



# Vanderbilt Sports Medicine

Knee Center *and* Shoulder Center

From: Kuhn JE. Exercise in the treatment of rotator cuff impingement. A systematic review and synthesized evidence-based rehabilitation protocol. *J Shoulder Elbow Surg* 2009, Jan-Feb

**General Instructions:** This physical therapy protocol is based on the best evidence demonstrating a beneficial effect for exercise in the treatment of rotator cuff tendonitis. It is largely unknown if adding or eliminating exercises will affect the outcome. Range of motion and stretching exercises should be performed daily. Strengthening should be performed 3x/week.

**Modalities:** Heat and/or cold may be used. Studies have demonstrated that ultrasound is no better than controls, and it should not be used.

**Manual Therapy:** Joint and soft tissue mobilization techniques have been shown to augment the effect of the exercise program. 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.



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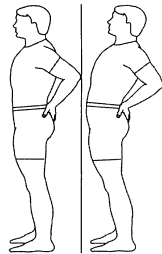
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**Range of Motion:** Patients may begin their range of motion work with postural exercise, like shrugs, and shoulder retraction. Glenohumeral motion should begin with pendulum exercises, progress to active assisted motion, then to active motion as comfort dictates. Active assisted motion may be performed with a cane, suspended with pulleys, or the uninvolved arm. Active motion may be performed in front of a mirror or using the opposite hand on the trapezius to prevent hiking of the shoulder



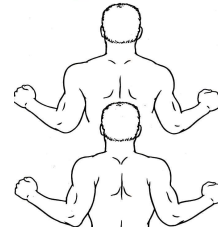
**Pendulum Exercises:**  
Let the arm dangle. Make 20 small counter-clockwise circles. Make 20 small clockwise circles. Make forward and backward motions then side to side motions.



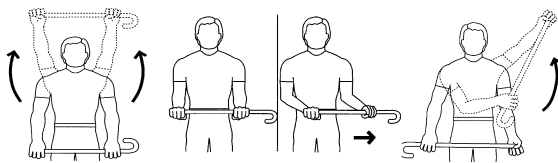
**Posture exercises:**  
Put hands on hips, lean back and hold.



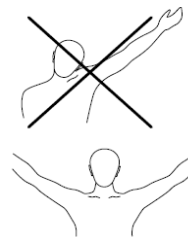
**Active training of the scapula muscles.**  
Shoulder Shrugs: Pull shoulders up and back and hold.



**Active training of the scapula muscles.**  
Pinch the back of the shoulder blades together using good posture.



**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.



**Active range of motion.** In front of a mirror practice raising your arm in front of your body without shrugging your shoulder.

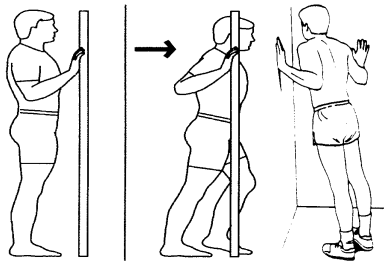


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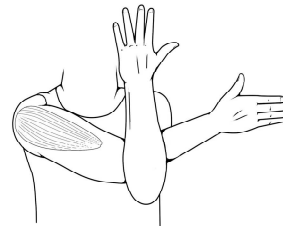
**Flexibility:** stretching should be performed daily and should include the following: Anterior shoulder stretching, performed by the patient in a corner or door jamb. Posterior shoulder stretching using the crossed body adduction technique. Each stretch should be held for 30 seconds, and repeated five times with 10 seconds rest between each stretch. Cane stretching in forward elevation and external rotation may also be used in a similar fashion (see above).



### Anterior Shoulder Stretch

Place hands at shoulder level on each side of a door or in a corner of a room.

Lean forward into door or corner and hold.



### Posterior Shoulder Stretch

Bring involved arm across in front of body as shown. Hold elbow with other arm.

Gently flex the bent arm which will pull the other arm across chest until a stretch is felt in the back of shoulder.

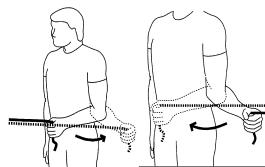


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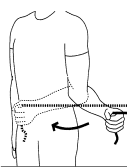
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**Strengthening:** Strengthening exercises should focus on the rotator cuff and scapula stabilizing muscles. Rotator cuff strengthening should involve the following exercises with theraband: internal rotation with arm adducted to side, external rotation with arm adducted to side, and scaption if there is no pain associated with the exercise. Scapula stabilizer strengthening should include: chair press, push up plus (prone using body weight or supine with hand weight), and upright rows using an elastic band. 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.

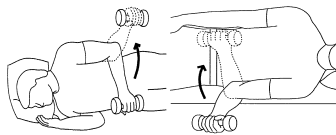


**External Rotation**  
Secure elastic at waist level. Hold elbow at 90 degrees arm at side. Pull hand away from body as shown.

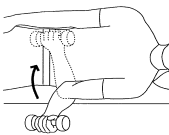


**Internal Rotation**  
Secure elastic at waist level. Hold elbow at 90 degrees arm at side. Pull hand across body as shown.

OR



**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.



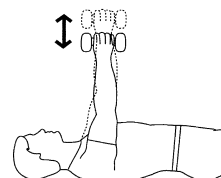
**Scaption**—Hold arm 30 degrees forward, thumb up or down, raise arm. May add resistance. This exercise should be done only if there is no pain



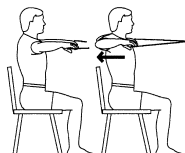
**Chair Press**—While seated press up on chair lifting body off chair. Try to keep spine straight



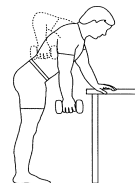
**Pushup Plus** - Do a pushup (either on your hands or forearms) and then really push to bring your spine to the ceiling.



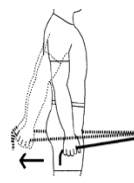
**Press Up** - Lie on back, elbow locked straight, weights in hands. Move arm up toward ceiling as far as possible.



**Rows** - Seated or standing, bend elbows and pull elastic cord back. Try to pinch your shoulder blades behind you.



**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.



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