

SECONDARY IMPINGEMENT SYNDROME



■ ■ ■ Description

Secondary impingement syndrome is characterized by pain in the shoulder due to inflammation of the tendons of the rotator cuff or the bursa (subacromial bursa). The rotator cuff is a series of four muscles that surround the ball of the shoulder (humeral head). A main function of the rotator cuff is to maintain the humeral head within the center of the glenoid. The subacromial bursa sits over the top of the cuff, allowing the cuff tendons to slide under the roof of the shoulder (acromion) without undue friction. Normally the humeral head gets closer to the acromion when the shoulder is moved, particularly as you reach overhead. Repeated throwing or overhead activities may cause fatigue of the rotator cuff muscles. This may lead to excessive motion of the humeral head within the glenoid, and the humeral head may slide upward and forward, closer to the acromion, with throwing and overhead activity. Thus the inflammation or pain is due to injury or overuse of the rotator cuff and due to pinching of the rotator cuff and bursa between the humeral head and the acromion.

■ ■ ■ Common Signs and Symptoms

- Pain around the shoulder, often at the outer portion of the upper arm
- Pain that is worse with shoulder function, especially when reaching overhead or lifting
- Occasionally, aching when not using your arm; possibly pain that awakens you at night
- Occasionally, tenderness, swelling, warmth, or redness over the outer aspect of the shoulder
- Loss of strength
- Limited motion of the shoulder, especially when reaching behind (back pocket, bra) or across your body
- Crepitation (a crackling sound) when the shoulder is moved
- Biceps tendon pain and inflammation (in the front of the shoulder), worse with bending the elbow or lifting

■ ■ ■ Causes

- Overuse of the shoulder due to repetitive throwing or overhead activity
- Uncommonly, direct blow or injury to the shoulder

■ ■ ■ Risk Increases With

- Contact sports, such as football, wrestling, or boxing
- Throwing sports, such as baseball, tennis, or volleyball
- Swimming
- Weightlifting and bodybuilding
- Heavy labor
- Previous injury to rotator cuff, including impingement
- Poor physical conditioning (strength and flexibility)
- Loose ligaments or joints (“double jointed”)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
 - Cardiovascular fitness
 - Shoulder flexibility
 - Muscle strength and endurance
- Use proper technique.

■ ■ ■ Expected Outcome

This is usually curable if treated appropriately with conservative treatment and resting of the affected area.

■ ■ ■ Possible Complications

- Prolonged healing time if not appropriately treated or if not given adequate time to heal.
- Chronically inflamed tendon, causing persistent pain with activity that may progress to constant pain
- Shoulder stiffness, frozen shoulder, or loss of motion
- Rotator cuff tendon tear
- Recurrence of symptoms, especially if activity is resumed too soon, with overuse, with a direct blow, or when using poor technique

■ ■ ■ General Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem. These all can be carried out at home, although referral to a physical therapist or athletic trainer may be recommended. Treatment is geared toward the weak rotator cuff and shoulder blade muscles to help stabilize the shoulder. An injection of cortisone to the area around the tendon (within the bursa) is rarely recommended. Surgery is uncommonly needed. Surgery is performed to tighten or stabilize the shoulder, not to relieve pressure on the rotator cuff. This is usually only considered after at least 6 months of conservative treatment. Surgery may be performed arthroscopically or through an open incision. Return to full activity is usually possible 4 to 6 months after surgery.

■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.

- Pain relievers are usually not prescribed for this condition, although your physician will determine this. Use only as directed and only as much as you need.
- Cortisone injections reduce inflammation, and anesthetics temporarily relieve pain, but these are rarely recommended for this condition. Cortisone helps reduce the inflammation and treat the symptoms, but it does not treat the problem (instability) and may weaken muscle and tendon tissue.

■ ■ ■ **Cold Therapy**

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.

■ ■ ■ **Notify Our Office If**

- Symptoms get worse or do not improve in 6 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

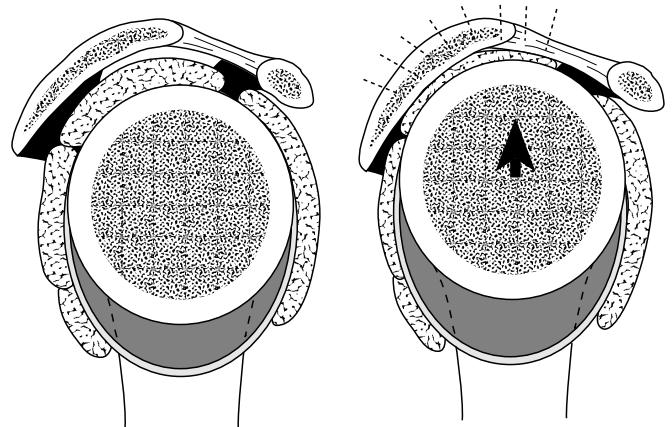


Figure 1

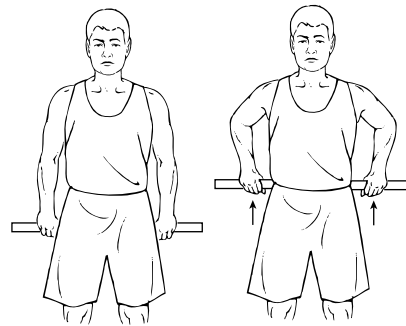
From Rockwood CA Jr., Matsen FA III: *The Shoulder*, 2nd ed. Philadelphia, WB Saunders, 1998, p. 763; modified from Matsen FA III, Lippitt SB, Sidles JA, Harryman DT II: *Practical Evaluation and Management of the Shoulder*. Philadelphia, WB Saunders, 1994.

EXERCISES

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Secondary Impingement Syndrome

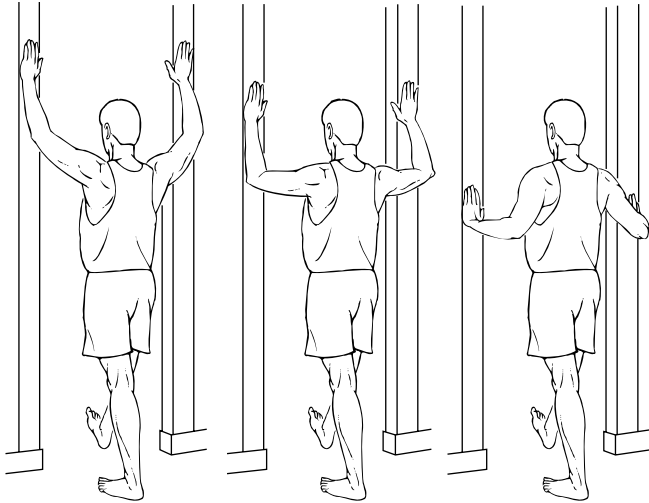
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



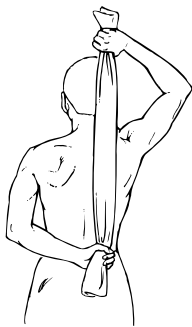
SHOULDER • Internal Rotation

1. Grasp a stick behind your back with both hands as shown.
2. Slide the stick up your back until you feel a gentle stretch.
3. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



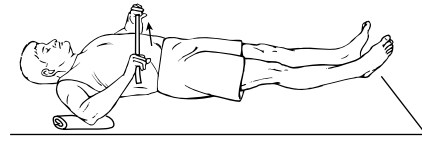
SHOULDER • External Rotation and Abduction

1. Stand in front of a door frame as shown.
2. Your hands and forearms may be placed on the door frame in any of the positions shown in the diagram. *Your physician, physical therapist, or athletic trainer will instruct you regarding which position you are to use! This exercise may be done with both arms at the same time or just one arm.*
3. Slowly step through the doorway with one foot. Use this stepping motion to obtain a stretch in the front of the shoulder and chest. **Do not lean through the doorway.**
4. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



SHOULDER • Internal Rotation

1. Place your _____ hand behind your back.
2. Drape a towel over your opposite shoulder and grasp it with the hand that is behind your back.
3. Use the towel to gently pull your hand farther up your back until you feel a gentle stretch.
4. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



SHOULDER • Internal Rotation

1. Lie on your back with your _____ arm out away from your body about 60 degrees and a rolled-up towel placed under your elbow as shown.
2. Turn/rotate your arm inward toward your body from the shoulder.
3. To assist in this stretch you may use a rope or towel to gently pull the arm farther inward as shown.
4. Make sure to keep your shoulders flat on the floor/bed on which you are lying.



SHOULDER • Horizontal Adduction

1. Stand or lie on your back, grasping your elbow as shown in the diagram.
2. Keeping your arm at shoulder height, pull your arm across your chest until you feel a gentle stretch in the back of your shoulder.
3. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.

> **STRENGTHENING EXERCISES** • Secondary Impingement Syndrome

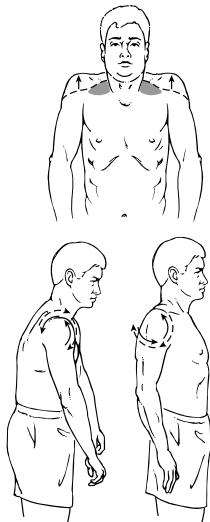
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.
- If weight equipment is used during the progression of your strength program, you should avoid activities that involve your hands or elbows going behind your head/body. These types of exercises place undue stress on your shoulders.



STRENGTH • Shoulder, External Rotation, Isometric

1. Bend your _____ elbow to 90 degrees as shown, holding your arm slightly in front of your body.
2. Place your opposite hand over your wrist as shown.
3. Try to turn/rotate your arm outward, away from your body, as if it were a gate swinging open. Resist this motion with the opposite hand that is on your wrist. Do not let any motion occur.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day.



SHOULDER • Scapular Elevation, Shrugs

1. Stand with your arms at your side in a *good erect posture*.
2. Subtly “shrug” your shoulders up and back toward your ears.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.
5. You may perform this exercise with a _____ pound weight in each hand.
6. Avoid standing in a slouched position with poor posture by using this technique intermittently throughout the day.



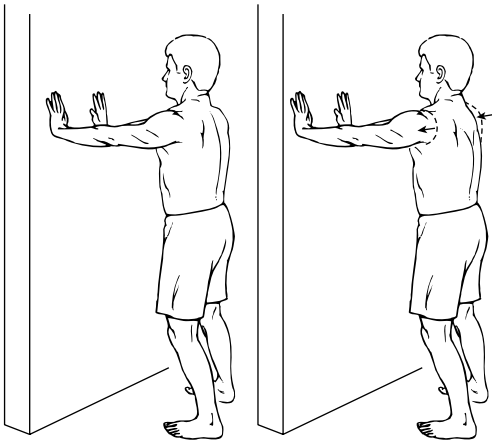
SHOULDER • Internal Rotation, Isometric

1. Bend your _____ elbow to 90 degrees as shown, holding the arm slightly in front of the body.
2. Place your opposite hand on the inside of your wrist as shown.
3. Try to turn/rotate your arm inward, toward the body, as if it were a gate swinging closed. Resist this motion with the opposite hand that is on the inside of your wrist. Do not let any motion occur.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day.



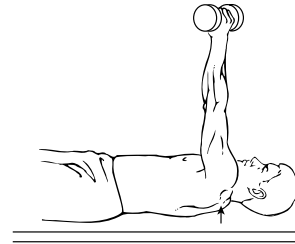
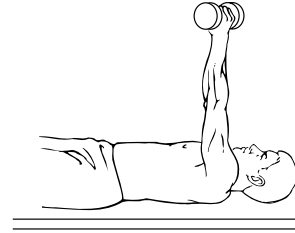
STRENGTH • Shoulder Abduction, Isometric

1. While standing, raise the _____ arm slightly away from the body as shown.
2. Place the other hand on top of your arm and push down. Do not allow your arm to move. Push as hard as you can without having any pain or moving the arm.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



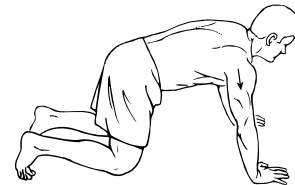
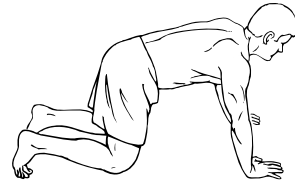
SHOULDER • Scapular Protraction

1. Stand with your hand against a wall as shown.
2. Keep your elbows straight and push down with your hands, raising the back of your shoulders away from the wall as shown in the drawing.
3. The farther away from the wall you stand, the harder the exercise.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



SHOULDER • Scapular Protraction

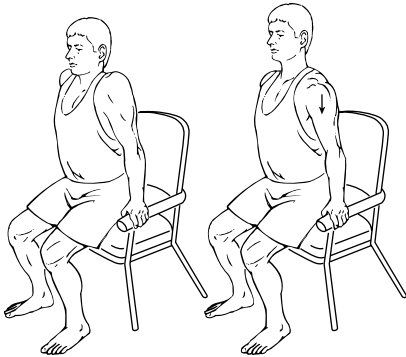
1. Lie on your back with your _____ arm straight up in the air as shown. Hold a _____ pound weight in your hand.
2. Push your hand up toward the ceiling, keeping your elbow straight and raising your shoulder off the floor.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



SHOULDER • Scapular Protraction

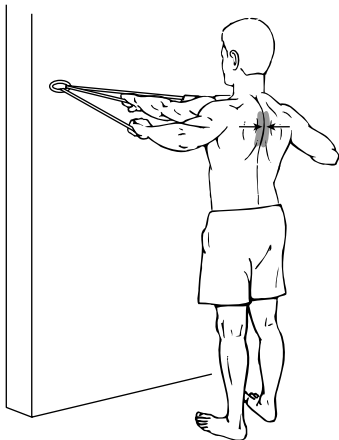
1. Position yourself on your hands and knees as shown.
2. Keep your elbows straight and push down with your hands, raising the back of your shoulders up as shown in the drawing.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.

This exercise may be made harder by assuming a push-up position. Before trying this check with your physician, physical therapist, or athletic trainer.



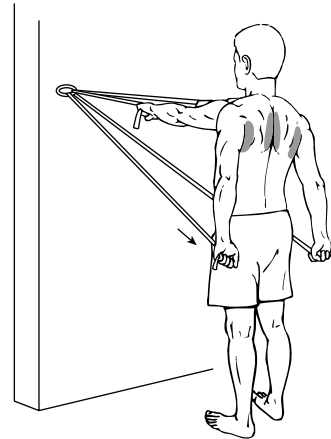
SHOULDER • Depression

1. Support yourself as shown in an armchair. Your elbows should be straight and you feel flat on the floor.
2. Push your shoulders downward. **Do not bend your elbows.**
3. Support your weight as needed by using your legs.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



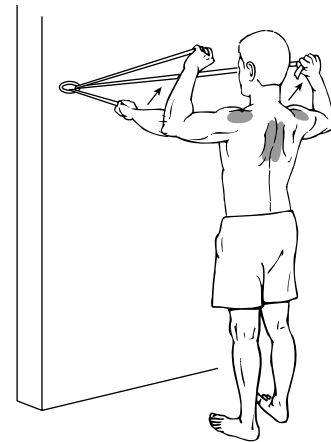
SHOULDER • Scapular Retraction

1. Anchor rubber band/tubing to a stable, fixed object.
2. Hold one end of the band/tubing in each hand with your arms straight out in front of you.
3. Squeeze/pinch your shoulder blades together.
4. Keeping your shoulder blades pinched together, pull your arms back as shown. Your hands should be level with your shoulders when you finish. Do not let your elbows go behind your body.
5. Hold this position for _____ seconds and then *slowly* return to the starting position.
6. Repeat exercise _____ times, _____ times per day.



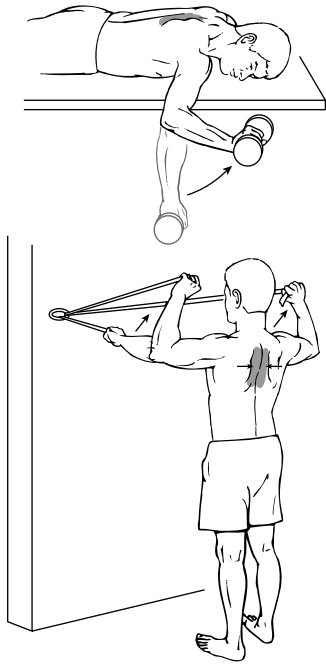
STRENGTH • Shoulder Extension

1. Anchor/secure rubber band/tubing around a stable object such as a stair post or around the knob of a closed door.
2. Stand holding the rubber band/tubing in front of you with your arms extended as shown.
3. Squeeze/pinch your shoulder blades together and pull your arms down and backward as shown. **Do not pull arms past the midline of your body.**
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



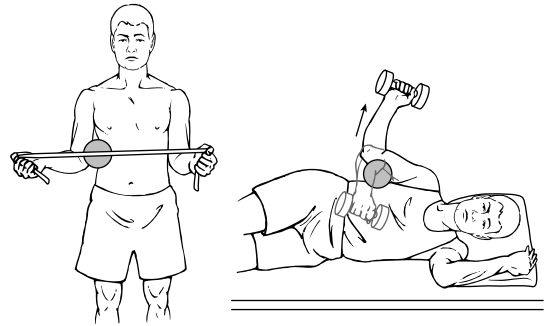
STRENGTH • Shoulder, External Rotation/Rowing

1. Anchor/secure rubber band/tubing around a stable object such as a stair post or around the knob of a closed door.
2. Stand holding the rubber band/tubing in front of you with your arms extended as shown.
3. Squeeze/pinch your shoulder blades together and pull your arms back as shown, bending your elbows. Your fists should end at shoulder height and close to your body.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



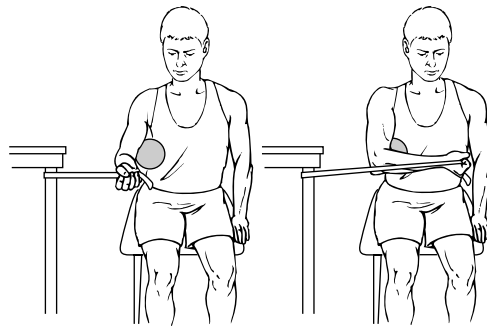
SHOULDER • Scapular Retraction and External Rotation

1. **If using a weight**—Lie on your stomach with your _____ arm out to the side and over the edge of the bed as shown. The elbow should be bent to 90 degrees and the upper arm should be supported by the bed. Hold a _____ pound weight in your hand.
 2. Turn/rotate your arm up toward the ceiling while keeping the elbow bent.
 3. Squeeze/pinch your shoulder blades together.
 4. Hold this position for _____ seconds and then *slowly* return to the starting position.
 5. Repeat exercise _____ times, _____ times per day.
1. **If using rubber band/tubing**—Hold one end of the band/tubing in each hand. Your elbows should be bent 90 degrees and at shoulder height.
 2. Squeeze/pinch your shoulder blades together.
 3. Keeping your shoulder blades pinched together, turn your arms up as if someone had said “Stick ‘em up!” Your hands should be in the position shown when you finish. **Do not bring your elbows or your hands past the middle of your body.**
 4. Hold this position for _____ seconds and then *slowly* return to the starting position.
 5. Repeat exercise _____ times, _____ times per day.



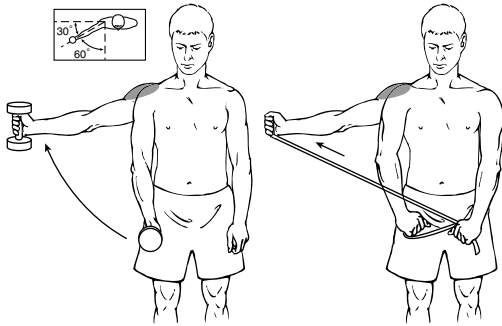
STRENGTH • Shoulder External Rotation

1. Lie on your side with your _____ arm up and the elbow bent to 90 degrees, or stand with your arms at your side and the elbows bent to 90 degrees as shown. Place a small rubber ball (4 to 6 inches in diameter) or rolled-up towel between your elbow and your side as shown.
2. Hold a _____ pound weight in your hand and turn the arm up toward the ceiling, keeping the elbow bent as shown. If using rubber band/tubing, turn the arm(s) out from your side while keeping the elbows bent.
3. Do this slowly and in control through your *pain free* range of motion only. If this is painful, stop and discuss this with your physician, physical therapist, or athletic trainer.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



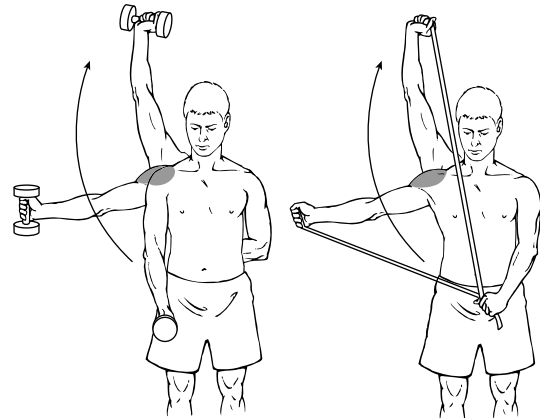
SHOULDER • Internal Rotation

1. Anchor the rubber band/tubing to a heavy/solid object as shown.
2. Place a small ball or towel between your elbow and body as shown in the drawing and bend your elbow to 90 degrees. Squeeze the ball gently to the side of your chest with your elbow.
3. Turn/rotate your arm in toward your body (across your chest/stomach). Do not let the ball move/fall away from the side of your chest.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



STRENGTH • Scaption, Thumb Up

1. Hold a _____ weight in your _____ hand with your arm at your side but slightly forward (approximately 30 degrees; see small diagram). This exercise may also be done with rubber band/tubing as shown.
2. Your hand should be in a “thumbs-up” position.
3. Slowly raise your arm in the “thumbs-up” position through your *pain free* range. If this is painful, stop and discuss this with your physician, physical therapist, or athletic trainer. Do not allow your shoulder to “shrug up” while doing this exercise.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



STRENGTH • Shoulder Abduction

1. Stand holding a _____ weight in your _____ hand and your palm facing your body as shown, or hold the rubber band/tubing as shown.
2. Slowly raise the arm up to the side and as far overhead as you can in your *pain free* range. If this is painful, stop and discuss this with your physician, physical therapist, or athletic trainer. *You should not progress above shoulder height unless instructed to do so by your physician, physical therapist, or athletic trainer.* If you are cleared to go above shoulder height, as you raise the arm to shoulder height begin to turn the palm toward the ceiling.
3. *Slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.

Notes:

(Up to 4400 characters only)

Notes and suggestions