South Shore Hospital

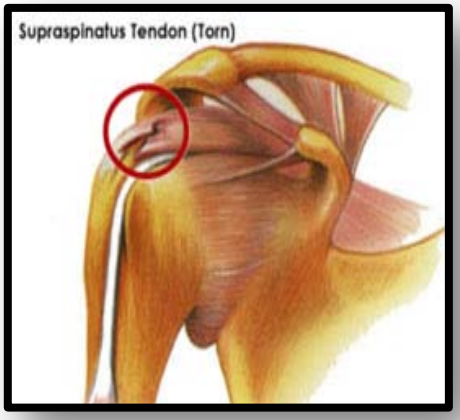
Orthopedic, Spine and Sports Therapy

Rotator Cuff Repair Protocol

Anatomy and Biomechanics

The shoulder is a wonderfully complex joint that is made up of the ball and socket connection between the humerus (ball) and the glenoid portion of the scapula (socket). The socket portion of the joint is not naturally deep. For this reason the shoulder is the most mobile joint in the body. Due to the lack of bony coverage the shoulder's proper function and stability is largely dependent on the soft tissues that surround it.

The rotator cuff is a group of four tendons that attach to the ball of the shoulder joint. They surround the ball much like the cuff of a sleeve fits snuggly around the wrist. When the arm is moved away from the body or over the head the tendons act to hold the ball in the socket correctly so that smooth fluid motion can be achieved. When one or more of these tendons is torn it becomes very difficult to use the arm to complete even the most basic activities of daily living. A tear in the rotator cuff can happen during a trauma to the shoulder or simply over time with repetitive, stressful activity.



Treatment Options

Regardless of how the tendon is torn your physician will work with you to determine what the best course of treatment will be. In many cases a small, partial thickness tear can be treated conservatively. This may include Physical Therapy, anti-inflammatory medication, rest, and activity modification. When conservative measures are unsuccessful in restoring function you and your physician may elect to have the torn tendon repaired.

Surgery

Rotator cuff repair surgery can now be performed arthroscopically and is in most cases an outpatient day surgery procedure. This means that it is very rare to have to spend the night in the hospital. If damage to the rotator cuff is extensive your surgeon may have to use an open incision rather than an arthroscope to complete the procedure. Regardless if the procedure is open or arthroscopic all patients will likely be home on the same day as surgery.

Recovery/Time off Work

Having a torn rotator cuff repaired is not an easy undertaking. It is very important that the patient knows that the recovery process is difficult and time consuming. He or she must be an active participant during this process, performing daily exercises to ensure there is proper return of range of motion and strength. There is a large amount of variability in the time it takes to fully recover from this procedure. It is usually estimated that it will take at least six months to feel as though you have completely regained the use of your arm. Some cases may take as long as a year to make a full recovery. People with desk jobs should plan to take at least one week off from work. Manual laborers will likely be out of work for at least six months. Recovery is different in each case your individual time table for return to activities and work will be discussed by your surgeon during post operative office visits.

Post Operative Visits

Your first post-op visit to the doctor's office will be approximately 10 days after the operation. At this visit your stitches will be removed and you will review the surgery with the surgeon or his assistant. At this time you will most likely be cleared to make an appointment to begin rehab. You should also plan to check in with your surgeon at 6, 12, and 24 weeks after the operation.

At Home

You may remove your post-op dressing two days after the operation and replace it as needed. Do not remove the tape (steri-strips) that are across your incision. Allow them to fall off on their own. You may shower after two days, but use a water-tight dressing until your sutures are removed. Bathing without getting the shoulder wet or sponge baths are a good alternative. You may wash under the affected arm by leaning forward and letting the arm dangle. **Do not** attempt to actively move your arm at the shoulder joint for any reason until cleared by your physician or therapist. You may move your hand, wrist and elbow when your arm is out of the sling, but **do not** lift or carry anything with your operated arm until cleared your physician or therapist.

Driving

You will be permitted to drive after surgery following approval from your doctor. Generally you should expect to not be able to drive for four to six weeks following the operation. You are not permitted to drive while wearing your sling or while on narcotic medication.

Medication

Your surgeon will prescribe you pain medicine after the operation. You may not take anti-inflammatory medication like Advil, Ibuprofen, or Aleve for at least 12 weeks after the operation as it may compromise the healing tendon. You may take Tylenol as needed. Please call the doctor's office if you have any questions regarding medication.

Ice

You must use ice on your shoulder after the operation for management of pain and swelling. Ice should be applied 3-5 times a day for 10-20 minutes at a time. Always maintain one layer between ice and the skin. Putting a pillow case over your ice pack works well for this.

Sling

You will be provided with a sling to wear after the operation. You should wear this sling all of the time (even for sleeping) and should remove it only when bathing/showering, or to do your exercises. Most patients will be required to use a sling for 4-6 weeks after the operation.

Sleeping

You should sleep with your sling on and a pillow propped under your arm to keep it slightly away from the body. For many patients lying flat is very uncomfortable. It is generally easier to sleep propped up or in a recliner after the operation. Do not attempt to sleep on your operated shoulder for at least 6 weeks.

Rehabilitation

****The following is an outlined progression for rehab. Time tables are approximate and advancement from phase to phase as well as specific exercises performed should be based on each individual patient's case and sound clinical judgment by the rehab professional. ****

Phase 1 (0-6 Weeks) Passive Range of Motion (ROM) Phase

Goals

Protect Healing Tendon
Restore Passive ROM of the Shoulder

Precautions

Do not start Passive Internal Rotation until 2 weeks post-op.
Do not perform any Active ROM of the shoulder.
Use sling for at least four weeks or as instructed by physician.

Recommended Exercises

Pendulums
Standing Scapular Mobility (no resistance)
Supine or Standing Passive External Rotation
Supine, Seated or Standing Passive Shoulder Flexion (elevation)
Passive Internal Rotation (starting at 2 weeks post-op)
Passive Horizontal Adduction
Ball Squeeze

Guidelines

Perform these exercises 3-5 times a day. Do 1-2 sets of 10-20 repetitions of each exercise.

Phase 2 (6-12 Weeks) Active ROM Phase

Goals

Continued protection of healing tendon
Continue to improve passive ROM and initiate progression of active assisted and active ROM
Progress to Active ROM against gravity by end of phase
Initiate gentle sub-maximal rotator cuff isometrics

Precautions

Discontinue use of sling if you have not already
Be careful with raising your arm away from your body only lift your arm to the front not to the side
Do not use your arm to pick anything up or carry anything

Recommended Exercises

Passive ROM and Stretching

- Continue passive ROM with physical therapist
- Continue exercises from Phase 1 until each can be progressed to active assisted or active motion
- Supine Passive External Rotation in scapular plane progressing to 90 deg of Abduction

Active Assisted Progressing to Active ROM

- Supine stick flexion with progression to standing active shoulder flexion/scaption
- Table slides in flexion with progression to wall slides
- Supine or standing cross body stretch
- Sidelying internal rotation stretch **caution to not cause impingement
- Sidelying external rotation
- Prone row, extension, horizontal abduction, scaption (by end of phase 2)

Strengthening

- Sub-maximal isometric internal and external rotation

Guidelines

Perform these exercises once a day. Do 2-3 sets of 15-20 repetitions.

Phase 3 (12 - 24 Weeks) Strengthening Phase

Goals

Continue to focus on restoration of ROM, biomechanics and strength
Initiate progressive strengthening of rotator cuff and peri-scapular muscle groups
Begin to use arm for daily activities

Precautions

Caution with lifting especially away from body and overhead
Caution with repetitive use of arm
Stop activity if it causes pain in shoulder

Recommended Exercises

Passive ROM and Stretching

- Continue on own and with therapist as needed

Active Assisted and Active ROM

- Continue ROM exercises from phase 2 until ROM is normalized

Strengthening (Resistance Band or Dumbbell)

- Scapular Retraction
- Prone Extension
- Prone Horizontal Abduction
- Standing/Prone Scaption
- Internal Rotation
- External Rotation
- Progress to Diagonal Patterns and Multi-Planar/Functional Planes of Motion

Dynamic Strengthening

- Manual Resistance Patterns
- Rythmic Stabilization
- Proprioceptive Drills
- Push Up Progression

Guidelines

Perform ROM and stretching exercises once a day until normal ROM is achieved. Do 2 sets of 15-20 Reps. Once normal ROM is achieved continue exercises to maintain ROM 3-5 times a week.

Perform strengthening exercises 3-5 times a week. Do 2-3 sets of 15-20 Reps. Strict attention must be paid to scapulohumeral rhythm with completion of all strengthening exercises.

Phase 4 (24 Weeks - 1 Year) Return to Sport/Activity Phase

Goals

Maintain normal ROM and strength
Continue to encourage progressive use of arm for functional activity and return to sport

Precautions

Encourage slow progression back to sport and high level activity
Work with surgeon or physical therapist regarding specific return to sport/activity plan

Recommended Exercises

ROM and Stretching

Continue ROM and stretching exercises from phase 2-3

Strengthening

Continue to progress strengthening program from phase 3

Guidelines

Perform ROM and stretching program 1-3 times a week to maintain normal ROM.
Do 1-2 sets of 15-20 Reps.
Perform strengthening 2-3 times a week. Do 2-3 sets of 15-20 Reps.

Time	Focus	Range of Motion	Recommended Exercises	Precautions
Phase 1 0-6 Weeks	Passive ROM Tissue Healing	*Passive ROM as tolerated *Do not Force Painful Motion (Minimize Muscle Guarding) *No Isolated Abduction *No Active Elevation	**Passive** Pendulums Scapular Mobility Passive External Rotation Passive Flexion Passive Horizontal Adduction Passive Internal Rotation (2wks post-op) Ball Squeeze	*No Active Reaching *Sling at all times for 4-6 weeks or per MD discretion *ROM restrictions may be different for complex repair
Phase 2 6-12 Weeks	Active Assisted ROM with Transition to Active ROM after MD Follow Up	*Progress to Full ROM in all Planes *Transition from PROM to AA and AROM	**Passive** Continue PROM Exercises Passive ER Progressing to 90^{o} Abd **Active Assisted/Stretching** Supine/Standing Flexion, Horizontal Adduction, Sidelying IR **Isometrics** Sub-max IR/ER **Active Progressions** Sidelying ER Standing Scaption Prone Row Prone Extension Prone Horizontal Abduction Prone Scaption	*No Resisted Activity/Lifting *Avoid Repetitive Abduction Motion in Coronal Plane *Must have good Scapular Control with Progressions
Phase 3 12-24 Weeks	Progressive Strengthening with Continued Attention to ROM if Still Deficient	Maintain Full Passive/Active ROM	**Passive** Continue as Needed **Active Assisted/ Active** Continue as Needed **Strengthening (Dumbell/T-band)** Row Prone Extension Prone Horizontal Abduction Standing/Prone Scaption Internal Rotation External Rotation Progress to Diagonals and Functional Planes	*No Heavy or Repetitive Overhead Lifting/Reaching *Limited Return to Gym Lifting Late in Phase 3 per MD Discretion *Dynamic Progressions at 16 Weeks if Pain Free/Full ROM with all ROM and Strengthening Exercises

			<u>Dynamic Progressions(16 Wks)</u> Manual Resistance Patterns Rythmic Stabilization Proprioceptive Drills Push Up Progression	
Phase 4 24 Weeks-1 Year	Return to Sports and Physical Activity if ROM and strength are adequate	Maintain Full Passive/Active ROM	**<u>Active Assisted/Active</u>** Continue as Needed Daily **<u>Strengthening</u>** Continue Resistance Band and Peri-scapular Progressions 2-3 x Week **<u>Dynamic Progressions</u>** Continue Proprioceptive Drills During Return to Sport 2-3 x Week	*Return to Sports and Physical Activity per Surgeons Evaluation *Progress Gym Lifting per MD Discretion

***Reviewed by Michael Geary, MD**