body creates a lubricating structure (bursa) to help decrease the friction in these areas and allow easy motion in the shoulder.

Impingement

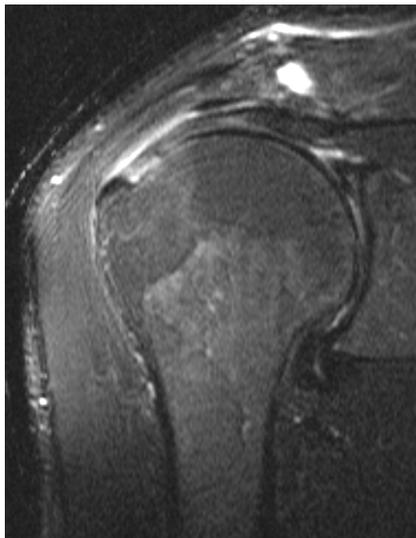
Impingement is one of the most common causes of shoulder pain in the adult. Normal anatomy and shoulder function allow for free and easy motion of the shoulder. If there is a bony abnormality, or chronic, repetitive use of the shoulder, the acromion can rub, or impinge on the rotator cuff tendons and bursa, causing irritation. The signs and symptoms include shoulder pain with or without weakness. It is possible if there is chronic or continued impingement on the rotator cuff tendons that it could progress to partial or full thickness tears in the tendons.



Rotator Cuff Tear

There are two main causes of rotator cuff tears- chronic irritation and impingement discussed above, and acute trauma, such as an injury or a fall. The patient may experience shoulder pain with specific motions, weakness, stiffness and loss of motion.

In order to diagnose impingement or a rotator cuff tear, Dr. Hunt will conduct a detailed history and physical exam. He will also obtain x-rays of the affected shoulder. These images can tell us useful information to help us refine our diagnosis. If warranted, Dr. Hunt may order advanced imaging, such as a MRI to help see the soft tissues in and around the shoulder. MRI is the gold standard when evaluating soft tissues around the shoulder.



Dr. Hunt will see his patients in clinic after the MRI to review the findings, refine his diagnosis, and present treatment options. If surgical intervention is recommended, Dr. Hunt will talk with you about the procedure, risks, and answer any questions you may have before the procedure.

Risks

There are some risks associated with surgery; any time we use a needle to penetrate

your skin or make an incision, there is a very low risk of contracting an infection. We do everything we can to prevent infections from occurring. There is also a small risk of blood vessel or nerve damage, bleeding, blood clot formation, failure of the repair, incomplete resolution of the pain, swelling and stiffness in the operative shoulder. There are also certain risks with anesthesia that will be addressed with you before your procedure.

Before Surgery

Before we can perform any surgical procedure, we need you to see your primary care provider for a pre-operative history and physical exam to make sure that you are healthy enough to tolerate the stress of the surgery. Your primary care provider may do some additional testing to assess your health in preparation for the surgery.

We ask that you refrain from using any non-steroidal anti-inflammatory medications (NSAIDs), such as ibuprofen, naproxen, Aleve or Advil for 10 days prior to your surgery. We also ask that you stop taking aspirin 7 days before your surgical date. Please contact your primary care provider regarding taking your other medications on the day of surgery. You may take Tylenol or Celebrex as needed up until the day before surgery.



In order to ensure your health and the best possible outcome from your procedure, we ask that you quit using any and all kinds of tobacco. Quitting may be difficult, but it is important for the short-term outcomes related to your surgery and the long-term health of your body. Repairs may be delayed in healing or may not heal at all if you continue to use tobacco after your surgery. If you would like assistance finding the right method of smoking cessation for you, please contact us or your primary care provider.

Before your scheduled procedure, we will have you meet with one of our staff to fit you with a specialized sling. You will wear your sling for 4-6 weeks after surgery and it is important that it fits properly to ensure the best possible result from your surgery. ****Please bring the sling with you on the day of your surgery**** We will also provide a TENS unit for you as well. It is a small electrical unit that supplies a low-level of electrical current to help reduce pain after the procedure. Sterile leads will be placed on your shoulder right after surgery to use once your return home.

Procedure

The day of the procedure, we ask that you do NOT eat or drink any food or liquids before coming to the surgery location. Once you are registered at the surgery center, we will start an IV in your arm and prepare you for your surgery. You will meet with the anesthesiologist and have every opportunity to ask questions you may have. You will also see and speak with Dr. Hunt on the day of your procedure. Before you are taken to the operating room, the anesthesiologist

will administer a scalene block on the side of the operative shoulder. This is an injection of a long-acting local anesthetic that will help control pain during and after the procedure. When ready, you are taken to the operative suite and placed on a flat bed. We use a very light general anesthetic to put you to sleep, but light enough where you continue to breathe on your own. We then position you around a beanbag and prep your shoulder for surgery. The surgical procedure itself takes approximately 1 hour.

Dr. Hunt performs this procedure using an arthroscope, so he makes 3-4 small incisions in your skin to allow him to see and perform all parts of the procedure inside your shoulder. He uses small, specialized anchors drilled into the bone with strong sutures running from the anchor to tie the rotator cuff tendon to the original insertion of the tendon, creating an anatomical repair.



After the surgery, a long-acting numbing medication is injected into your shoulder to help with pain control the day of surgery. There are dressings placed on your shoulder with sterile TENS unit leads placed on the front and back of your shoulder to use once you get home. The pre-fit sling will be placed on your arm before you are taken to the post-operative area where you are allowed to recover until you are ready to go home.

After Surgery

For the first 3 days after surgery, we suggest that you pack your operative shoulder in ice constantly. This will help prevent swelling and lead to a much shorter recovery period. We have placed enough dressings on your shoulder that you will not experience any frostbite to your skin from the ice.

You may remove the bandages from your shoulder 72 hours after surgery. After removal of the bandages, there will be Steri-strips over the incisions. Keep these Steri-strips on until they fall off on their own. At this point you are able to shower, letting water and soap run over the shoulder and patting it dry. Do not submerge the incisions under water.

It is normal for your shoulder to be mildly warm after your surgery. This is due to the increase in blood flow to the area in response to the surgery. The shoulder and arm may swell up in response to the surgery as well. You may also experience a low-grade fever while recovering. This is a normal part of the inflammatory response your body mounts after an invasive procedure.

Pain Relief

After surgery, we provide you with a few different strategies for pain control. Most of the pain after surgery is associated with swelling- to prevent the swelling and discomfort we ask that you try to keep ice packs on the operative

shoulder constantly for the first 3 days after surgery. We also provide you with 3 different prescription medications to help control your pain. Two of these medications are narcotic pain medications; one is a long-acting pain medication that gives you good baseline relief, and the other is a short-acting medication that you should use for breakthrough pain. Some of the side effects of the narcotic pain medications are drowsiness, dry mouth and constipation. Drink plenty of water while taking these medications. You may want to use a stool softener during the treatment period as well to help prevent any bowel discomfort.

We will also prescribe you a medication for nausea and/or vomiting that you can use if the other medications cause any discomfort in your stomach. You can use this medication as needed for nausea or vomiting that you may experience.

Dr. Hunt's team also provided you with a TENS unit to use for post-operative pain control. We place sterile electrodes on your skin in the operating room before applying the bandages. You can start using the TENS unit once the procedure is complete. You may use this as much or as little as you want. It is an effective, non-medication method for controlling post-operative pain.

If there is an increase in pain after the first 3 days, rest the operative arm by staying off of your feet and icing constantly for 12-16 hours. This should help calm the inflammation in your shoulder and your discomfort should abate. Use ice as much as you need to control the pain and swelling.

Recovery

After surgery, you will be in your sling for 4-6 weeks. After coming out of the sling, you will not have full use of your operative arm due to the prolonged time in the sling. You will work with physical therapy to regain your motion and strength after the surgery. It may take up to 3 months to feel comfortable using your arm for everyday activities. Patients will continue to see improvement up to 18 months after their surgery to feel the final result.

Many patients find that sleeping in a reclined position for the first 7-10 days is more comfortable than lying on their back. Patients also feel that pillows propped under their operative elbow help when lying on their backs, preventing your arm from falling back towards the floor.

Follow-up

You will follow up with Nick Meath, Dr. Hunt's physician assistant, 10-14 days after surgery. This appointment is made for you at the time you schedule your surgery. At this appointment, your pain control, restrictions, incisions and work/school status will all be discussed. Your intra-operative photos of your surgery will be reviewed with you at this appointment as well. You will have a follow up appointment with Dr. Hunt 6-8 weeks after your surgery.

If you miss any of your post-operative appointments, we reserve the right to deny any medication refill requests you have until you are seen in clinic.

If any questions, concerns or issues arise, feel free to contact Sara, our care coordinator at **952-486-5108** during regular business hours, or call our main number at **952-456-7000**.

Physical therapy

We ask that you make your physical therapy appointments prior to your surgery date. You should start your therapy about 2 weeks after your surgery. We will provide you with a referral with your surgery paperwork on the day of your procedure. If you would like to set-up physical therapy with Twin Cities Orthopedics, please call 952-456-7004. Dr. Hunt's physical therapy protocol is attached at the end of this book. Feel free to bring this with you to your therapy appointments.

Restrictions

You must wear your sling at all times. This will protect the repair in your daily activities and during sleep. You must sleep with the sling on. You may remove the sling to dress, bathe and do your exercises, but must wear it at all other times.

You will use your sling constantly and move your operative arm minimally for the first 2 weeks after surgery until you are seen in clinic. At that time, your restrictions with your sling will loosen a bit, but we will still require you to wear your sling at most times.

When to Call

There are certain situations after surgery in which you should contact your surgeon. Please call if you experience any of the following:

- Fever over 101 degrees for more than 24 hours
- Foul drainage, redness or warmth at the operative site
- Large amounts of bleeding or drainage
- Severe or uncontrolled pain
- Persistent nausea or vomiting
- Hives, rash or medication intolerance

*** Call 911 or go to the nearest Emergency Room if you experience shortness of breath, redness, warmth and extreme pain in the calf. These are signs of a blood clot.***

Appendix A

**Rotator Cuff Repair
Physical Therapy Protocol
Dr. Allan Hunt****Phase I 0-2 Weeks-** *Maximum protection*

Educate the patient on self-care/hygiene, supporting shoulder with sling/abductor support, warning signs including fever, erythema and excessive/unrelenting pain, use of TENS unit

No motion. Immobilizer at all times for 4-6 weeks

Ice 3-5 times per day for 15 minutes each, especially after therapy. Modalities PRN.

Post-op visit at 10-14 days after procedure

May eat, limited typing, writing with sling in place. Elbow, wrist and hand ROM allowed

Phase II 2-6 Weeks- *Introduction to protected PROM*

Discontinue sling at 4 weeks, 6 weeks if larger tear or if patient uses tobacco

Recheck with surgeon at 6-8 weeks.

Exercises include: pendulums, scap sets, passive flexion(fwd bend, table slide), passive ER with stick, therapist-assisted scaption and ER. All ER ideally performed in 20°-30° ABD.

PROM should be nearly pain-free and not pushed beyond the below limits.

If biceps tenodesis, no AROM with flexion of elbow or forearm supination for 4 weeks

Target ROM at 6 weeks: 90°-120° passive flexion and 20°-30° passive ER

Phase III 6-12 Weeks- *Start AAROM and AROM, expand PROM and stretching*

Wean modalities

Begin AAROM exercises: pulleys, stick assisted press or flexion should start supine and progress to incline and standing as tolerated with proper form throughout this phase.

At 8+ weeks daily AROM may begin including wall climbs, prone extension and horizontal abduction, SLER and supine press or flexion. Flexion may progress to incline and standing as tolerated.

Light closed chain exercises (wall push-ups, quadruped position exercises).

Isometrics may be used only if sub-maximal and pain-free.

At 8+ weeks progress PROM/stretching to include: horizontal adduction, IR behind the back and capsular stretching as needed.

Target ROM at 12 weeks: $\geq 140^\circ$ passive flexion, $\geq 30^\circ$ passive ER at side, $\geq 75^\circ$ passive ER at 90° abduction, $\geq 120^\circ$ active flexion

Phase IV 12-20 weeks- *Gradual strengthening progression, endurance*

Emphasize the importance of maintaining PROM

Gradually maximize functional AROM, strength, power and endurance

Strengthening begins with the progressive addition of $\frac{1}{2}$ to 3 lbs. to the above AROM exercises and gradually progressive closed chain exercises. No theraband

Return to clinic at 5 months after surgery

Educate that maximal improvement can take up to 1 year after procedure

Phase V 20+ weeks- *Higher level strength and conditioning*

Work/sport specific activities beginning at 20 weeks progressing until discharge