

# OS ACROMIONALE



## ■ ■ ■ Description

The roof of the shoulder (the acromion) has three growth centers made of cartilage. During development, these growth centers become bone and the roof of the shoulder transforms from four separate bones into one bigger bone. Occasionally, one or more of these growth centers does not undergo bony change. This persistent growth center of the roof of the shoulder is called the os acromionale. This cartilage growth plate allows for some motion of the acromion, which may pinch the rotator cuff tendon or bursa, causing symptoms of rotator cuff inflammation. Alternatively, this entity may not cause any pain or problems.

## ■ ■ ■ Common Signs and Symptoms

Sometimes there is no pain with this problem, and it is found when x-rays are taken for other reasons. Other times, symptoms can include the following:

- Tenderness and occasionally redness and warmth on the top of the shoulder
- Shoulder pain, especially when moving the shoulder against resistance or with lifting, and particularly reaching overhead
- Pain that may awaken you at night
- Limitation of shoulder motion
- Crepitation (a crackling sound) when the shoulder is moved

## ■ ■ ■ Causes

The growth center of the acromion fails to undergo bony change. This allows for motion of the acromion, which may pinch the rotator cuff and bursa, causing inflammation, degeneration, and eventually tearing of the cuff.

## ■ ■ ■ Risk Increases With

- Growth plate not fusing
- Overhead activity, including sports such as tennis, volleyball, swimming, and baseball, as well as heavy lifting
- Poor physical conditioning (strength and flexibility)

## ■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Shoulder muscle strength
  - Flexibility and endurance
- Use proper technique.

## ■ ■ ■ Expected Outcome

Mild cases can be resolved with slight reduction of activity level, whereas moderate to severe cases may require significantly reduced activity for 3 to 4 months. Occasionally surgery is necessary.

## ■ ■ ■ Possible Complications

- Persistence and recurrence of symptoms
- Rotator cuff tear
- Risks of surgery, including infection, bleeding, injury to nerves, shoulder stiffness, nonunion (not healing), malunion (healing incorrectly), and pain from wires or screws used to fix the problem
- Persisting prominence (bump) on the roof of the shoulder

## ■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises (particularly of the rotator cuff and scapular [shoulder blade] stabilizing muscles), and modification of activities. Specifically, avoiding overhead activities and heavy lifting will help reduce the inflammation. The exercises for the shoulder can all be carried out at home. Referral to a physical therapist or athletic trainer for further evaluation or treatment may also be recommended. Uncommonly, injection of cortisone into the subacromial bursa may be attempted. Surgery to fuse the growth plate or to remove part of the bone if it is particularly small is recommended if symptoms persist despite 3 to 6 months of conservative treatment. Surgery to fuse the growth plate usually involves pins, screws, or wires to hold the bone, often with bone grafting. If the rotator cuff is torn, this should be fixed at the same time.

## ■ ■ ■ 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.



Figure 1

- Pain relievers are usually not prescribed for this condition, although your physician may prescribe these following surgery. Use only as directed and only as much as you need.
- Cortisone injections into the bursa may be administered to reduce inflammation, although this is not usually recommended.

### ■ ■ ■ 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

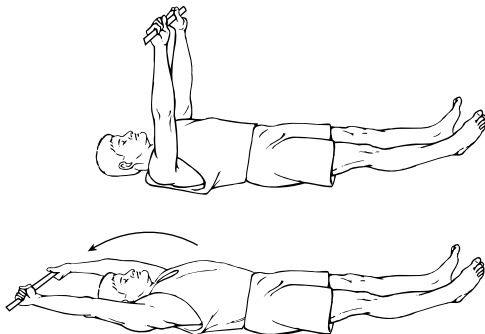
- Symptoms get worse or do not improve in 2 to 4 weeks despite treatment
- After surgery you develop increasing pain, swelling, redness, increased warmth, bleeding, drainage, or fever
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

## EXERCISES

### > RANGE OF MOTION AND STRETCHING EXERCISES • Os Acromionale

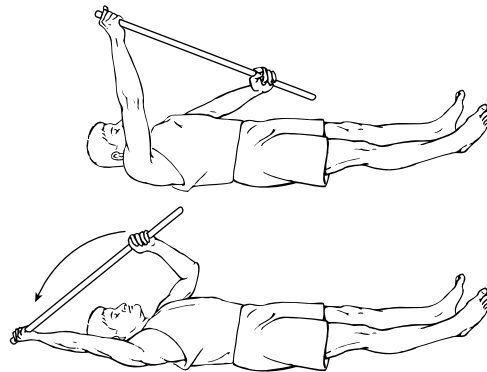
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



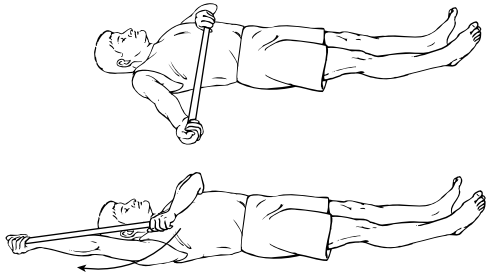
### SHOULDER • Flexion

1. Lie on your back holding a stick in both hands, keeping your hands shoulder-width apart.
2. Raise both hands over your head until you feel a gentle stretch.
3. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day. Hold each repetition 5 to 10 seconds.



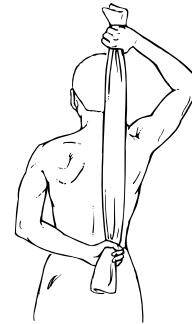
### SHOULDER • Flexion

1. Lie on your back. Grasp the bottom of a stick, handle of an umbrella, or blade of a golf club in your \_\_\_\_\_ hand as shown.
2. Using the stick, raise your arm overhead as shown until you feel a gentle stretch. Lead with the thumb in a "thumbs up" position.
3. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day. Hold each repetition 5 to 10 seconds



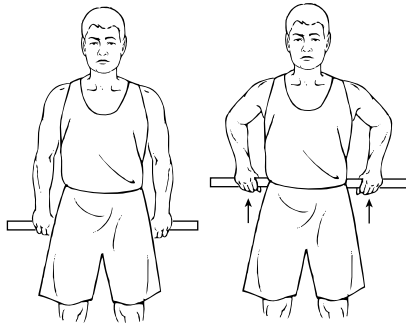
**SHOULDER • Abduction**

1. Lie on your back holding a stick, umbrella handle, or golf club in your hand as shown. The hand should be in the “thumbs up” position.
2. Using the stick, slowly push your arm away from your side and as far overhead as you can without pain. Push until you feel a gentle stretch.
3. 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. 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 • 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.

### > STRENGTHENING EXERCISES • Os Acromionale

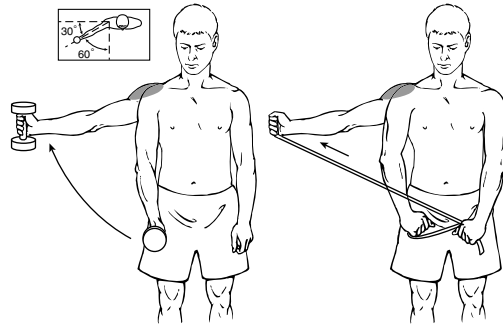
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



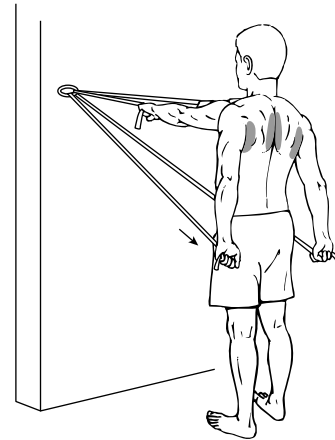
#### STRENGTH • Shoulder Abduction, Isometric

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.



#### 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.



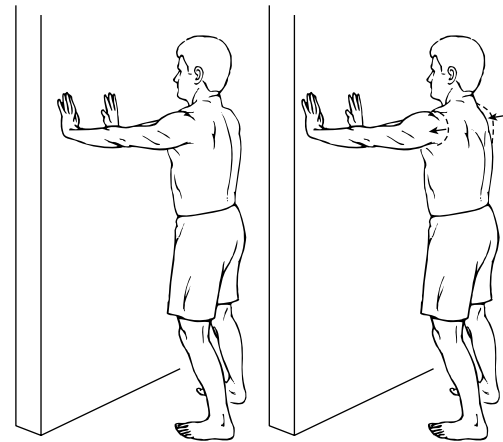
#### STRENGTH • Shoulder Extension

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.



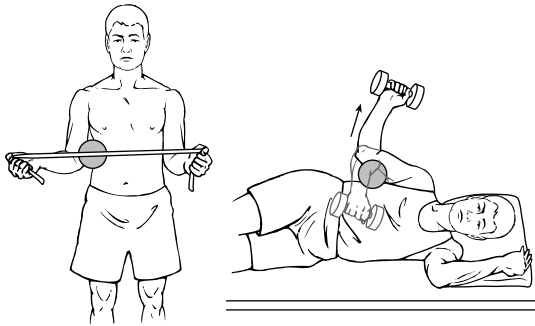
**STRENGTH • Shoulder, External Rotation, Isometric**

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.



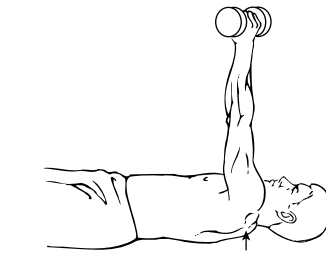
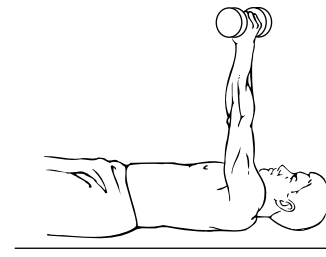
**SHOULDER • Scapular Protraction**

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.



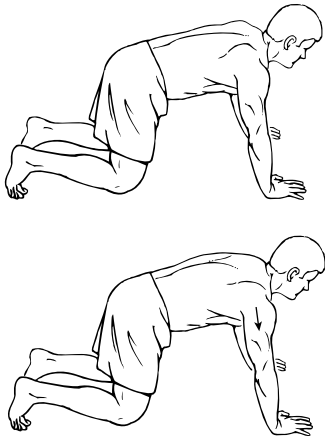
**STRENGTH • Shoulder External Rotation**

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 • Scapular Protraction**

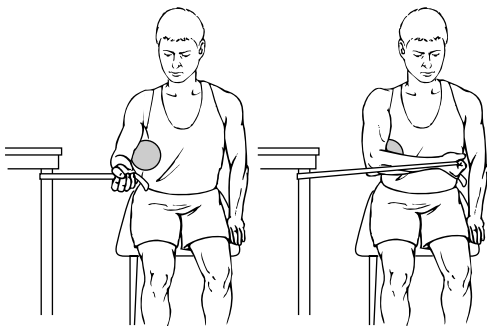
1. Lie on your back with your \_\_\_\_\_ arm straight up in the air as shown. Hold a \_\_\_\_\_ pound weight in your hand.
2. Push your hand up toward the ceiling, keeping your elbow straight and raising your shoulder off the floor.
3. Hold this position for \_\_\_\_\_ seconds and then *slowly* return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



### SHOULDER • Scapular Protraction

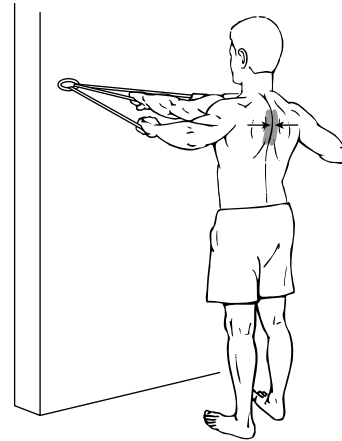
1. Position yourself on your hands and knees as shown.
2. Keep your elbows straight and push down with your hands, raising the back of your shoulders up as shown in the drawing.
3. Hold this position for \_\_\_\_\_ seconds and then *slowly* return to the starting position.
4. Repeat exercise \_\_\_\_\_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



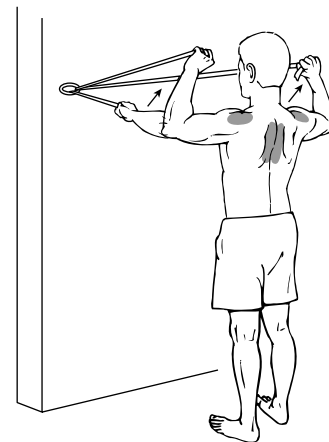
### SHOULDER • Internal Rotation

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.



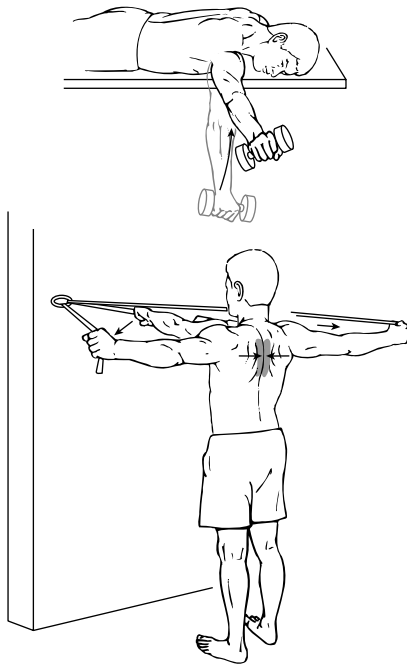
### SHOULDER • Scapular Retraction

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.



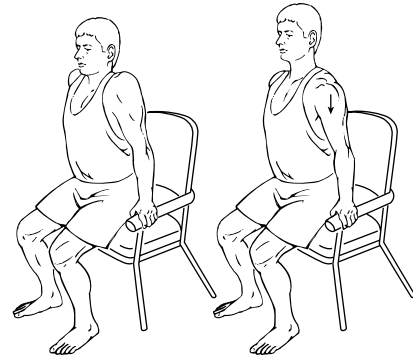
### STRENGTH • Shoulder, External Rotation/Rowing

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 • Horizontal Abduction

1. **If using a weight**—Lie on your stomach with your \_\_\_\_\_ arm over the edge of the bed as shown, holding a \_\_\_\_\_ pound weight in your hand.
2. Raise the arm up slowly so that it is level with the edge of the bed. Keep your elbow straight.
3. Hold this position for \_\_\_\_\_ seconds and then *slowly* return to the starting position.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.
1. **If using rubber band/tubing**—Anchor the rubber band/ tubing to a solid object.
2. Hold one end of the band/tubing in each hand as shown with your arms straight out in front of you.
3. Spread your arms apart, pulling straight backward, keeping them parallel to the floor.
4. Hold this position for \_\_\_\_\_ seconds and then *slowly* return to the starting position.
5. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



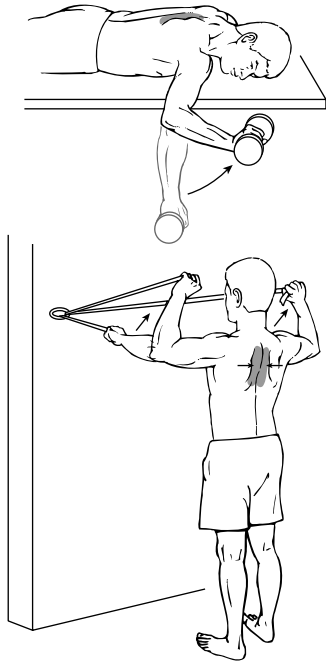
### SHOULDER • Depression

1. Support yourself as shown in an armchair. Your elbows should be straight and your feet 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 • 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.



### 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.



Notes:

(Up to 4400 characters only)

Notes and suggestions