Touching the pain לגעת בכאב

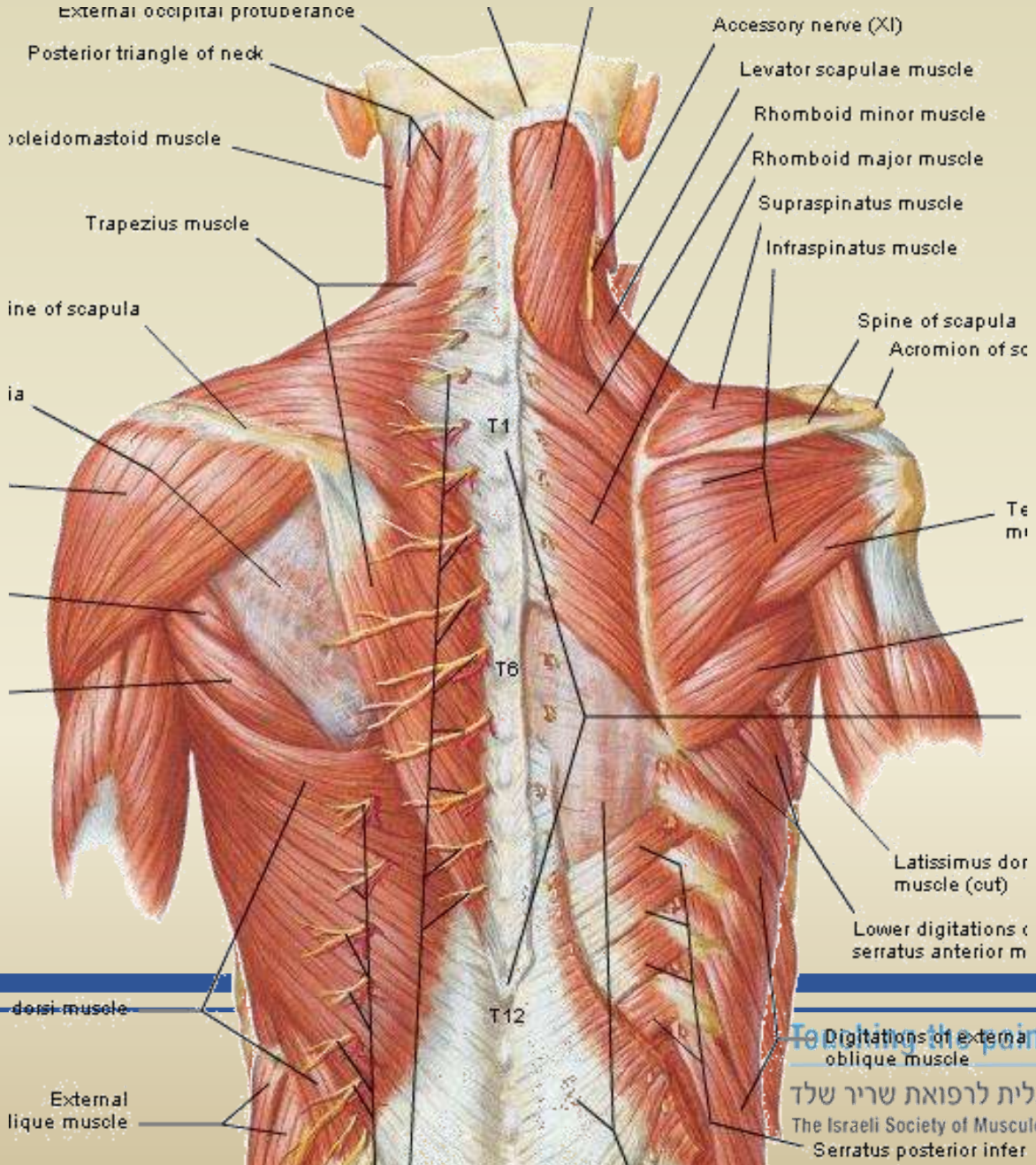
החברה הישראלית לרפואת שריר שלד

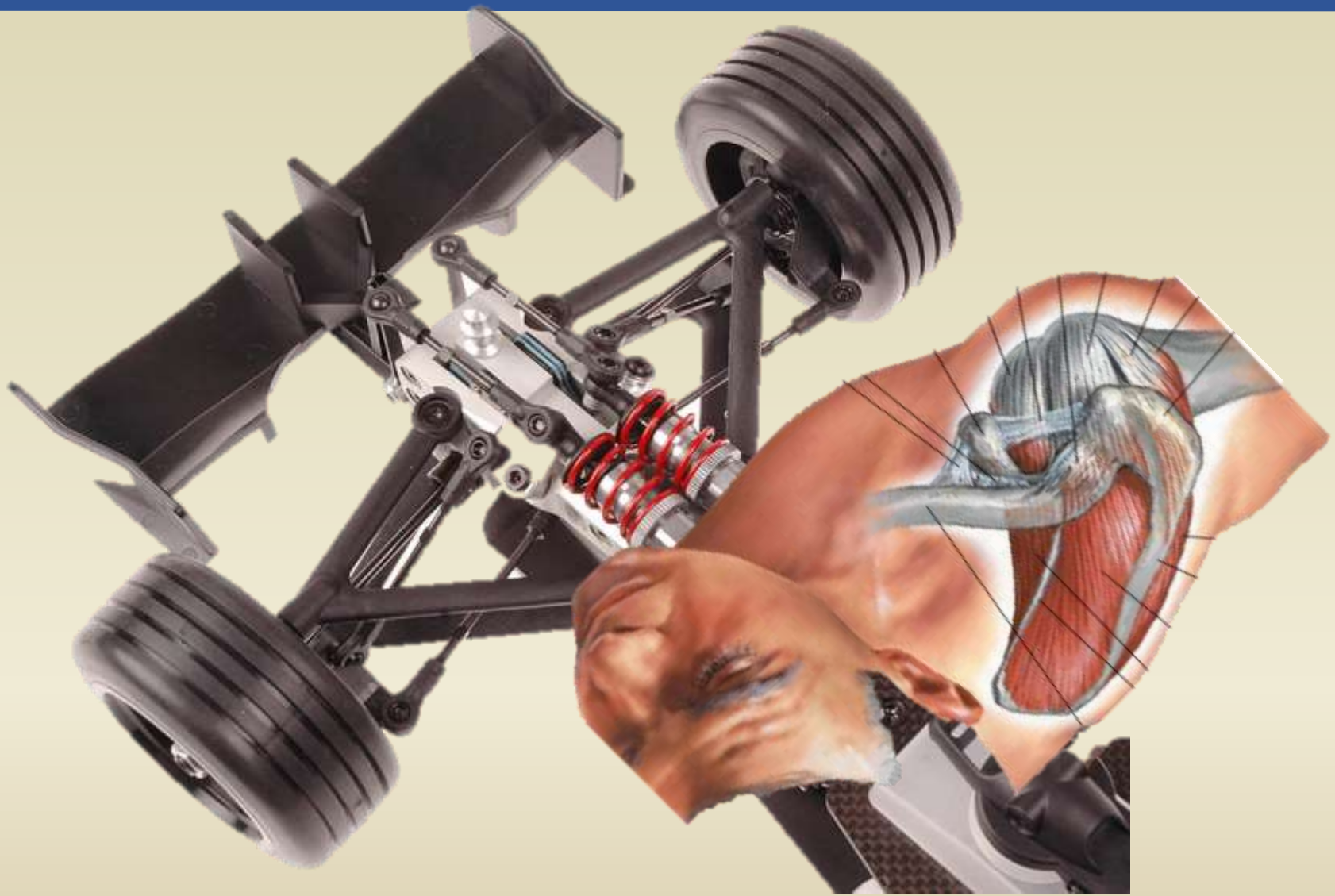
The Israeli Society of Musculoskeletal Medicine

Shoulder

- Aharon (Roni) Finestone
- Orthopaedics, Assaf HaRofeh MC, Zeriffin, Israel

- Thanks to Dr John Kent


External occipital protuberance
Posterior triangle of neck
Accessory nerve (XI)
Levator scapulae muscle
Rhomboid minor muscle
Rhomboid major muscle
Supraspinatus muscle
Infraspinatus muscle
Trapezius muscle
Spine of scapula
Acromion of sc
T1
T6
T12
Latissimus dor
muscle (cut)
Lower digitations
serratus anterior m
Digitations of externa
oblique muscle
Serratus posterior infer



FIMM

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Shoulder Muscles

Outer layer

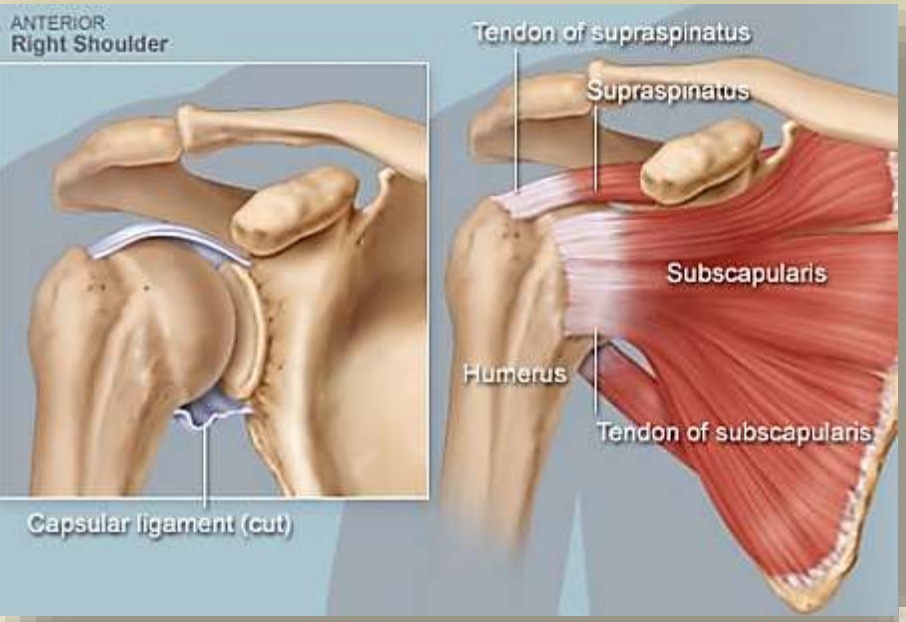
- Trapezius
- Latissimus dorsi
- Teres major/minor
- Pectoralis Major
- Deltoid
- Triceps

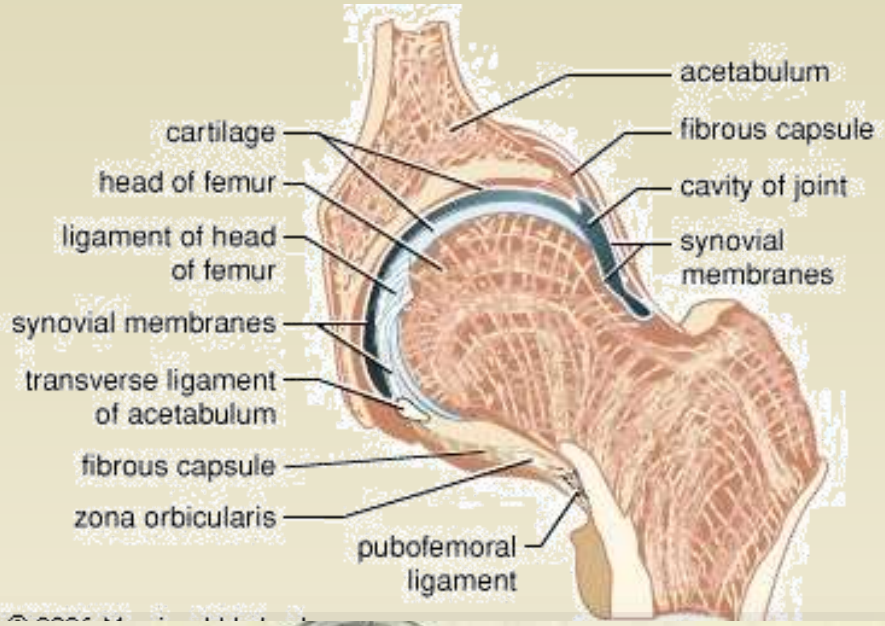
Rotator Cuff

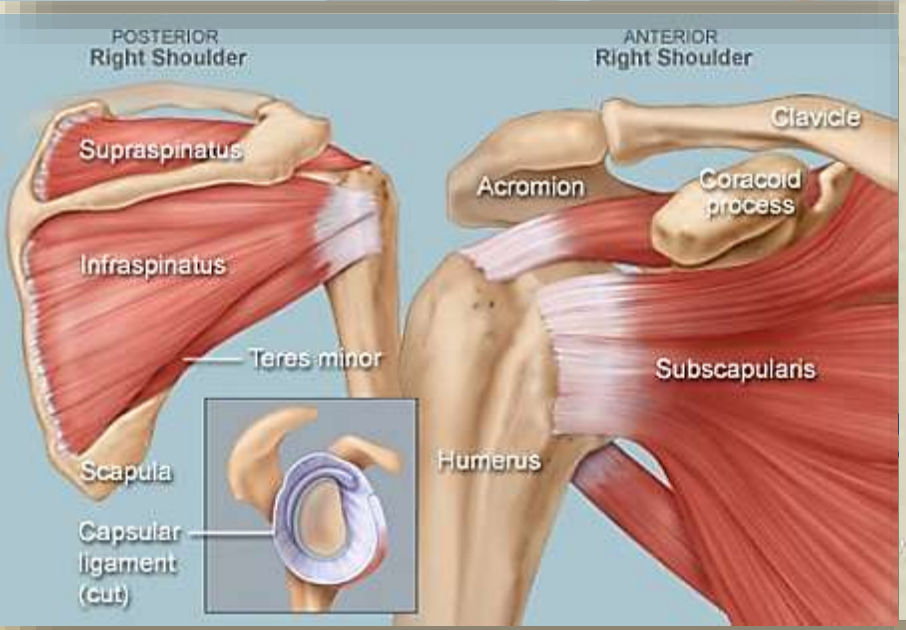
- Supraspinatus
- Infraspinatus
- Subscapularis
- Teres minor

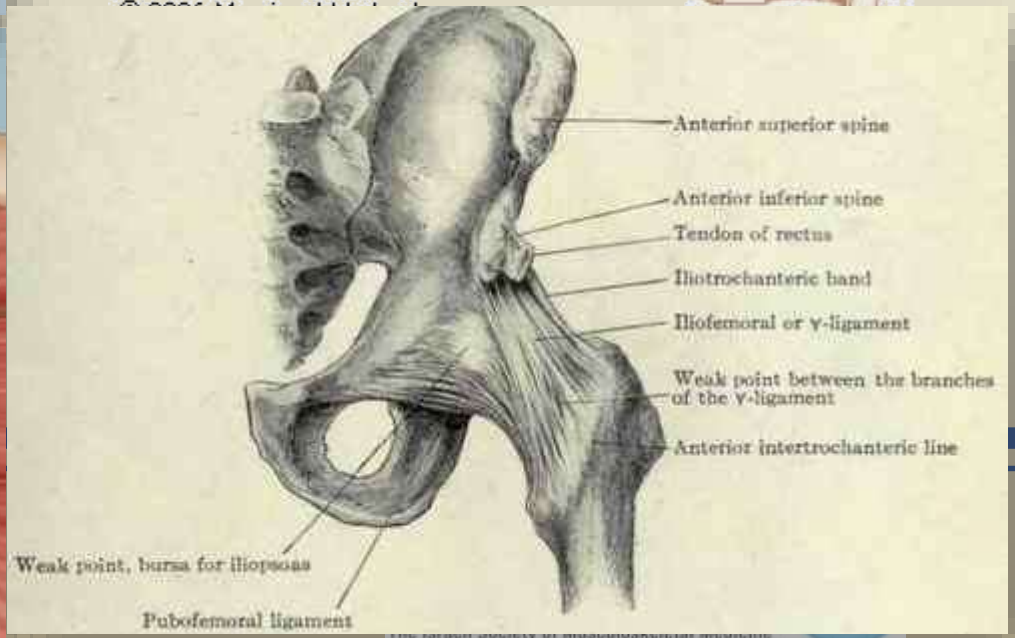
Shoulder = **Mobility**

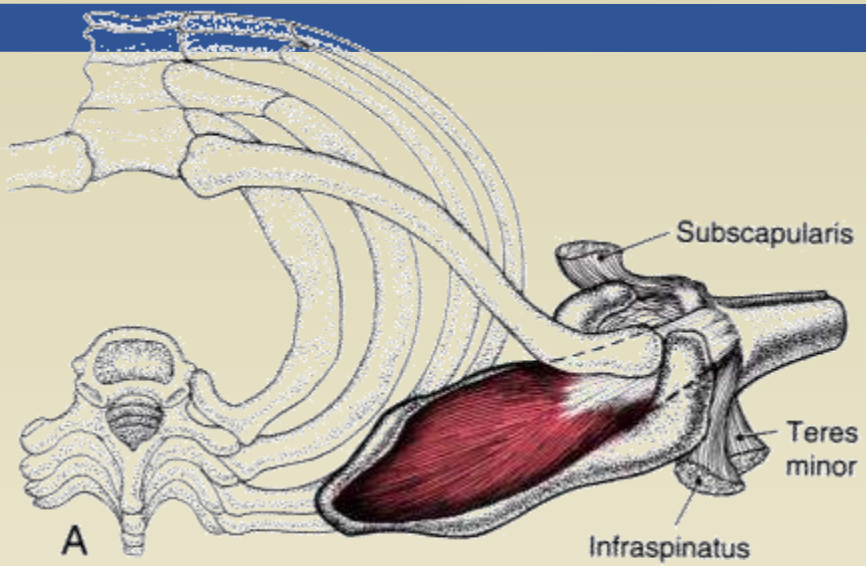
Hip = **Stability**









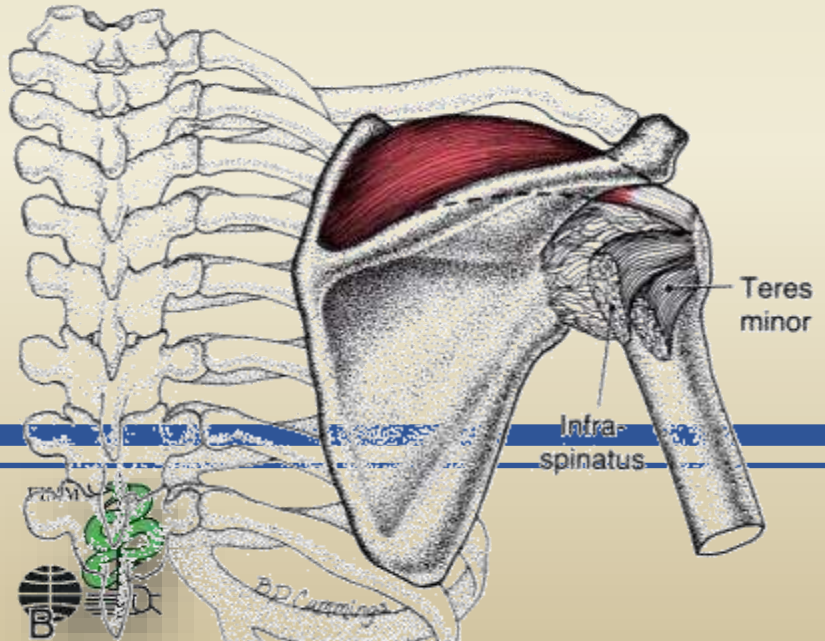


Supraspinatus

Innervation: C5

Action:

abduct arm
pulls head of humerus inwards
prevent downward displacement



Myotactic Unit:

Abduction:	middle Deltoid upper Trapezius
Stabilization:	rotator cuff mm. *(Serr.Ant. – scapula)*
Antagonists:	LatDorsi, TeresMaj/Min

Supraspinatus

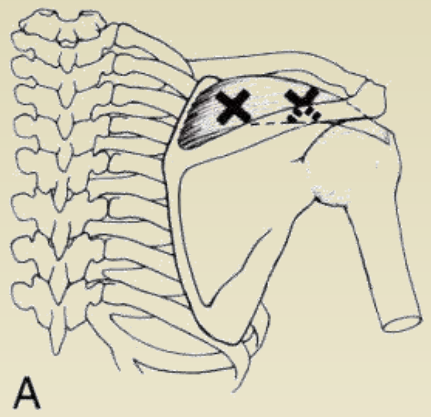
Symptoms

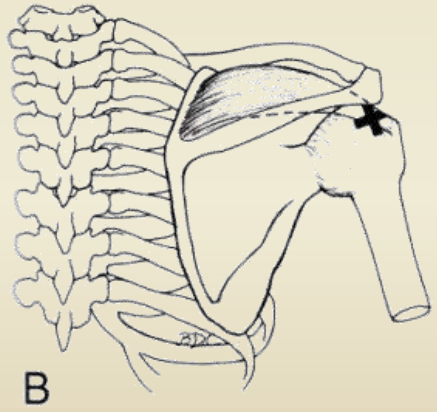
Referred pain

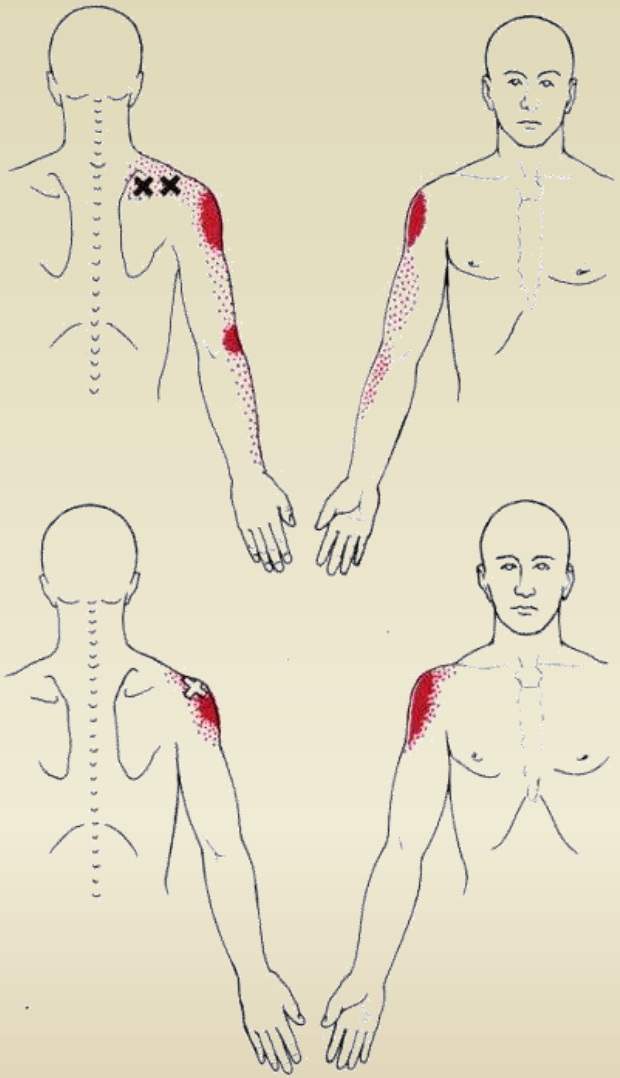
- during abduction
- rarely at rest
- rarely at night

Shoulder snap/click

Problems: comb hair, brush teeth, shave







Supraspinatus

Note: *The supraspinatus needs to be tested in its most shortened position because it is a one-joint muscle and tests strongest in its most shortened position (see page 113).*

*The "empty can" test does not meet the requirements for testing the strength of this muscle. Rowlands et al concluded "our study found that the empty can test does not allow selective activation of the Supraspinatus muscle." **

Weakness: The tendon of the supraspinatus is firmly attached to the superior surface of the capsule of the shoulder joint. Weakness of the muscle or rupture of the tendon decreases shoulder joint stability, allowing the humerus to alter its relationship with the glenoid cavity.

* Rowlands LK, Wertsch J.J, Primack S J, Spreiter AM, Roberts MM, "Kinesiology of the empty can test, " Am J Phys. Med. Rehabil. 1995 Jul- Aug: 74(4):302-4

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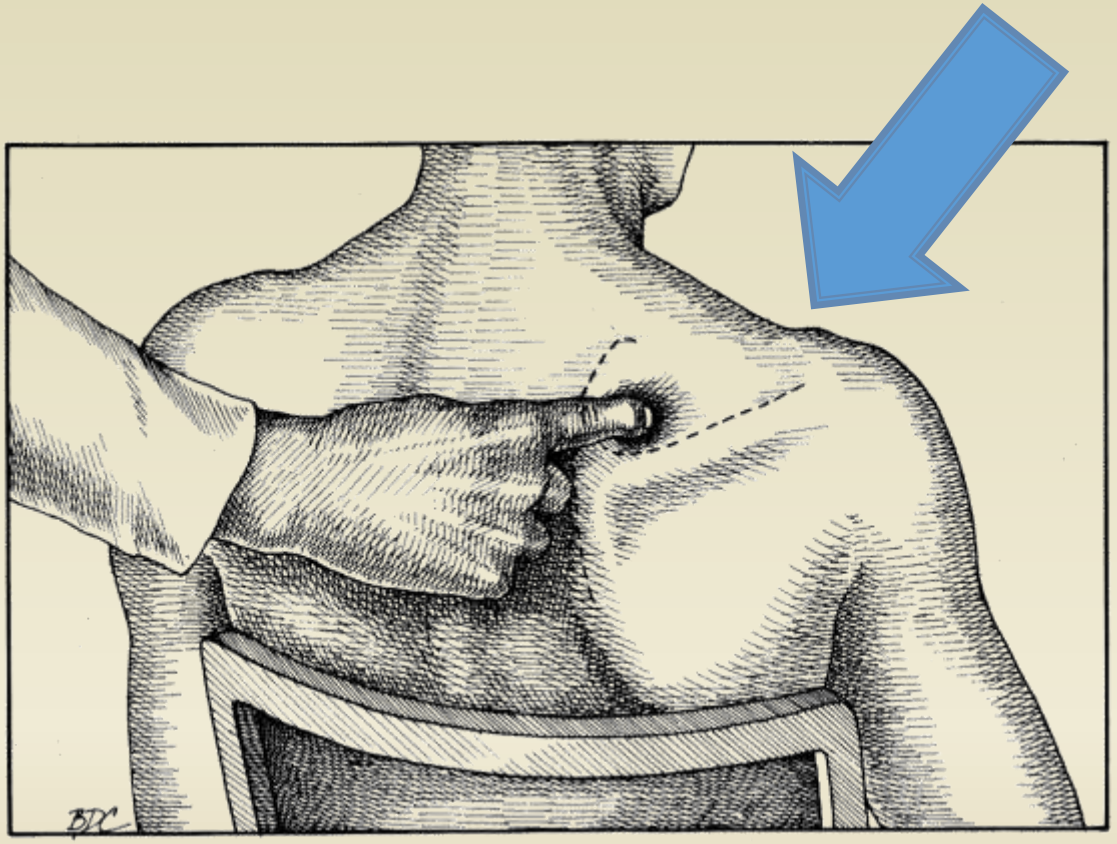
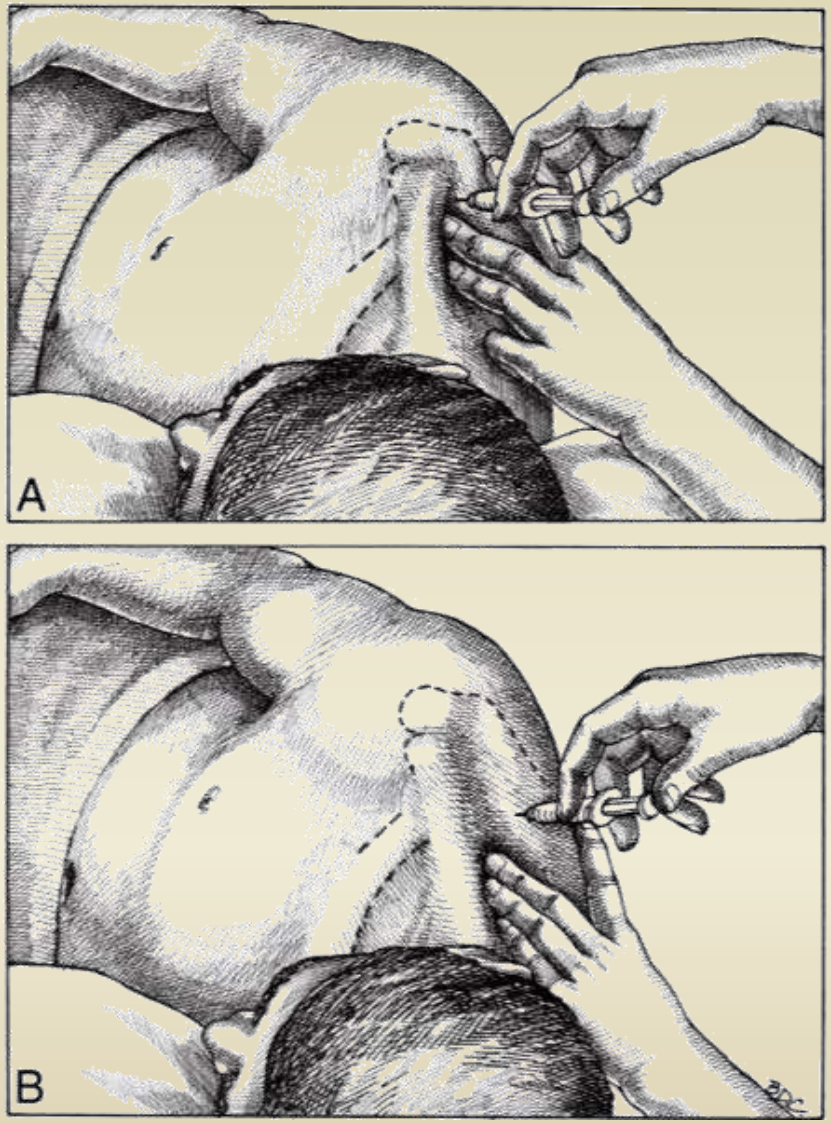
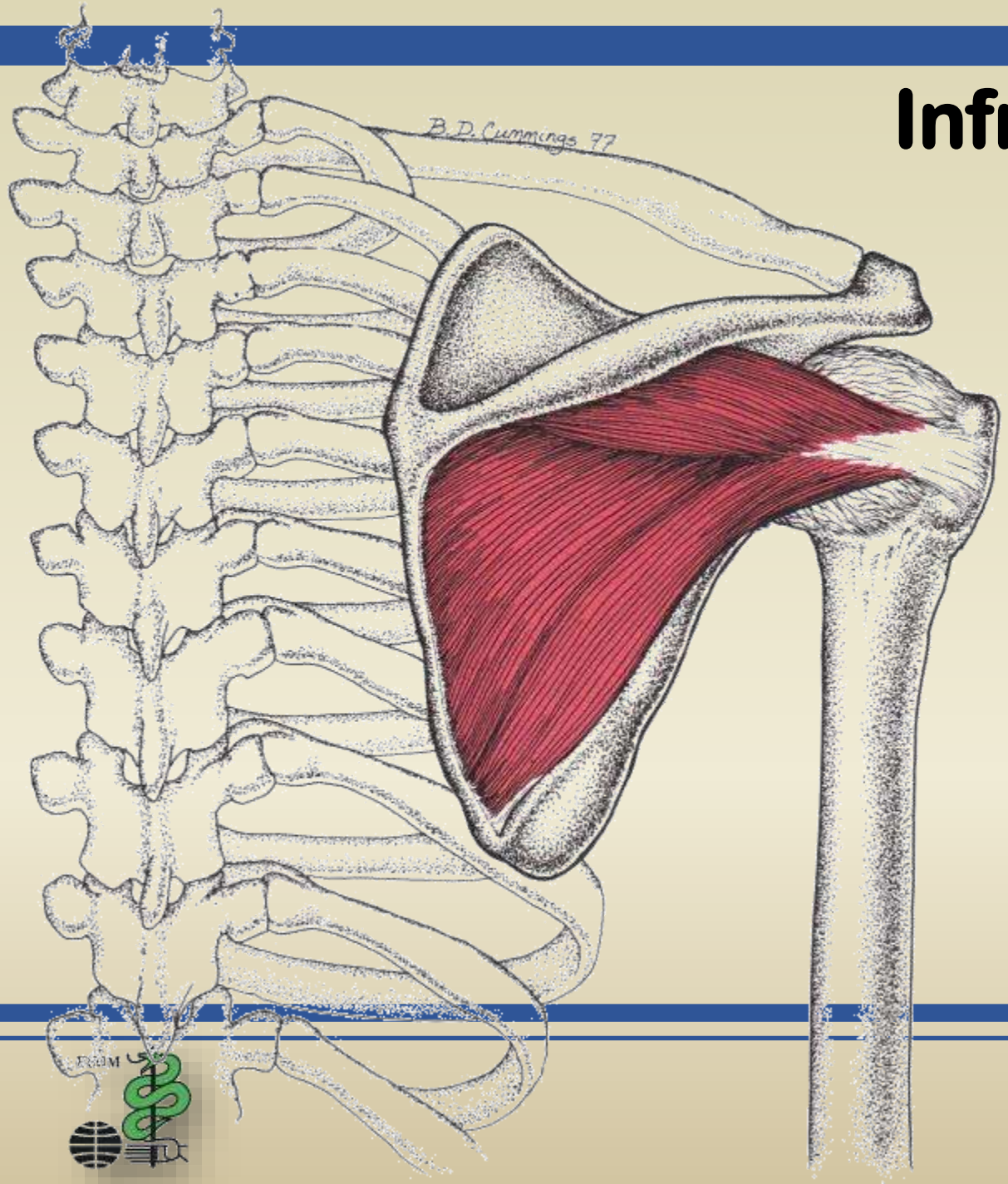
Supraspinatus



Supraspinatus



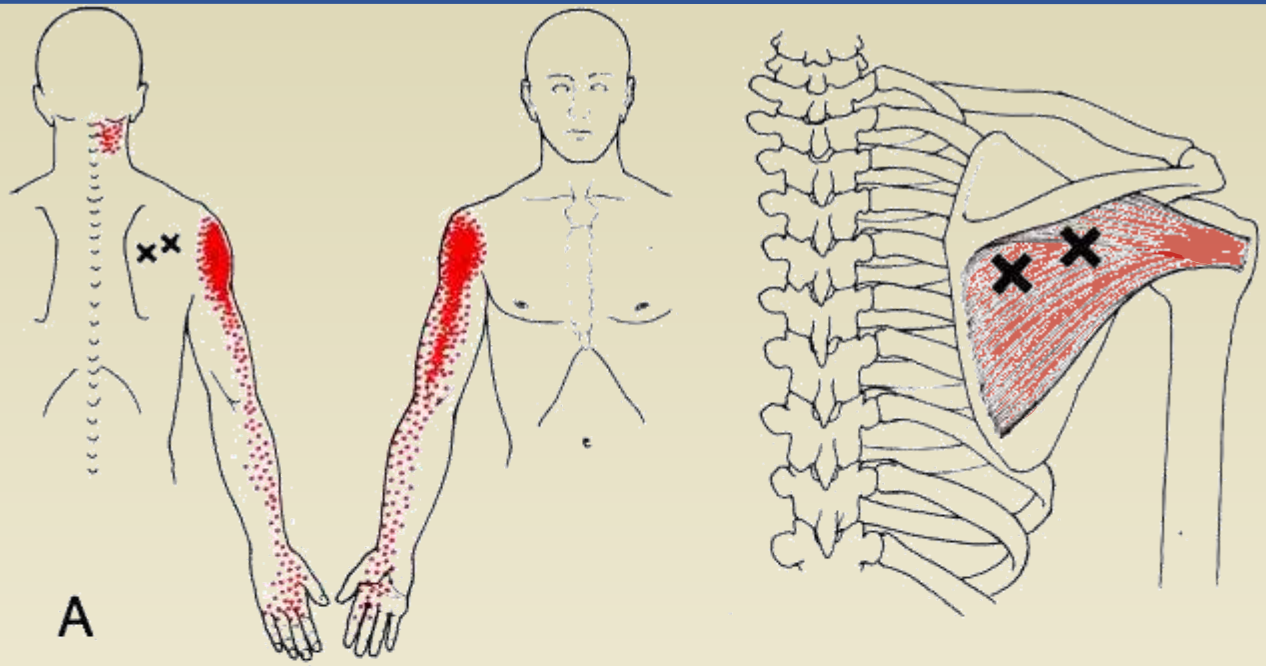
Infraspinatus



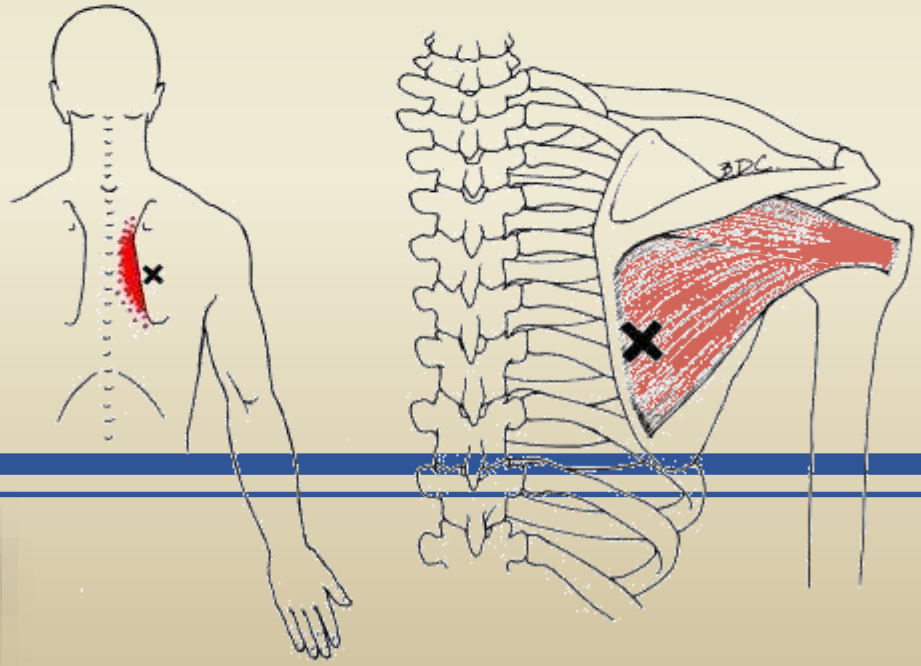
Attachments:
Medial 2/3 of infraspinatus fossa
Adjacent fascia

Innervation: C5,C6

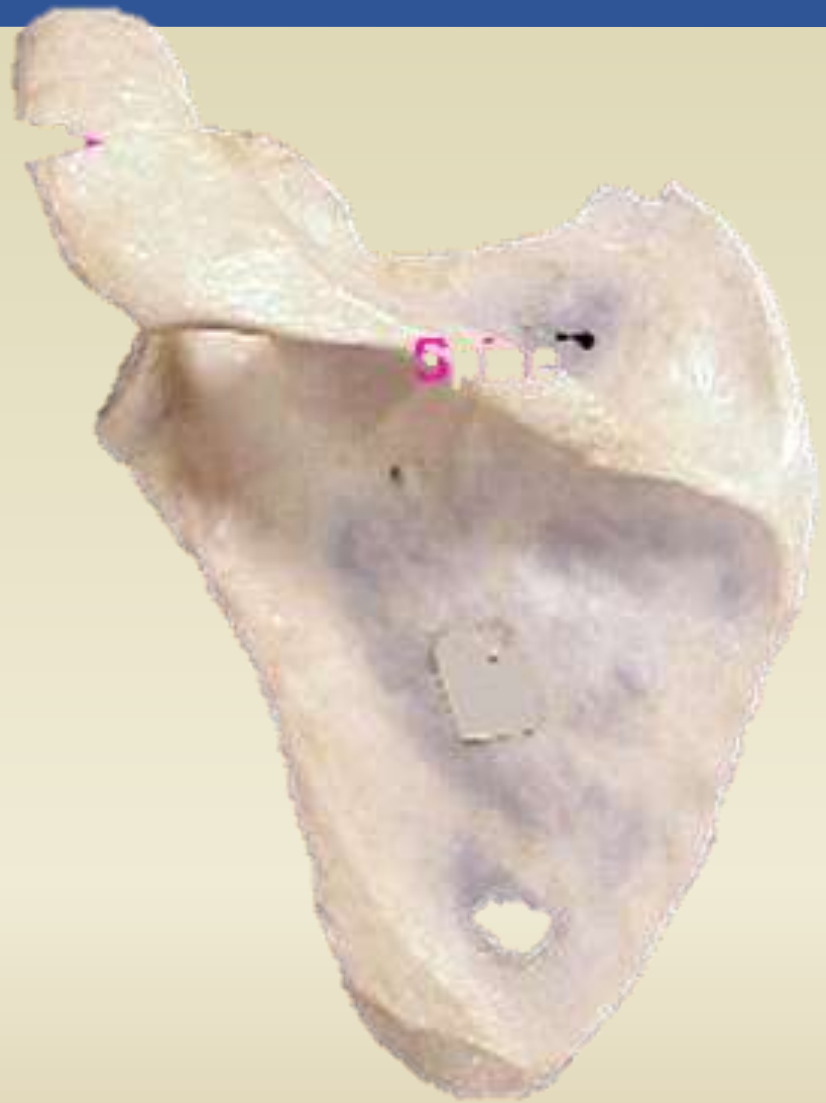
Action:
External rotation
Stabilize head of humerus

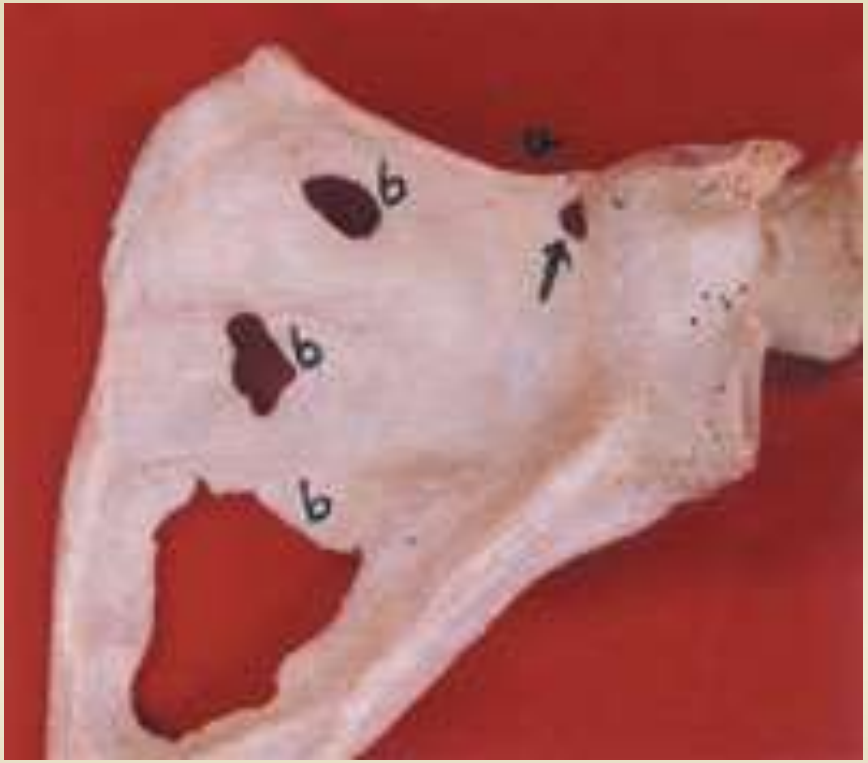


Infraspinatus

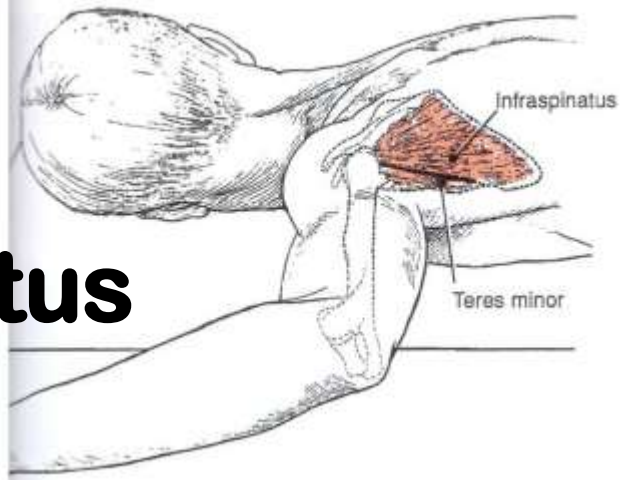


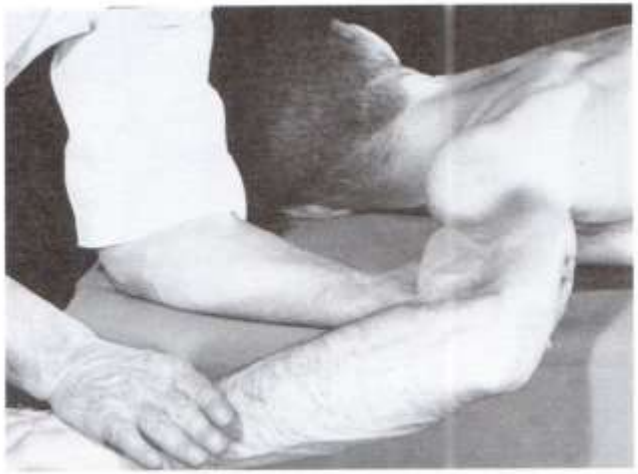
Infraspinatus





Infraspinatus





NFRASPINATUS

Origin: Medial 2/3 of the infraspinous fossa of the scapula.

Insertion: Middle facet of the greater tubercle of the humerus and shoulder joint capsule.

Action: Laterally rotates the shoulder joint, and stabilizes the head of the humerus in the glenoid cavity during movements of this joint.

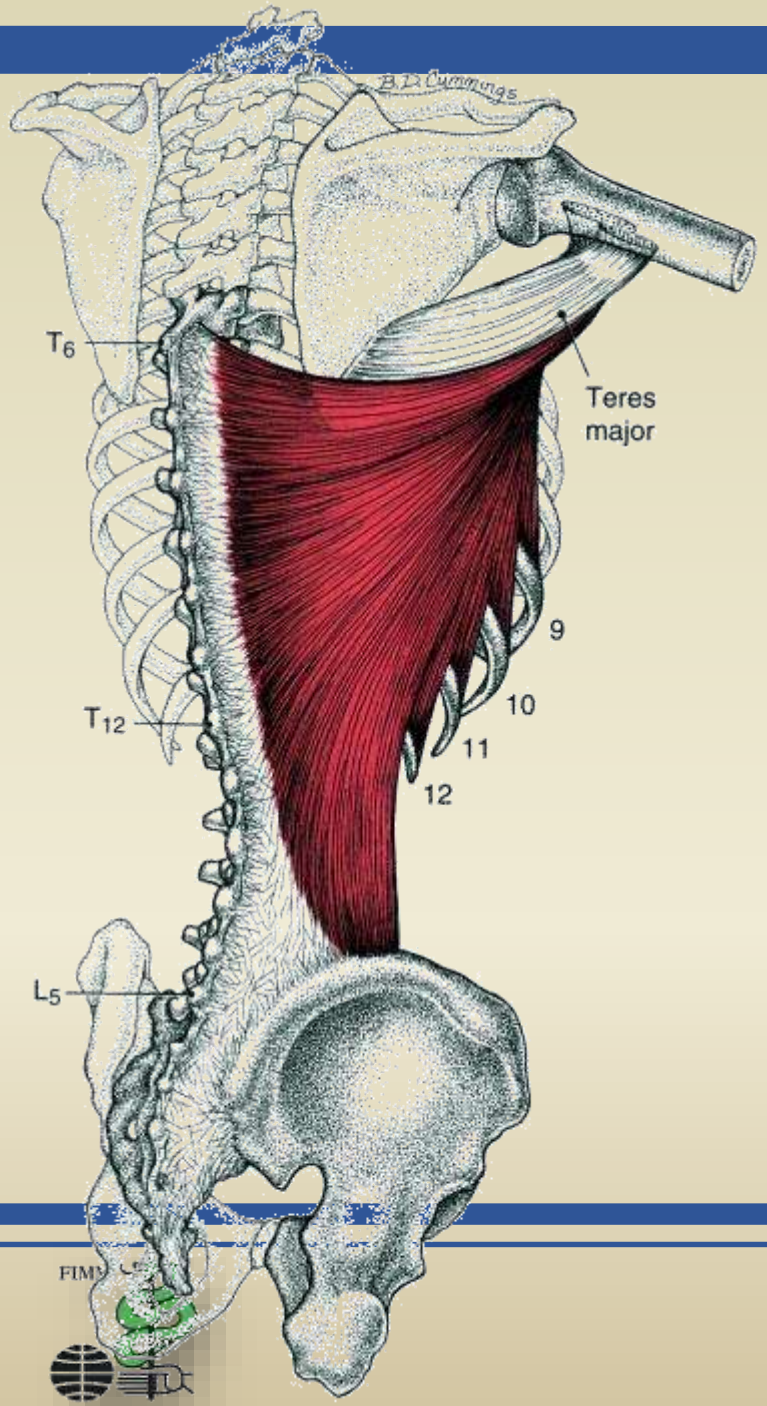
Nerve: Suprascapular, *C*(4), **5**, **6**.

Patient: Prone.

Fixation: The arm rests on the table. The examiner places one hand under the arm near the elbow and stabilizes the humerus to ensure rotation by preventing adduction or abduction motion. The examiner's hand cushions against the table pressure. This test requires strong fixation by the scapular muscles, particularly the middle and lower trapezius, and in performing this test, one must observe whether the lateral rotators of the scapula or the lateral rotators of the shoulder break when pressure is applied.

Test: Lateral rotation of the humerus, with the elbow held at a right angle.

Pressure: Using the forearm as a lever, pressure is applied in the direction of medially rotating the humerus.



Latissimus dorsi

Attachments:

- Spinous processes T6-sacrum
- Crest of ilium
- Lower 3-4 ribs
- Medial intertubercular groove of humerus

Fibers twist almost 180° around Teres major

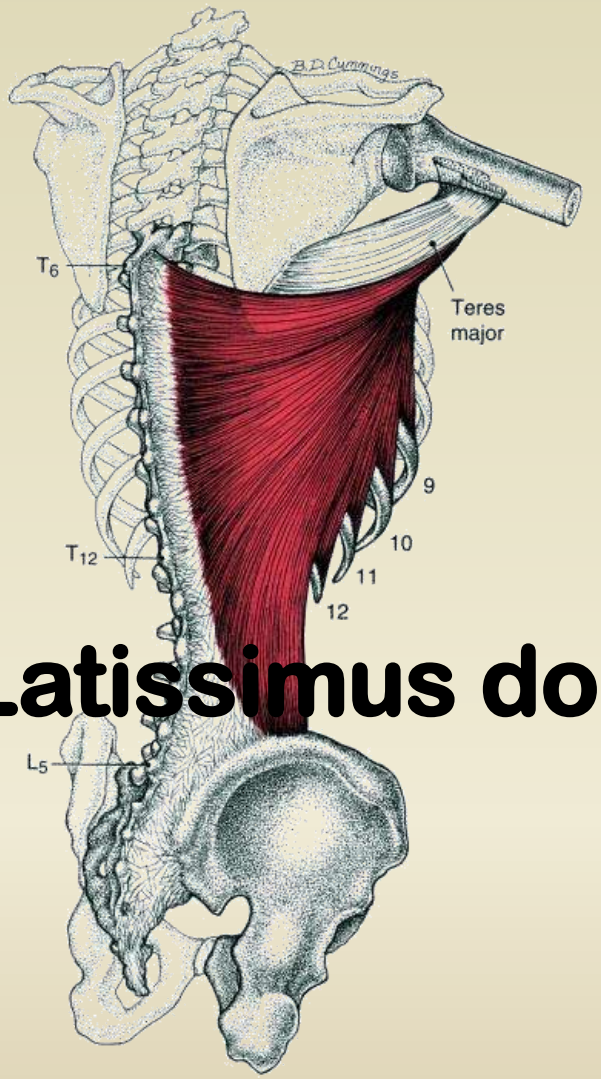
Innervation:

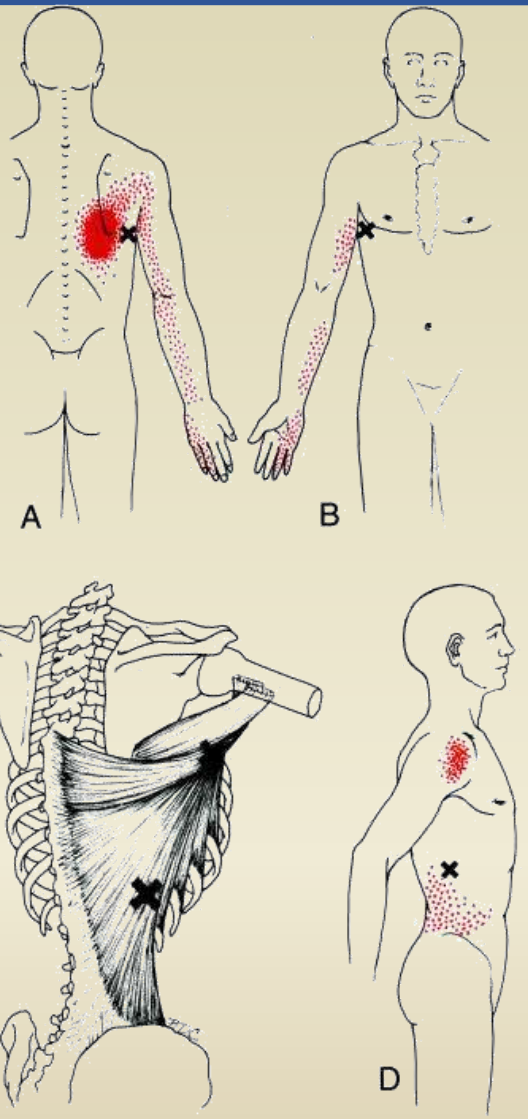
- C6,C7,C8 Thoracodorsal *(long subscapular) n.*

Action:

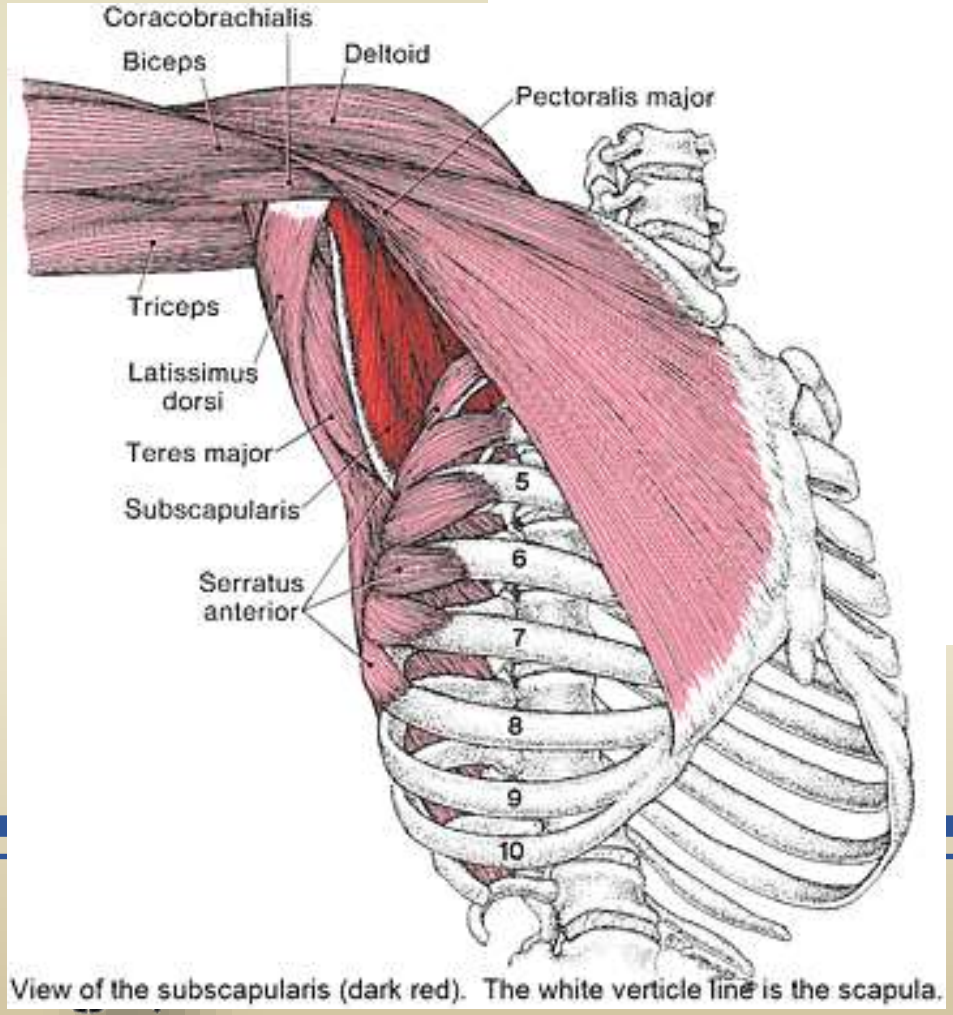
- Swim crawl, chop wood
- Extend arm, adduct/int.rotate

Latissimus dorsi

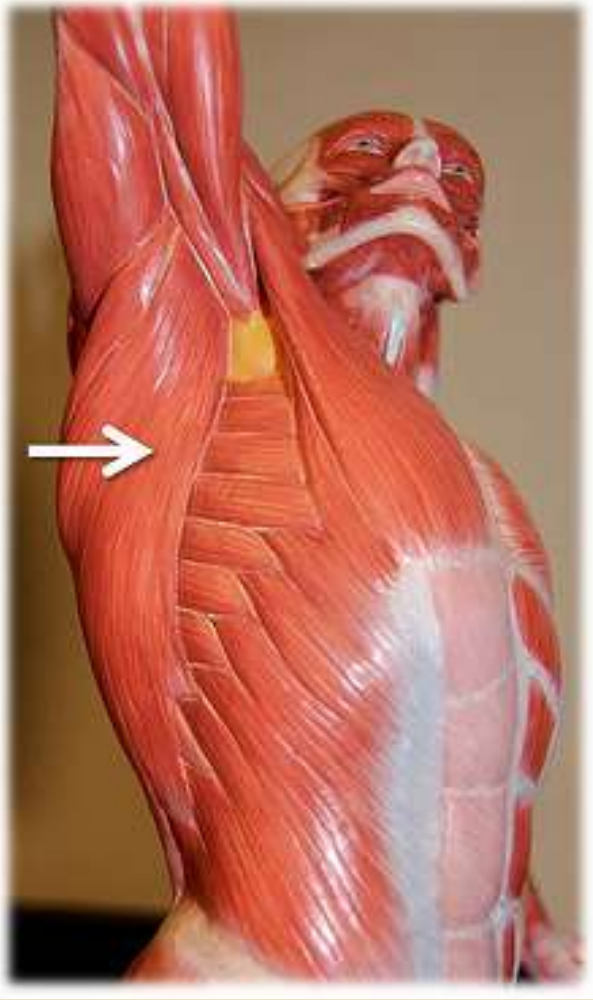




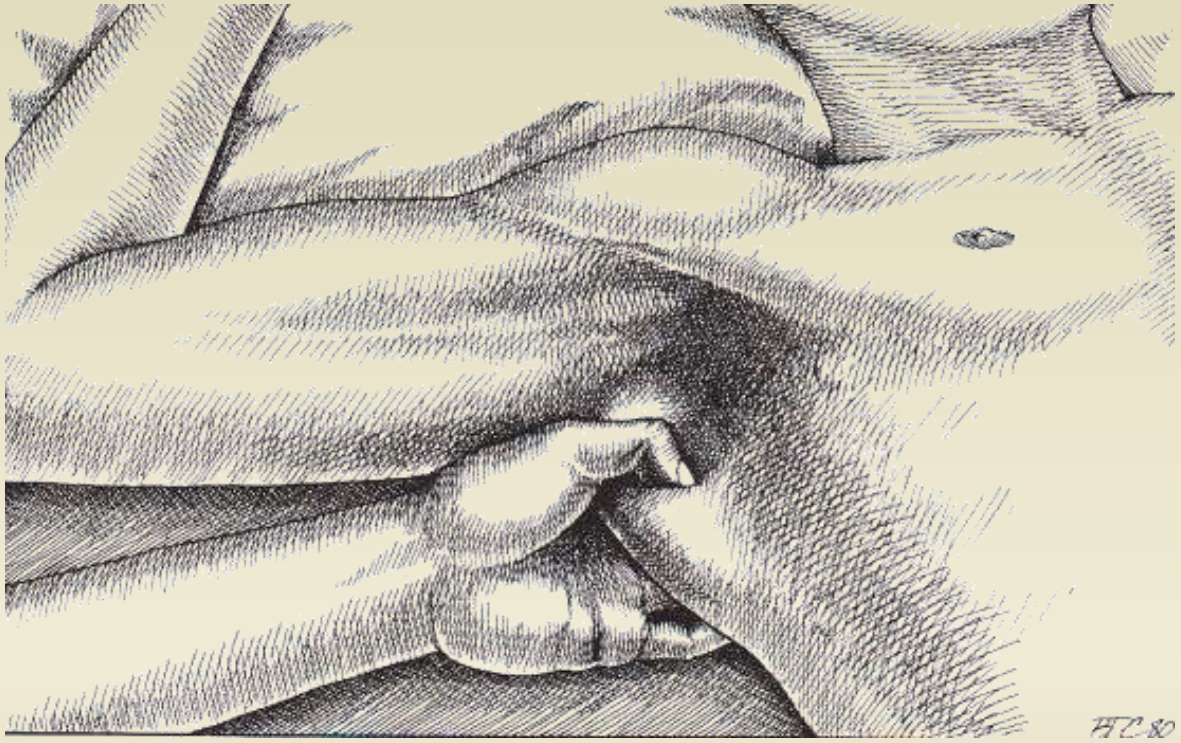
Latissimus dorsi



View of the subscapularis (dark red). The white verticle line is the scapula.



Latissimus dorsi



Palpation:

- Supine
- Arm abducted to 90°

- Palpation of free border
- Snapping palpation of taut bands

Latissimus dorsi