

SCAPULAR WINGING

(Serratus Anterior Palsy, Long Thoracic Nerve Injury)



■ ■ ■ Description

Scapular winging is an uncommon nerve condition, causing pain and occasionally weakness in the shoulder. It involves injury to the long thoracic nerve in the back near the shoulder blade. The long thoracic nerve runs from the neck along the chest wall to the serratus anterior muscle. The nerve can be stretched due to a fall on the shoulder while the neck bends toward the other shoulder, it can be the result of repetitive injury, or it may occur without injury; sometimes it is associated with a viral illness. Injury to this nerve results in weakness of the serratus anterior muscle, causing the shoulder blade (scapula) to pull away from the chest wall with attempted shoulder movement, called winging. The scapula is the base from which the shoulder functions. With winging, the shoulder works off a weak base, making shoulder function weak as well.

■ ■ ■ Common Signs and Symptoms

- Pain and discomfort (burning or dull ache) that is poorly localized, often in the back of the shoulder or shoulder blade
- Heaviness or fatigue of the arm
- Loss of power of the shoulder
- Difficulty raising the arm above shoulder level
- Pain in the back when sitting in a chair with a high back due to the scapula hitting the back of the chair
- Bump in the back of the shoulder (the scapula) that is more obvious when trying to do push-ups or reach forward overhead

■ ■ ■ Causes

- Viral illness
- Repetitive stretch injury
- Fall onto shoulder with the head and neck stretched away from the shoulder

■ ■ ■ Risk Increases With

- Contact sports
- Sports that require overhead throwing type activity, such as baseball, volleyball, and tennis
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Shoulder flexibility
 - Muscle strength and endurance

■ ■ ■ Expected Outcome

There is usually complete spontaneous recovery within 18 months. Rarely surgery is necessary.

■ ■ ■ Possible Complications

- Permanent weakness of the shoulder, particularly in lifting power and when working with the arm overhead
- Persistent pain in the shoulder
- Stiffness of the shoulder
- Increasing weakness of the extremity
- Disability and inability to compete

■ ■ ■ General Treatment Considerations

Initial treatment consists of rest from the offending activity and nonsteroidal anti-inflammatory medications to help reduce inflammation and pain. The nerve usually spontaneously recovers, although this may take up to 12 to 24 months. Performing shoulder range-of-motion exercises while waiting for nerve recovery is of paramount importance. Referral to a physical therapist or an athletic trainer may be recommended for further treatment, including ultrasound and other modalities. If this conservative treatment is not successful, surgery may be necessary to replace the lost function of the serratus anterior muscle with the function of another muscle. This surgery is considered a salvage operation; it is not meant to allow the athlete to return to sports, just to allow pain-free activities of daily living.

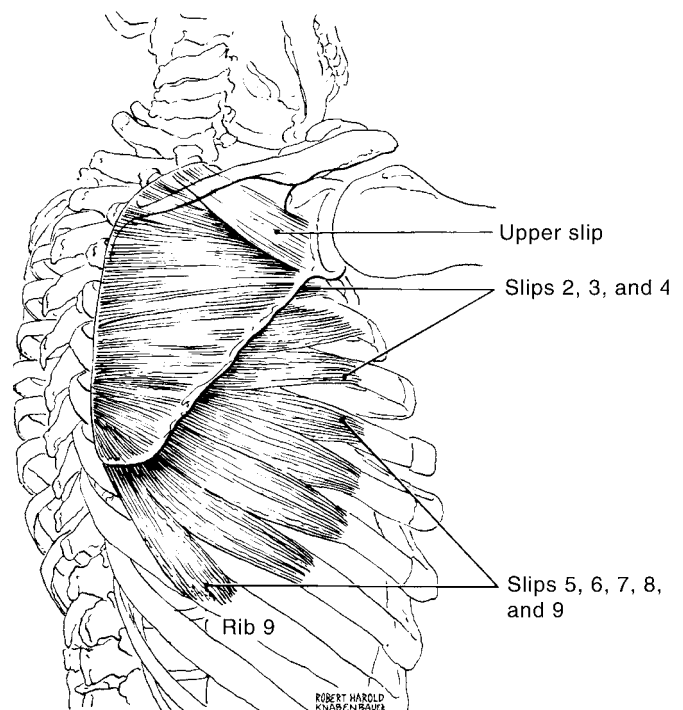


Figure 1

From Rockwood CA Jr., Matsen FA III: *The Shoulder*, 2nd ed. Philadelphia, WB Saunders, 1998, p. 136.

■ ■ ■ 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 may be prescribed as necessary by your physician, usually only after surgery. Use only as directed and only as much as you need.

■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. 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.

- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

■ ■ ■ Notify Our Office If

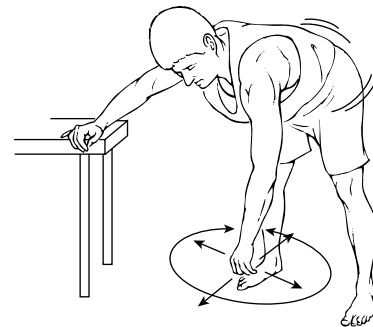
- Symptoms get worse or do not improve in 6 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

EXERCISES

➤ RANGE OF MOTION AND STRETCHING EXERCISES • Scapular Winging (Serratus Anterior Palsy, Long Thoracic Nerve Injury)

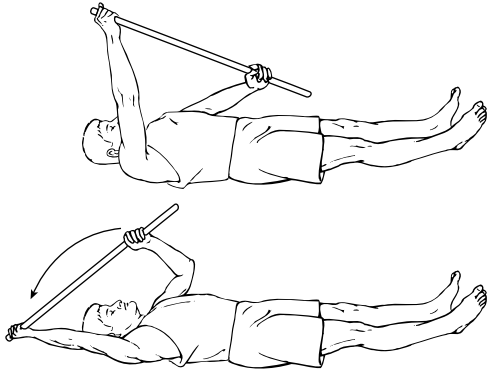
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.

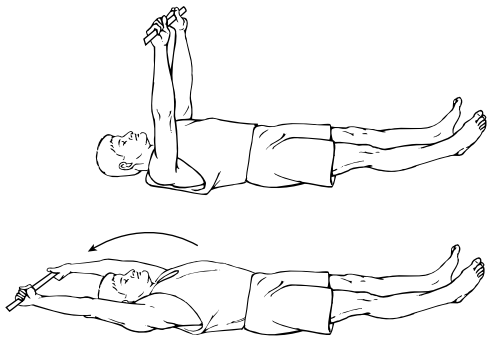


SHOULDER • Pendulum

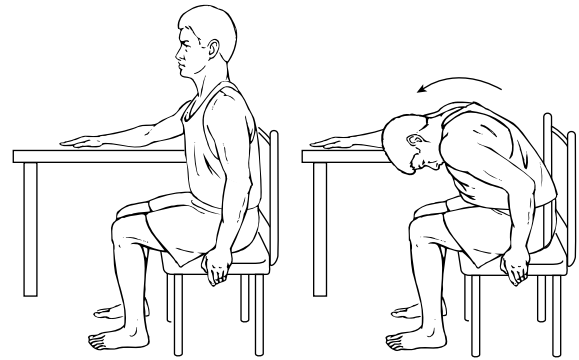
1. Lean forward at the waist, letting your _____ arm hang freely. Support yourself by placing the opposite hand on a chair, table, or counter as shown.
2. Sway your *whole body* slowly forward and back. This will cause your arm to move. Let your arm hang freely. Do not tense it up.
3. Repeat the above swaying side to side and moving in circular patterns, clockwise and counterclockwise.
4. Do _____ repetitions in each direction.
5. Repeat exercise _____ times, _____ times per day.

**SHOULDER • Flexion**

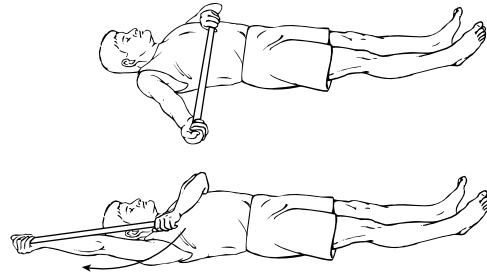
1. Lie on your back. Grasp the bottom of a stick, handle of an umbrella, or blade of a golf club in your _____ hand as shown.
2. Using the stick, raise your arm overhead as shown until you feel a gentle stretch. Lead with the thumb in a “thumbs up” position.
3. Repeat exercise _____ times, _____ times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

**SHOULDER • 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. Sit in a chair with your _____ arm on a table as shown.
2. Lean forward, sliding your arm forward on the table until you feel a gentle stretch.
3. Return to the starting position.
4. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds

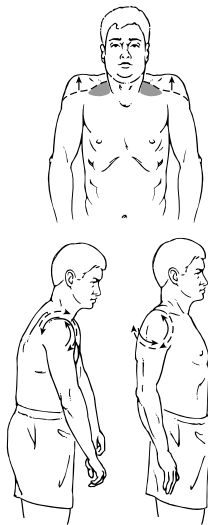
**SHOULDER • Abduction**

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.

➤ **STRENGTHENING EXERCISES** • Scapular Winging (Serratus Anterior Palsy, Long Thoracic Nerve Injury)

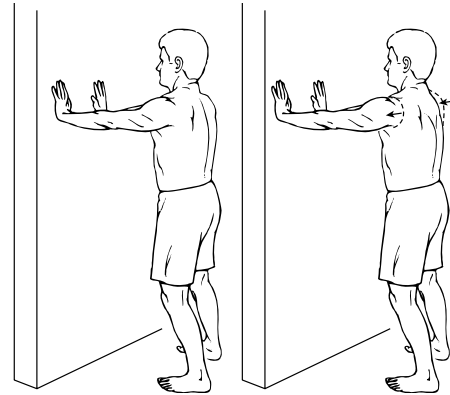
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. These exercises not only specifically address the weakness of the serratus anterior, but also other muscles that control scapular movement. 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.



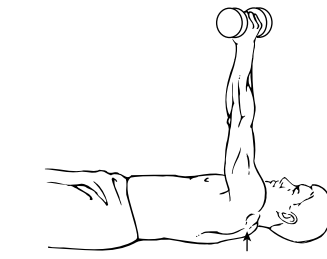
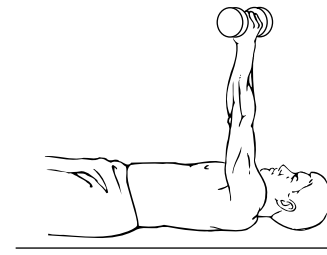
SHOULDER • Scapular Elevation, Shrugs

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.



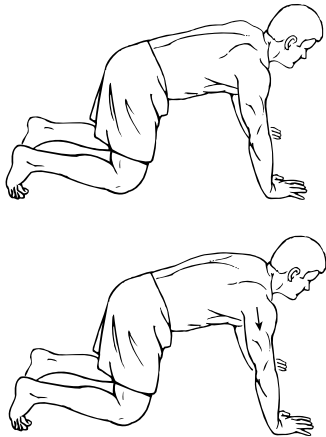
SHOULDER • Scapular Protraction

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

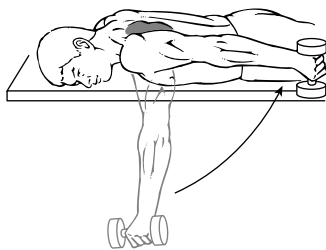
1. Lie on your back with your _____ arm straight up in the air as shown. Hold a _____ pound weight in your hand.
2. Push your hand up toward the ceiling, keeping your elbow straight and raising your shoulder off the floor.
3. Hold this position for _____ seconds and then *slowly* return to the starting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



SHOULDER • Scapular Protraction

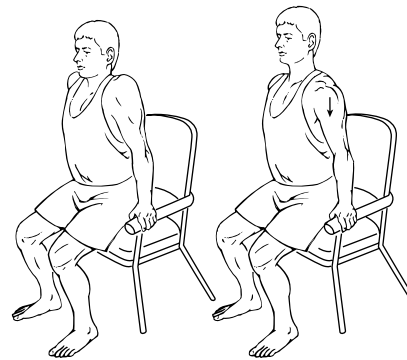
1. Position yourself on your hands and knees as shown.
2. Keep your elbows straight and push down with your hands, raising the back of your shoulders up as shown in the drawing.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times,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



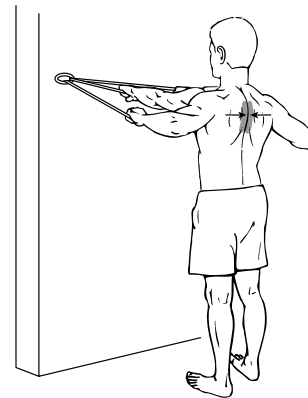
STRENGTH • Shoulder Extension

1. Lie on your stomach with your _____ arm off the edge of the bed.
2. Holding a _____ pound weight in your hand, slowly raise the arm up and backward toward the ceiling.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



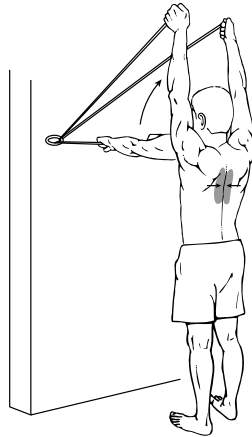
SHOULDER • Depression

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.



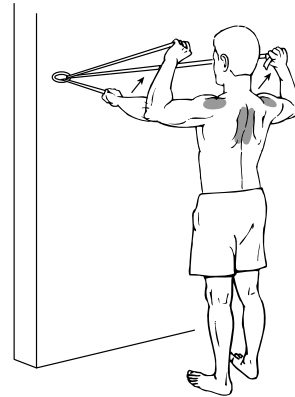
SHOULDER • Scapular Retraction

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.



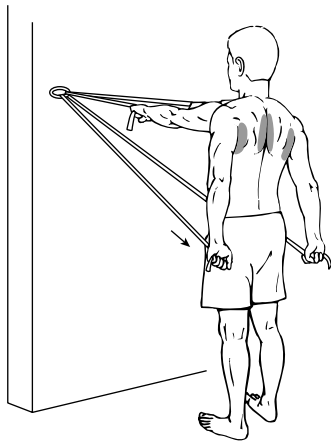
SHOULDER • Scapular Retraction and Elevation

1. 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 both arms straight, raise them both up overhead.
4. Lead with your thumbs so that they are in a “thumbs up” position.
5. Hold this position for _____ seconds and then *slowly* return to the starting position.
6. Repeat exercise _____ times, _____ times per day.



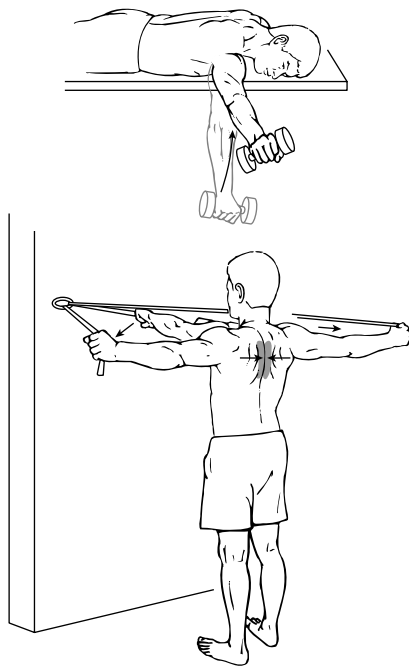
STRENGTH • Shoulder, External Rotation/Rowing

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.



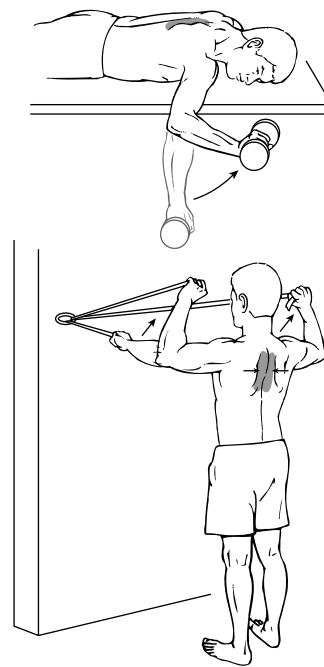
STRENGTH • Shoulder Extension

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.



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 • 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