

STRUCTURAL ISSUES

See THORACIC OUTLET SYNDROME.

OTHER STRUCTURAL ISSUES

- ❖ Winging of the scapula
- ❖ The middle bellies of Serratus Anterior elevate the scapula where the lower bellies depress the scapula making it an antagonist of itself.
- ❖ Weakness of the Serratus Anterior makes control of breathing difficult during speech as the breathing becomes more labored.

IMPAIRED FUNCTION

- ❖ Deep breathing restricted, shortness of breath, "air hunger"
- ❖ Unable to talk without pauses to breathe
- ❖ Unable to sleep on the affected side
- ❖ Increase in pain associated to myocardial infarction
- ❖ Pain on strong protraction of the scapula, especially to one side.
- ❖ Inability to chin-up on a bar
- ❖ Tenderness and fibrocystic nodules in the breast
- ❖ Hyper sensitive nipples

CAUSES & PERPETUATING FACTORS

- ❖ Unaccustomed running
- ❖ Heavy lifting overhead
- ❖ Chest press exercises
- ❖ Severe coughing
- ❖ High levels of anxiety
- ❖ Hanging from hands
- ❖ Heavy back pack or bag with a strap that elevates and protracts the shoulder

CONTRAINDICATIONS & CAUTIONS

- ❖ Acute fracture of the ribs

DIFFERENTIAL ASSESSMENT

- ❖ An elevated and protracted shoulder with pain medial to the lower scapular border is a reasonable indicator.
- ❖ Winged scapulae with difficulty breathing while speaking loudly is a reasonable indicator.

- ❖ Tenderness in the Serratus Anterior that elicits pain in the back medial to the lower scapula is a strongly indicates the Serratus Anterior.
- ❖ Pain medial to the scapula must be distinguished from a displaced rib head as well as the referral of iliocostalis thoracis, infraspinatus, latissimus dorsi, multifidi, rhomboids, scalenes and trapezius.

Serratus Anterior is shares many functions with other muscles. See the STRUCTURAL OVERVIEW for more detailed comparisons on structural assessment.

Pain close to the lower scapular border is not easy to separate from the infraspinatus or rhomboids. Postural analysis, palpation and eliciting referral with ischemic compression are needed for better assessment.

Displaced ribs heads tend to be sharper and local to the associated rib and often sharp and more closely associated to breath and twisting of the trunk.

Latissimus dorsi referral is usually just below the scapula instead of just medial to it. The latissimus dorsi also produces a depressed shoulder with a "C" shaped side-bending, kyphosis. Serratus anterior trigger points are not usually associated to side bending.

Iliocostalis thoracis usually has a notable lump in the muscle and produces pain that is associated to extending a twisting.

Multifidi patterns are more local to the lamina groove and associate to spinal movement.

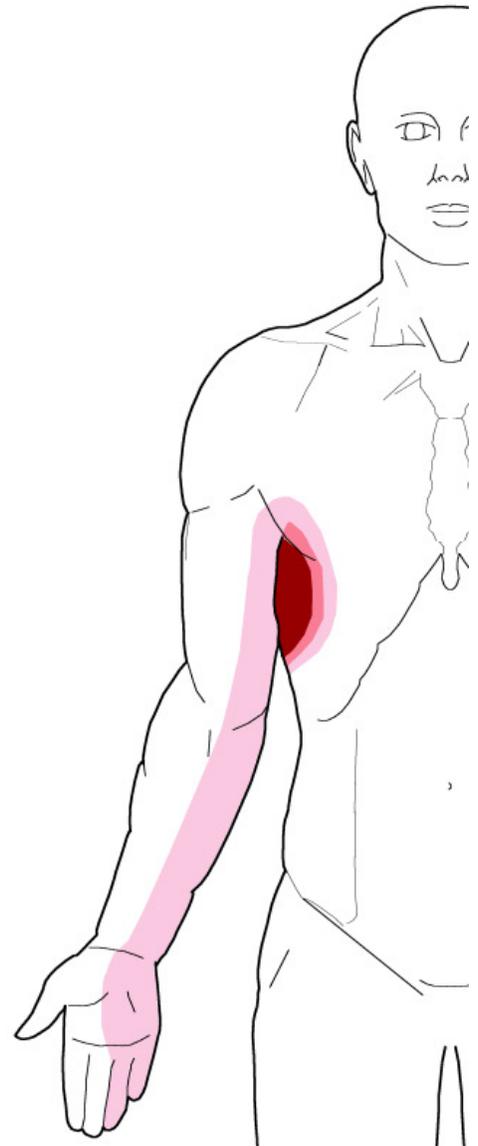
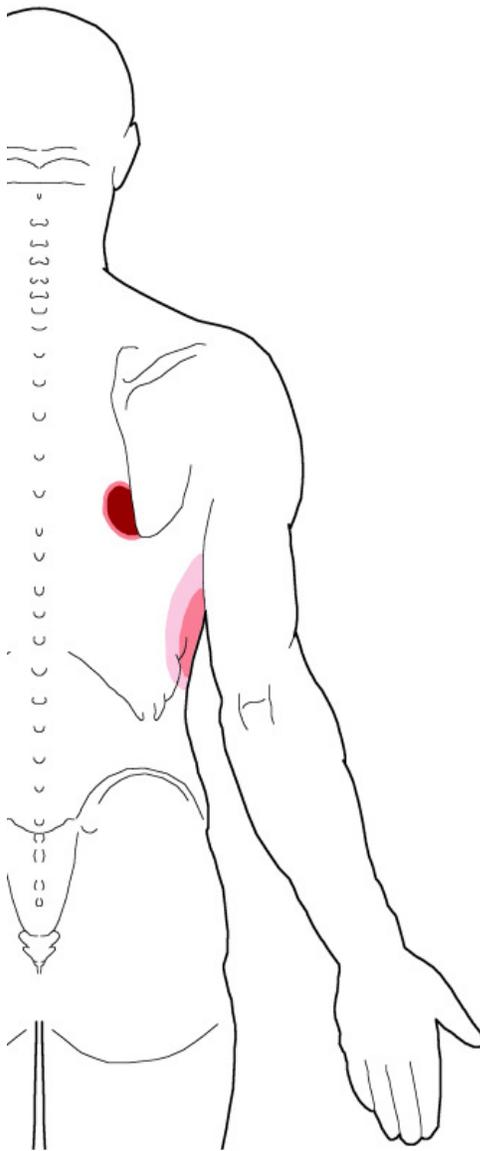
The referral pattern for scalenes is not limited to the lower portion of the interscapular area.

Scalenes are, however, often associated to the breathing patterns that result from a restricted diaphragm.

Rhomboids are seldom the real problem, unless there is acute trauma to the rhomboid.

The referral of trapezius (lower) is difficult to separate without ischemic compression. It is often part of the same postural distortion with elevated shoulders. It is usually easiest to just treat trapezius (lower) and Serratus Anterior at the same time.

AREAS OF PAIN AND REFERRAL



- ❖ Pain in the lateral ribs around the level of the xiphoid with intense pain medial to the inferior vertebral border of the scapula. Pain may extend down the medial arm into the ulnar palm and fingers
- ❖ Breast sensitivity
- ❖ Chest pain