



Nonoperative Treatment of Rotator Cuff Tendinopathy Physical Therapy Guidelines

From: Kuhn JE. Exercise in the treatment of rotator cuff impingement. A systematic review and synthesized evidence-based rehabilitation protocol. JSES 2009

General Instructions: This physical therapy protocol is based on the best evidence demonstrating a beneficial effect for exercise in the treatment of rotator cuff tendinitis. It is largely unknown if adding or eliminating exercises will affect the outcome.

The program has 4 components:

1. **Stretching**
2. **Range of motion**
3. **Rotator cuff Strengthening Level 1**
4. **Rotator cuff Strengthening Level 2**

Range of motion and stretching exercises should be performed daily.

Rotator Cuff strengthening should be delayed until active range of motion is nearly pain free and mobility nearly normal. Active Elevation above 120° and Passive Internal Rotation with arm abducted should approach 50% of the opposite side are milestones suggesting nearly normal mobility. Rotator Cuff strengthening should be performed 3x/week.

Contact: If you have questions or concerns, please contact your surgeon.

Modalities: Cold therapy and electrical modalities may be used to reduce inflammatory response in high and moderately irritated tissues.¹ Studies have demonstrated that ultrasound is no better than controls, and it should not be used.²

Manual Therapy: Joint and soft tissue mobilization techniques have been shown to augment the effect of the exercise program. Manual therapy techniques include joint mobilization, soft-tissue mobilization, and release techniques. Initially, supervised exercises with manual therapy is recommended. During that time patients should be instructed in a home program. Patients can move entirely to a home program when they no longer are in need of manual therapy.

Initial Goals

- Restore passive mobility of shoulder to nearly normal range
- Pain free active motion without resistance
- Reduce inflammatory symptoms, primarily pain during daily activities

Stretching: should be performed daily and should include the following:

- Anterior shoulder stretching, performed by the patient in a corner or door jamb.
- Posterior shoulder stretching using the crossed body adduction technique.
- Incorporating scapula stabilized stretching within pain tolerances is encouraged.

Each stretch should be held for 30 seconds and repeated five times with 10 seconds rest between each stretch.



Posterior Shoulder Stretch: Bring involved arm across in front of body as shown. Hold elbow with other arm. Gently flex the bent elbow which will assist in pulling the arm across chest until stretch is felt in the back of the shoulder.



Anterior Shoulder Stretch: Place hands at shoulder level on each side of a door or in a corner of a room. Gently step forward into door or corner and hold modify arm position if have discomfort.

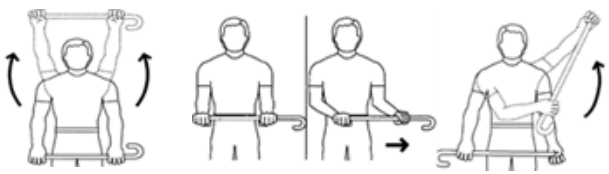


Sleeper Stretch: Lie on your side with a pillow supporting your head. Bring your elbow up to a 90 degree angle from your body. Gently push your hand toward the surface until you feel a stretch in your shoulder without pain.

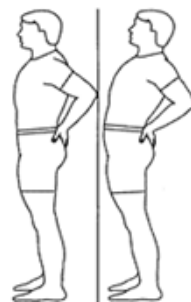


Cross body stretch with scapula stabilized: Lie on your back with arm on table. Partner or Clinician stabilizes lateral border of the scapula while the patient gently pulls the arm across the body until a stretch is felt in the shoulder without pain. *Hold for 5 seconds and repeat 10 times in a row.*

Range of Motion: Patients may begin to restore their active range of motion by using active assistive devices such as a cane, pulley or the uninjured arm. Additional work on postural exercise, like shrugs, and shoulder retraction can be started. Glenohumeral motion should begin with pendulum exercises, progress to active assisted motion, then to active motion as comfort dictates. Active motion may be performed in front of a mirror or using the opposite hand on the trapezius to prevent hiking of the shoulder



Active Assisted Range of Motion using a Cane:
 Lying supine, hold the cane with both hands. Elevate the arms using the healthy arm to guide the injured arm. Increase the use of the injured arm as directed by comfort. These can be done upright when comfortable. Images demonstrate Forward Elevation, External Rotation and Abduction. Can do standing if comfortable.



Posture exercises:
 Put hands on hips, lean back and hold.



Active training of the scapula muscles:
Scapular Shrugs: pull shoulders up and back and hold.



Active training of the scapula muscles:
Scapular Retraction: Pinch the back of the shoulder blades together using good posture.

Active range of motion: In front of a mirror, practice raising your arm in front of your body without hiking or excessively shrugging your shoulder. You may slide your arm along a wall or stair rail to minimize the load on your arm.



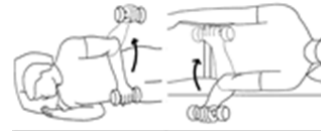
Criterion to progress to strength training for shoulder

- Pain at rest below 2 out of 10
- Pain with active motion without a load of less than 3/10
- Nearly normal passive and active motion restored (85% of opposite side), especially with ER/IR with shoulder in 90 of abduction.

Strengthening Phase 1: Strengthening exercises should focus on the rotator cuff and scapula stabilizing muscles. Rotator cuff strengthening should involve the following exercises with elastic resistance bands: internal rotation with arm adducted to side, external rotation with arm adducted to side, rows and scapular punches or press up. *Each exercise should be performed as 3 sets of 10 repetitions, with increases in elastic resistance as strength improves.*

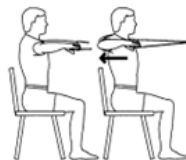


External Rotation: Secure elastic at waist level. Hold elbow at 90 degrees arm at side. Pull hand away from body as shown.
Internal Rotation: Secure elastic at waist level. Hold elbow at 90 degrees arm at side. Pull hand across body as shown.

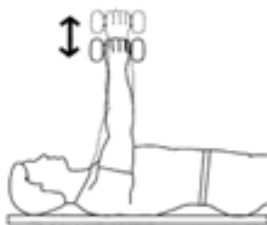


External Rotation: Lie on side, involved side up. Arm at side, elbow bent, with or without weight. Move hand up as shown
Internal Rotation: Lie on involved side, elbow bent at 90 degrees, arm at side. With or without weight, pull hand inward across body, as shown.

Rows: Seated or standing, bend elbows and pull elastic cord back. Try to pinch shoulder blades together.



Upright Row: Do one arm at a time. While standing lean over a table, bend at waist. Pull hand & weight back, pulling shoulder blade back.

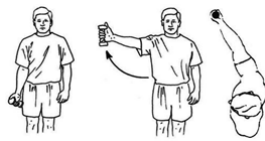


Press Up: Lie on back, elbow locked straight, weights in hands. Move arm up toward ceiling as far as possible.

Criterion to progress to strength training phase 2 for shoulder

- **No** pain at rest
- Pain with active motion without a load less than 1 out of 10
- Nearly normal passive and active motion restored (95% of opposite side)
- Performs all Phase 1 strengthening exercises with a Red or Green (3-5 lbs) resistance 30 repetitions without pain or substitution

Strengthening Phase 2: Strengthening exercises should continue focus on the rotator cuff and scapula stabilizing muscles but can progress to long lever arm and functional tasks for the individual demands of the patient. Incorporation of long lever arm exercise like standing scaption and prone horizontal abduction to build strength and endurance are recommended as long as there is no pain or a compensation associated with the exercise. Scapular stabilizer strengthening can progress to body weight activities such as chair and variations of push-ups. Combination strengthening while standing using elastic bands should include: forward elevation and extension. *Each exercise should be performed as 3 sets of 10 repetitions, with increases in elastic resistance as strength improves.*



Scaption: Hold arm 30 degrees forward, thumb up or down, raise arm. May add resistance. This exercise should be done only if there is no pain



Prone Horizontal Abduction: Lie on your stomach and squeeze your shoulder blades together as you lift your arm out to the side with your thumb up



Pushup Plus: Do a push-up (either on your hands or forearms) and then really push to bring your spine to the ceiling. You place hand on stable surface if hurts to get on your knees



Chair Press: While seated press up on chair lifting body off chair. Try to keep spine straight.



Low Trapezius: Stand upright. Grasp elastic bands. Keep elbows straight and pull. Try to reach behind you.



References

1. McClure PW, Michener LA. Staged Approach for Rehabilitation Classification: Shoulder Disorders (STAR-Shoulder). *Phys Ther.* 2015;95(5):791-800.
2. Kuhn JE. Exercise in the treatment of rotator cuff impingement: a systematic review and a synthesized evidence-based rehabilitation protocol. *Journal Of Shoulder And Elbow Surgery / American Shoulder And Elbow Surgeons [Et Al]*. 2009;18(1):138-160.