

Osteopathic Shoulder Exam and Treatment

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Objectives

- Articulate the Tenets of Osteopathy and the Models of Treatment
- Briefly describe relevant anatomy and their potential contributions to shoulder girdle dysfunctions
- Describe a focused structural exam that could be done when evaluating shoulder pain
- Create an example focused manipulative treatment plan for shoulder pain

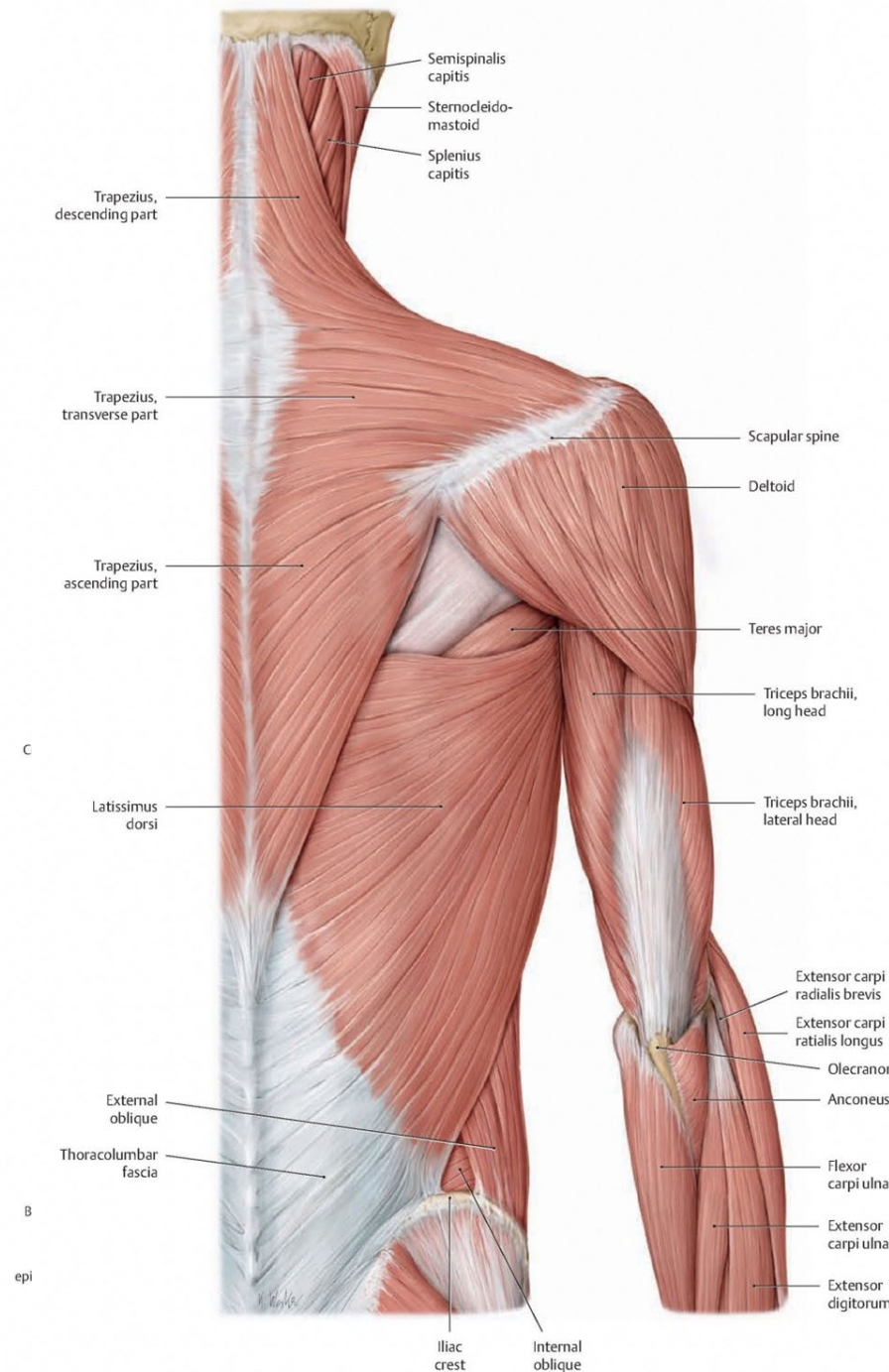


The Great Hub

- Overlapping muscles
- Distribution of Tension



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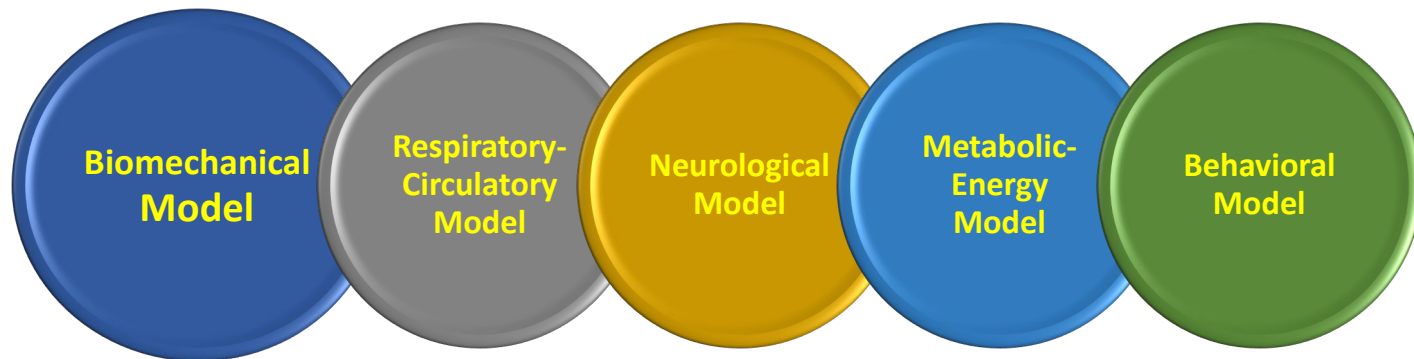


Tenets of Osteopathy

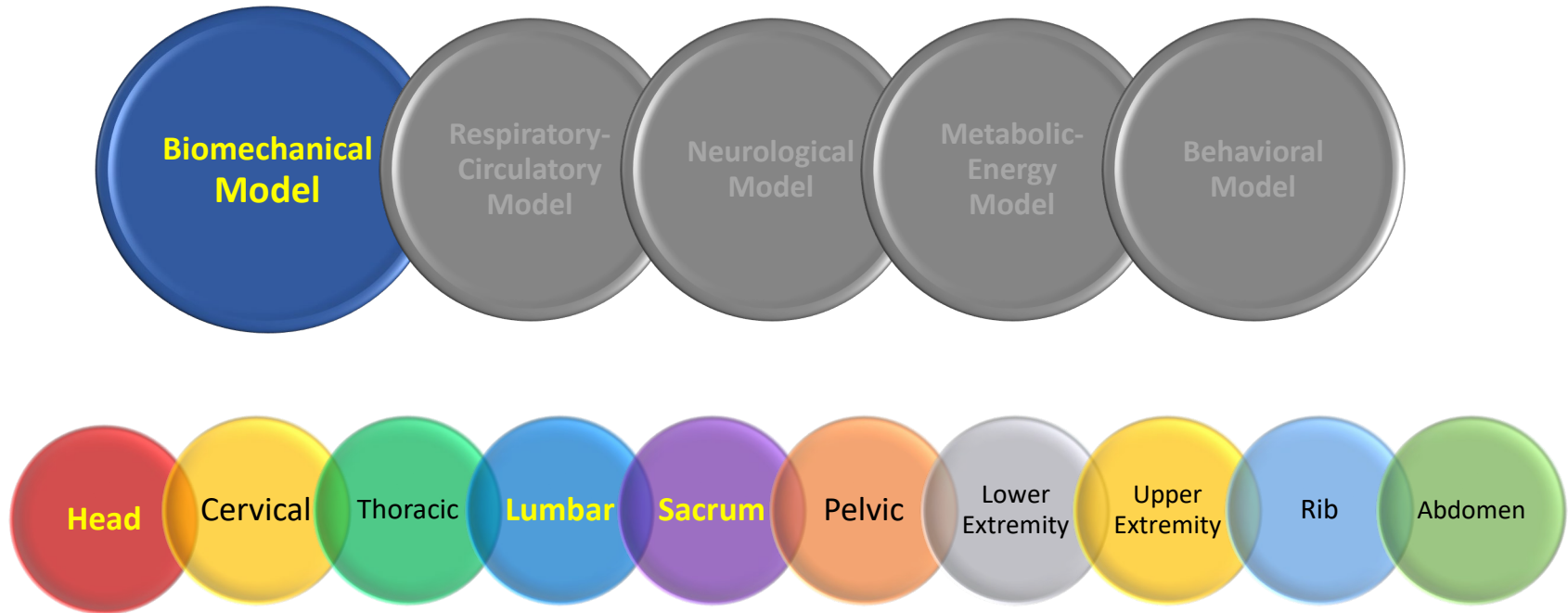
- The body is a unit; the person is a unit of body, mind, and spirit.
- The body is capable of self-regulation, self-healing, and health maintenance.
- Structure and function are reciprocally interrelated.
- Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.



Five Models of Osteopathic Treatment



Basic Considerations



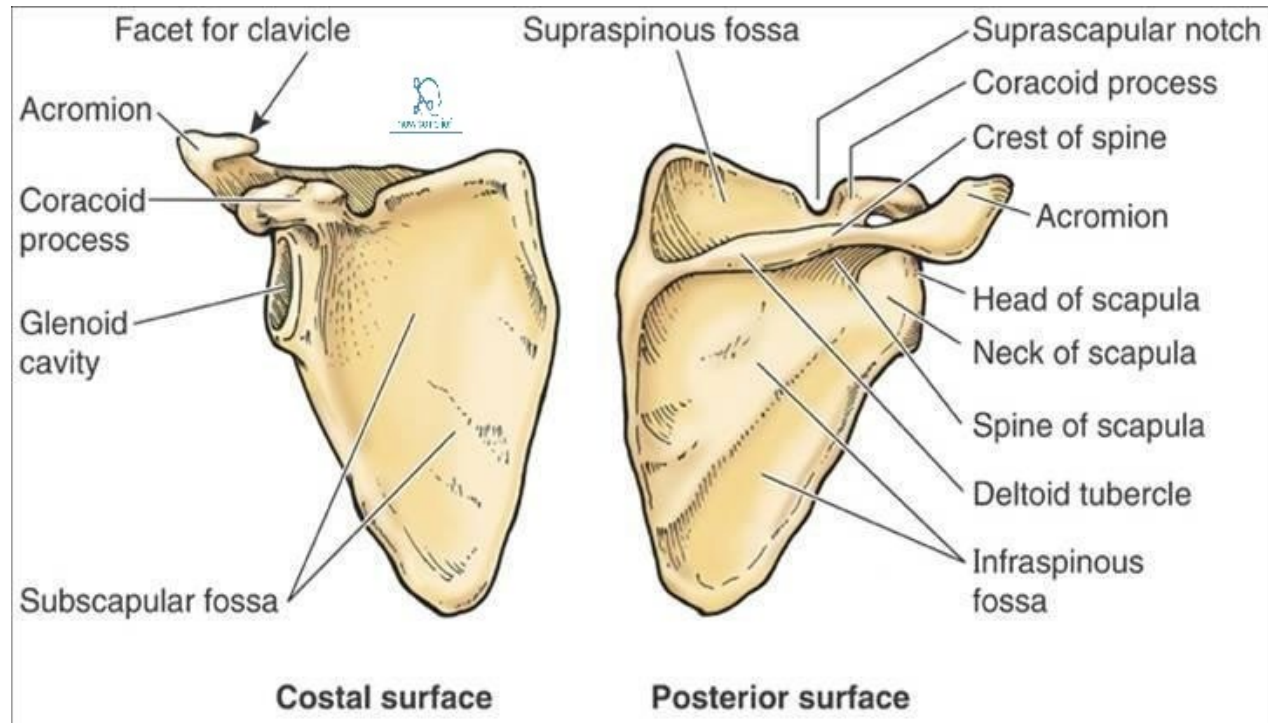
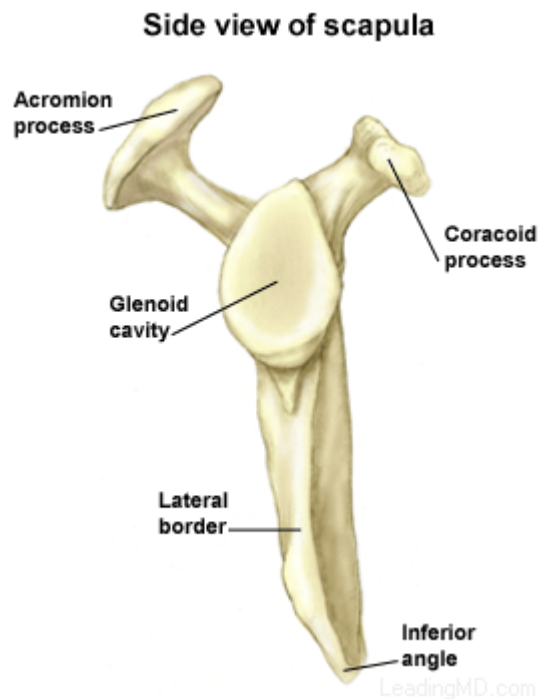
The Body Regions



Descriptors	Relevance in Shoulder
Cervical	Biomechanical pain Autonomic- Parasympathetic (OA)
Thoracic	Biomechanical pain Autonomic- Sympathetic Circulation- Resp Diaphragm
Upper Extremity	Biomechanical pain
Rib Cage (costochondral, costovertebral, sternochondral)	Biomechanical pain Autonomic- Sympathetic Circulation- Resp Diaphragm
Lumbar	Biomechanical pain
Sacrum	Biomechanical pain Autonomic- Parasympathetic
Pelvis (Pubic, Hip)	Biomechanical pain



The Scapula & Its Landmarks



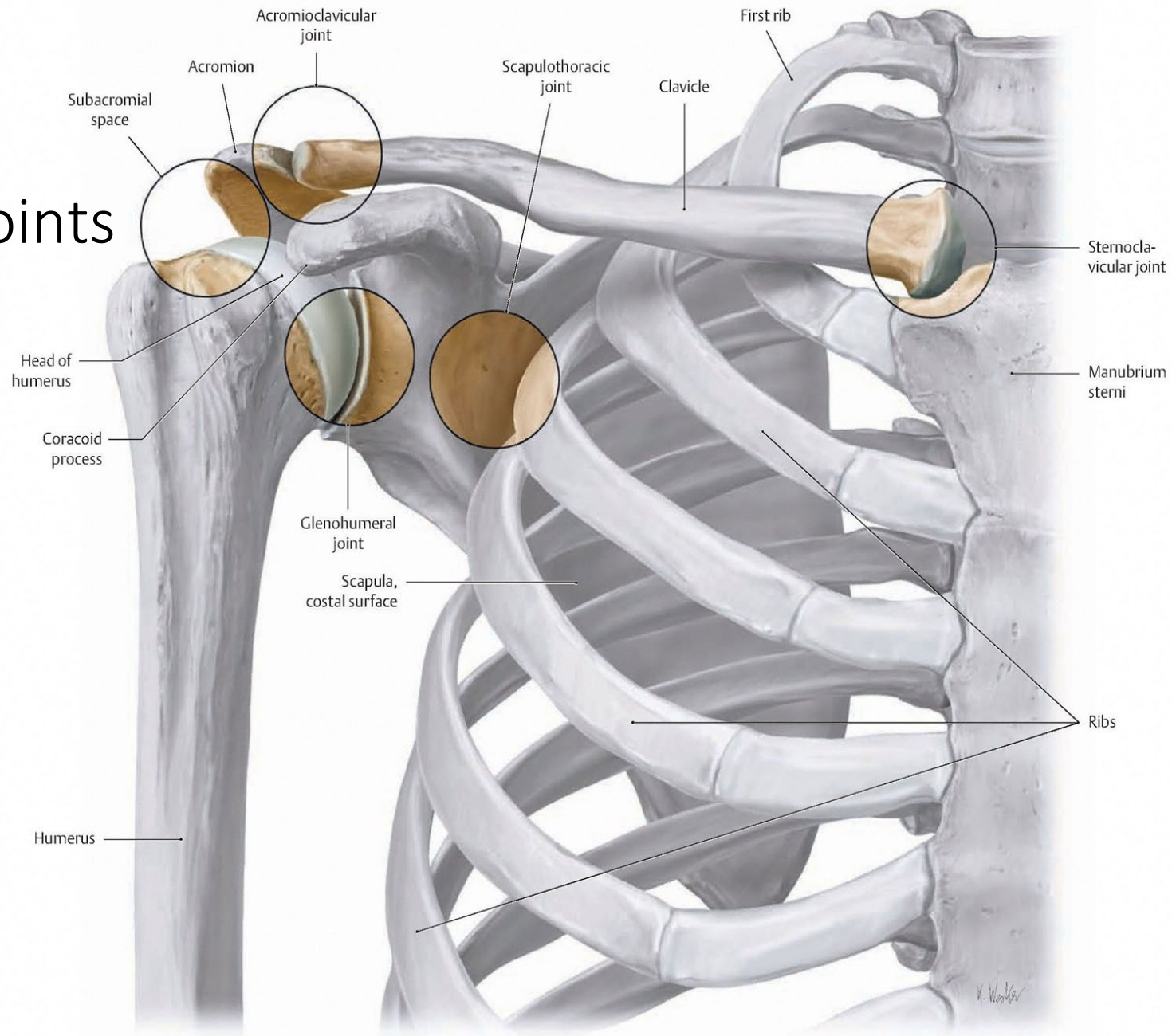


Joints and Articulations

- Joints (Clear boundaries)
 - 3 True Joints
 - Glenohumeral
 - Acromioclavicular
 - Sternoclavicular
- Articulations (Regions of contact)
 - 3 Articulations
 - Scapulothoracic
 - Suprahumeral AKA Subacromial
 - The Bicipital groove

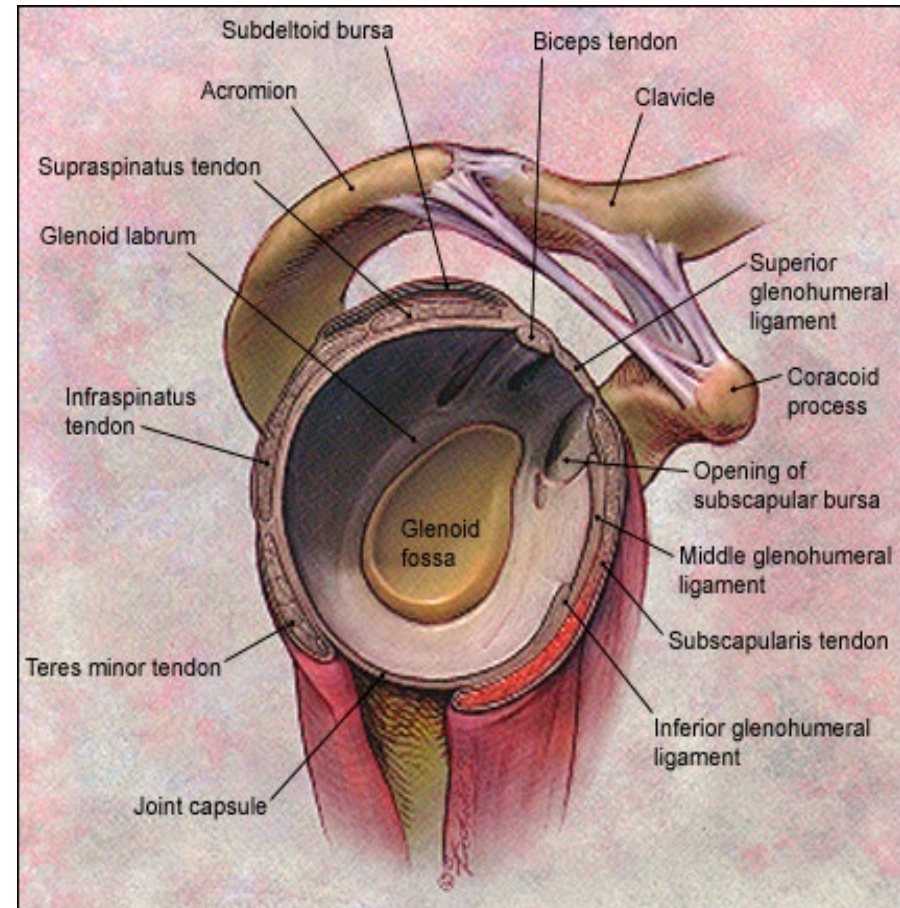


Shoulder Joints

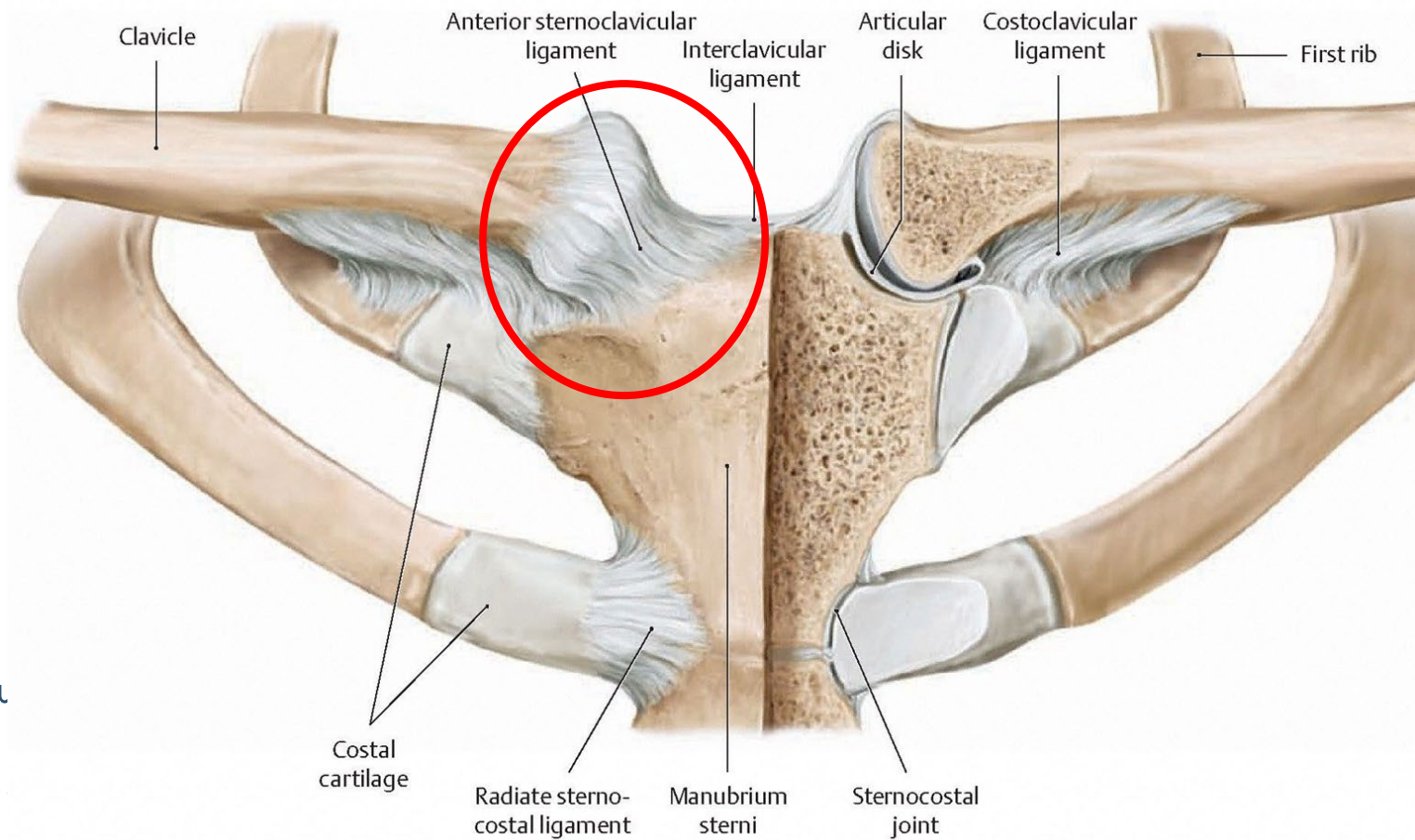


Glenohumeral Joint

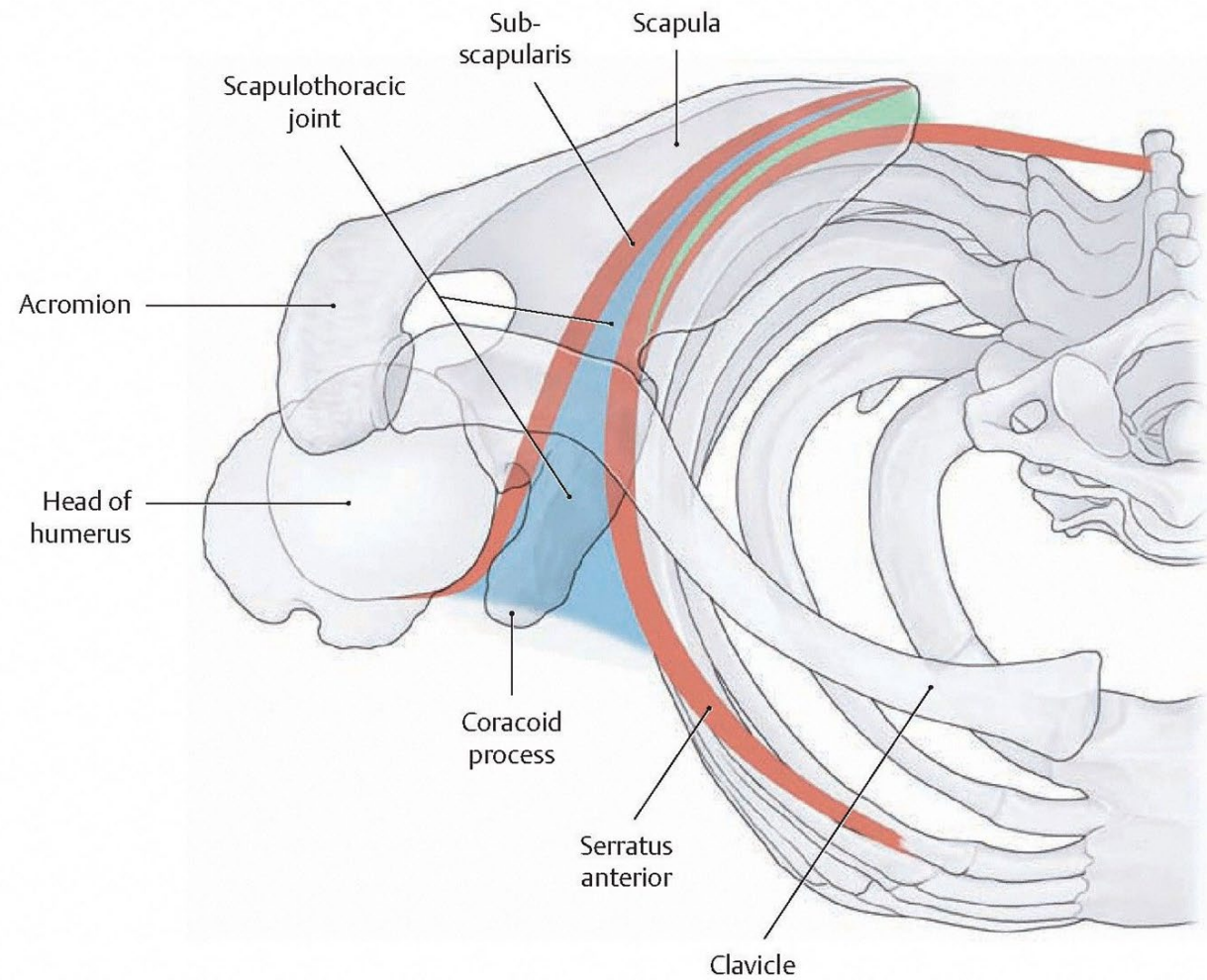
- Glenoid fossa surrounded by ring of cartilage called labrum, which deepens pocket and allows for better conformity



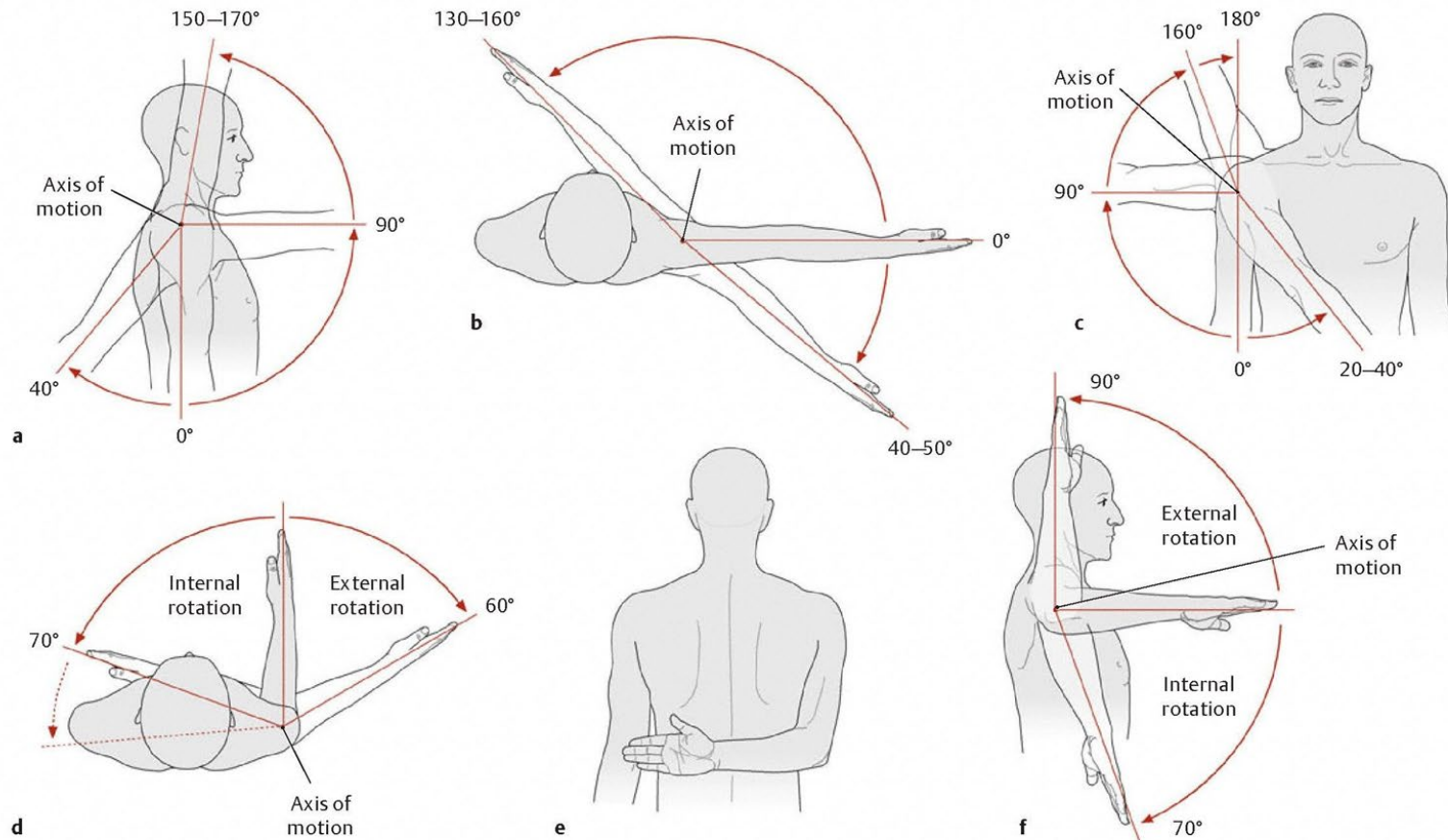
Sternoclavicular Joint



Scapulothoracic Joint



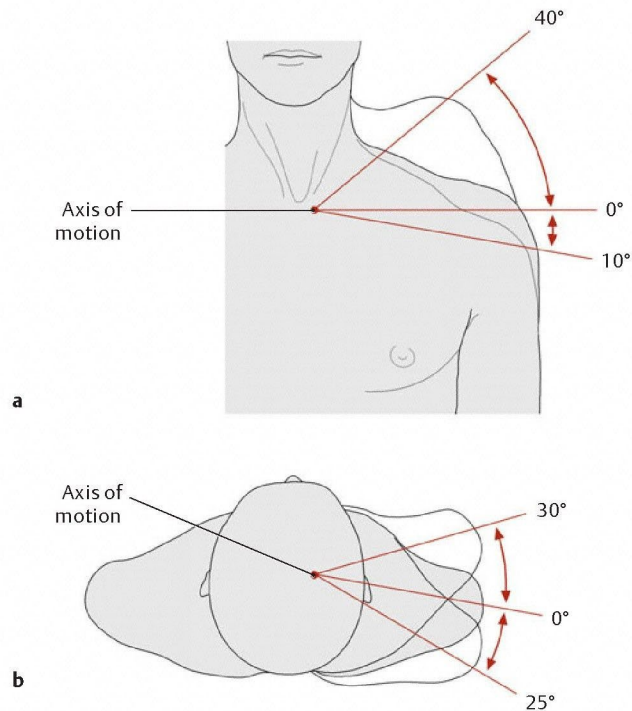
Motions of the Shoulder



D Movements in the shoulder joint

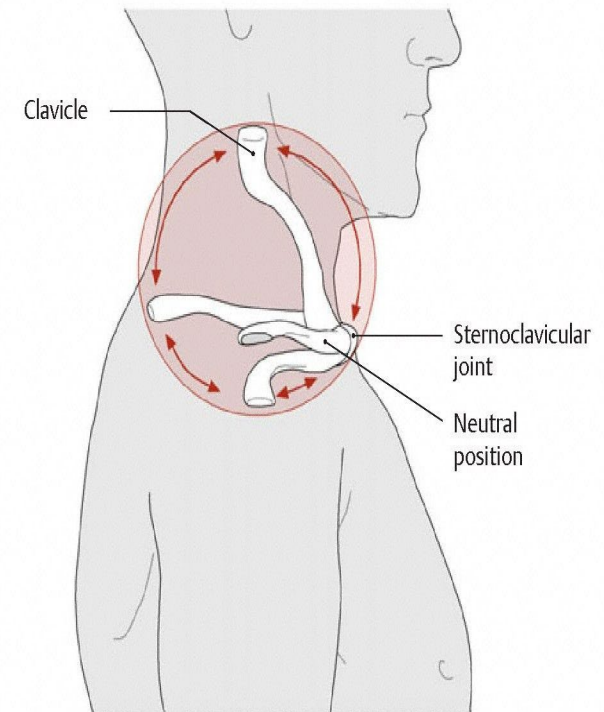
- a Anteflexion and retroflexion (flexion and extension) about a horizontal axis.
- b Anteflexion and retroflexion of the arm raised to 90 degree abduction.
- c Abduction and adduction about a sagittal axis.
- d-f Internal and external rotation of the arm about the longitudinal (shaft) axis of the humerus.

Motions of the Shoulder



B Movements (and range of motion) in the sternoclavicular joint

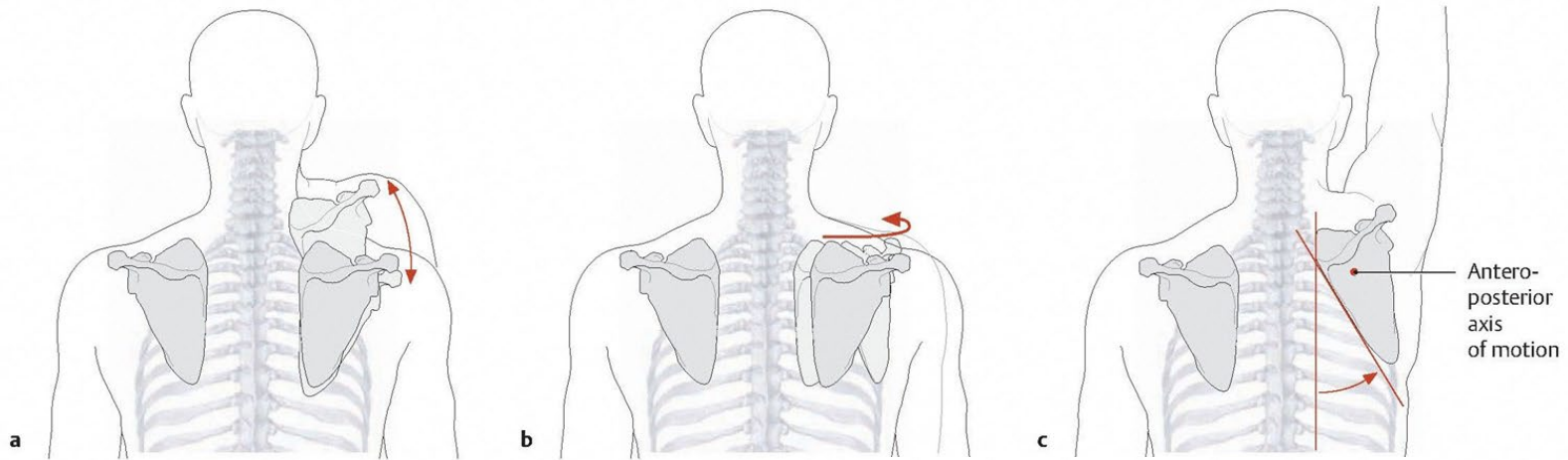
- a Elevation and depression of the shoulder about a para-sagittal axis.
- b Protraction and retraction of the shoulder about a longitudinal (vertical) axis.



C Range of motion of the clavicle

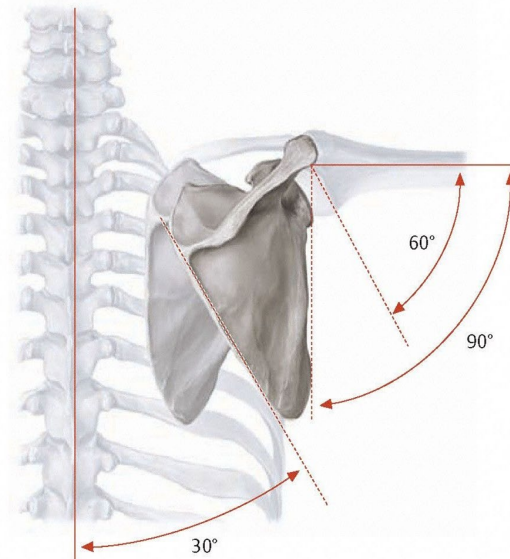
Lateral view of the right clavicle.

Motions of the Shoulder

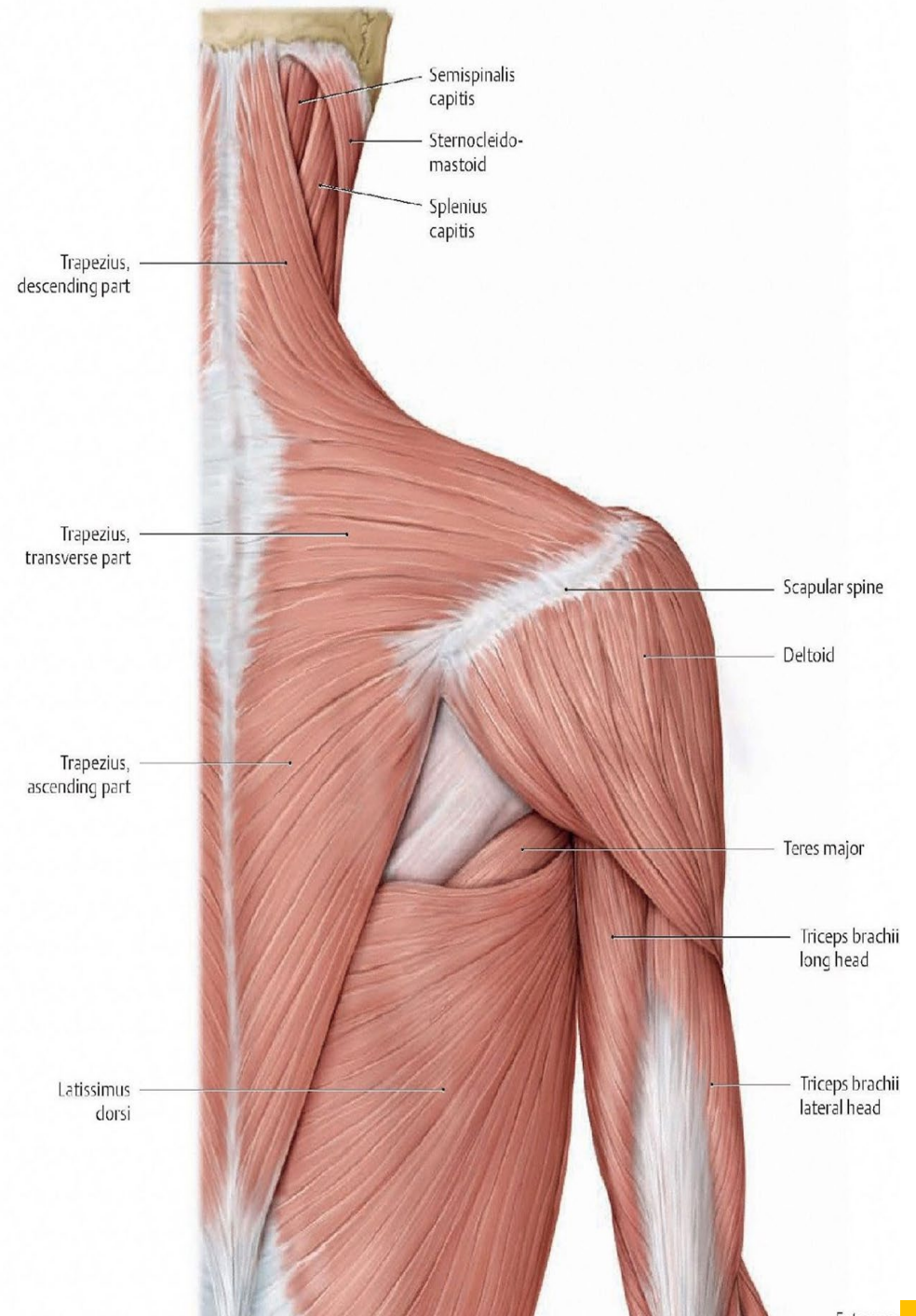


A Movements of the scapula

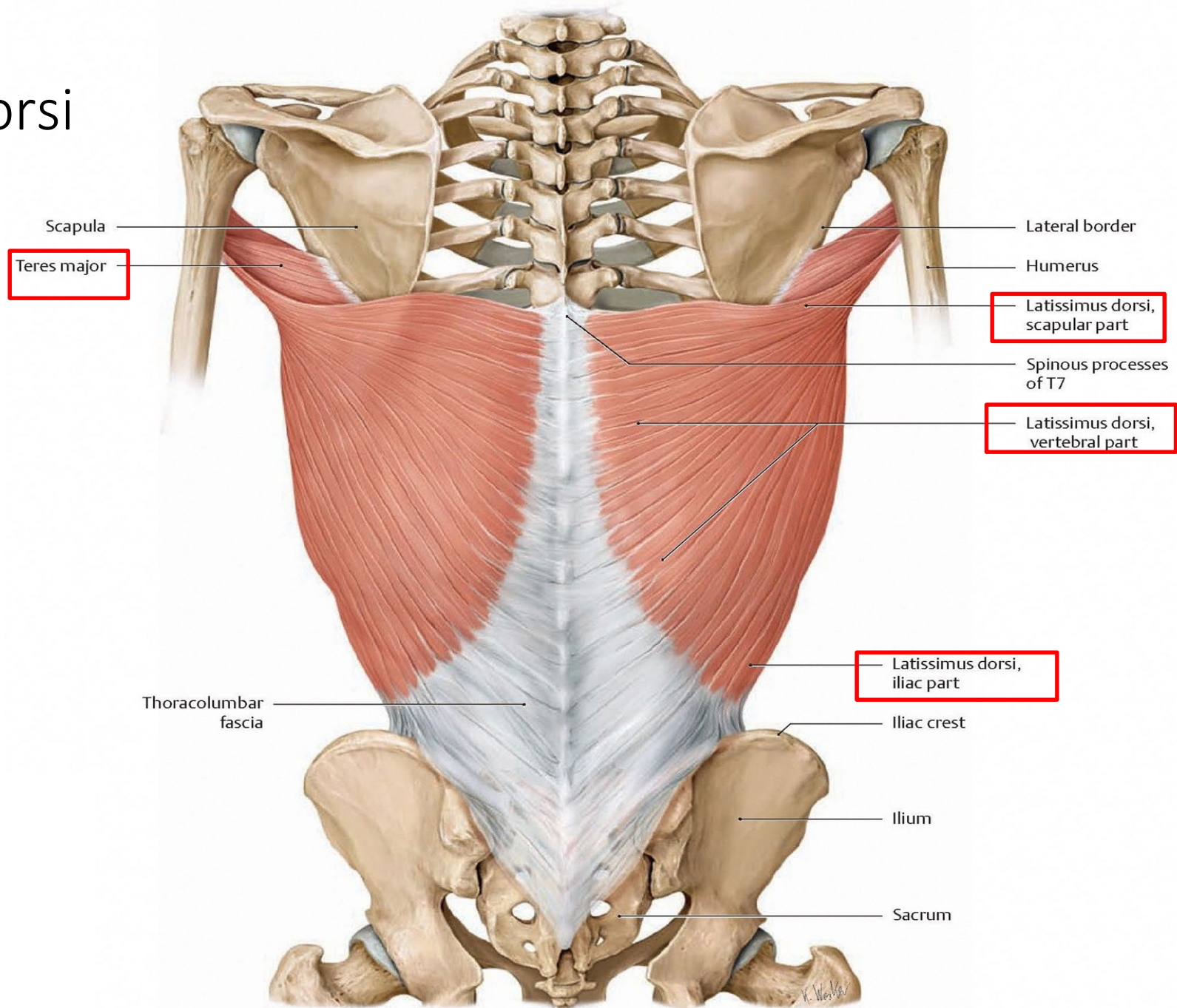
- a Elevation and depression.
- b Abduction and adduction.
- c Lateral rotation of the inferior angle.



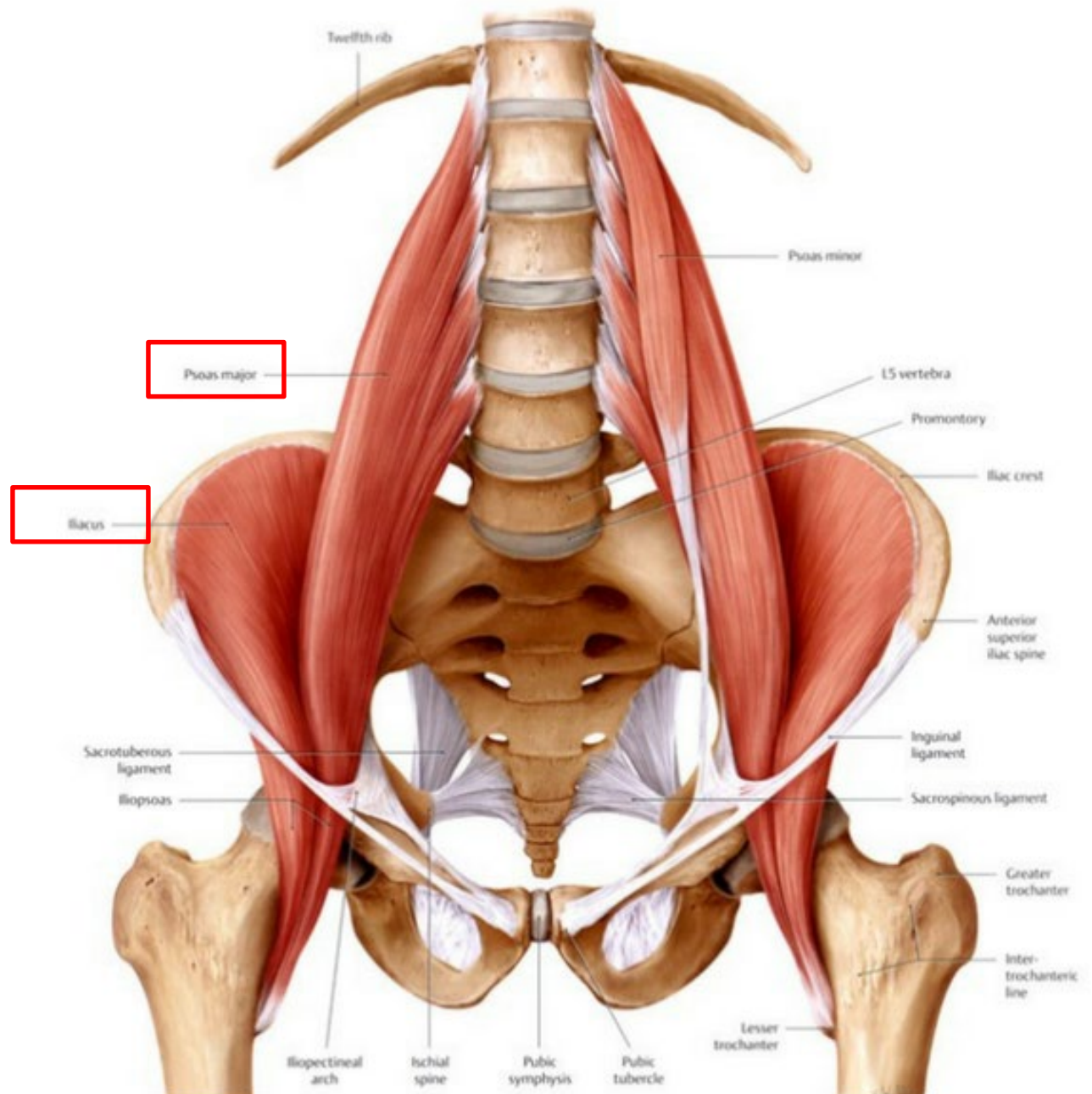
Trapezius



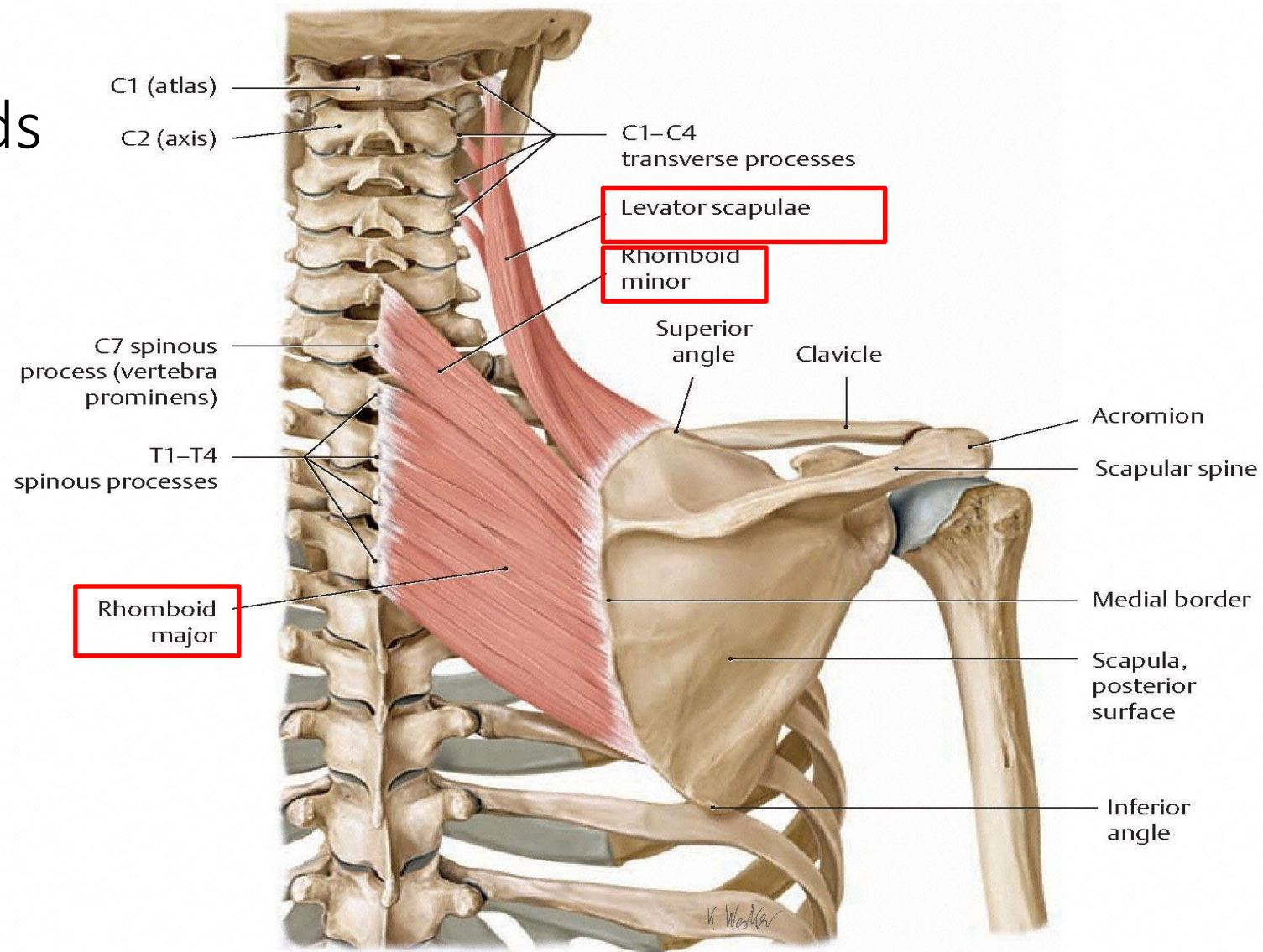
Lat. Dorsi



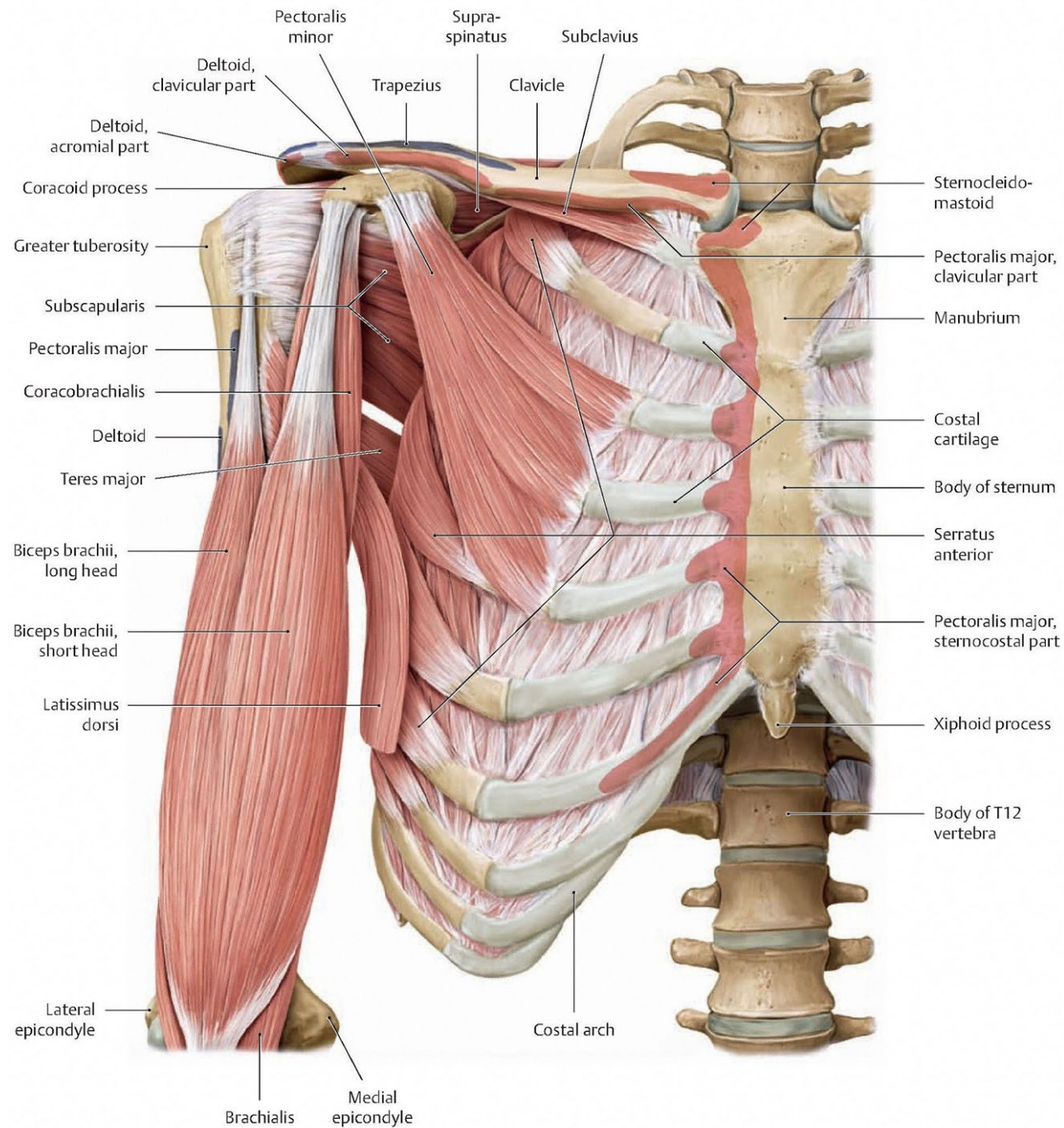
Iliopsoas



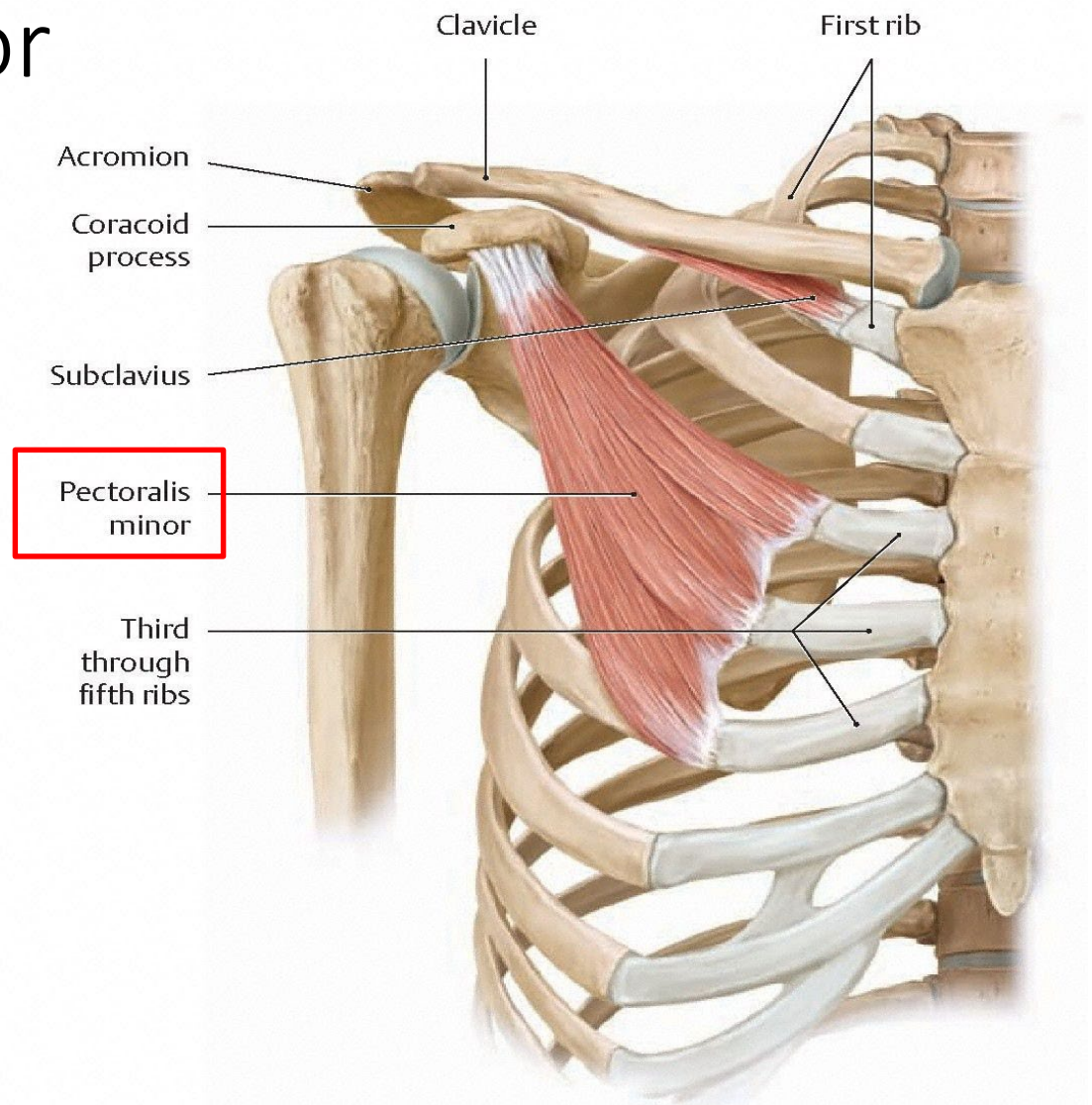
Rhomboids



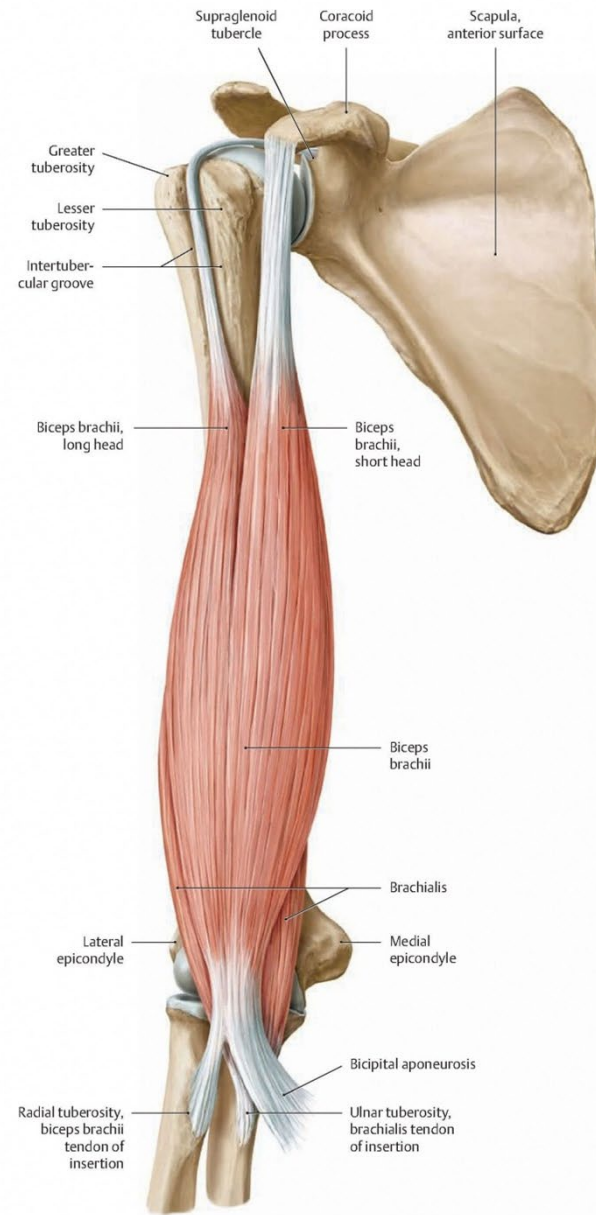
Anterior Shoulder



Pectoralis Minor



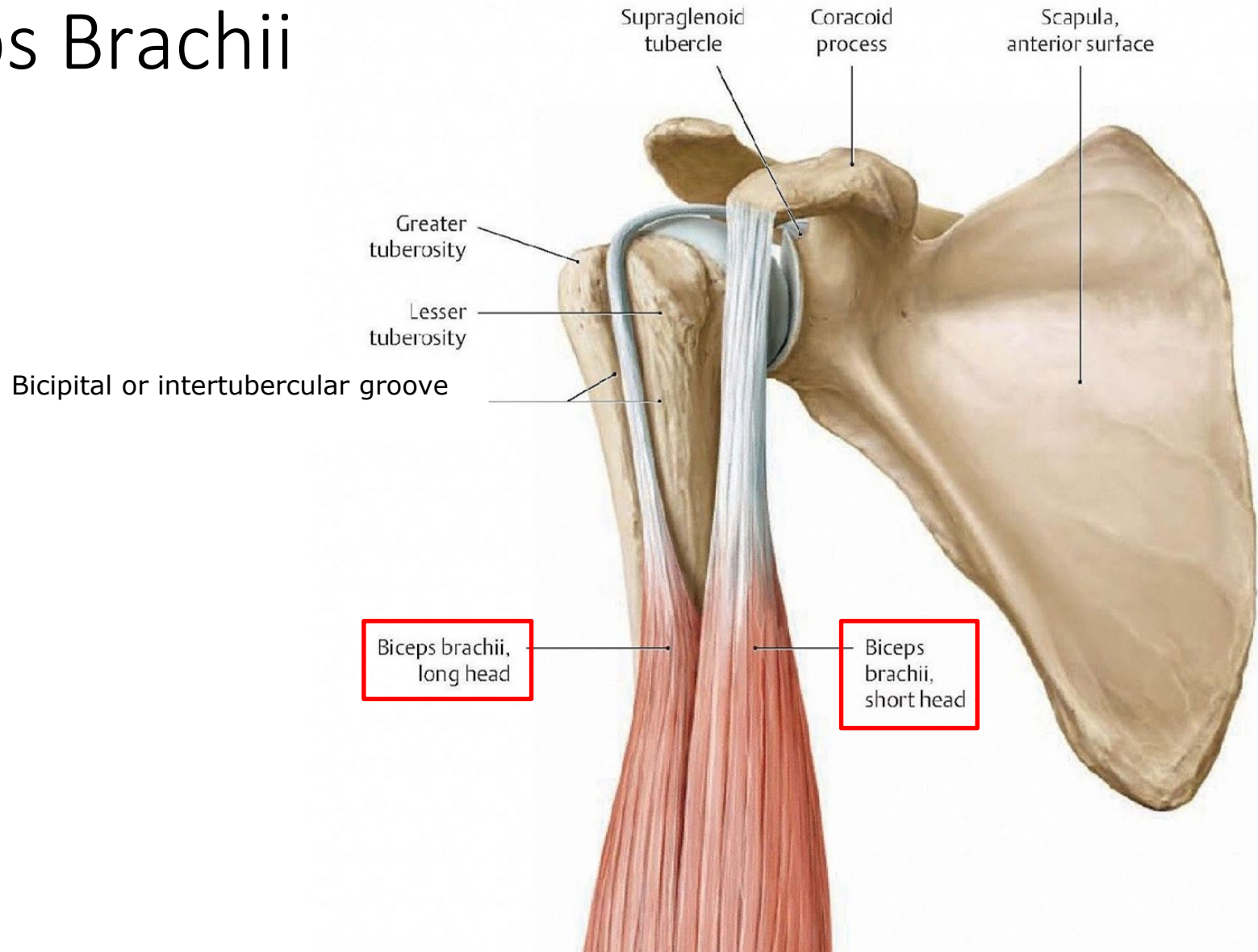
Biceps Brachii



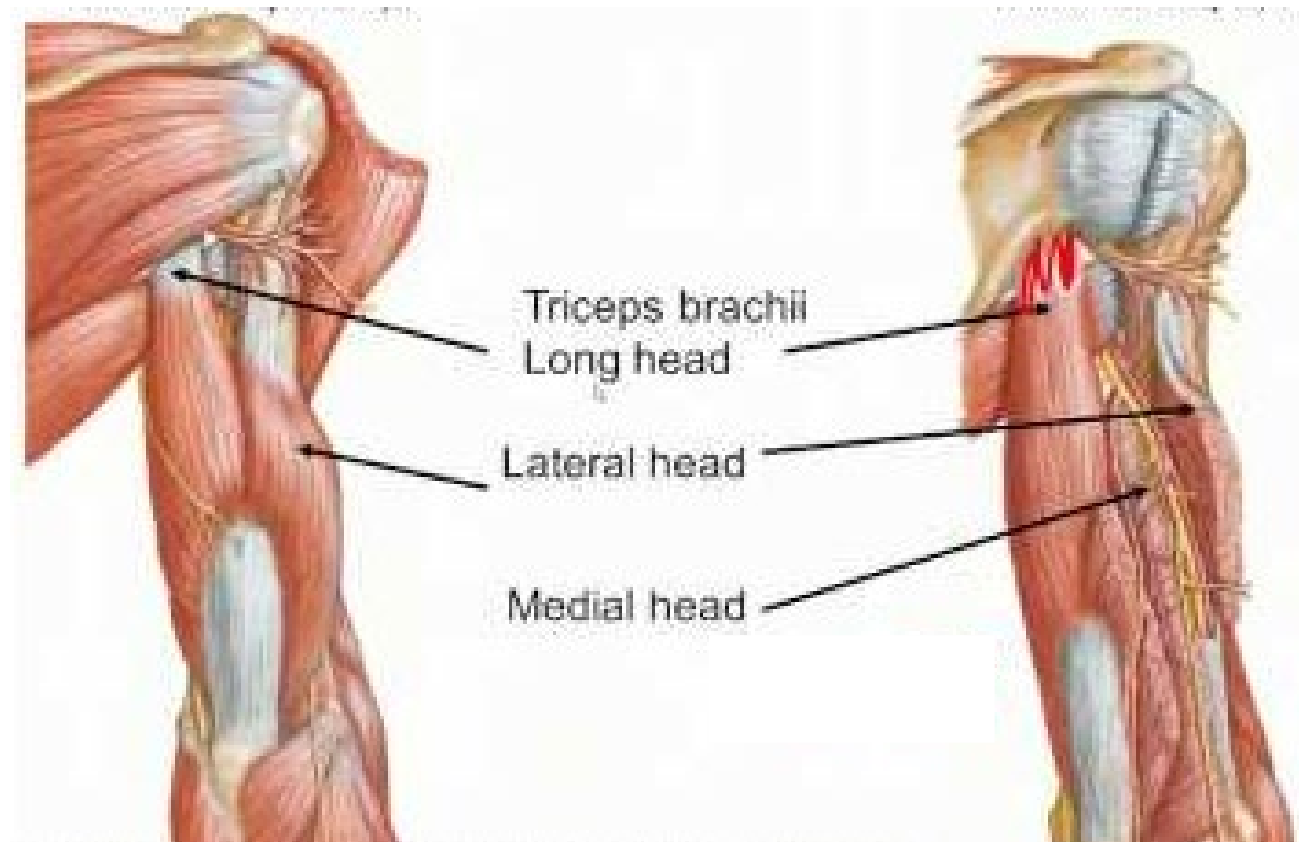
C The biceps brachii and brachialis
Right arm, anterior (ventral) view.



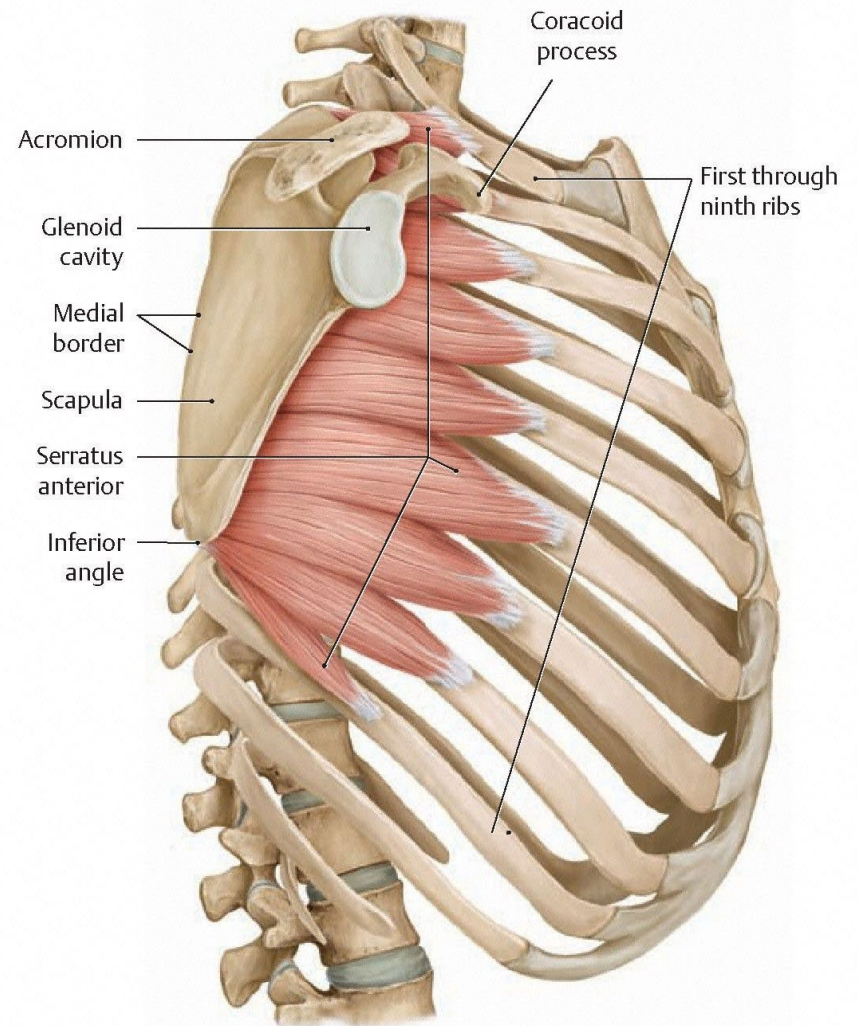
Biceps Brachii



Triceps Brachii

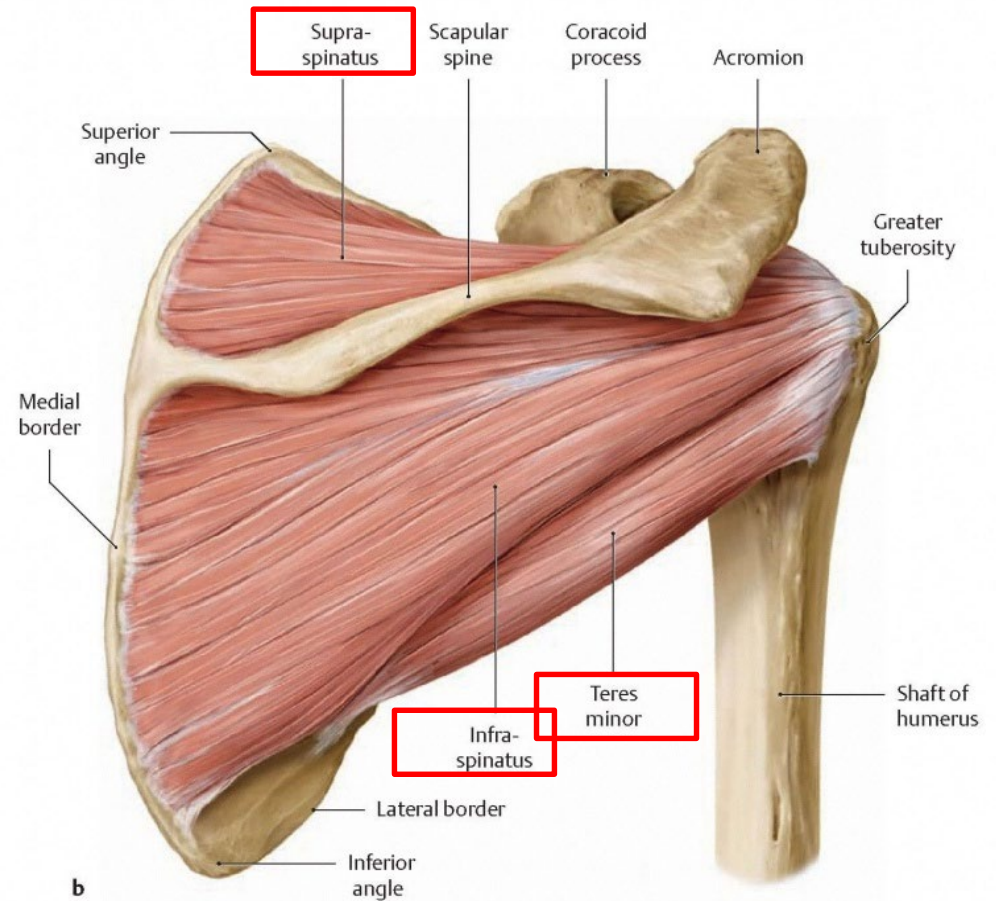


Serratus Anterior



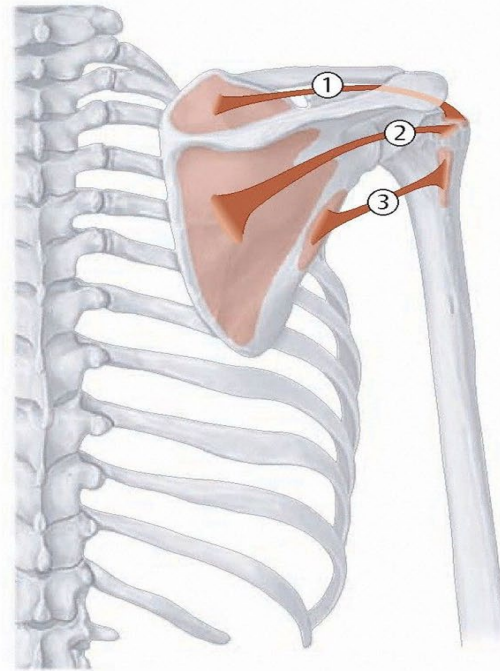
Rotator Cuff

- Supraspinatus
- Infraspinatus
- Teres minor
- (Subscapularis)



Rotator Cuff

- Supraspinatus
- Infraspinatus
- Teres minor
- (Subscapularis)



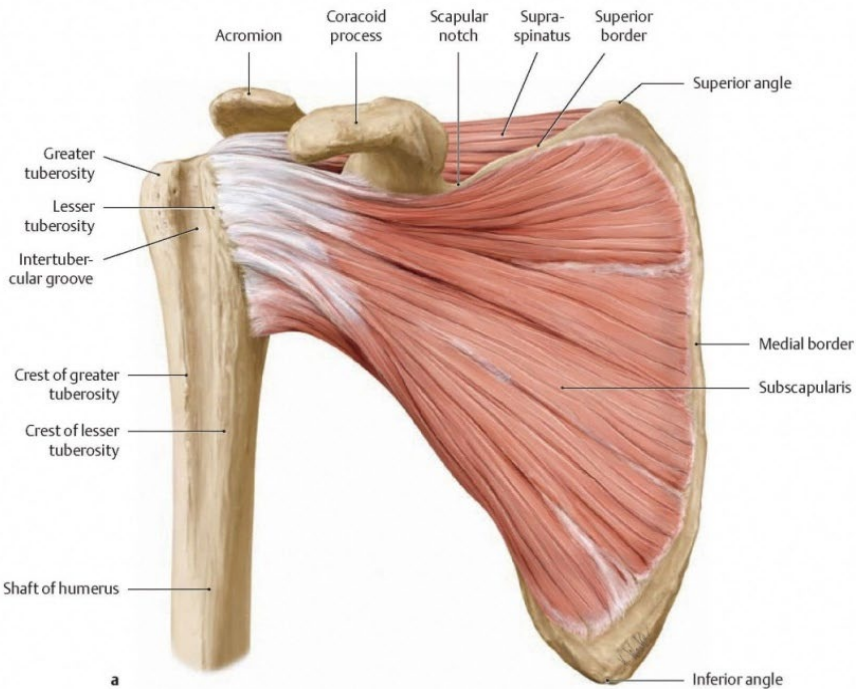
A Schematic of the supraspinatus, infraspinatus, and teres minor

Illustrator: Karl Wesker

pp. 262-263

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Rotator Cuff



C Muscles of the rotator cuff: supraspinatus, infraspinatus, teres minor, and subscapularis

Right shoulder joint.

a Anterior view.

Illustrator: Karl Wesker

pp. 262-263

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B Schematic of the subscapularis

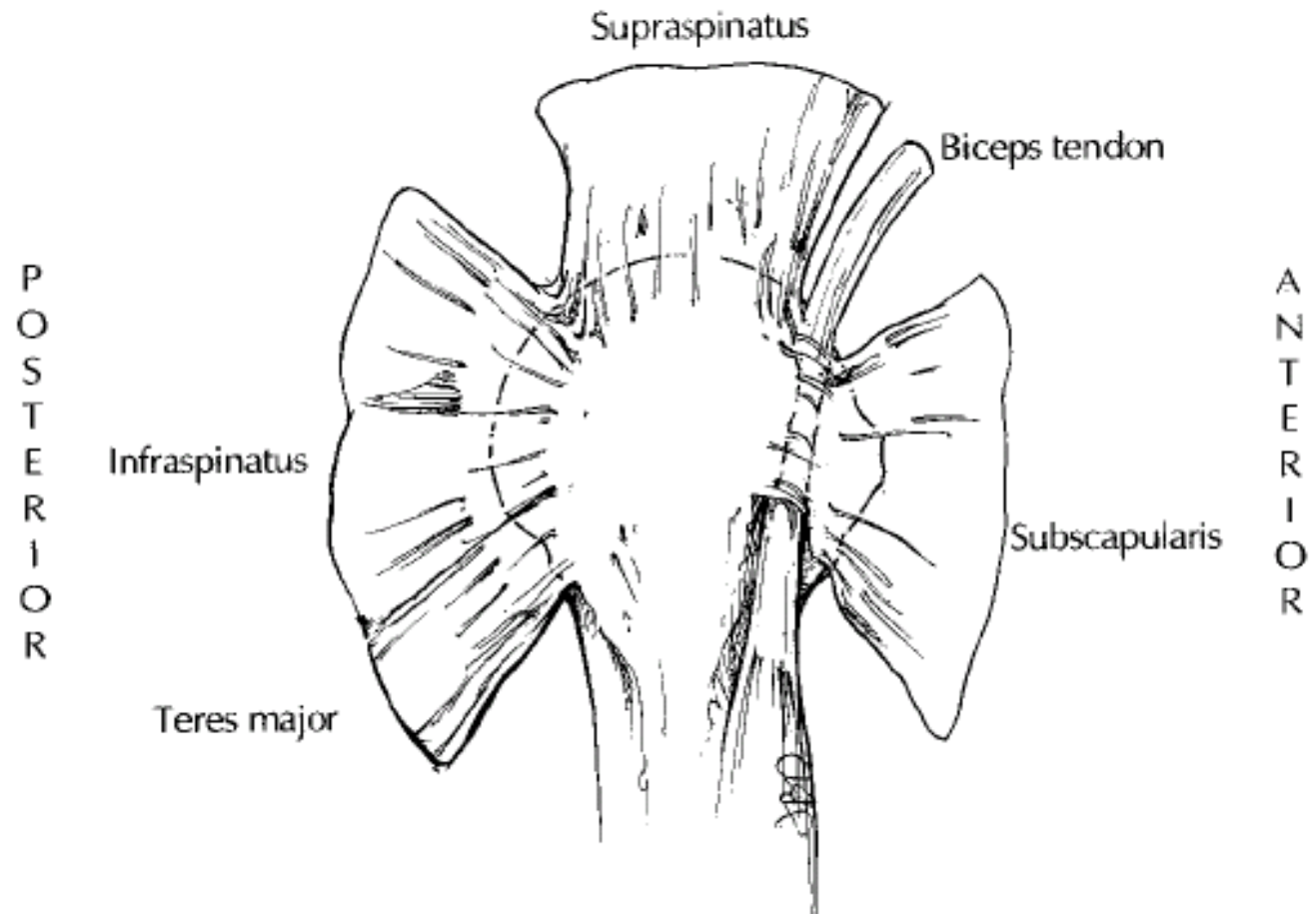
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Rotator Cuff



OMT treatments chosen

- Seated Thoracic ME and HVLA
- Scapular Mobilization
- Supine Thoracic HVLA
- Psoas Counterstrain
- Pelvic/Sacral ART
- Spencer's technique ME and ART
- Trapezius Inhibition
- Lat Dorsi Inhibition





Thoracic Muscle Energy

- Increase motion within the thoracic spine
- Patient position: Seated with arms folded



Thoracic Seated HVLA

- Increase motion within the thoracic spine
- Patient position: Seated with arms behind their back



Channell MK, Mason DC, The 5-Minute Osteopathic Manipulative Medicine Consult. Philadelphia, Wolters Kluwer 2020

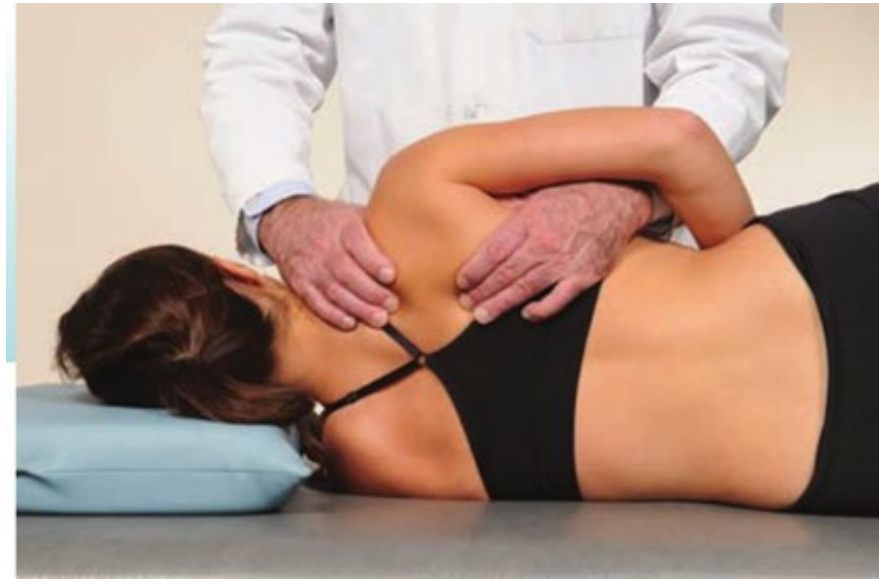
Scapular Mobilization Articulation

- Extend the patient's shoulder to 45 degrees and have the patient's hand rest on the lateral abdomen
- Pass your caudad hand under the patient's arm, and with the pads of your fingers, grasp the medial border of the scapula
- With your cephalad hand, contact the anterior portion of the shoulder to provide an effective counterforce



Scapular Mobilization Articulation

- With your caudad hand, draw the medial border of the scapula laterally and caudad, parallel to the fibers of the rhomboid musculature, hold for a second, and slowly release the tension
- This technique is applied slowly and rhythmically gradually progressing along the medial border of the scapula
- Continue this technique for 3 to 5 minutes



Thoracic Supine HVLA

- Increase motion within the thoracic spine
- Patient position: Supine with arms folded

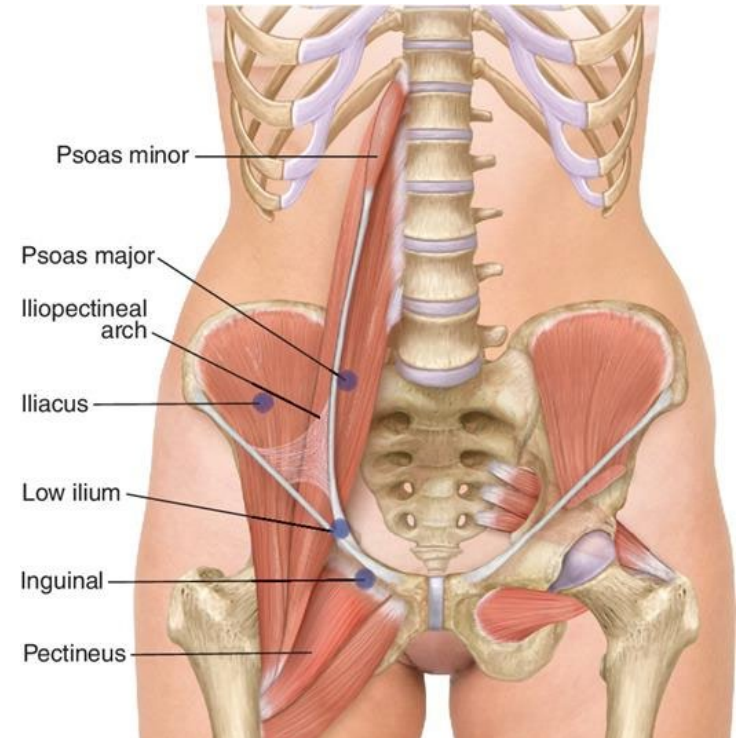


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Psoas Counterstrain



Nicholas, A. S., & Nicholas, E. A. (2008). Atlas of osteopathic techniques. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

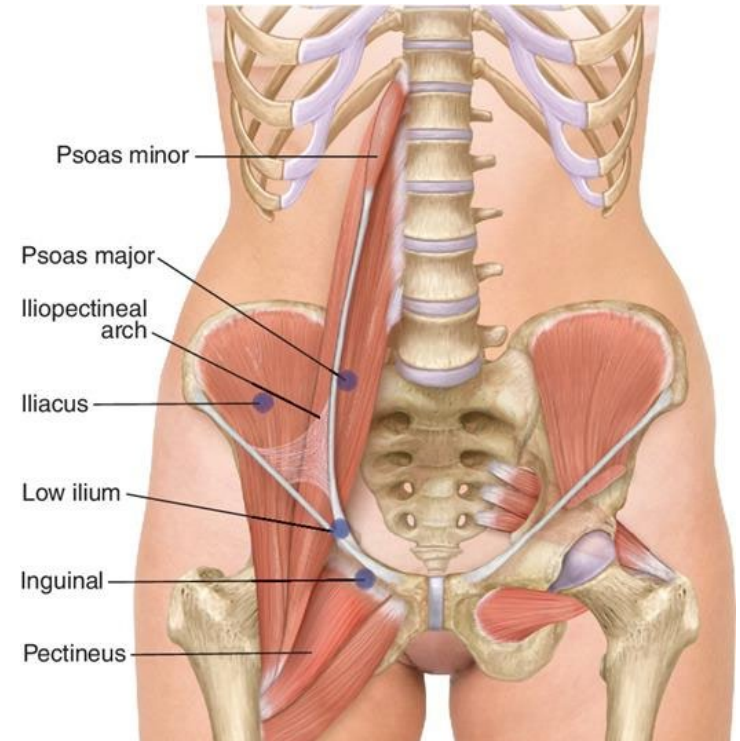
Psoas

$\frac{2}{3}$ of the distance from the ASIS to the midline; press deep in a posterior direction toward the belly of the psoas

Marked bilateral hip flexion; side bend lumbar spine toward; may require some external rotation of the hip

F ST

Psoas Counterstrain



Iliacus	$\frac{1}{3}$ of the distance from the ASIS to the midline; press deep in a posterior lateral direction toward the iliacus	Marked bilateral flexion and external rotation of the hips with the knees flexed	F ER
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Sacral Articulatory

- Increase Sacral Base motion
- Patient position: Supine

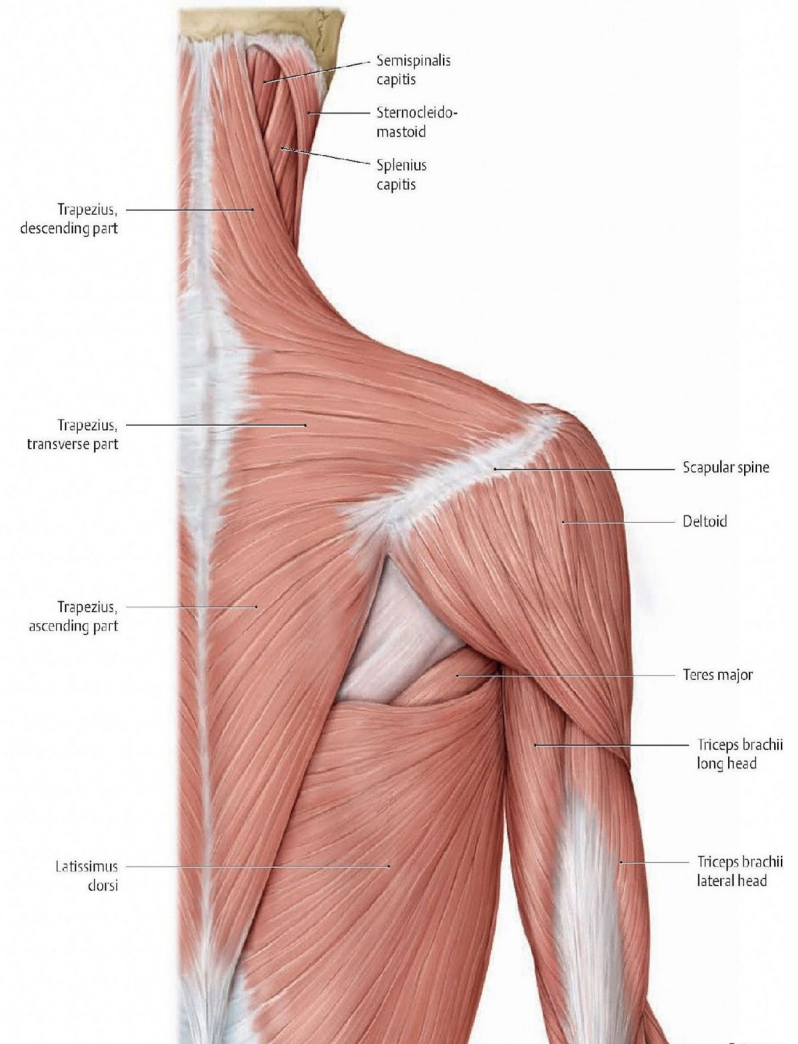


Trapezius Inhibition

- Direct inhibition of trapezius muscles to decrease hypertonicity
- Patient position: On their back



Nicholas, A. S., & Nicholas, E. A. (2008). Atlas of osteopathic techniques. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.



The Spencer Technique

- Useful in diagnosing and treating some shoulder conditions
- **Treatment used as a muscle energy or articulatory technique**
- Improves shoulder mechanics and range of motion
- Stretches local tissues, improving lymphatic and circulatory flow



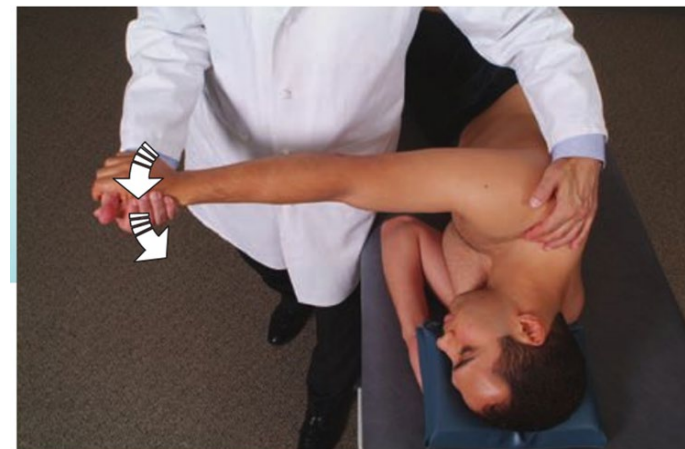
Utilization of Spencer Technique

- May be utilized as an articulatory or a muscle energy technique.
- Articulatory: pumping
 - Direct and Passive technique
 - Repetitive springing motions of a joint through the restrictive barrier, 8-10 times. This is a passive technique
- Muscle Energy:
 - Direct and Active technique
 - Move shoulder to the restrictive barrier, have patient actively resist, then move into new barrier. Perform 3-5 times for 3-5 seconds each.



The Spencer Technique

- Applications:
 - Somatic dysfunctions of the relative muscles of motion
 - Adhesive capsulitis,
 - Post-operative or post-injury myofascial restriction,
 - Bursitis/tendonitis
- Usually performed with the patient in the lateral recumbent position

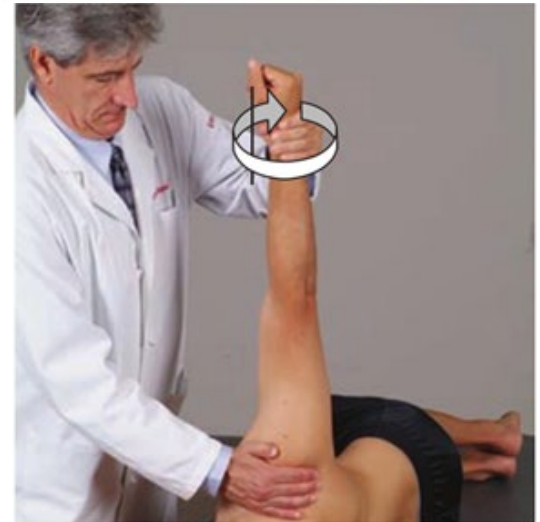


Spencer's Seven Stages

1. Extension
2. Flexion
3. Circumduction with Compression
4. Circumduction with Traction
5. Abduction/Adduction
6. Internal Rotation
7. Pump/Traction Stretch



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Spencer Mnemonic

1. Elephants- Extension
2. Fly- Flexion
3. Constantly– Compression
(circumduction)
4. To- Traction (and circumduction)
5. Annoy- abduction/adduction
6. Intoxicated– internal rotation
7. People- pump



Spencer Technique: ROM

- Stage 1: Shoulder extension with elbow flexion
- Stage 2: Shoulder flexion with elbow extension
- Stage 3: Abduct to 90°, stabilize shoulder, move in circumduction with compression toward joint
- Stage 4: Abduct to 90°, stabilize shoulder, extend the arm, move in circumduction with traction
- Stage 5: With elbow flexed, abduction/adduction
- Stage 6: Test internal rotation by placing pts wrist and hand behind back and gently pulling elbow forward
- Stage 7: Arm traction and deltoid pump. This may also be used to start treatment.



General Principles of Treatment

Consider overlapping anatomy of thoracic, lumbar, upper extremity, ribs, and pelvis when addressing shoulder girdle dysfunction

- Examine areas of subjective pain and surrounding structures.



Summary

- Patients see the shoulder as a large region, therefore you should too
- Understand the biomechanics of the shoulder and the osteopathic treatments will follow
- Most practices will require focused, structural exams and osteopathic treatments

References

1. Channell MK, Mason DC, The 5-Minute Osteopathic Manipulative Medicine Consult. Philadelphia, Wolters Kluwer 2020
2. Gilroy, A. M., MacPherson, B. R., & Ross, L. M. (2008). *Atlas of anatomy*. Stuttgart: Thieme
3. Nicholas, A. S., & Nicholas, E. A. (2008). *Atlas of osteopathic techniques*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.
4. Hoppenfeld, MD, Stanley; Physical exam of the Spine and Extremities; Appleton-Century-Crofts NY 1976; pp1-34.
5. Digiovanna, DO Eileen, Schiowitz, DO, Stanley; An Osteopathic Approach to Diagnosis and Treatment, Third Edition Lippincott, Williams & Wilkins, 2005, pp 409-418, 433-462.
6. Schuenke et. Al. Thieme Atlas of General Anatomy and Musculoskeletal System. 2006.
7. Brunnstrom's Clinical Kinesiology 5th Edition, F.A. Davis Co. Phila, 1996, pp 223-265.
8. Calliet, The Illustrated Guide to Functional Anatomy of the Musculoskeletal System, AMA Press, 2004, pp. 113-144.
http://www.orthop.washington.edu/uw/arthritis/tabID_3376/ItemID_131/PageID_251/Articles/Default.aspx (accessed July 19,2009)

