

# ***MSS Module***

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## **Scapular Region and Back**



# *Lecture objectives*

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- **By the end of this session, you should be able to:**
  1. Know the different muscles of the scapular region with special relevance to their origin, insertion, nerve supply and action.



# *General rules*

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- 1. All muscles come from the scapula***
- 2. All inserted into the humerus***
- 3. All supplied by upper 2 roots of brachial plexus with values of C5,6***
- 4. All act on the shoulder (Gleno-humeral) joint***

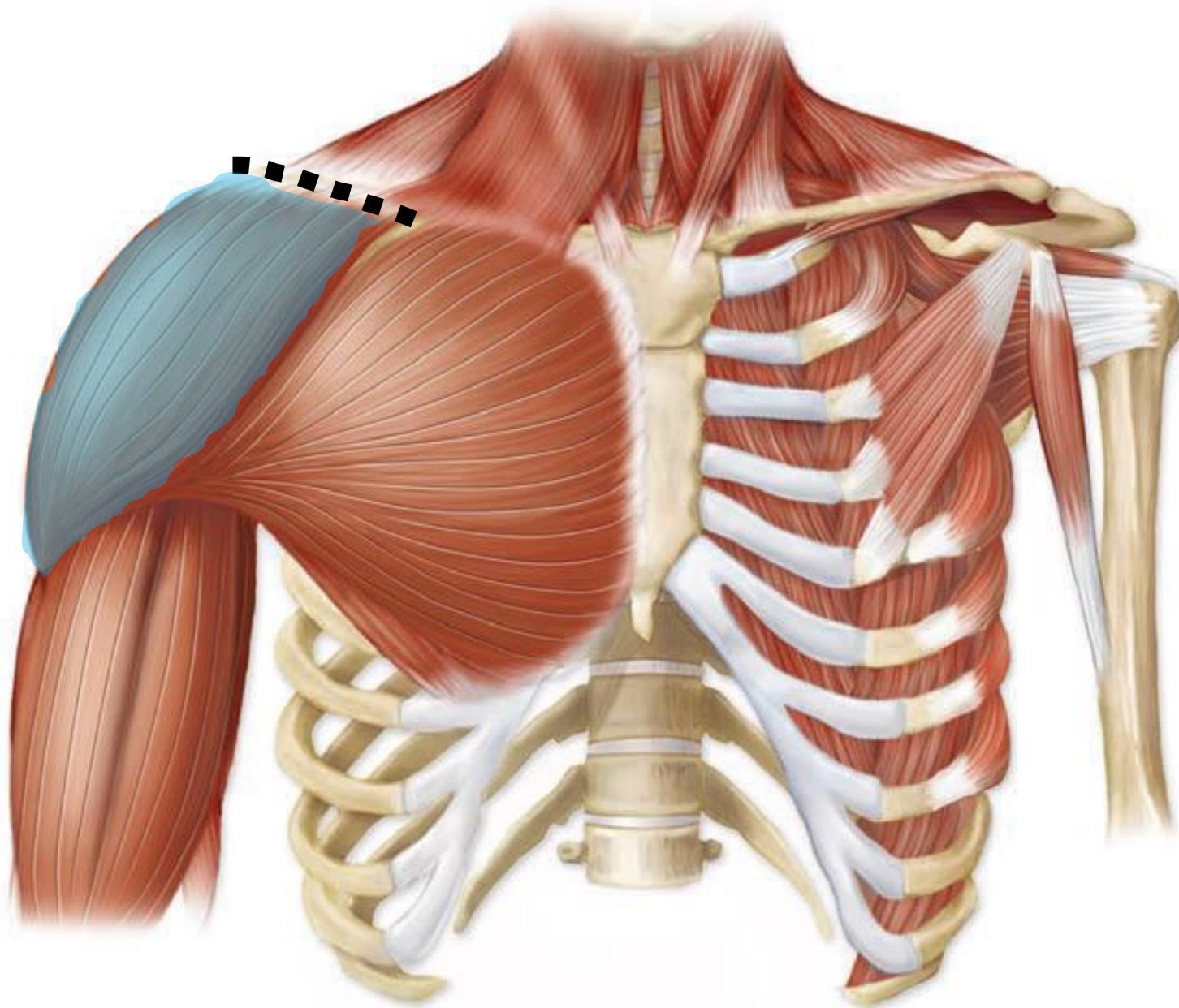


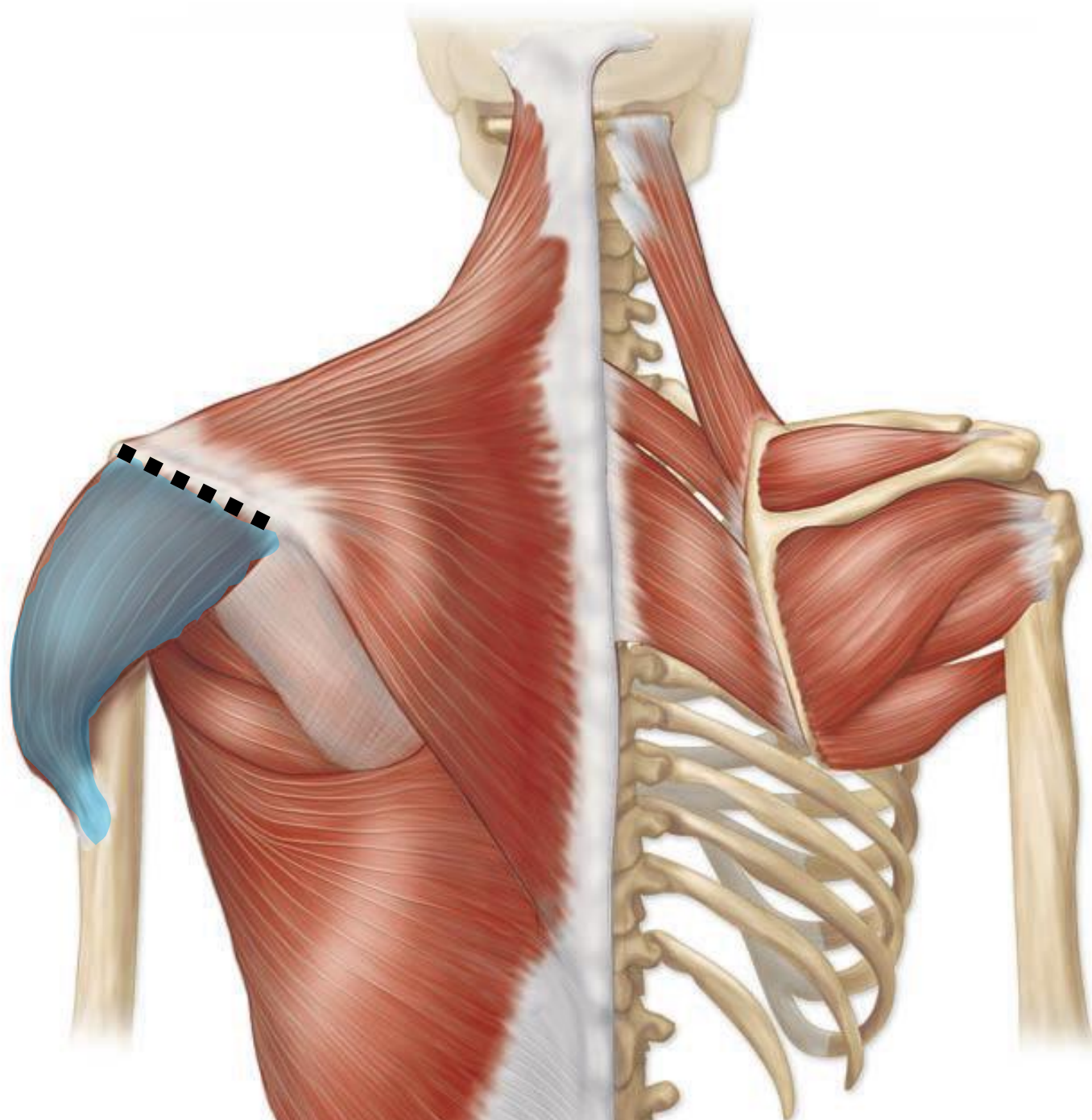
# ***Deltoid Muscle***

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- ***Origen:***

1. Anterior border of lateral 1/3 of clavicle.
2. Lateral border of acromion process of scapula.
3. Lower lip of crest of scapular spine.







# ***Deltoid Muscle***

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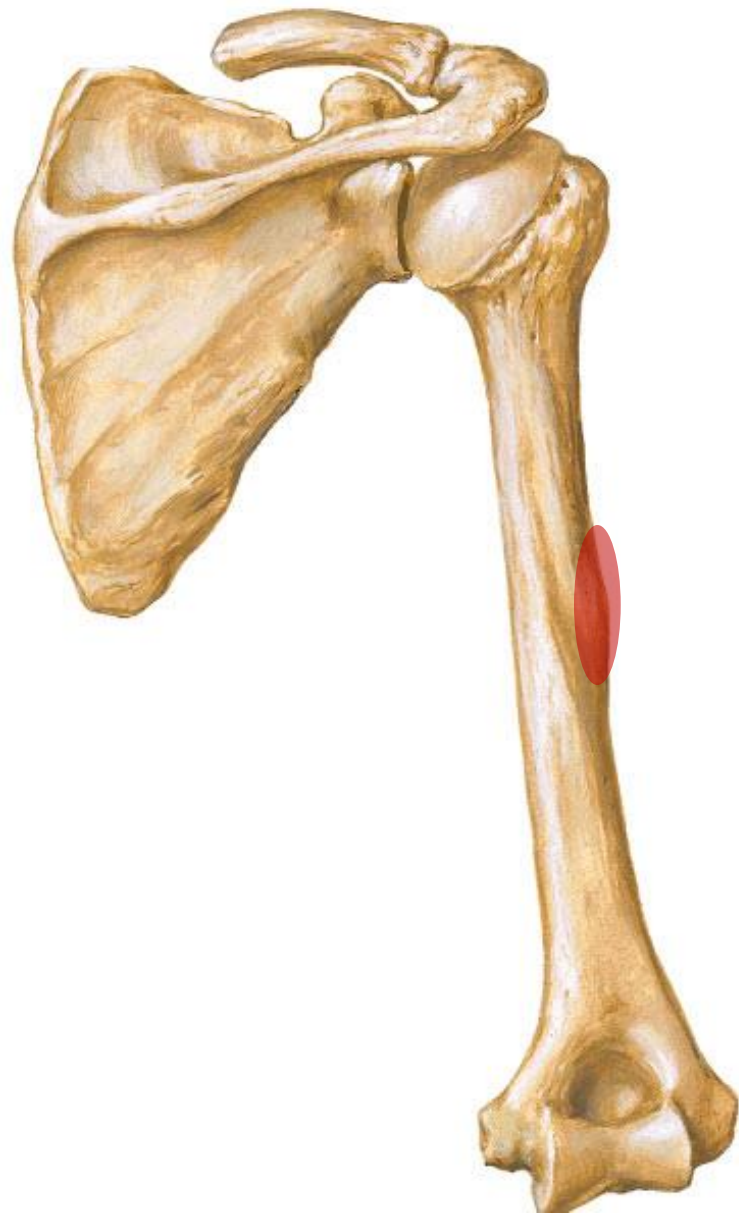
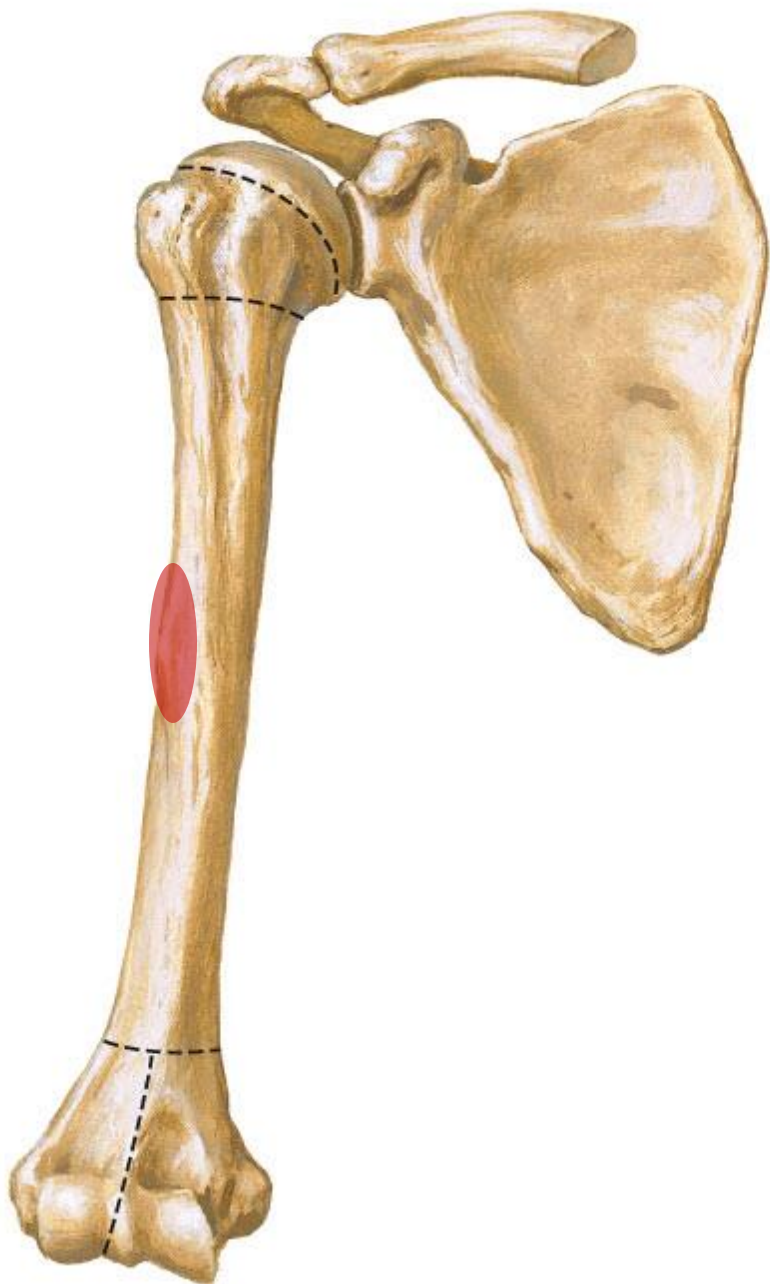
- ***Insertion:***

Deltoid tuberosity of humerus.

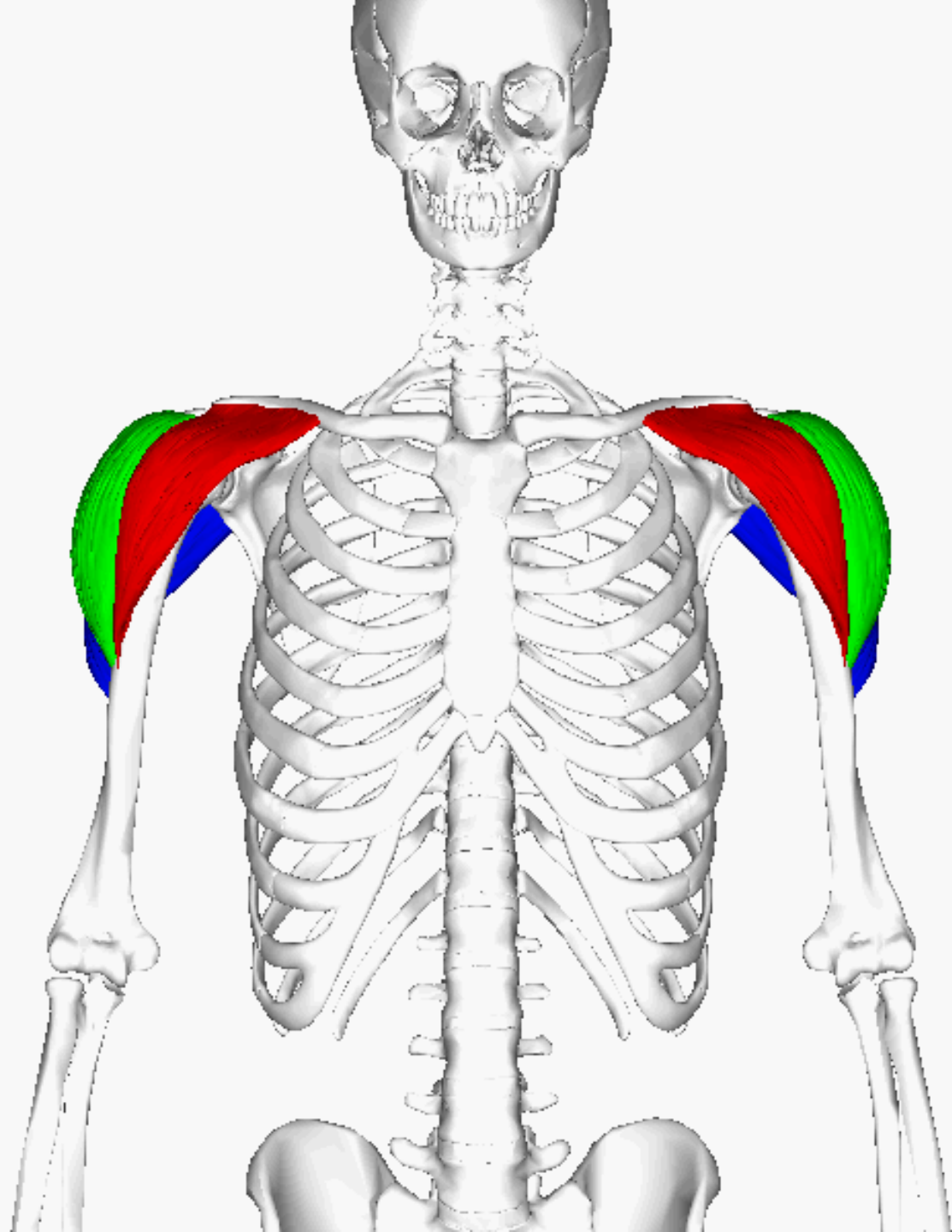
- ***Nerve Supply:***  
**Axillary nerve**

- ***Action:***

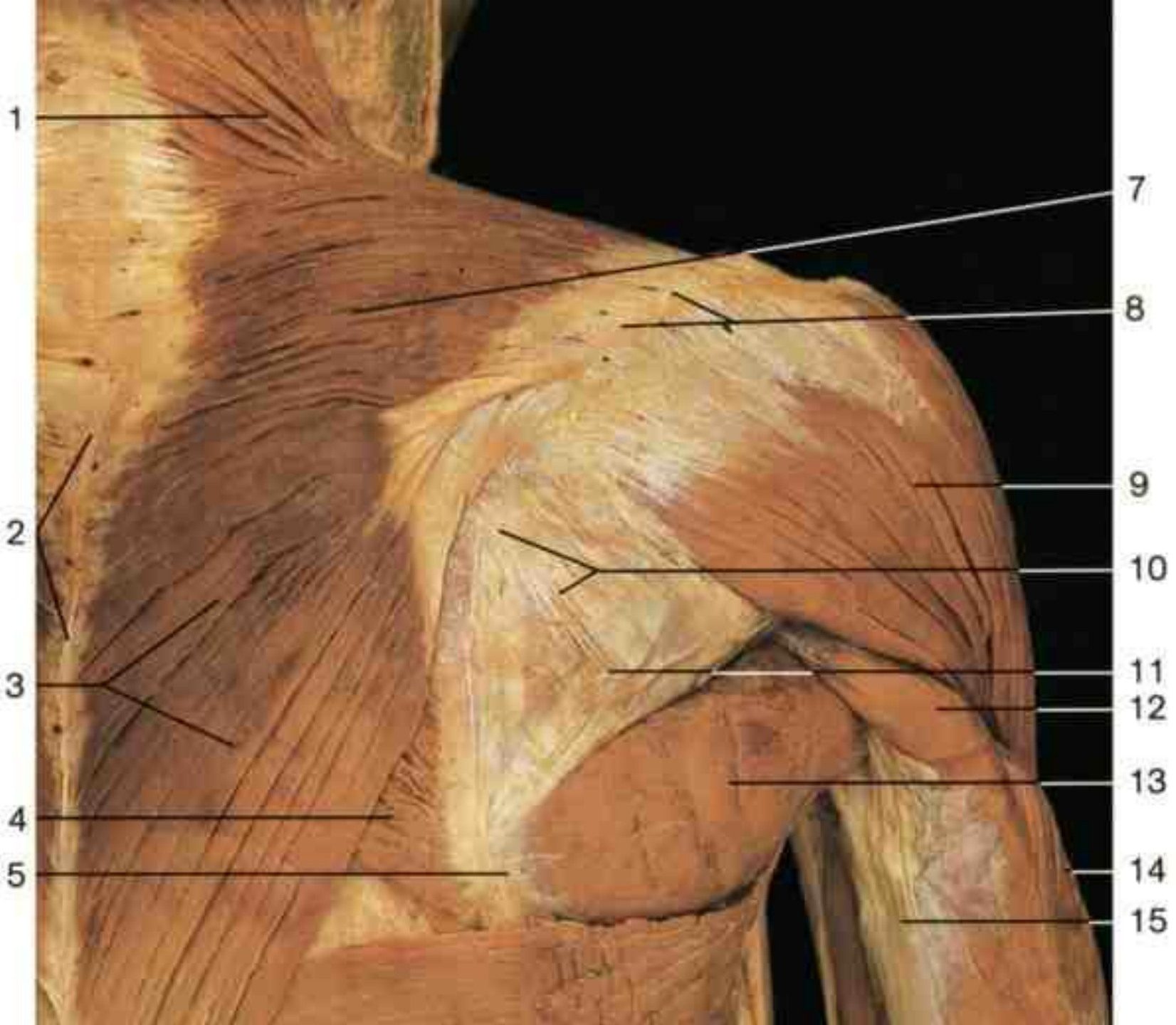
1. Anterior fibers: flexion & medial rotation of arm.
2. Middle fibers: abduction of arm (15-90 Degrees).
3. Posterior fibers: extension & lateral rotation of shoulder joint.







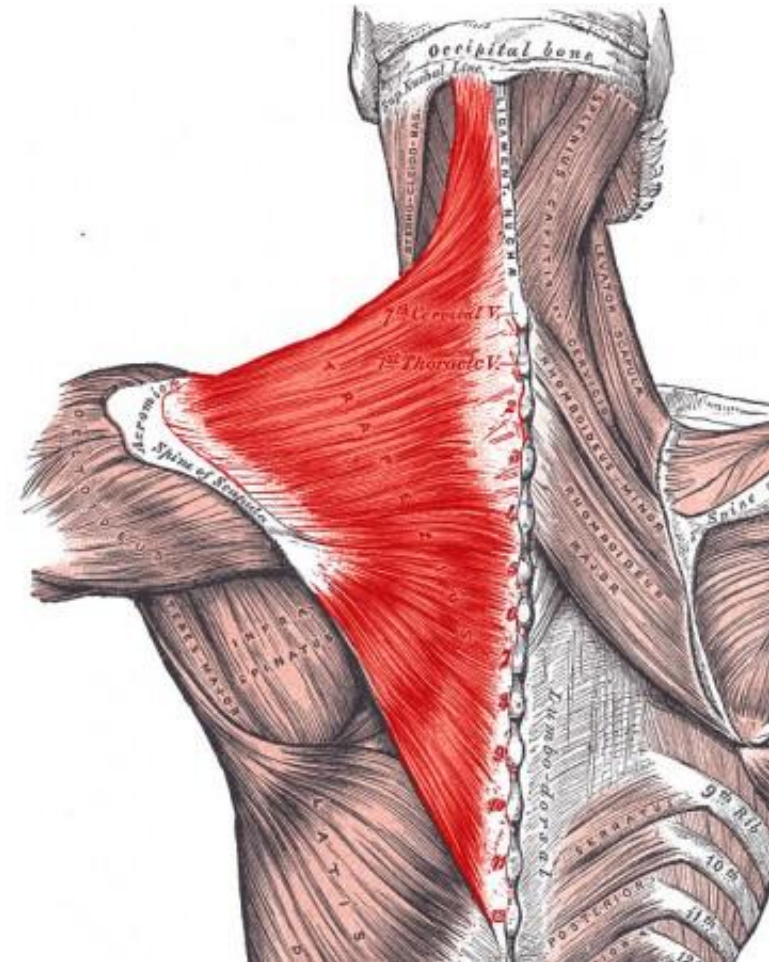




# *Trapezius Muscle*

- ***Origen:***

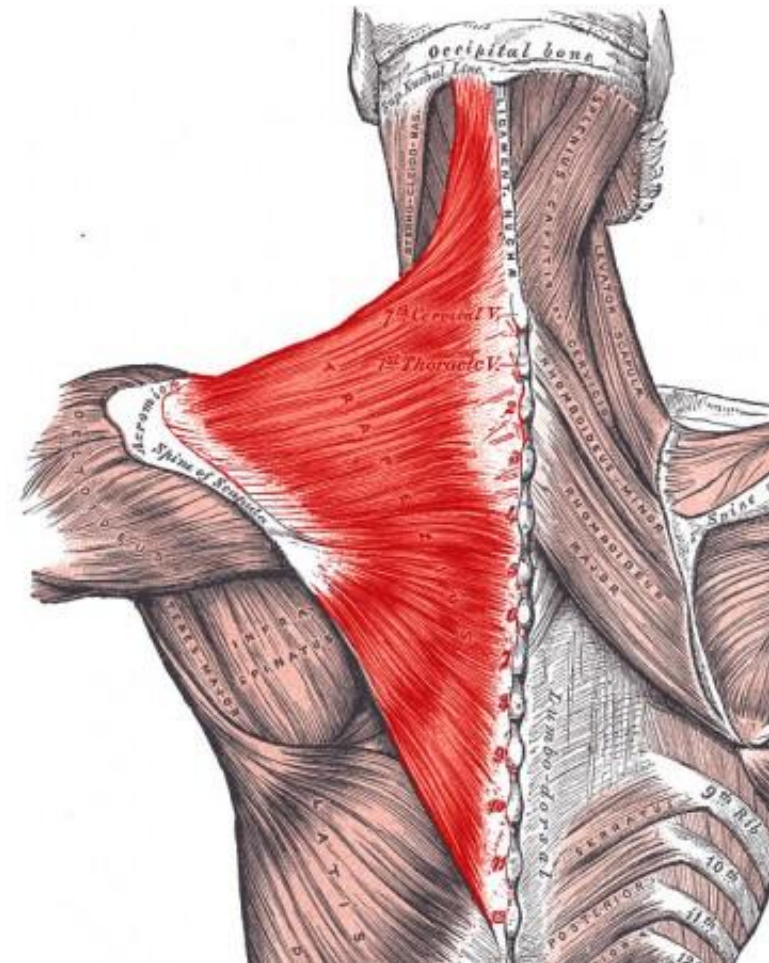
Superior nuchal line, external occipital protuberance, medial margin of the ligamentum nuchae, spinous processes of C7 to T12 and the related supraspinous ligaments

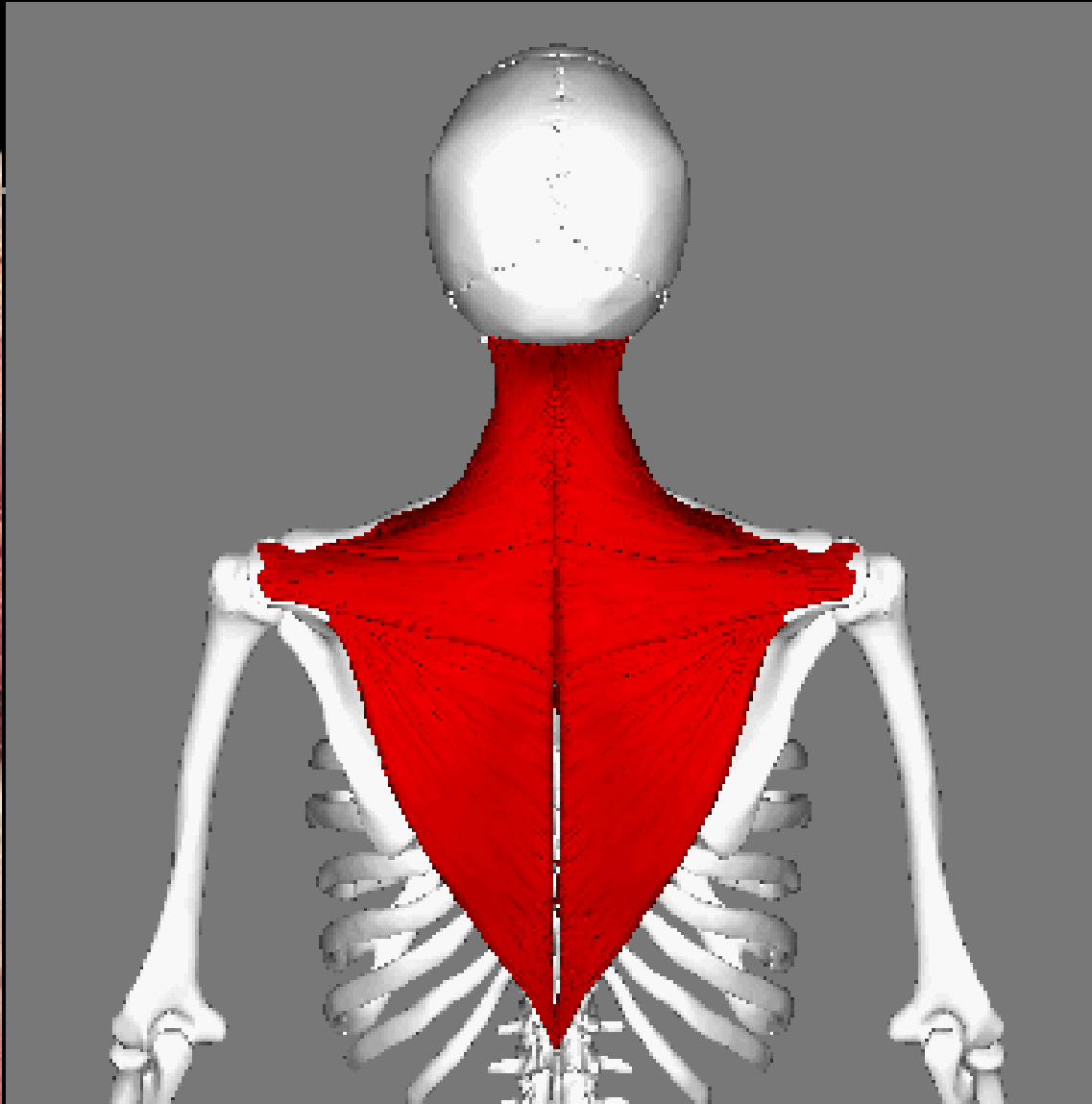


# *Trapezius Muscle*

- ***Insertion:***

Superior edge of the crest of the spine of the scapula, acromion, posterior border of lateral one-third of clavicle

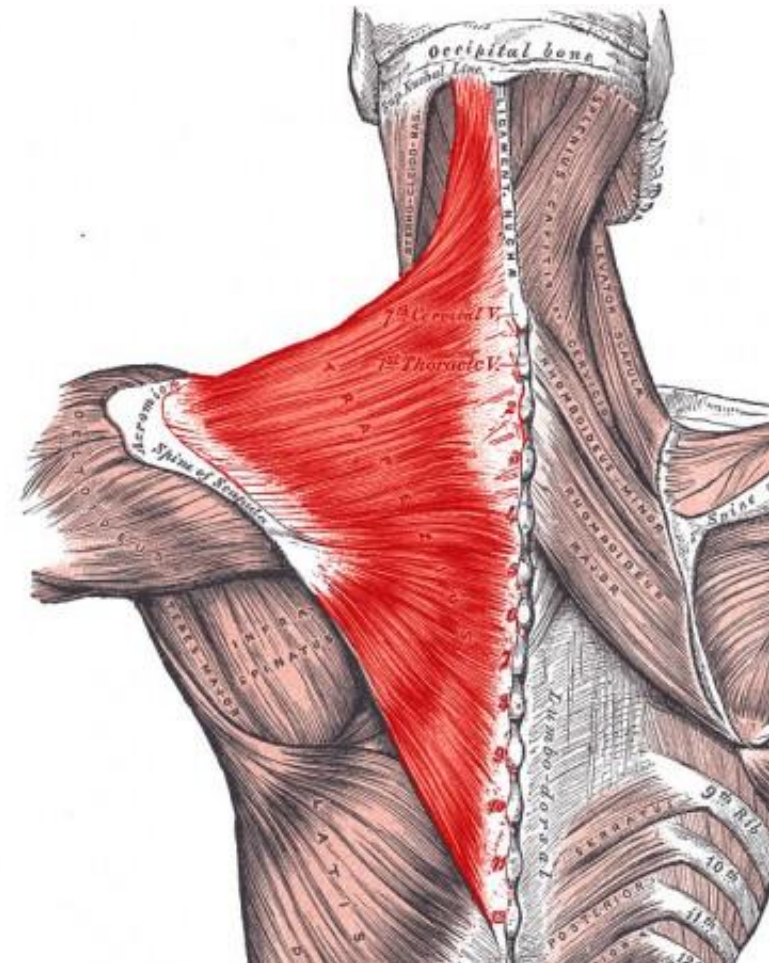




# *Trapezius Muscle*

- ***Nerve Supply:***

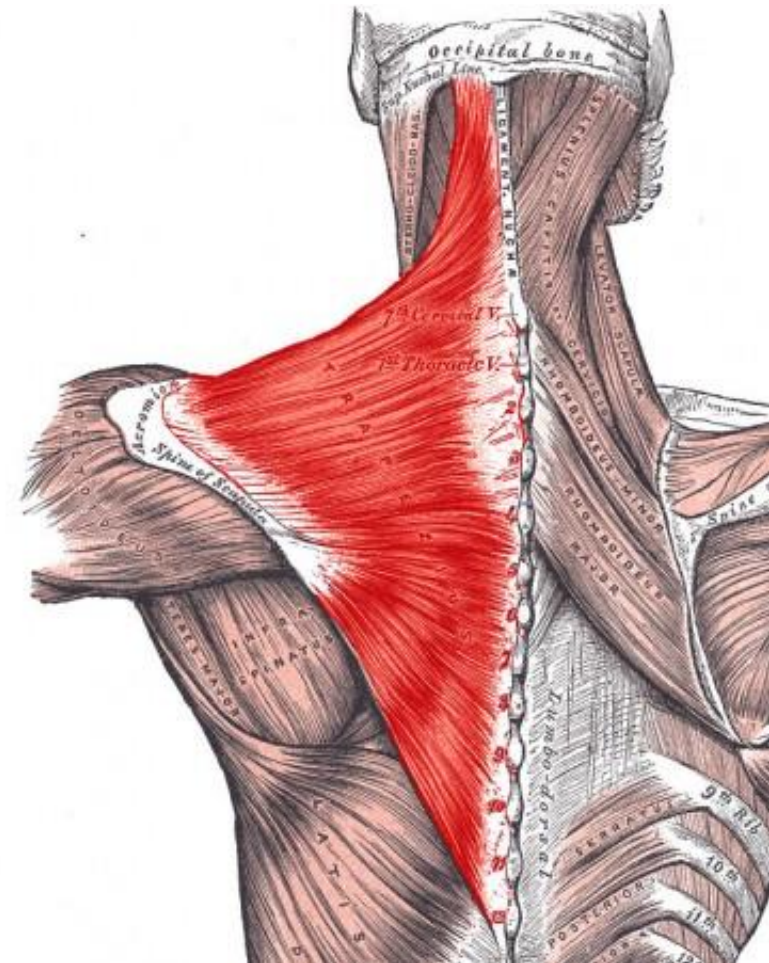
Motor spinal part of accessory nerve (CN 11).  
Sensory (proprioception) anterior rami of C3 and C4



# *Trapezius Muscle*

- ***Action:***

Powerful elevator of the scapula; rotates the scapula during abduction of humerus above horizontal; middle fibers retract scapula; lower fibers depress scapula





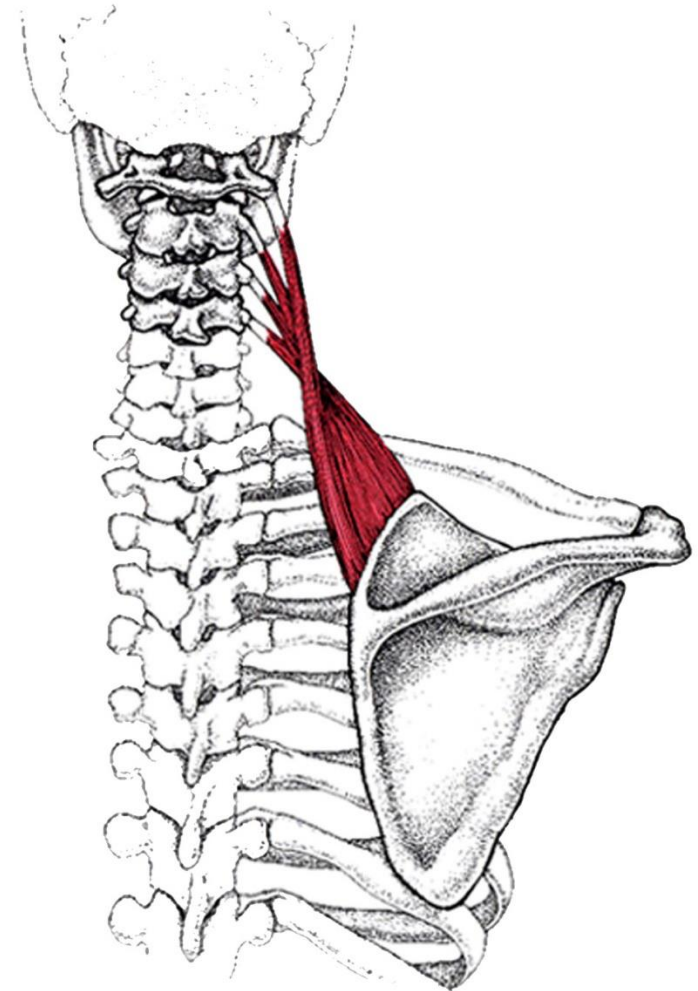
# *Levator Scapulae Muscle*

- ***Origen:***

Transverse processes of C1 to C4 vertebrae

- ***Insertion:***

Posterior surface of medial border of scapula from superior angle to root of spine of the scapula



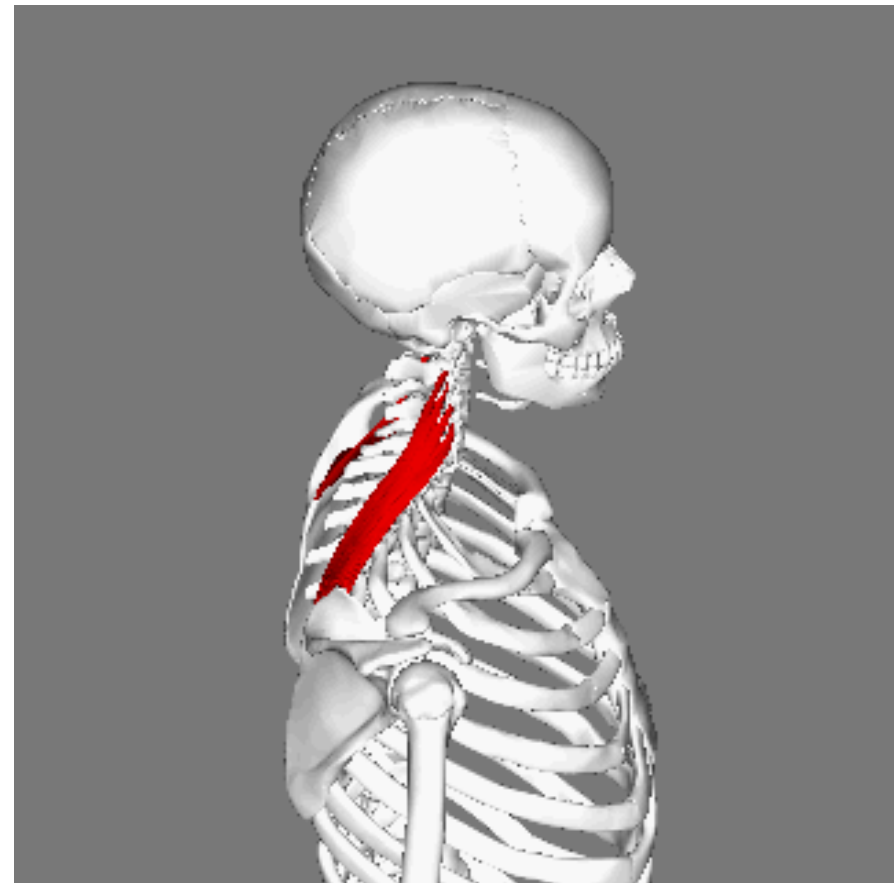
# *Levator Scapulae Muscle*

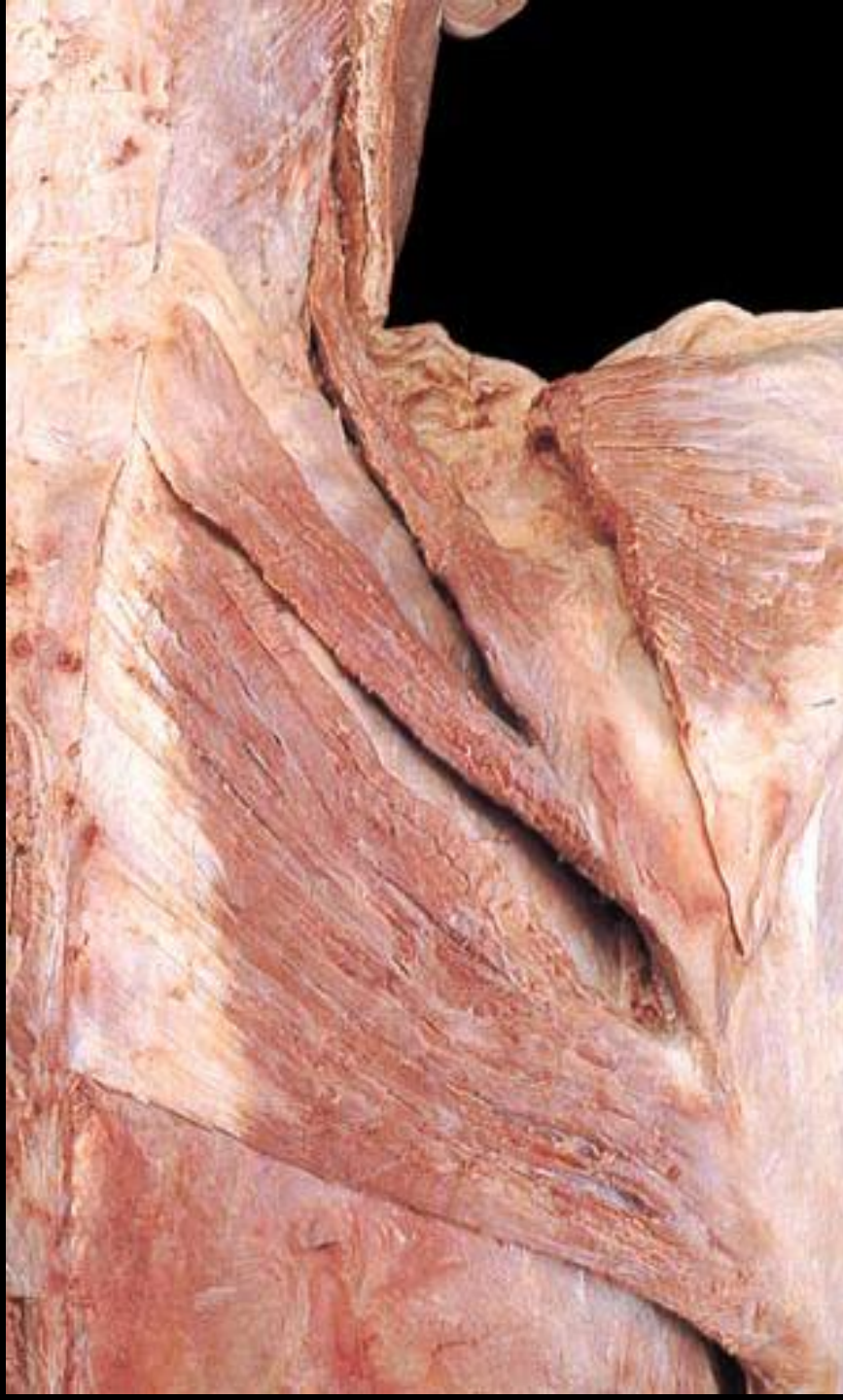
- ***Nerve Supply:***

Branches directly from anterior rami of C3 and C4 spinal nerves.

- ***Action:***

Elevates the scapula.





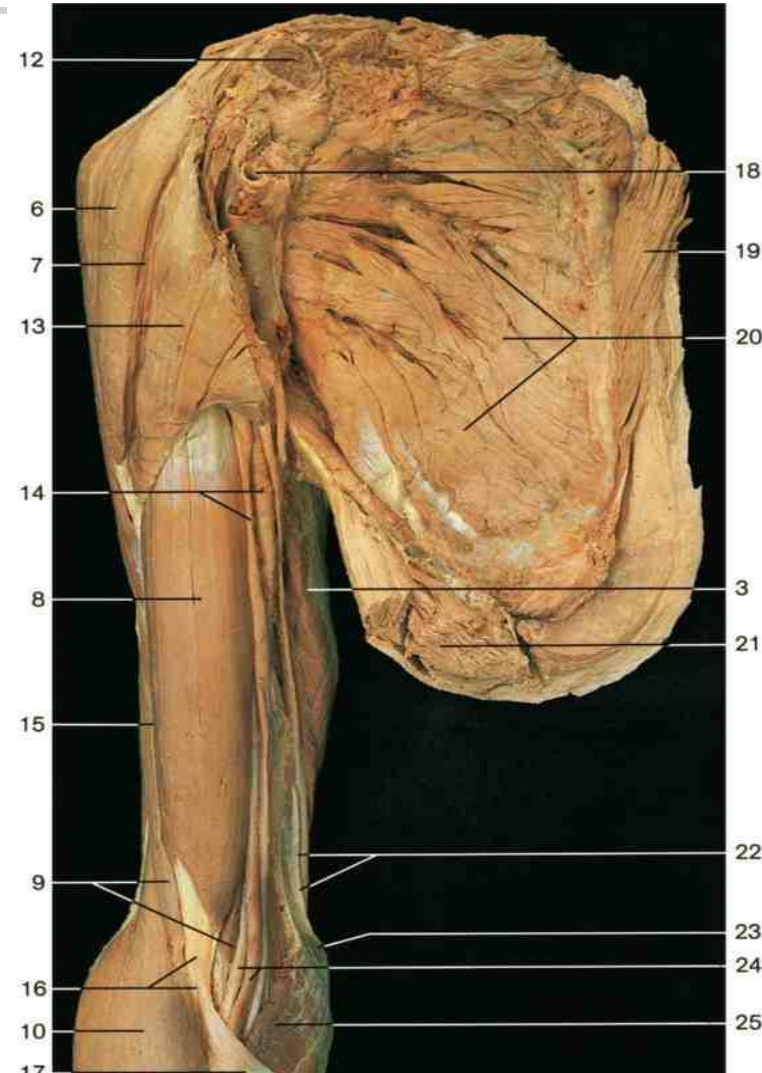
# *Subscapularis Muscle*

## ■ *Origen:*

Medial 2/3 of subscapular fossa.

## *Insertion:*

Lesser tuberosity of humerus.



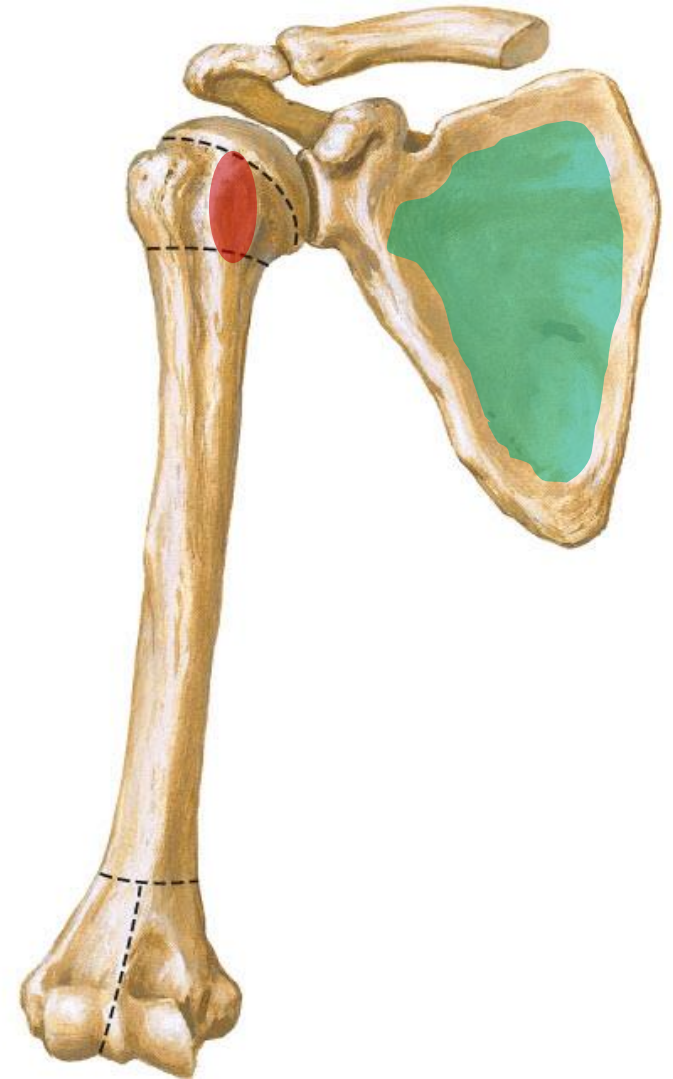
# *Subscapularis Muscle*

- ***Origen:***

Medial 2/3 of  
subscapular fossa.

***Insertion:***

Lesser tuberosity  
of  
humerus.



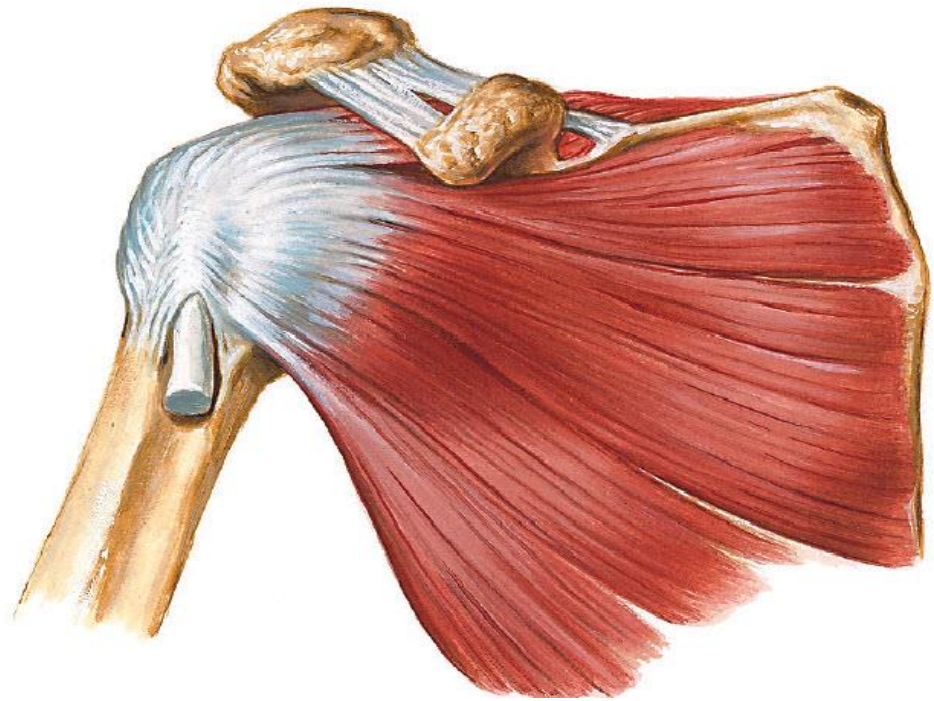
# ***Subscapularis Muscle***

- ***Nerve Supply:***

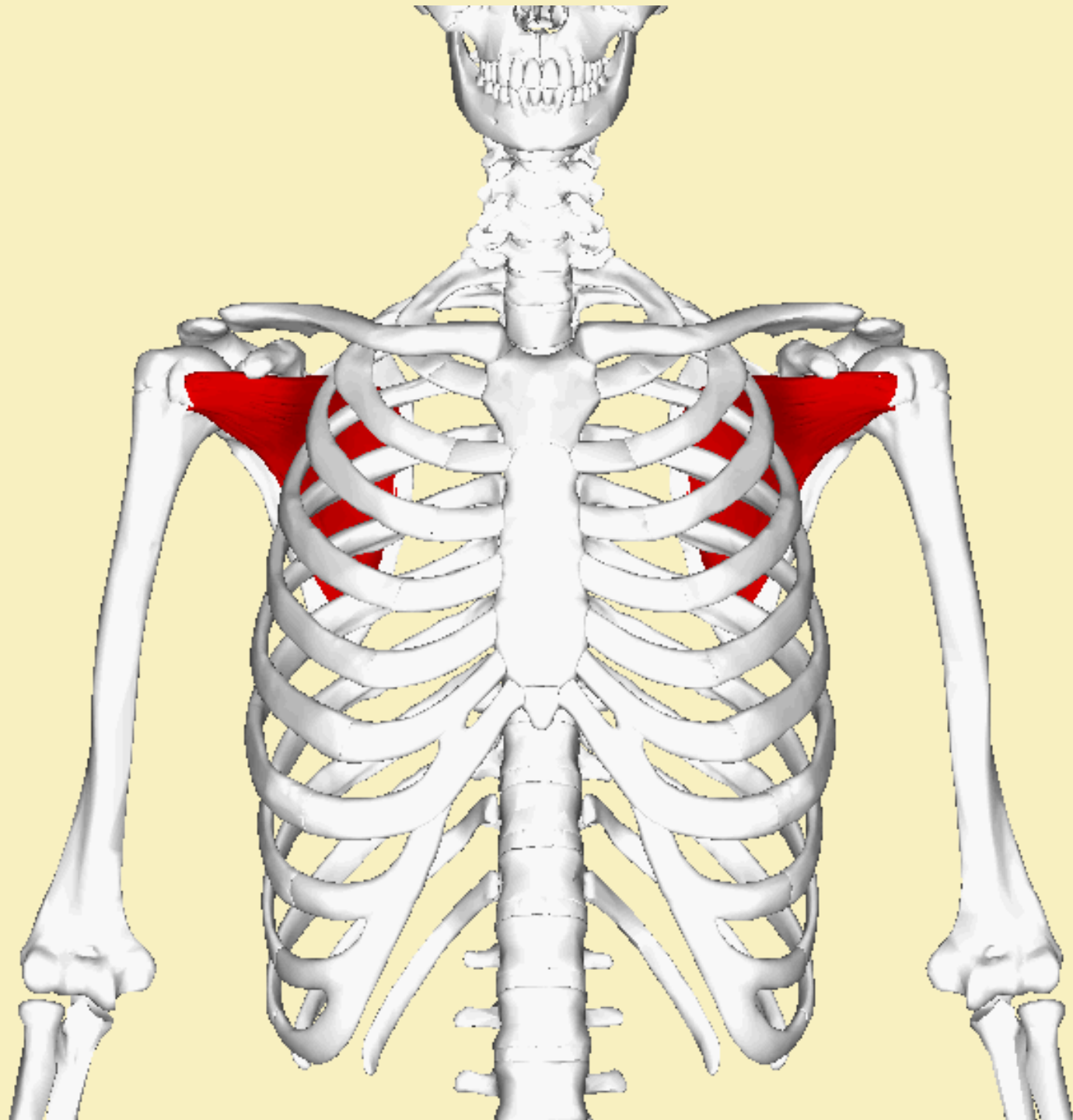
Upper & Lower  
Subscapular nerves.

- ***Action:***

Adduction and  
medial rotation of  
arm.









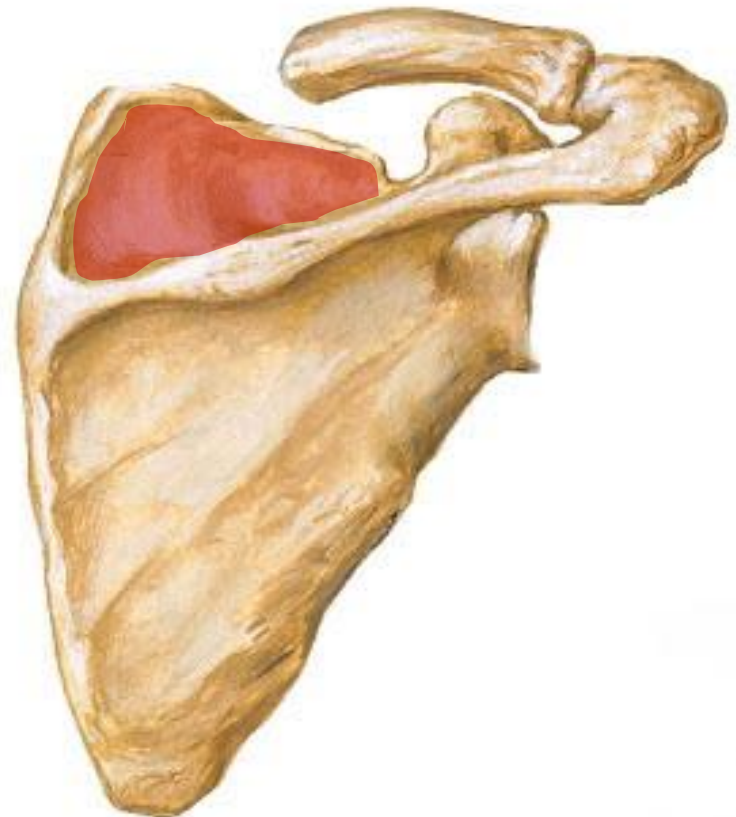
# *Supraspinatus Muscle*

- ***Origen:***

Medial 2/3 of supraspinous fossa.

- ***Insertion:***

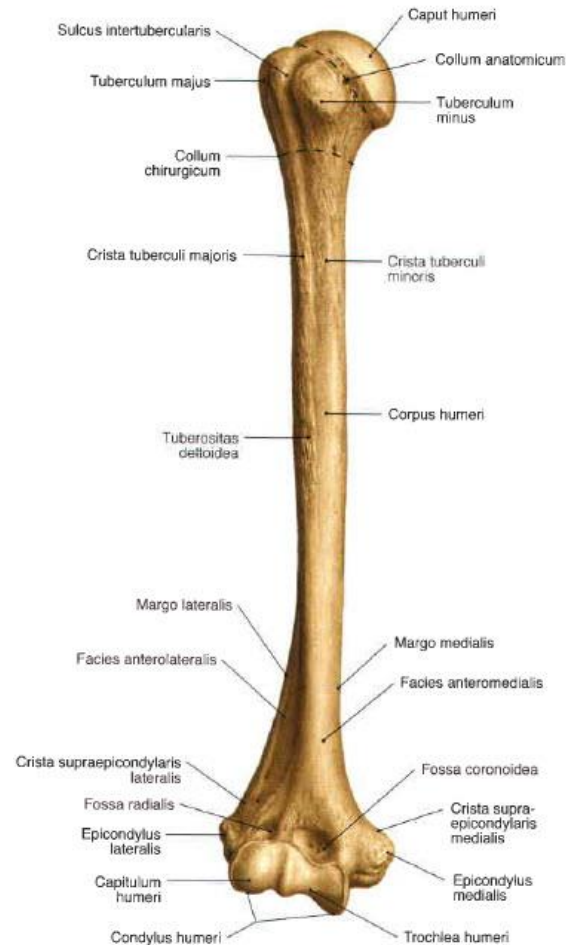
Upper impression of greater tuberosity of humerus.



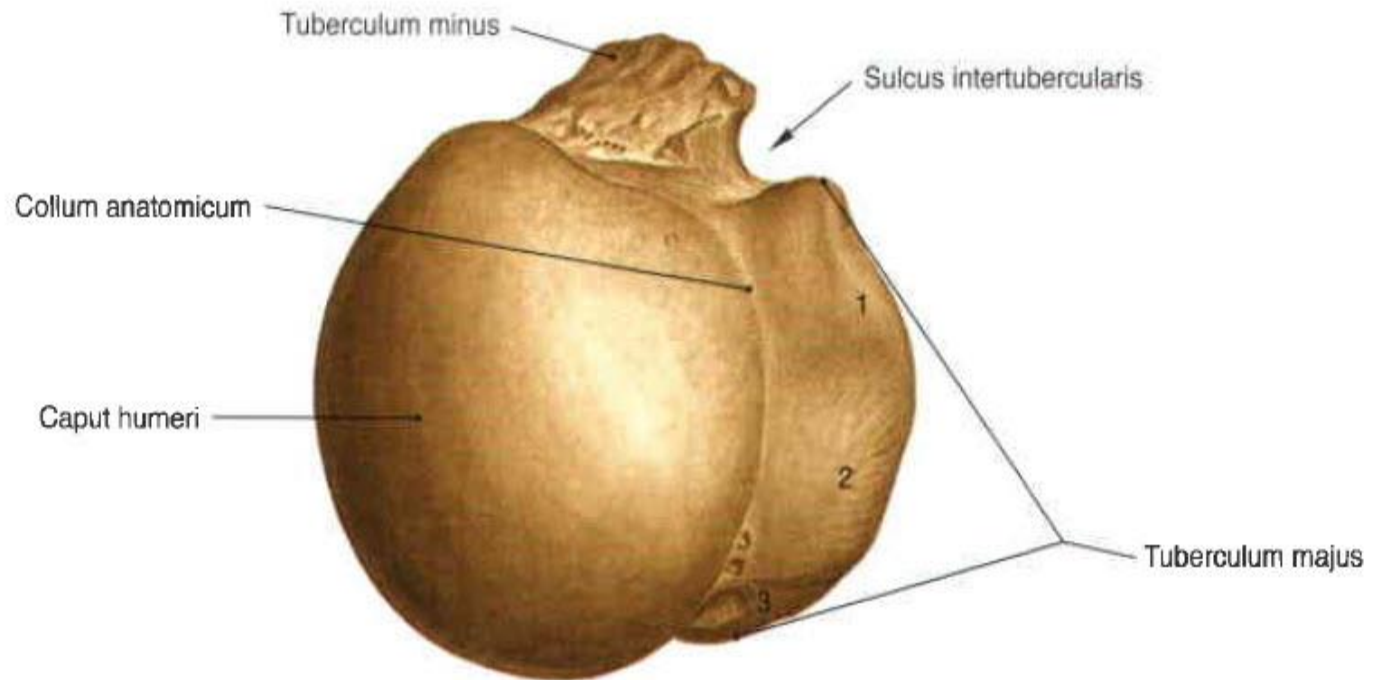
# *Supraspinatus Muscle*

- ***Nerve Supply:***  
**Suprascapular nerve**

- ***Action:***  
Initiation of abduction of arm in its early steps (first 0 – 15 Degrees).

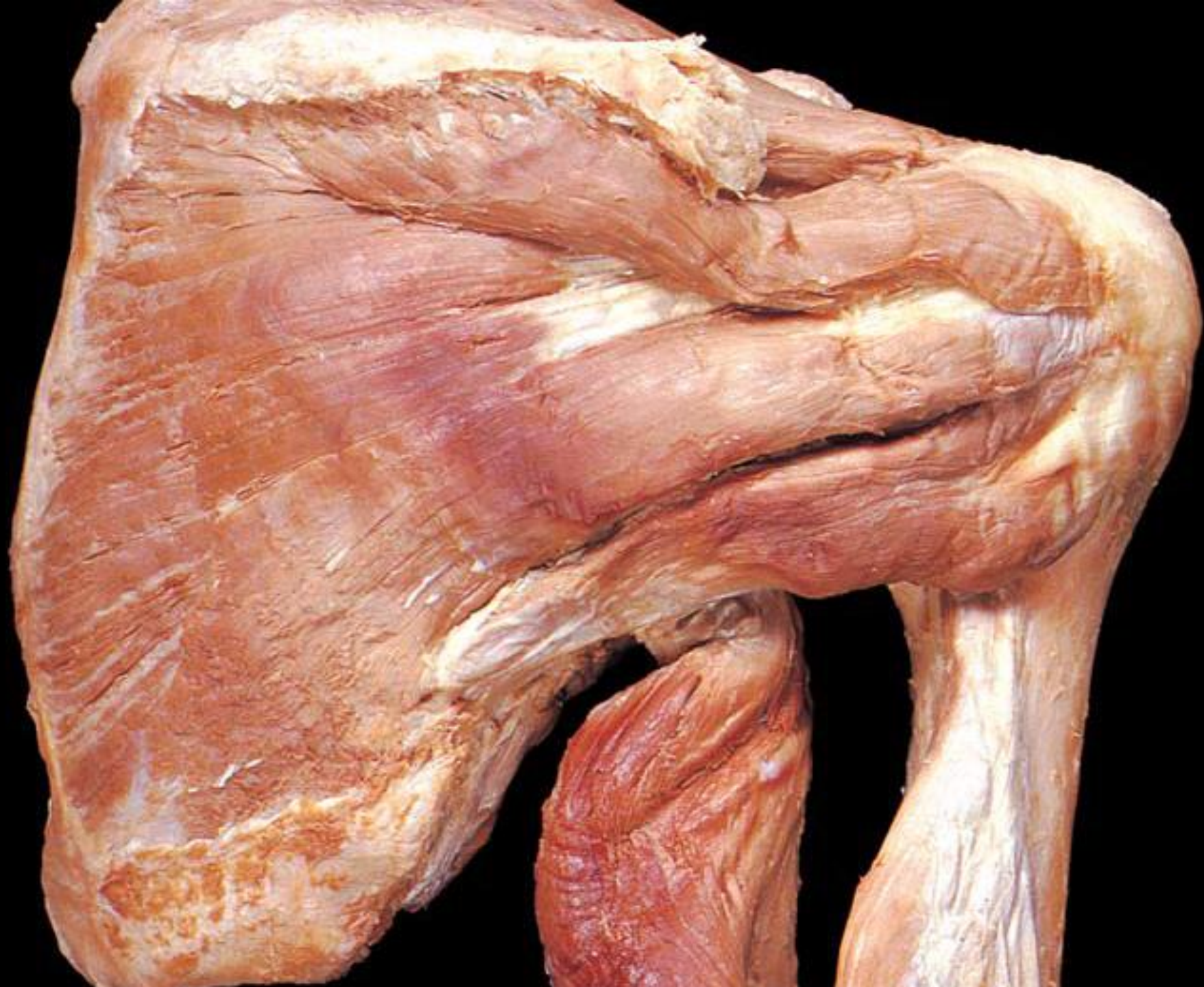


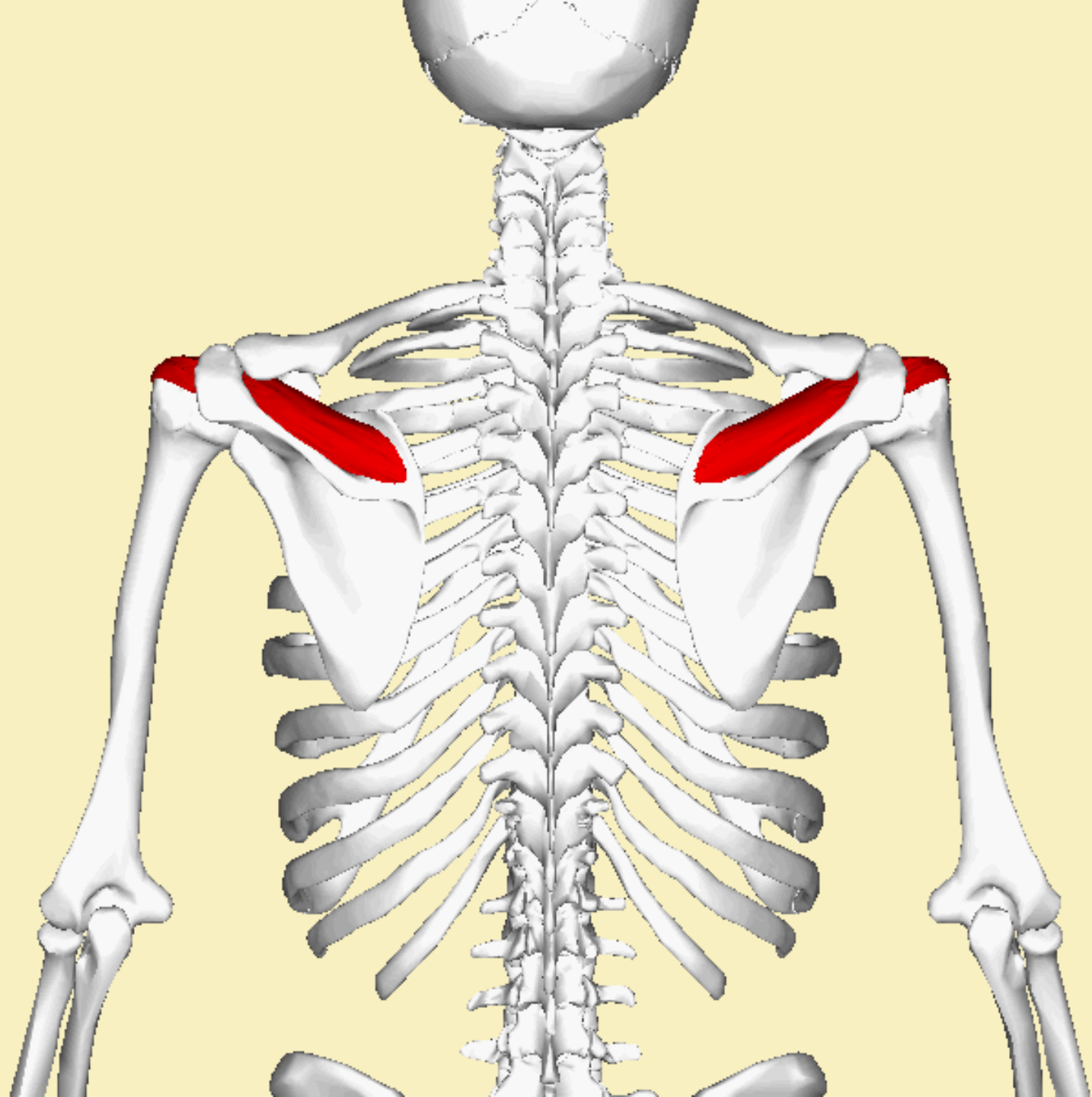
# ***Supraspinatus Muscle***



Insertions of the tendons of:

- 1 M. supraspinatus
- 2 M. infraspinatus
- 3 M. teres minor





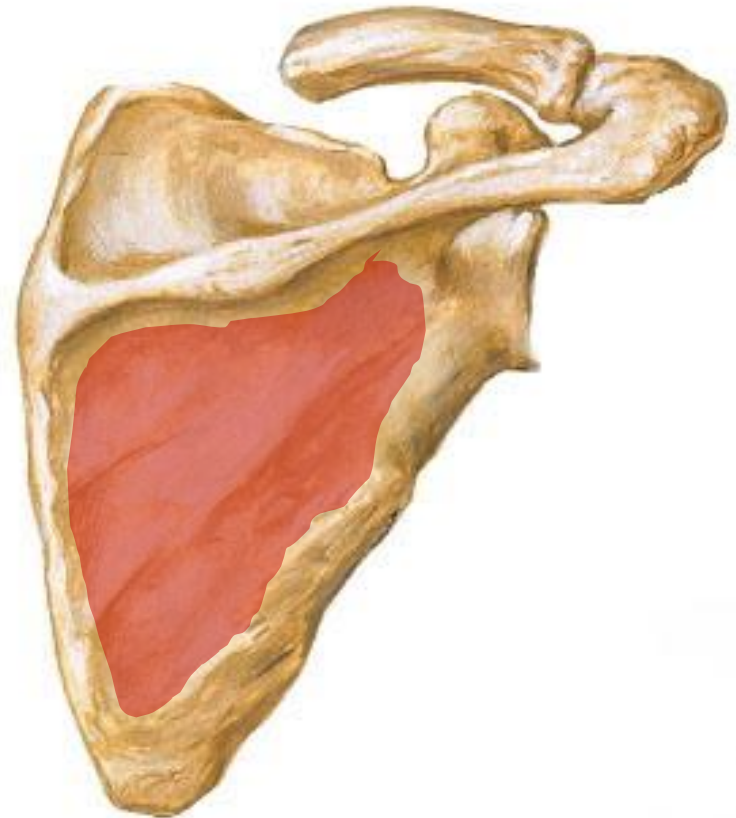
# *Infraspinatus Muscle*

- ***Origen:***

Medial 2/3 of  
infraspinous fossa.

- ***Insertion:***

Middle impression of  
greater tuberosity of  
humerus.



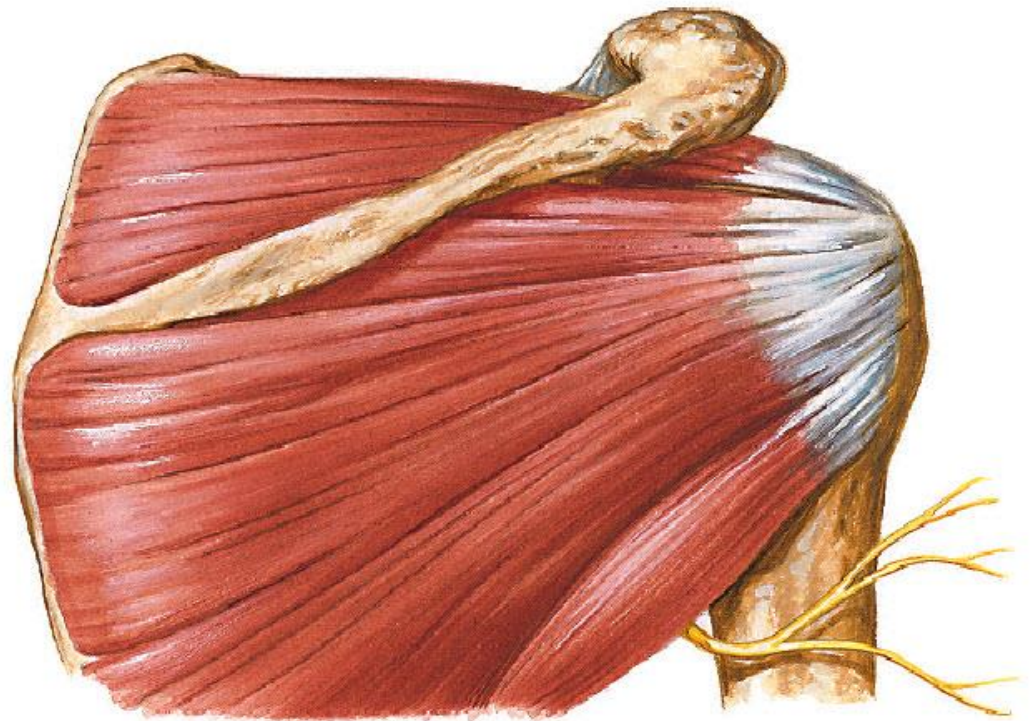
# *Infraspinatus Muscle*

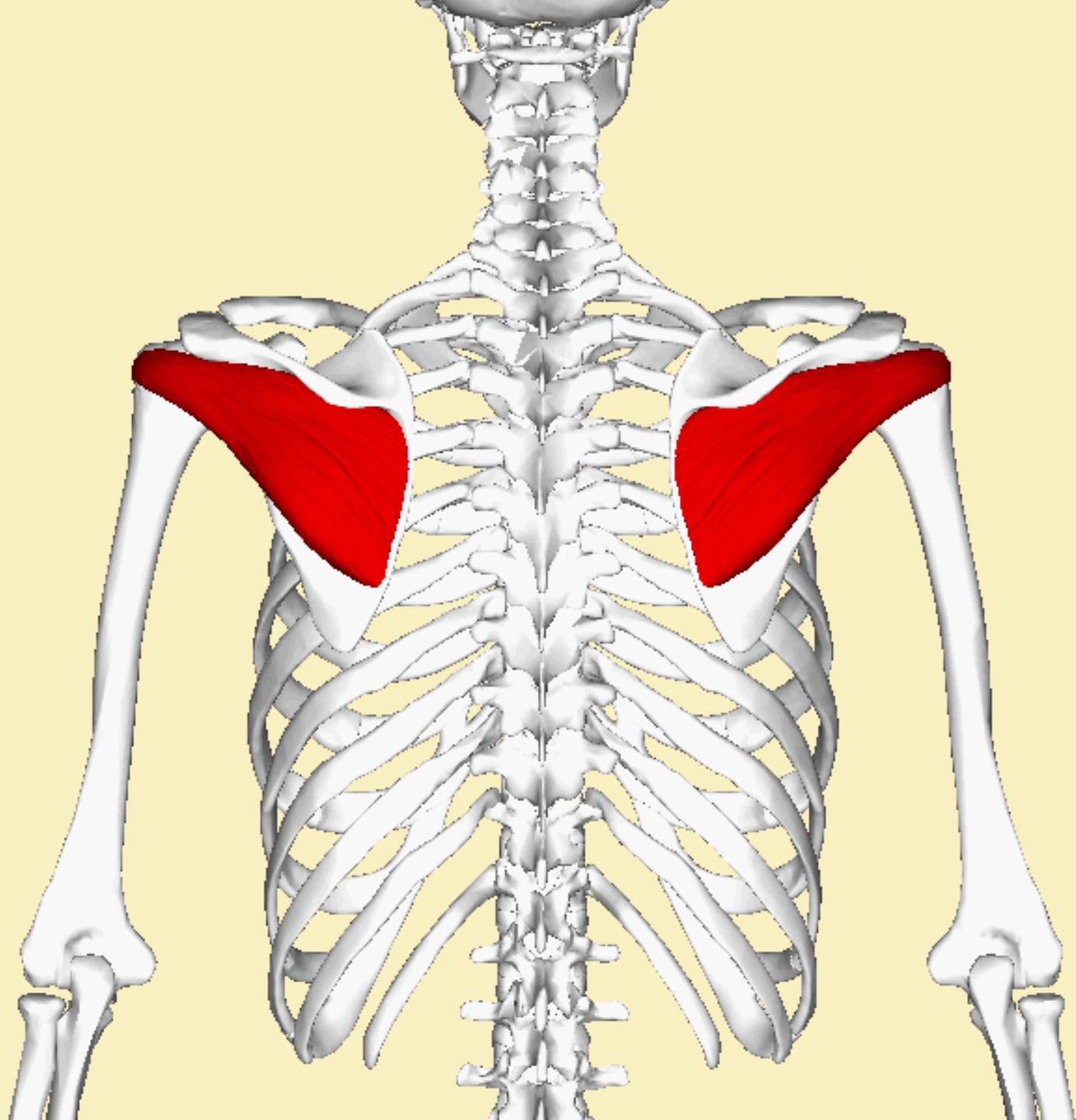
- ***Nerve Supply:***

**Suprascapular  
nerve**

- ***Action:***

Adduction and  
lateral rotation of  
arm.







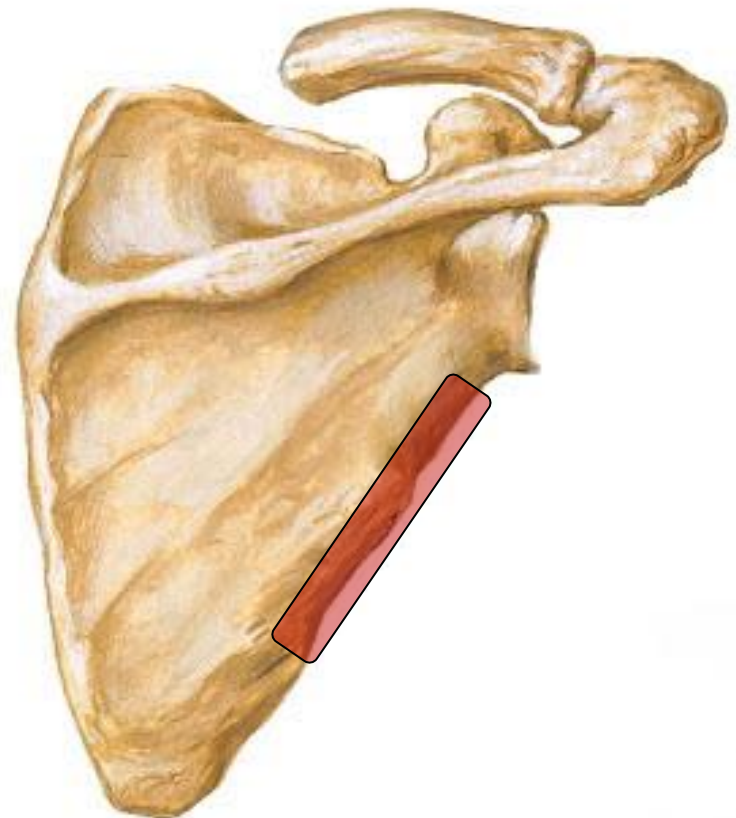
# ***Teres Minor Muscle***

## ■ ***Origin:***

Upper 2/3 of dorsal aspect of lateral border of scapula.

## ***Insertion:***

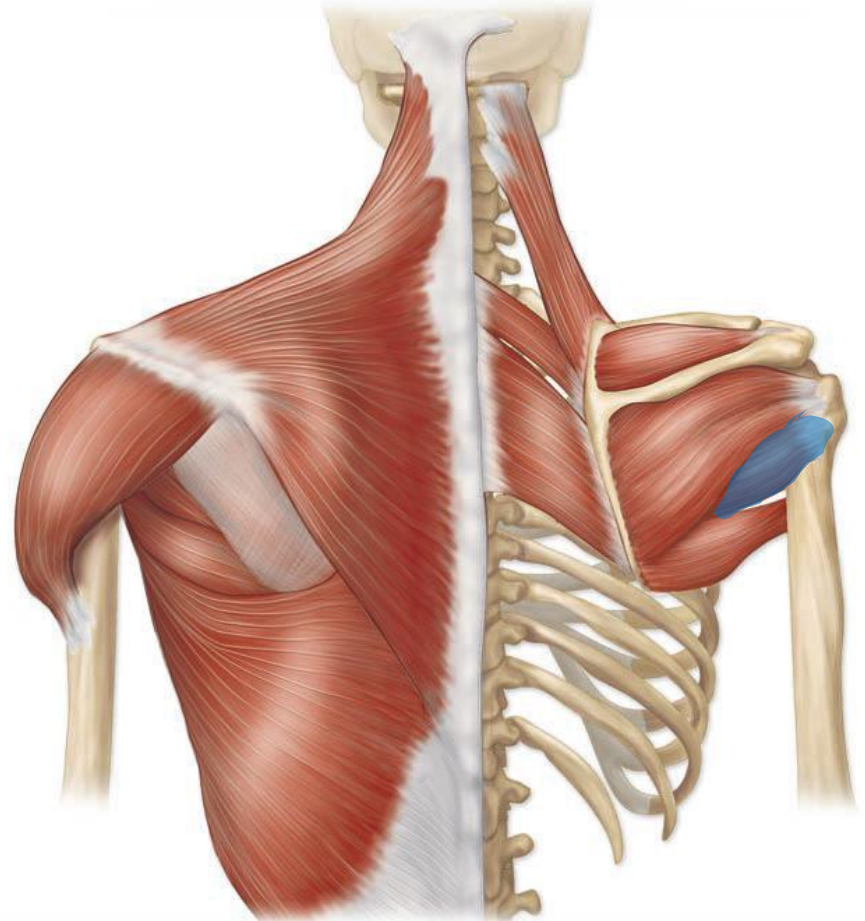
Lower impression of greater tuberosity of humerus.

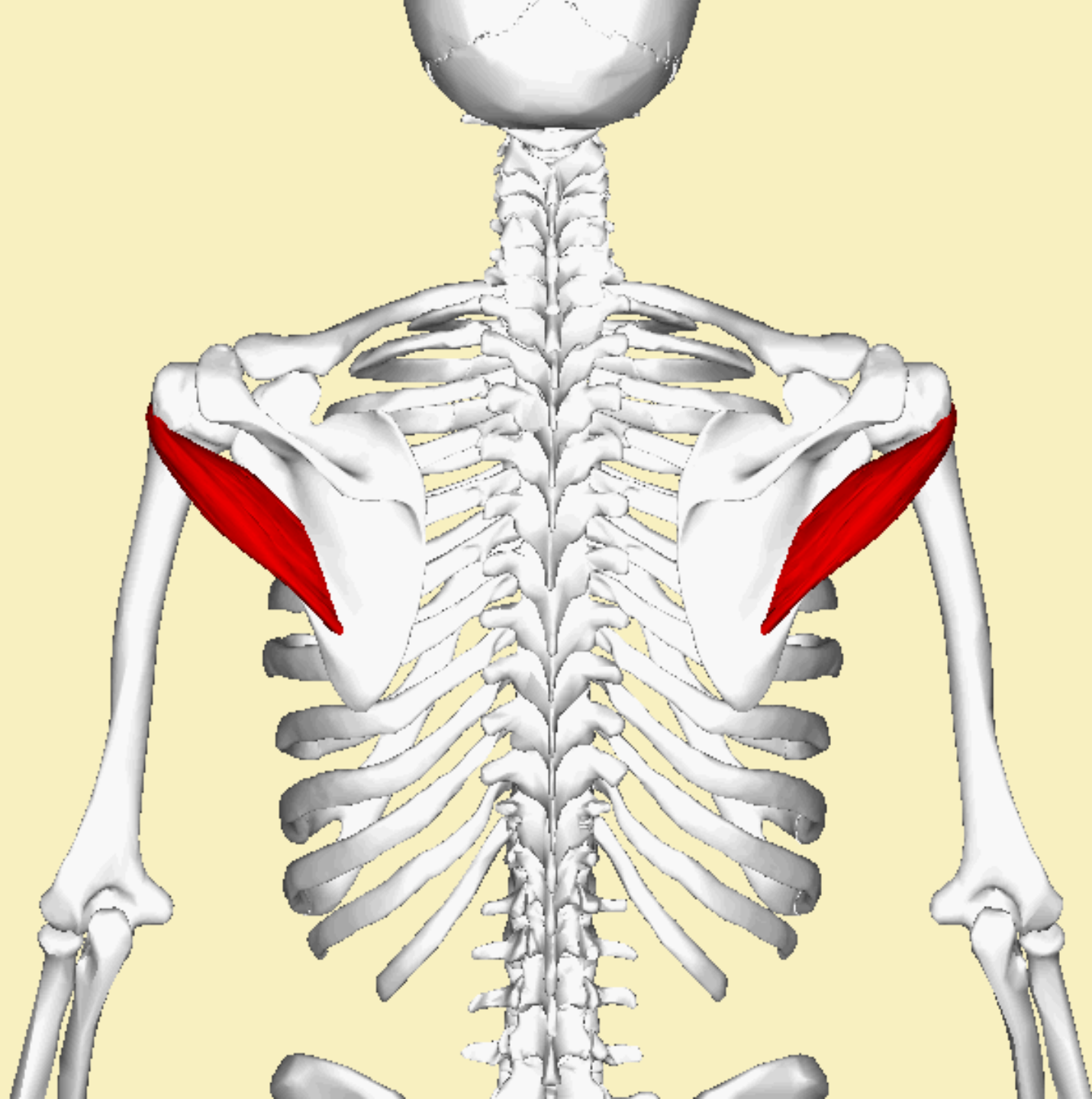


# ***Teres Minor Muscle***

- ***Nerve Supply:***  
**Axillary nerve**

- ***Action:***  
Adduction and lateral rotation of the arm.





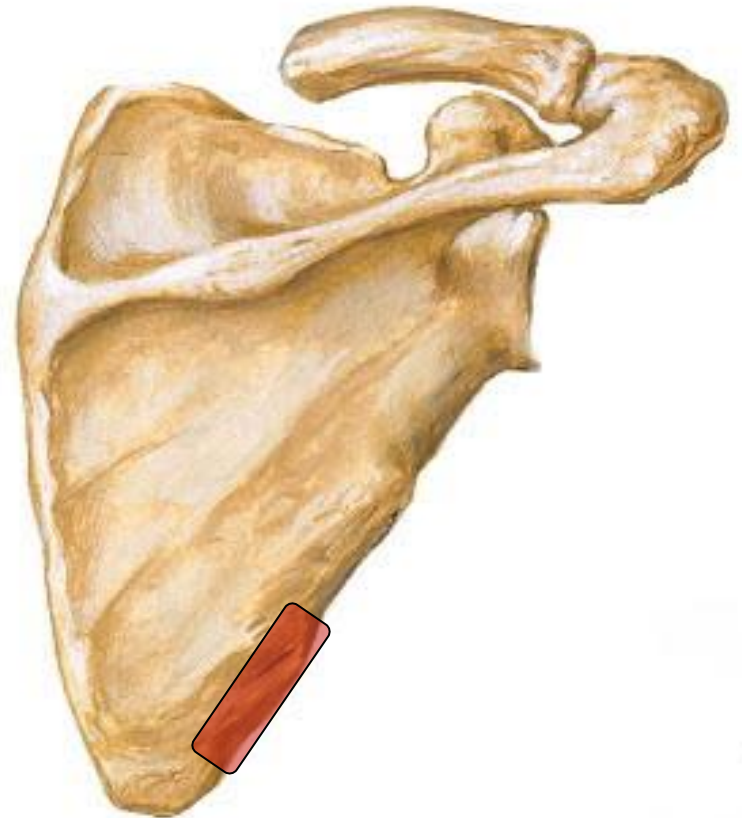
# ***Teres Major Muscle***

- ***Origen:***

Lower 1/3 of dorsal aspect of lateral border of scapula.

- ***Insertion:***

Medial lip of bicipital groove of humerus.



# ***Teres Major Muscle***

- ***Origen:***

Lower 1/3 of dorsal aspect of lateral border of scapula.

- ***Insertion:***

Medial lip of bicipital groove of humerus.



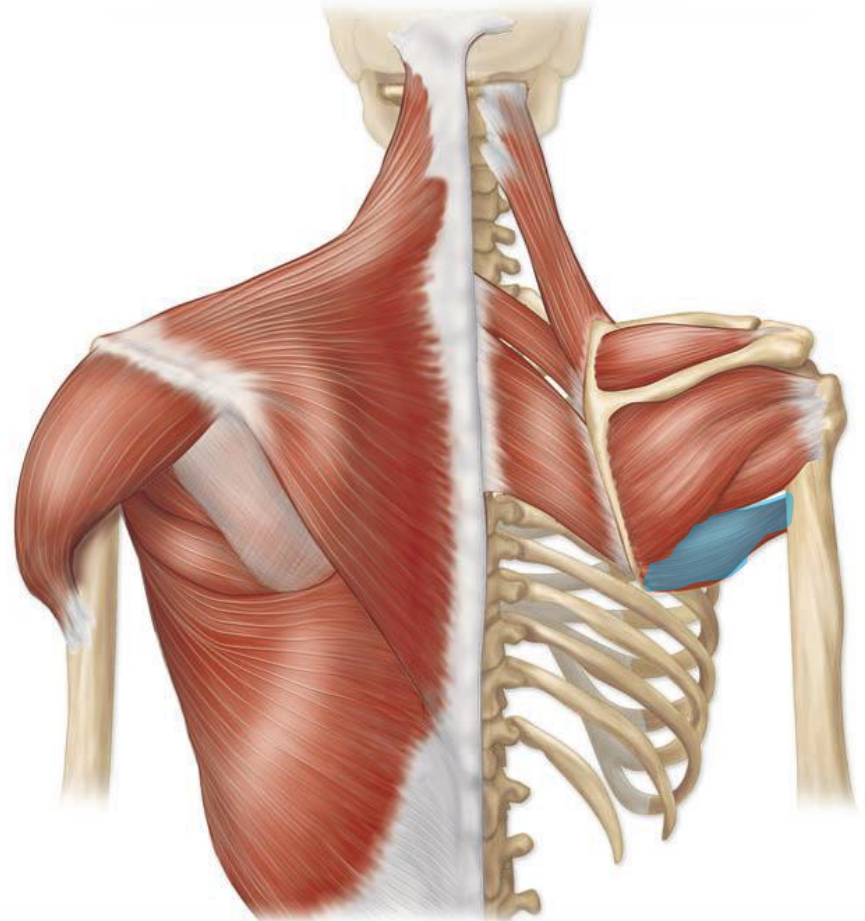
# ***Teres Major Muscle***

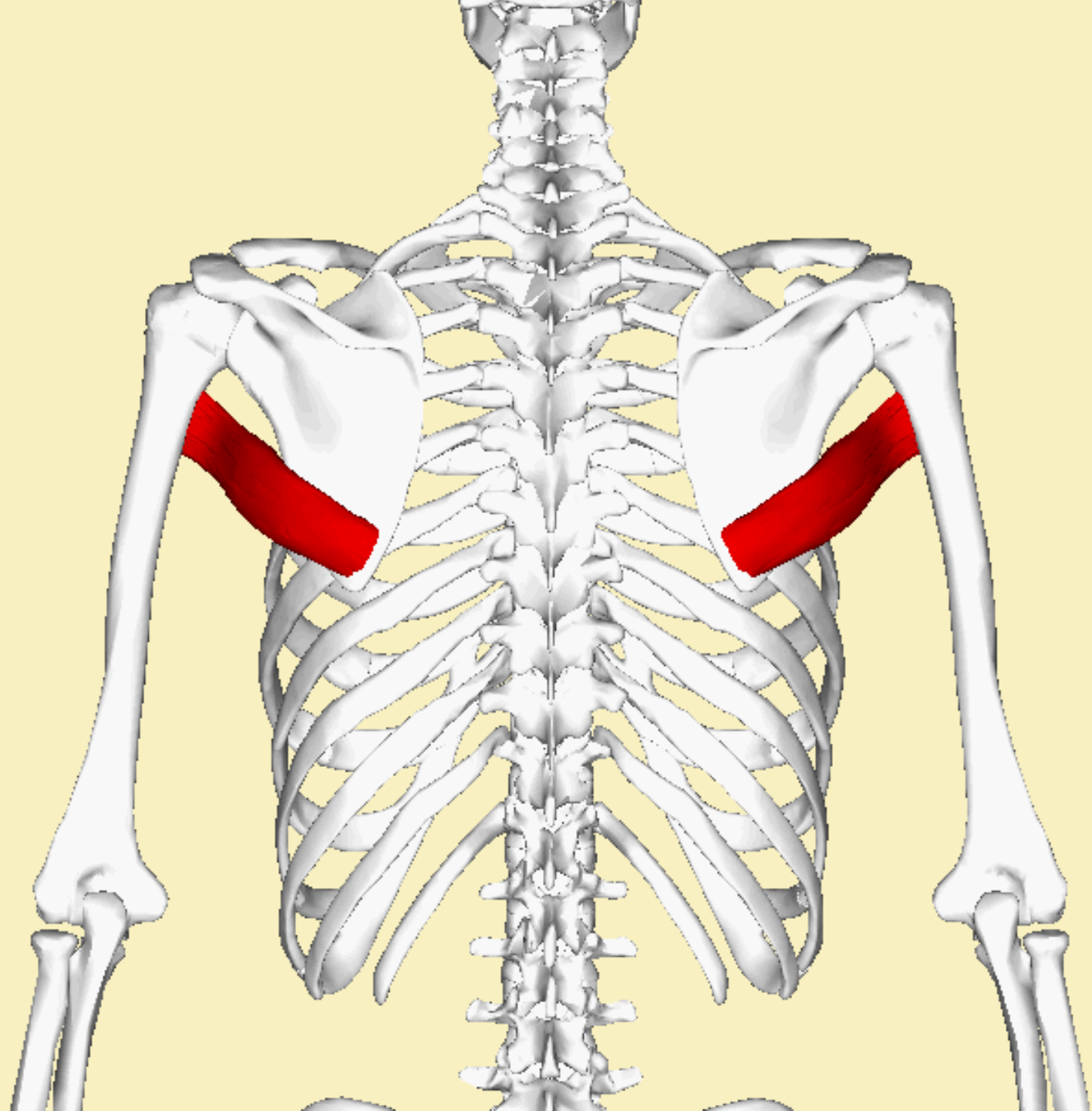
- ***Nerve Supply:***

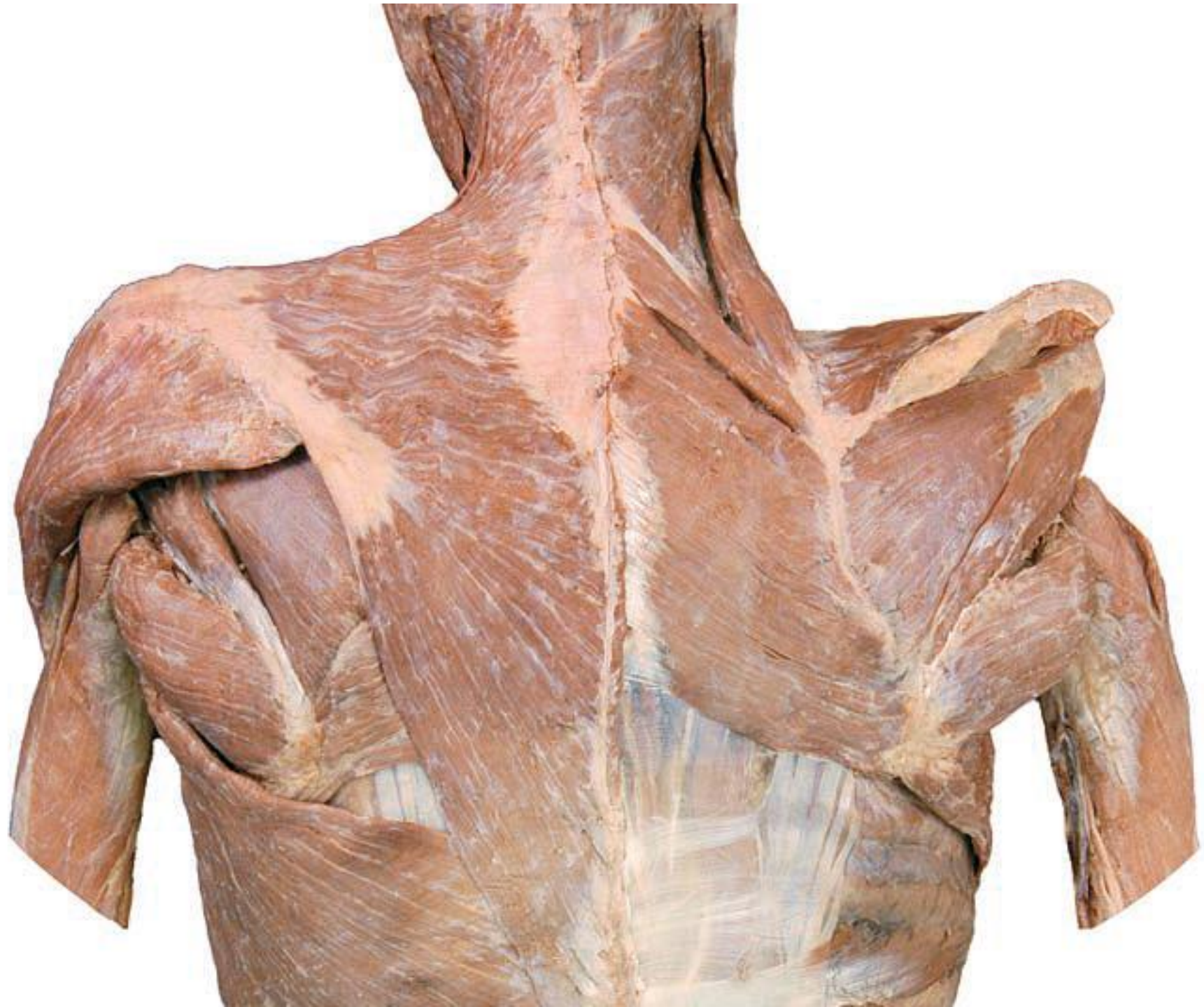
**Lower  
Subscapular  
nerve**

- ***Action:***

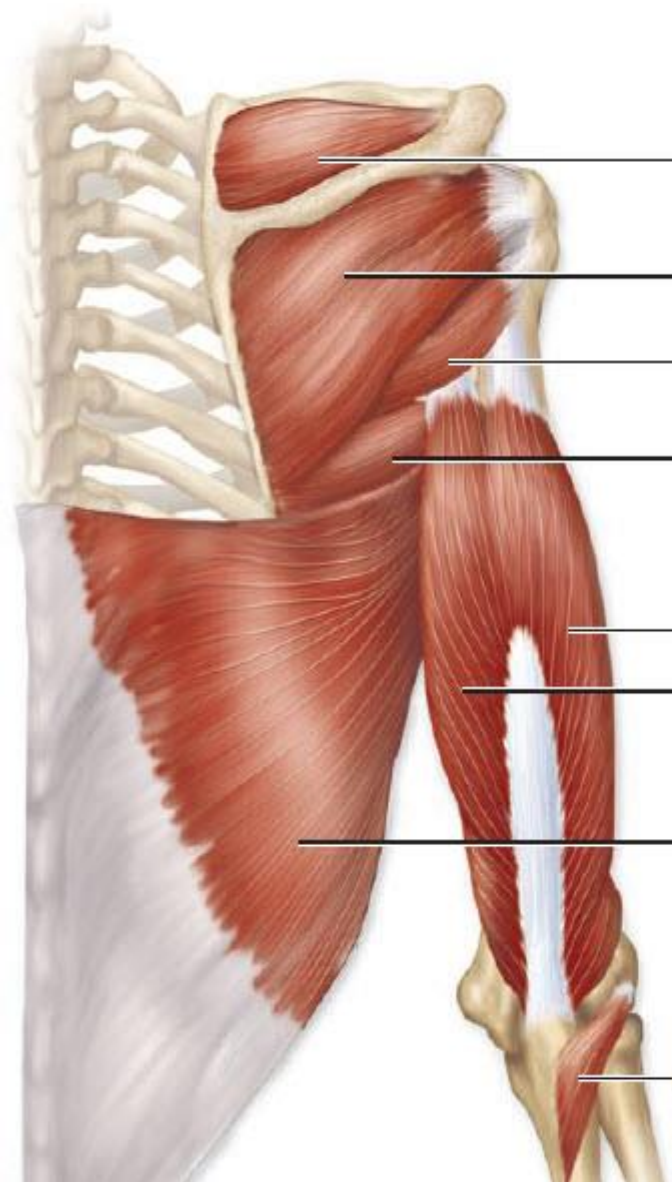
Adduction,  
extension                      and  
medial  
rotation of arm.











Supraspinatus

Deltoid

Infraspinatus

Teres minor

Teres major

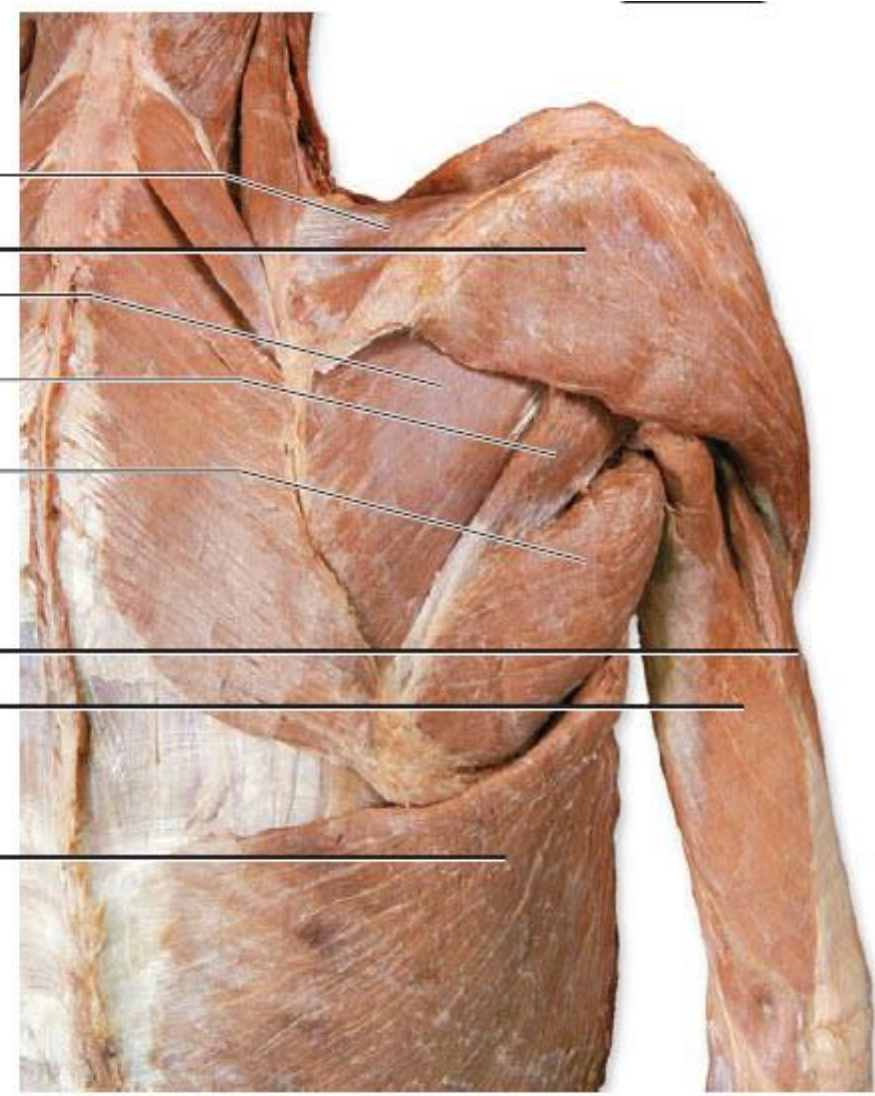
**Triceps brachii**

Lateral head

Long head

Latissimus dorsi

Anconeus



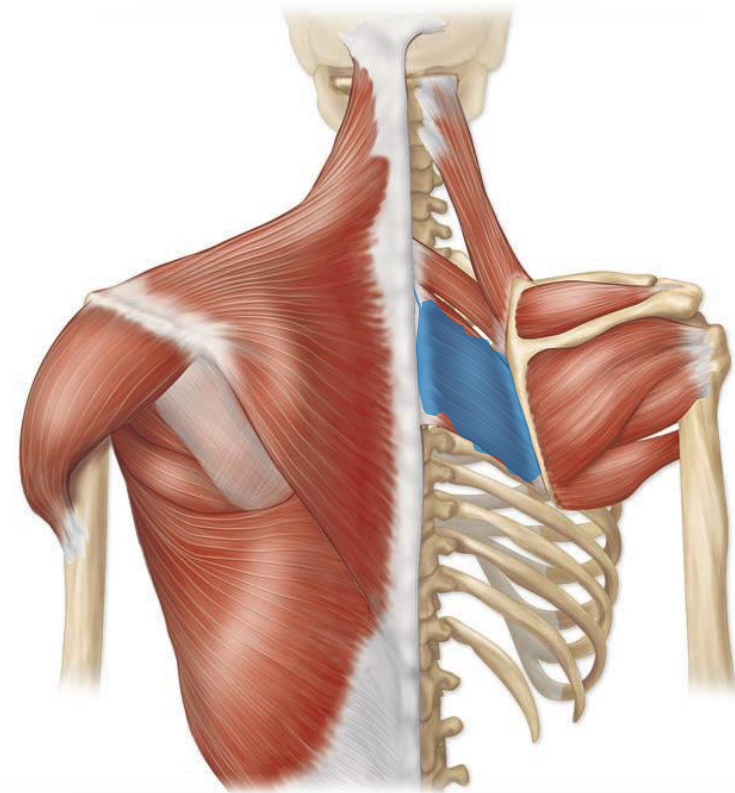
# ***Rhomboid Major Muscle***

## ***Origin:***

Spinous processes of T2-T7 vertebrae and intervening supraspinous ligaments.

## ***Insertion:***

Posterior surface of medial border of scapula from the root of the spine of the scapula to the inferior angle



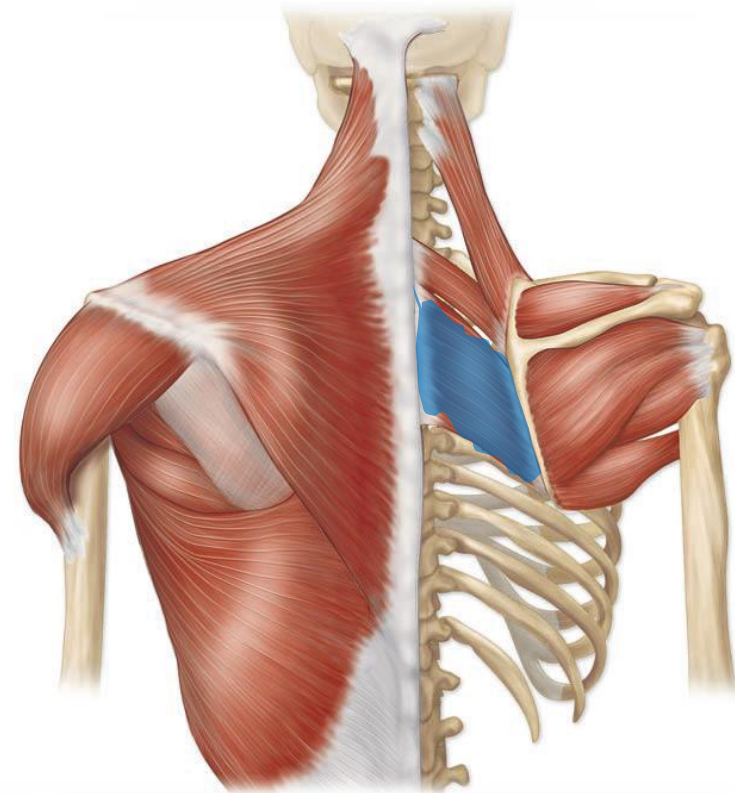
# ***Rhomboid Major Muscle***

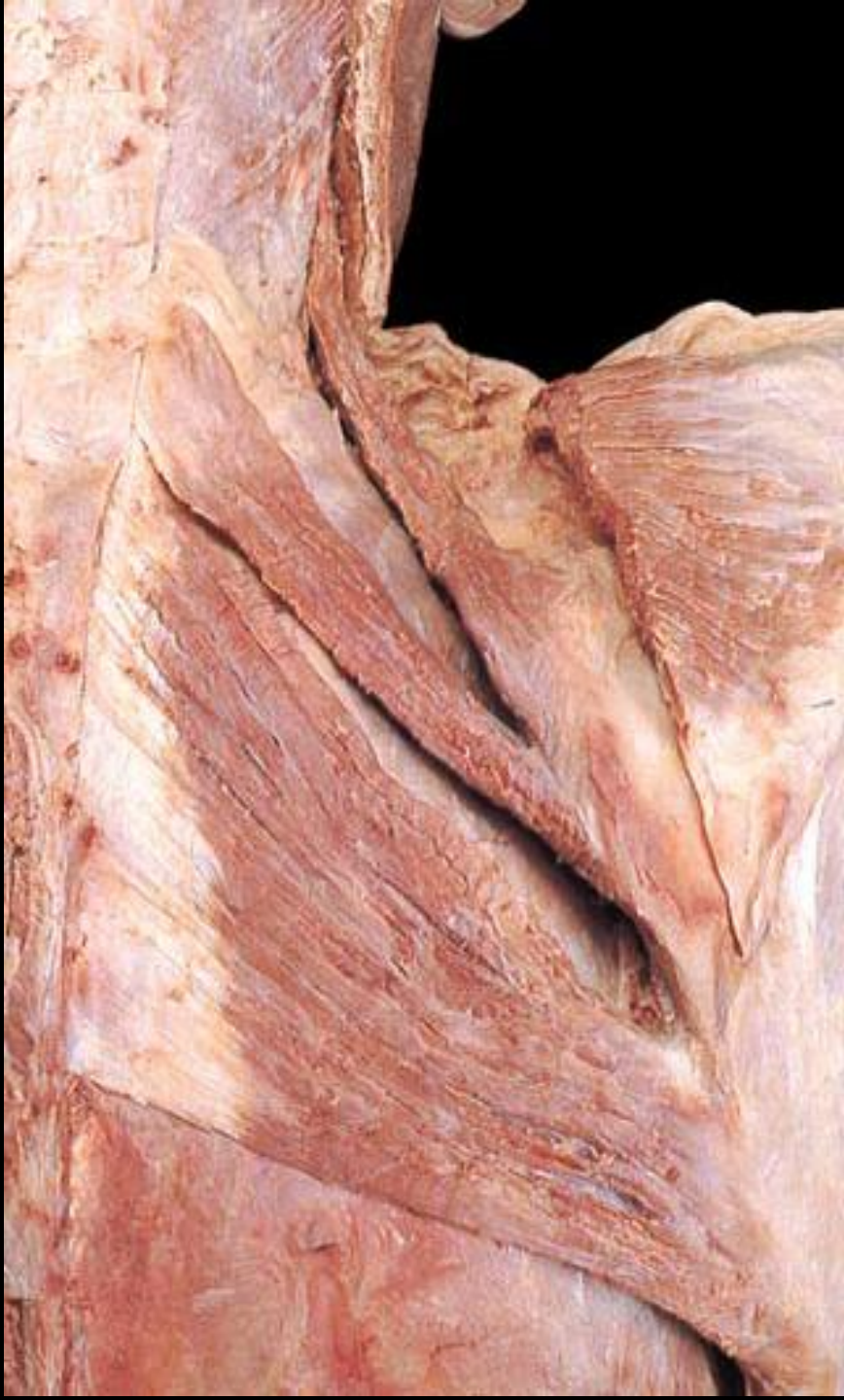
- ***Nerve Supply:***

**Dorsal scapular nerve  
[C4,C5]**

***Action:***

Elevates and retracts the scapula.





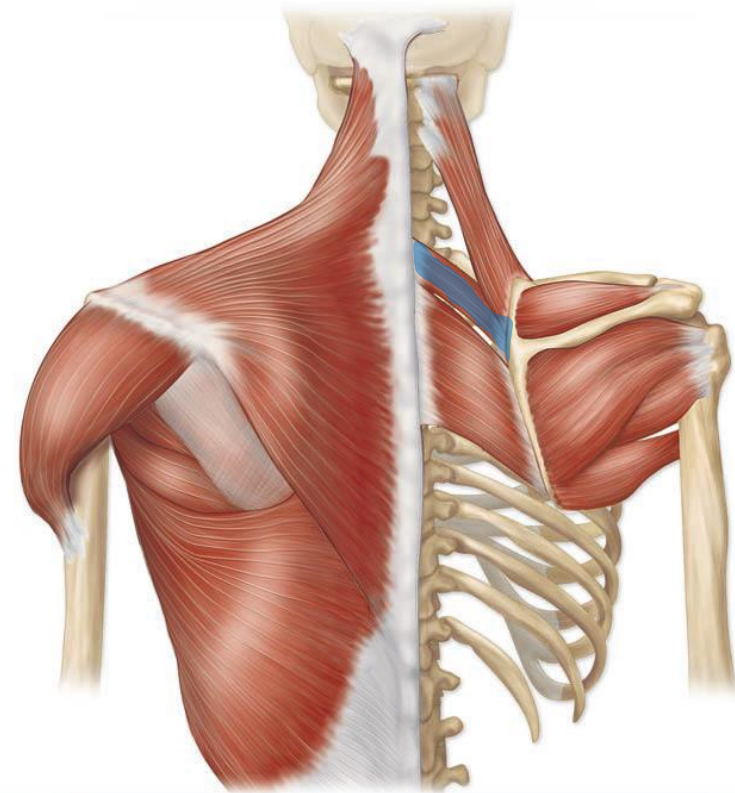
# ***Rhomboid Minor Muscle***

## ***Origin:***

Lower end of ligamentum nuchae and spinous processes of C7 and T1 vertebrae.

## ***Insertion:***

Posterior surface of medial border of scapula at the root of the spine of the scapula.



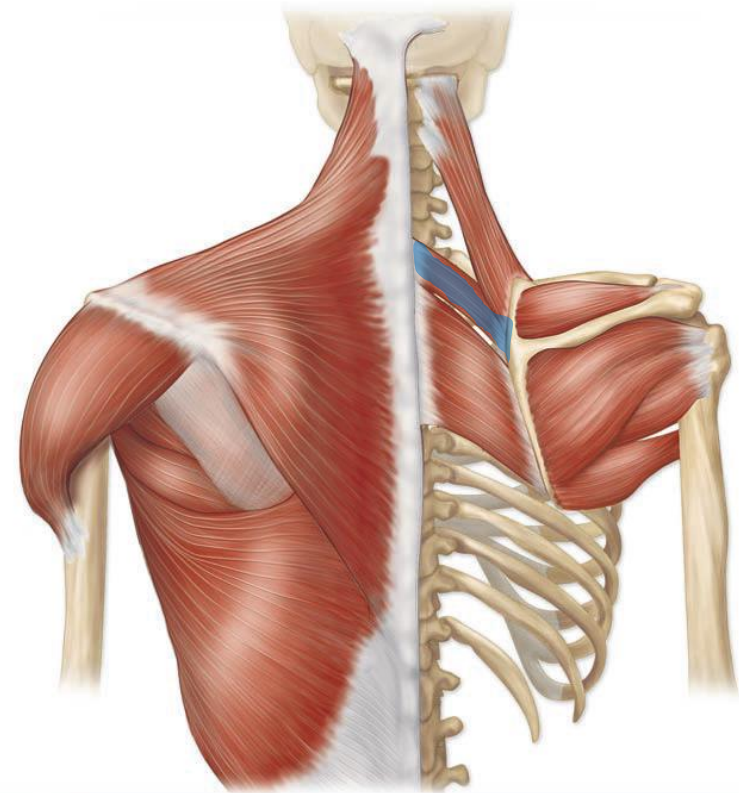
# ***Rhomboid Minor Muscle***

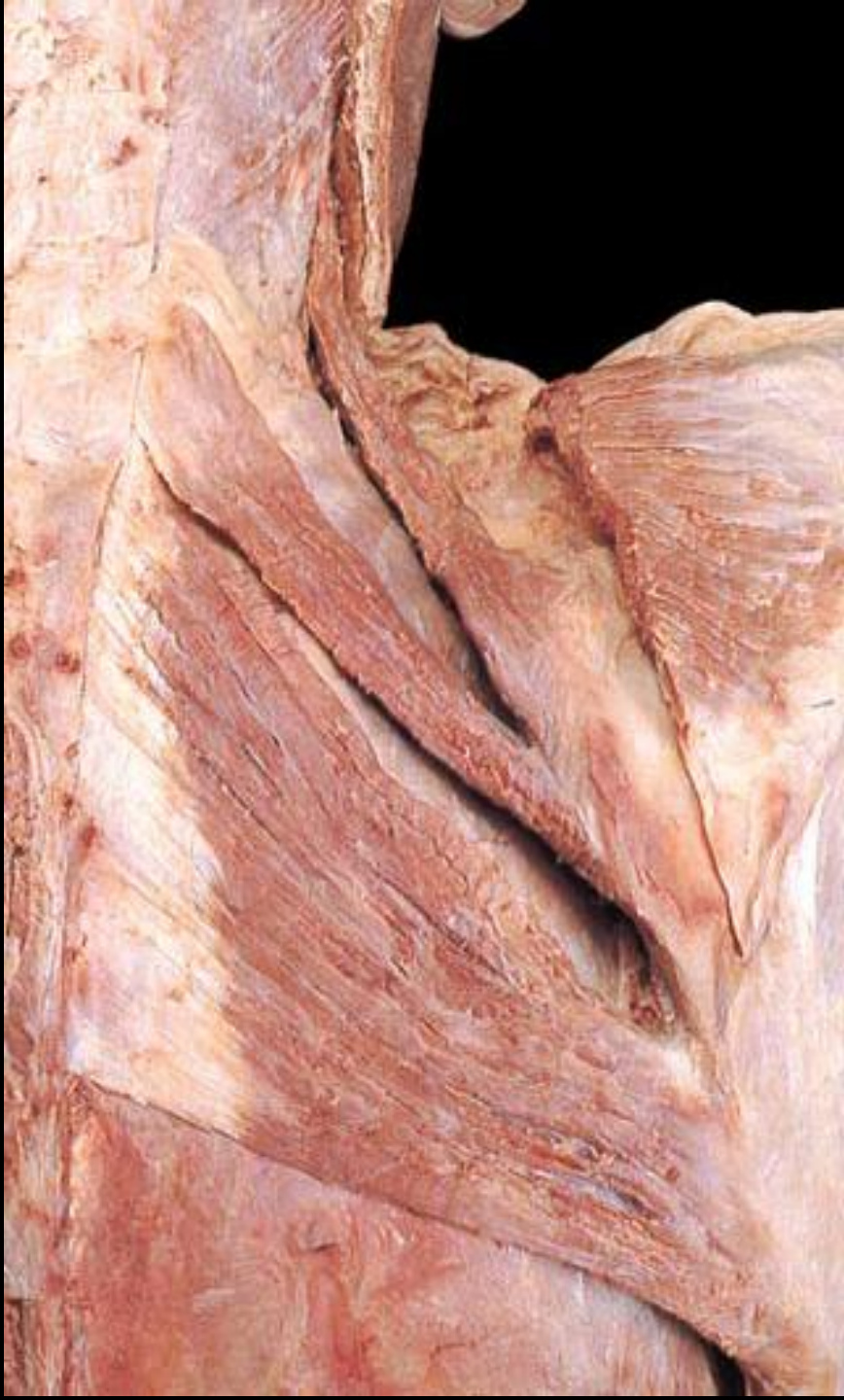
- ***Nerve Supply:***

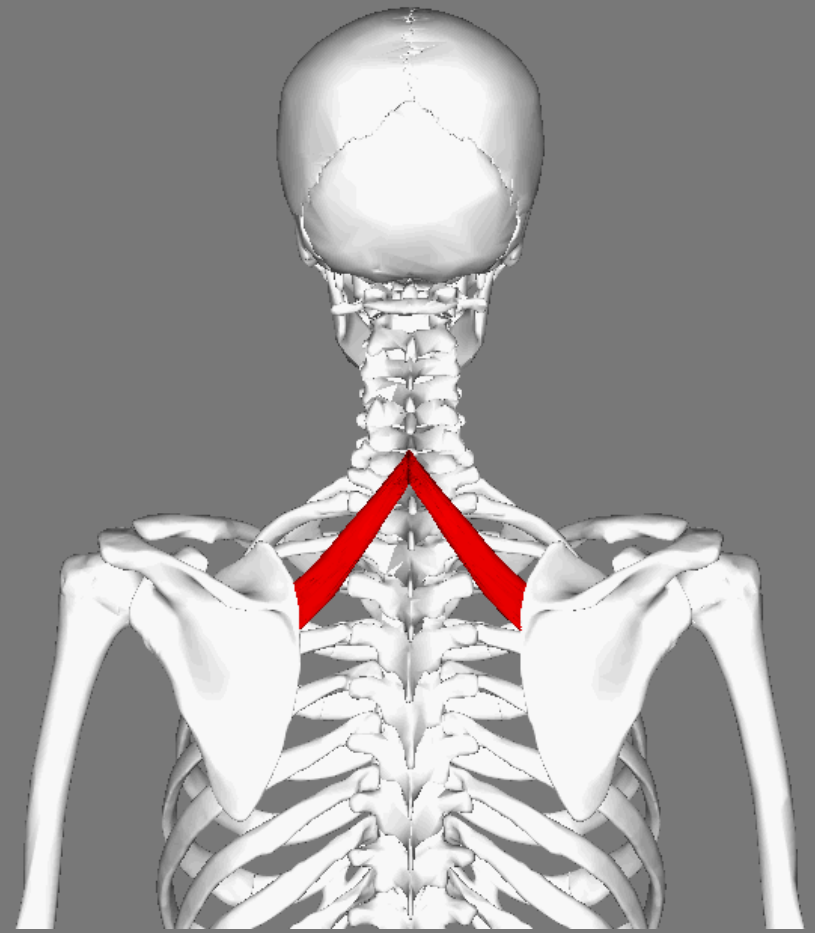
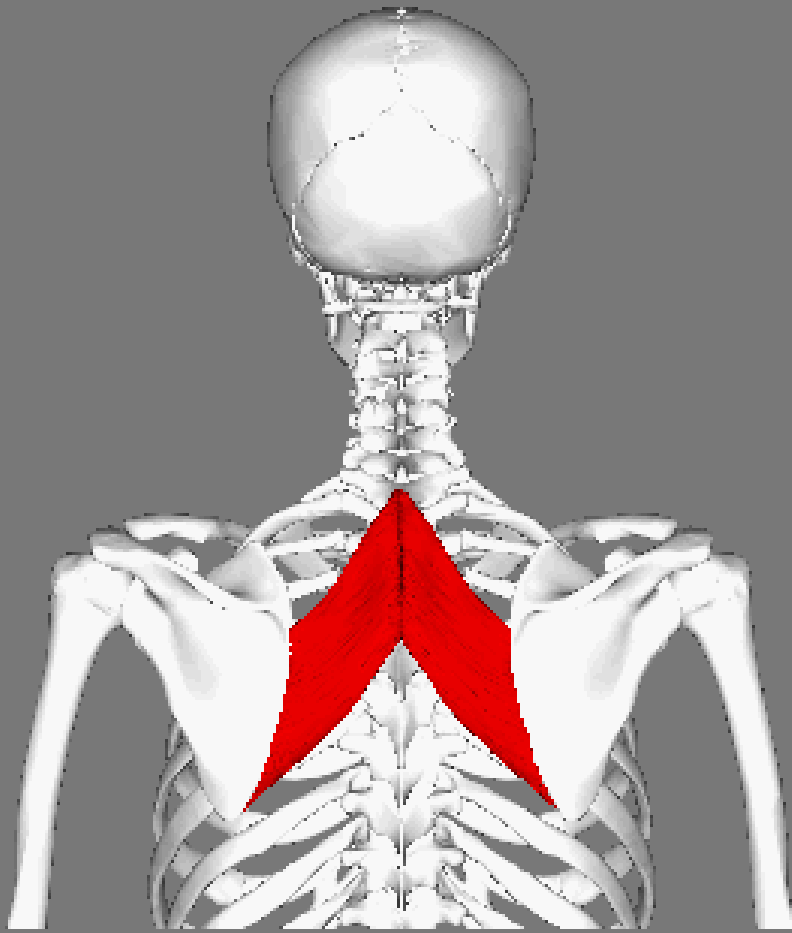
**Dorsal scapular nerve  
[C4,C5]**

***Action:***

Elevates and retracts the scapula.









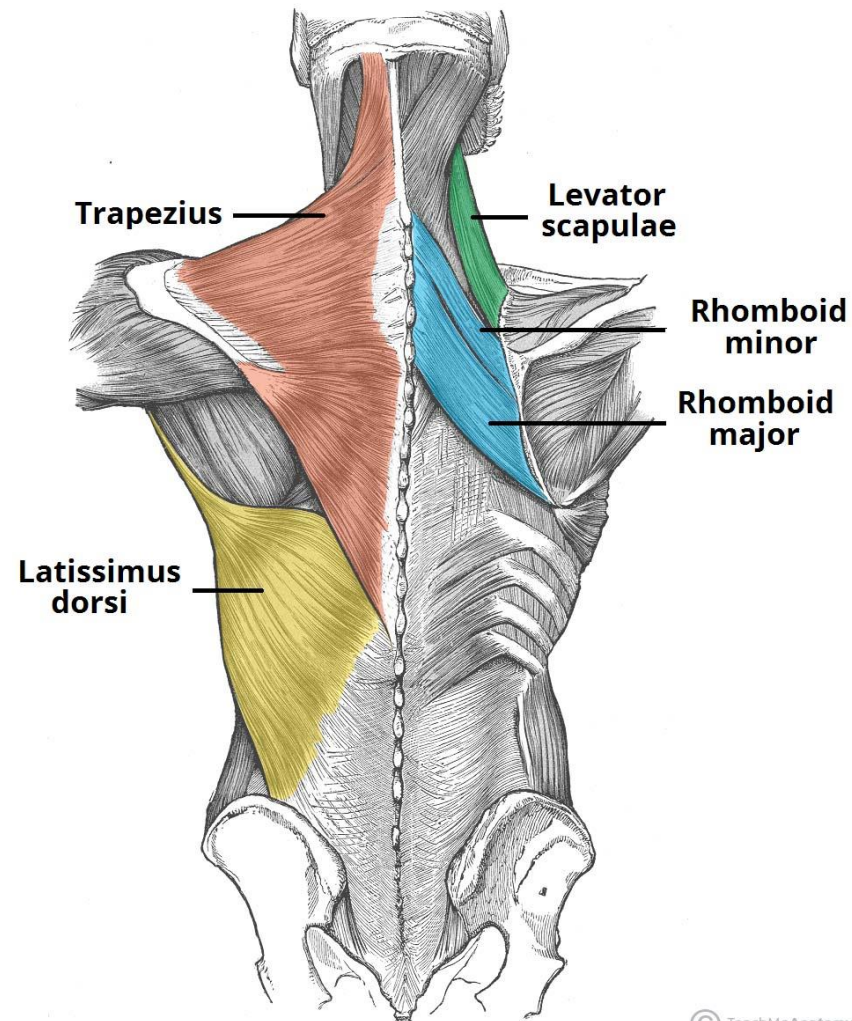
# *Latissimus Dorsi*

- ***Origen:***

Has a broad origin – arising from the spinous processes of T6-T12, thoracolumbar fascia of L1 to L5, iliac crest, and the inferior 2 ribs.

- ***Insertion:***

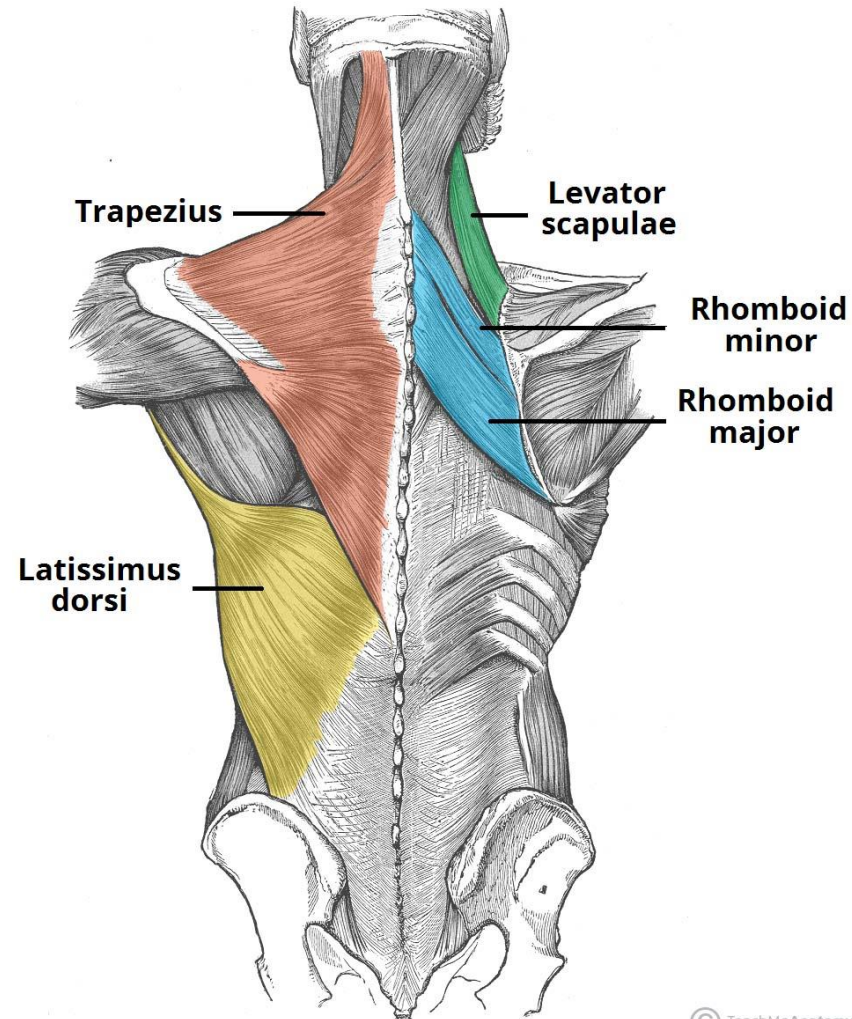
A tendon that attaches to the intertubercular sulcus of the humerus (floor of bicipital groove)



# *Latissimus Dorsi*

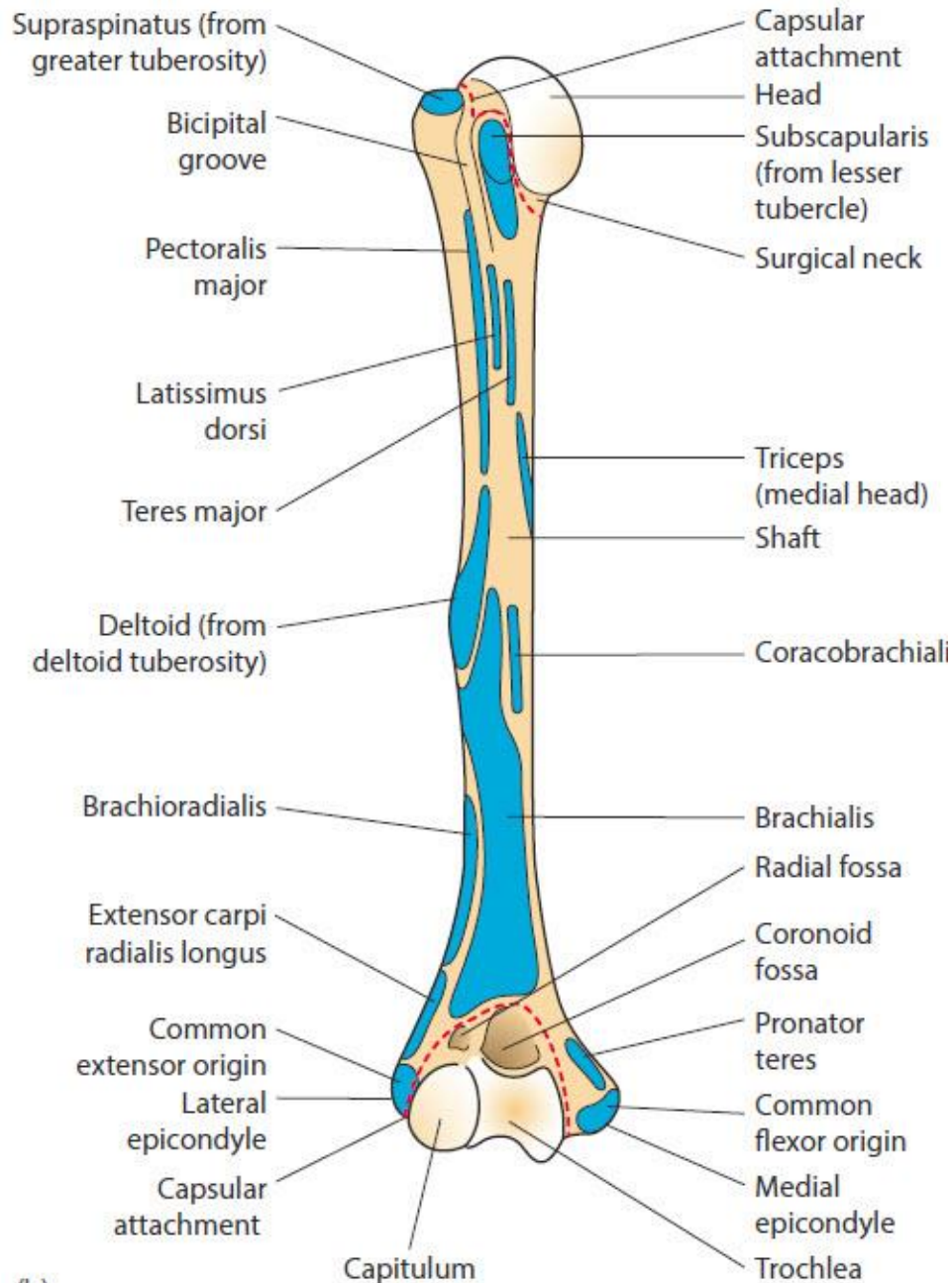
- **Nerve Supply:**  
*Thoracodorsal nerve.*

- **Action:**  
Extends, adducts and medially rotates the upper limb.

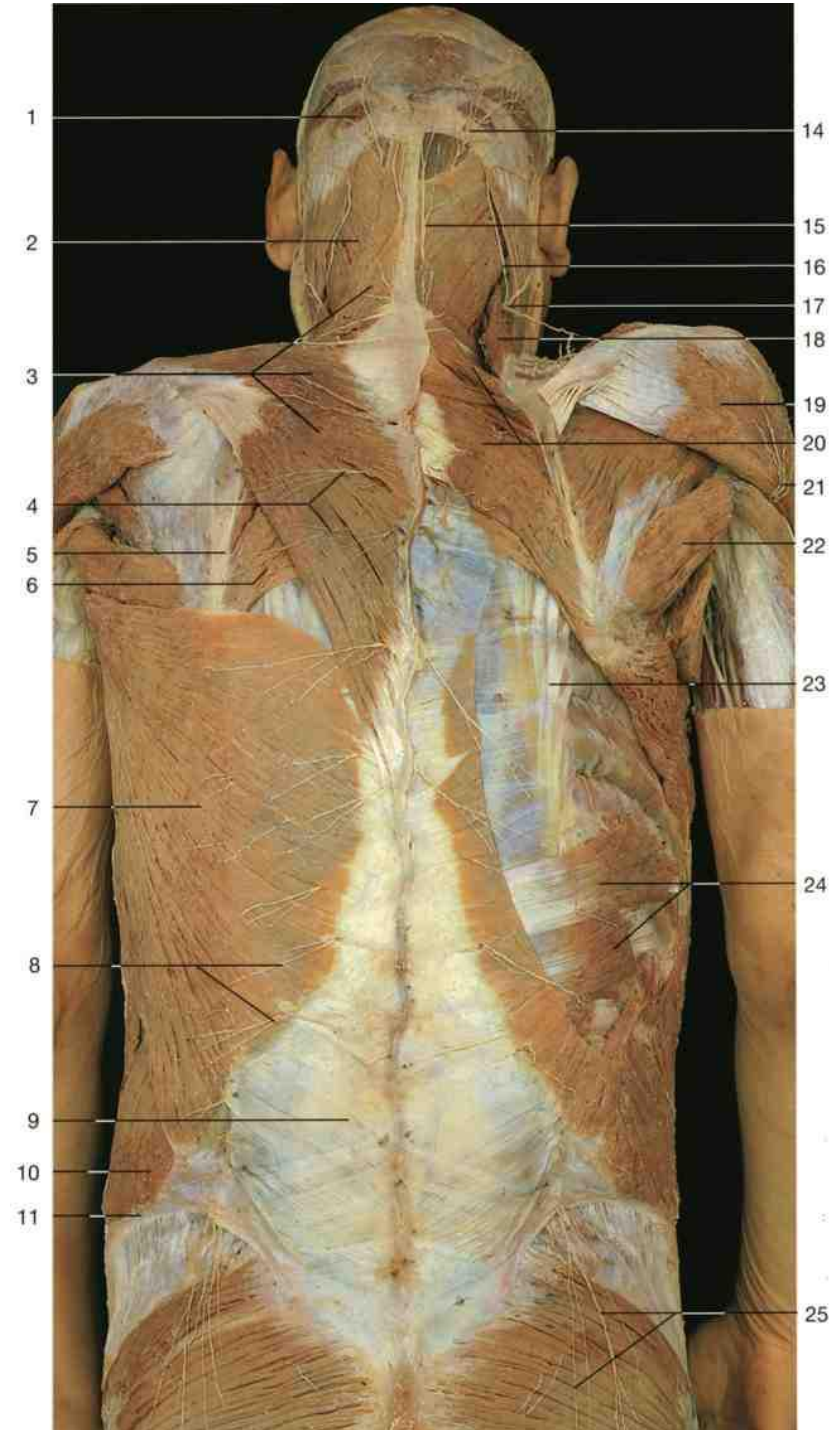


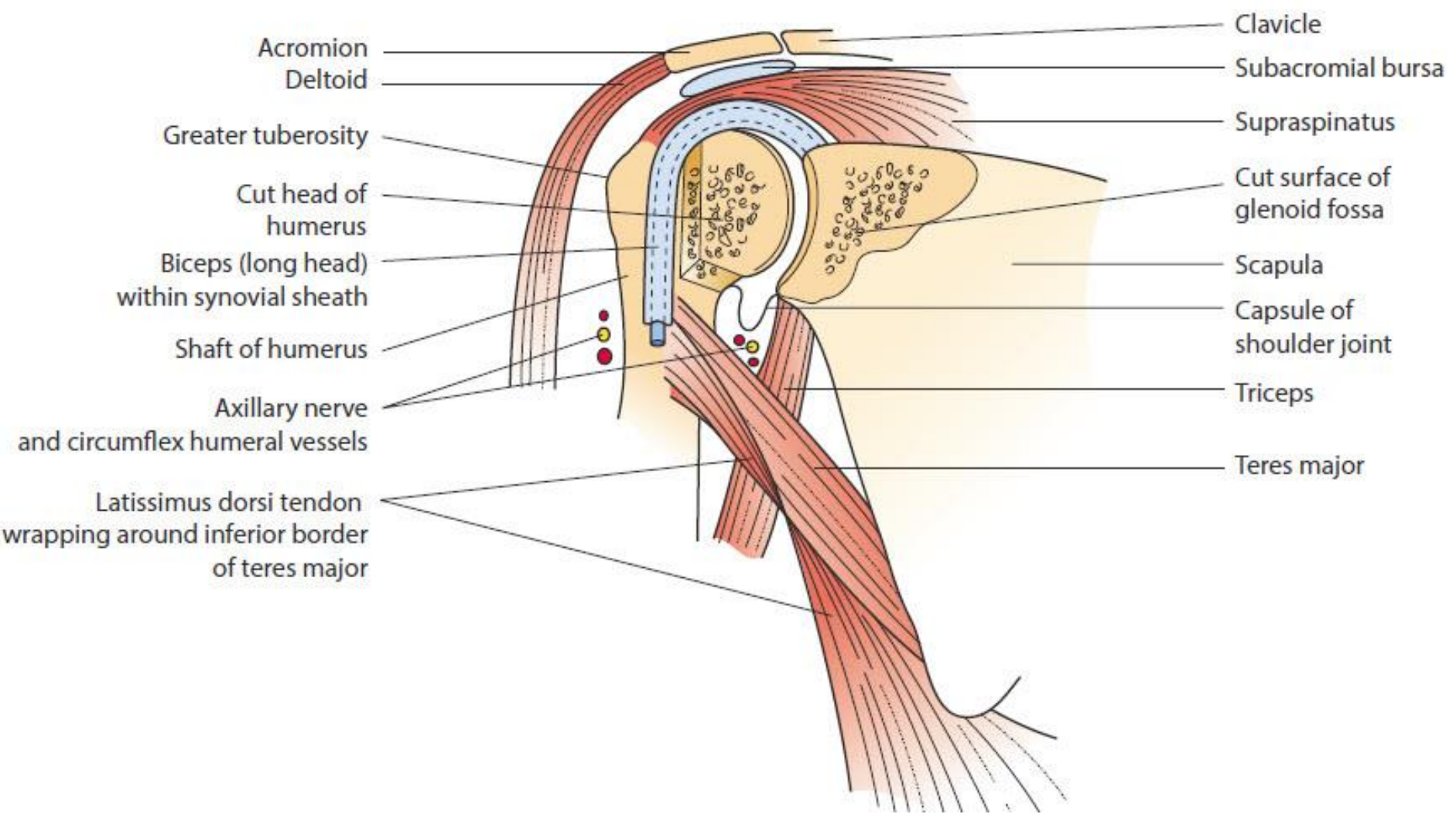


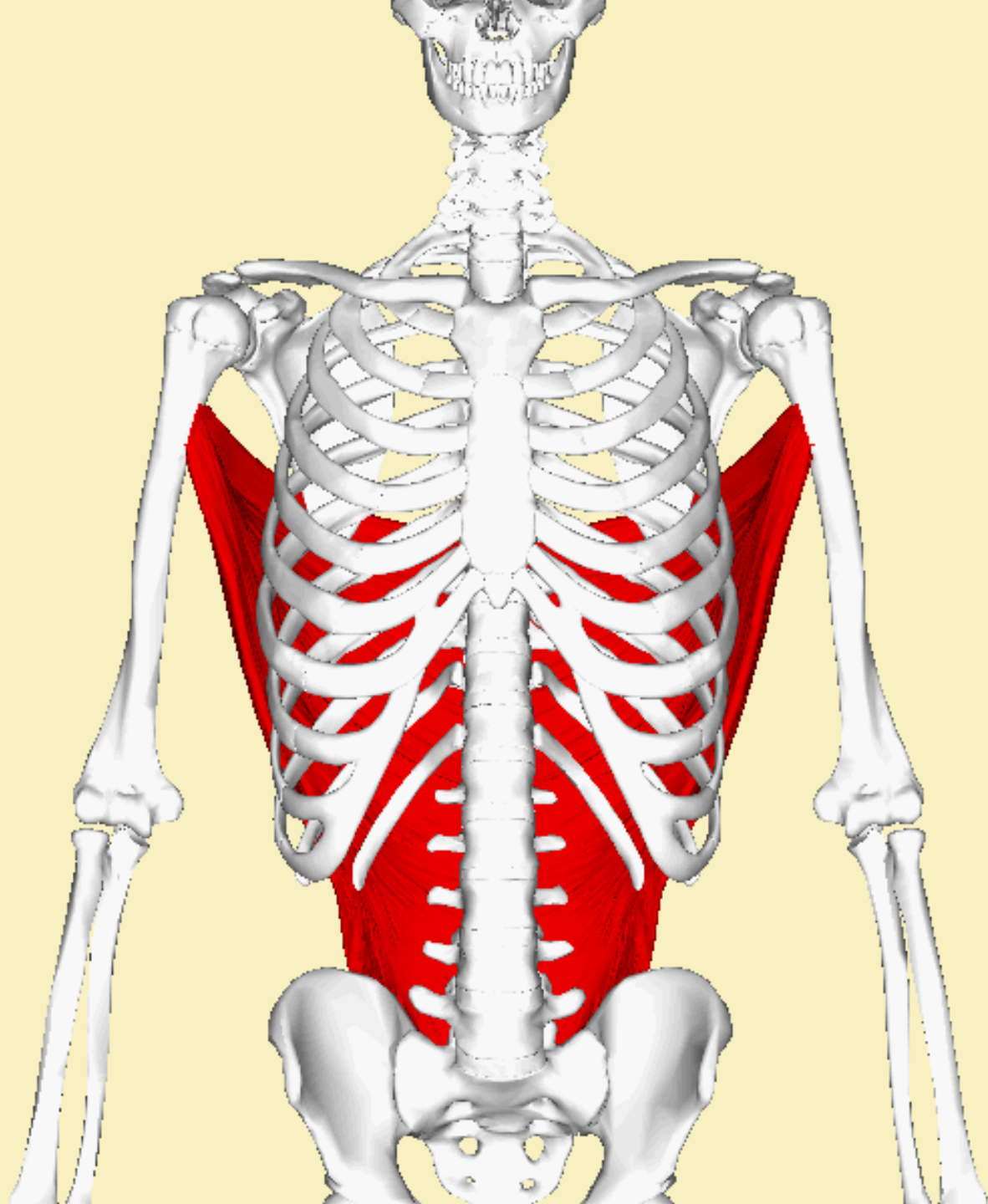
Anterior aspect



(b)









# *The Rotator cuff*

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- A fibrous sheath which is formed by the flattened tendons of the 4 muscles that are inserted into the 2 tuberosities of the head of humerus blending with the capsule of the shoulder joint to strengthen it.



# *The Rotator cuff*

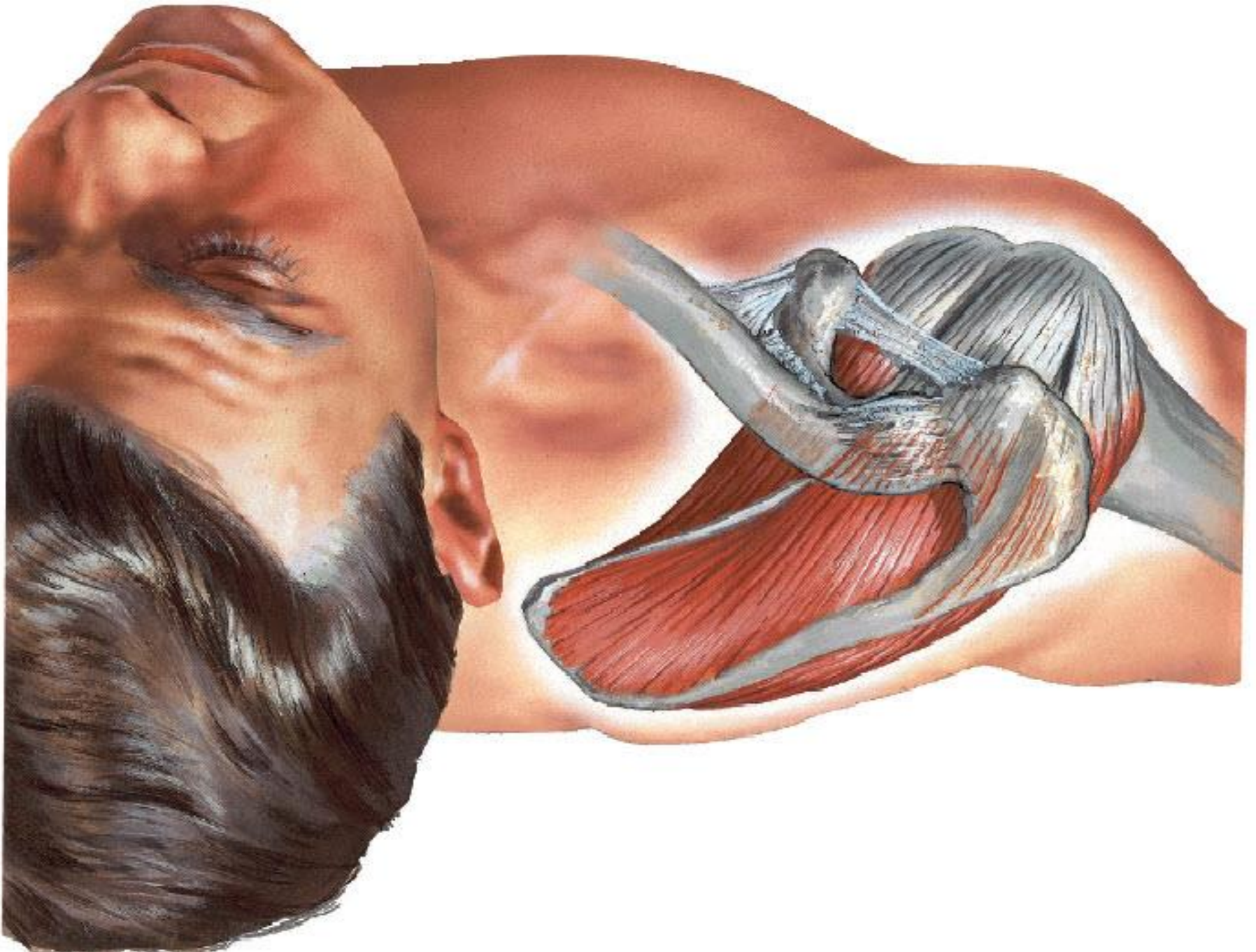
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- *The Muscles are:*

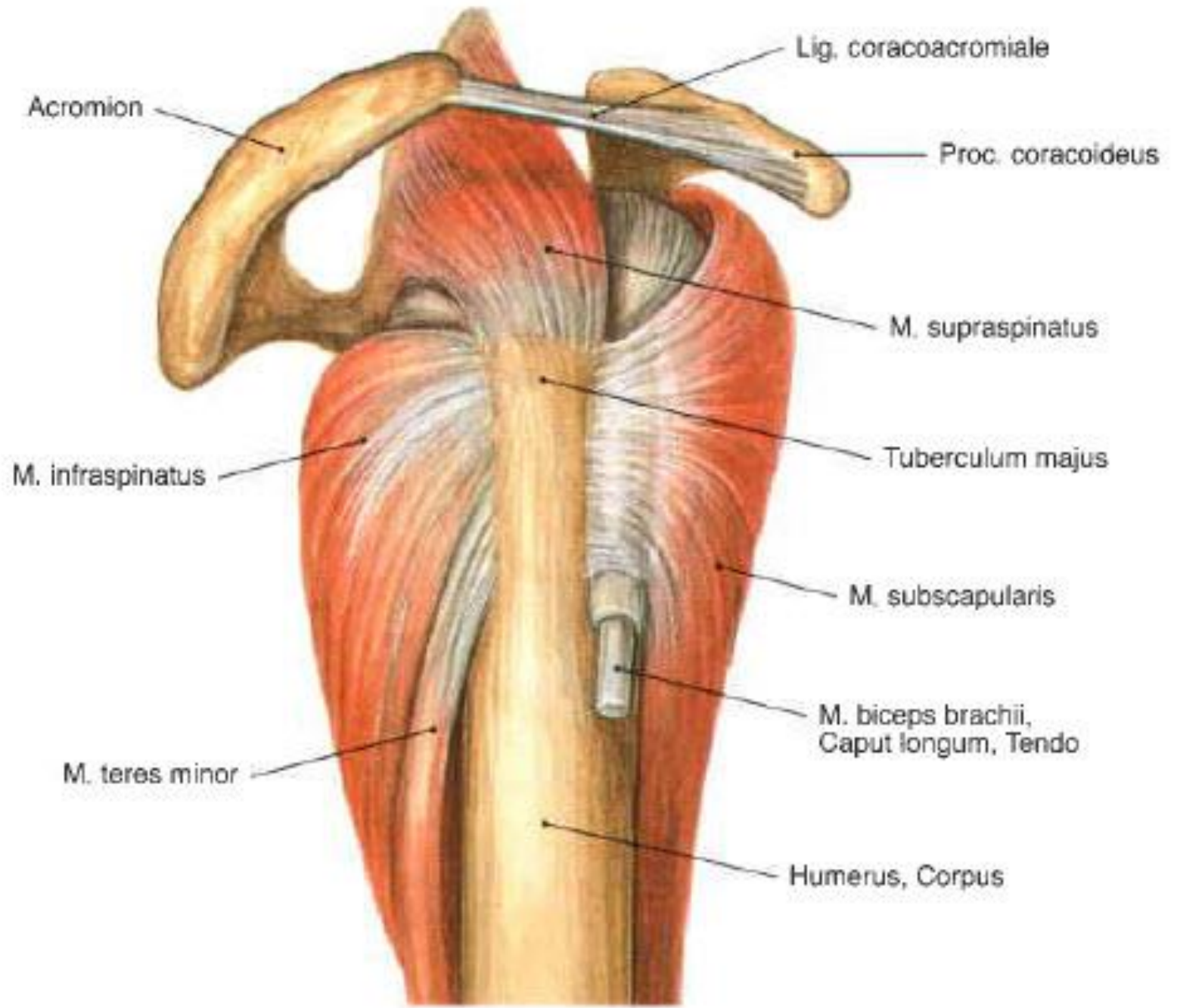
1. *Subscapularis*
2. *Supraspinatus*
3. *Infraspinatus*
4. *Teres minor.*

- *These muscles are all around except inferiorly*



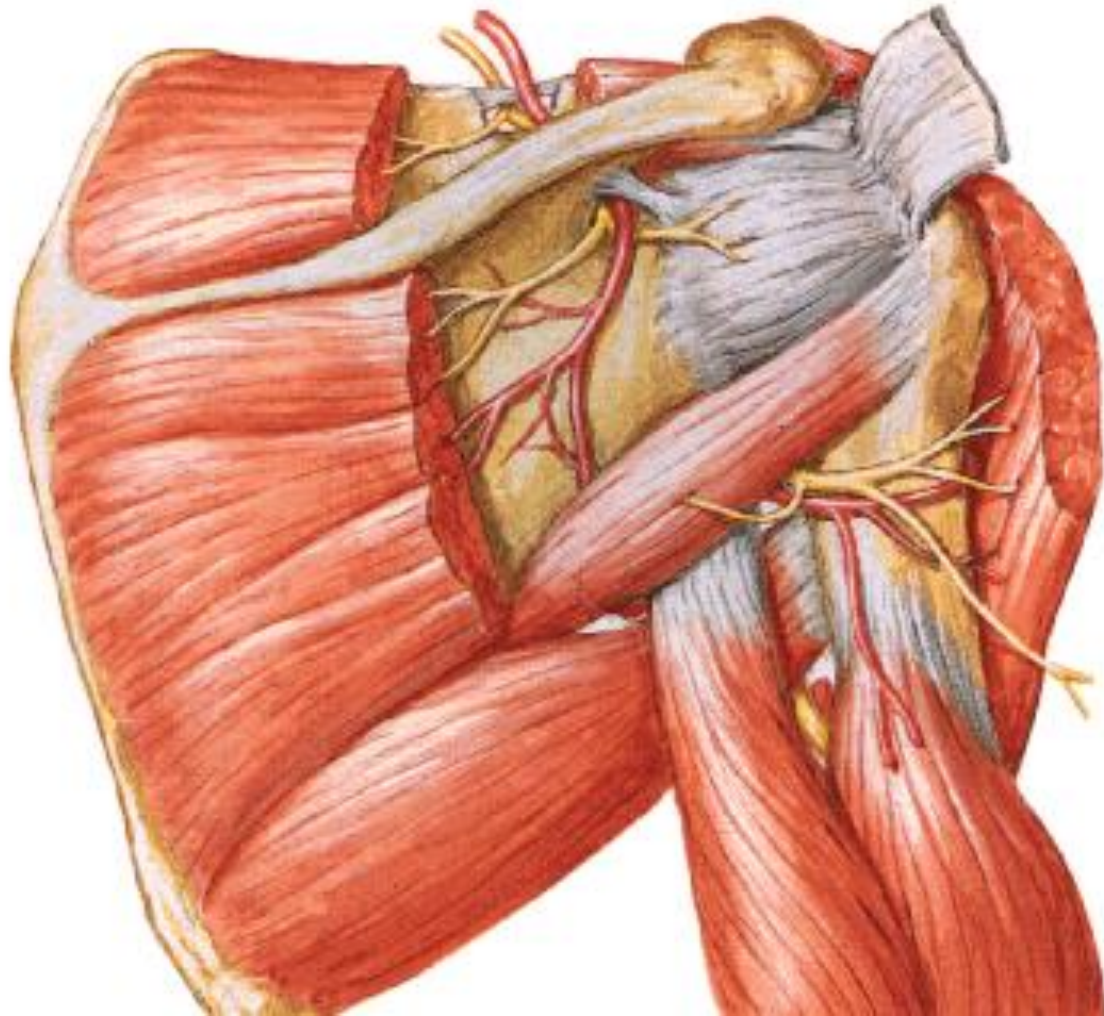




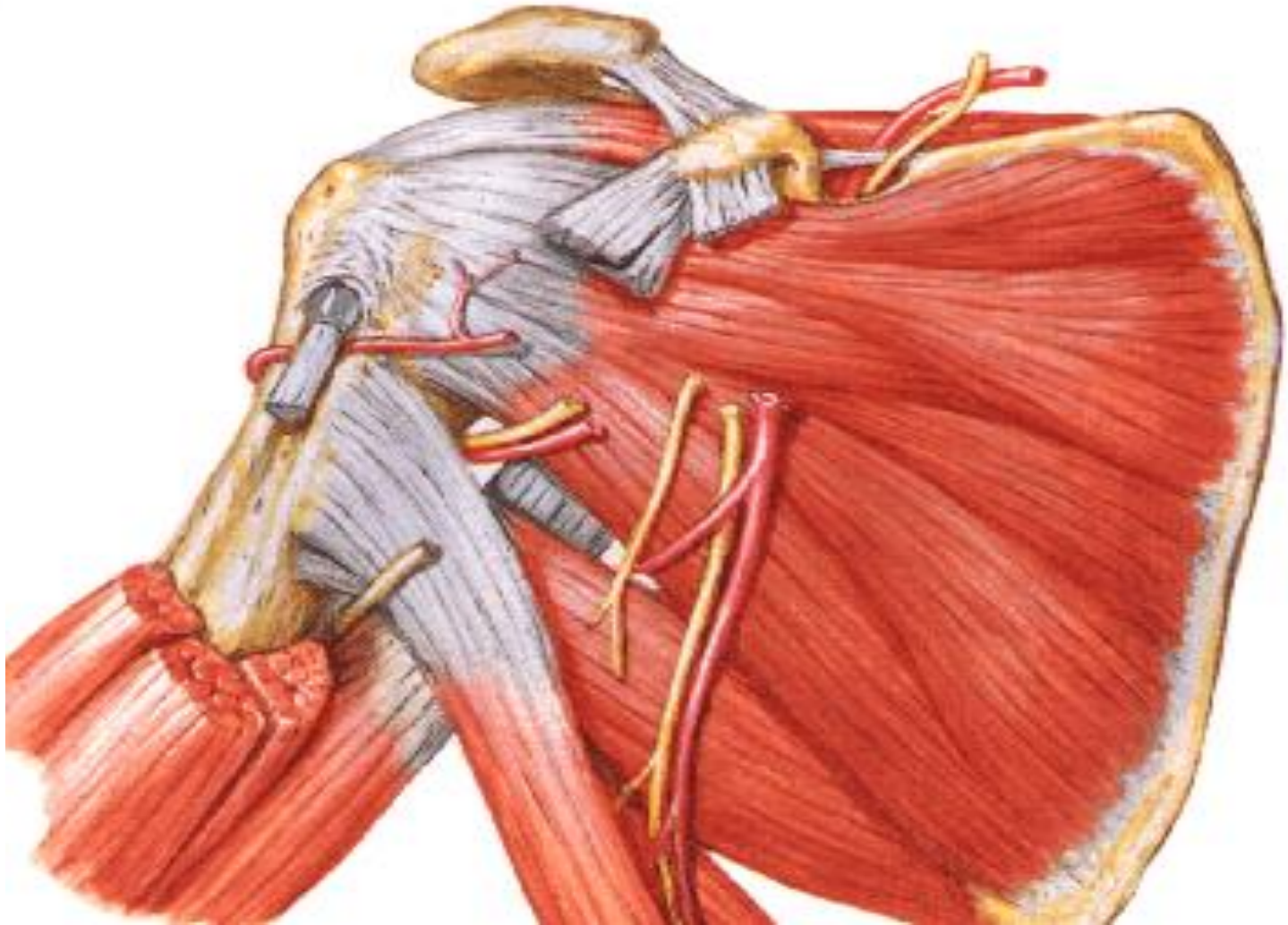




# ***Intermuscular Spaces in the Scapular Region***



# ***Intermuscular Spaces in the Scapular Region***





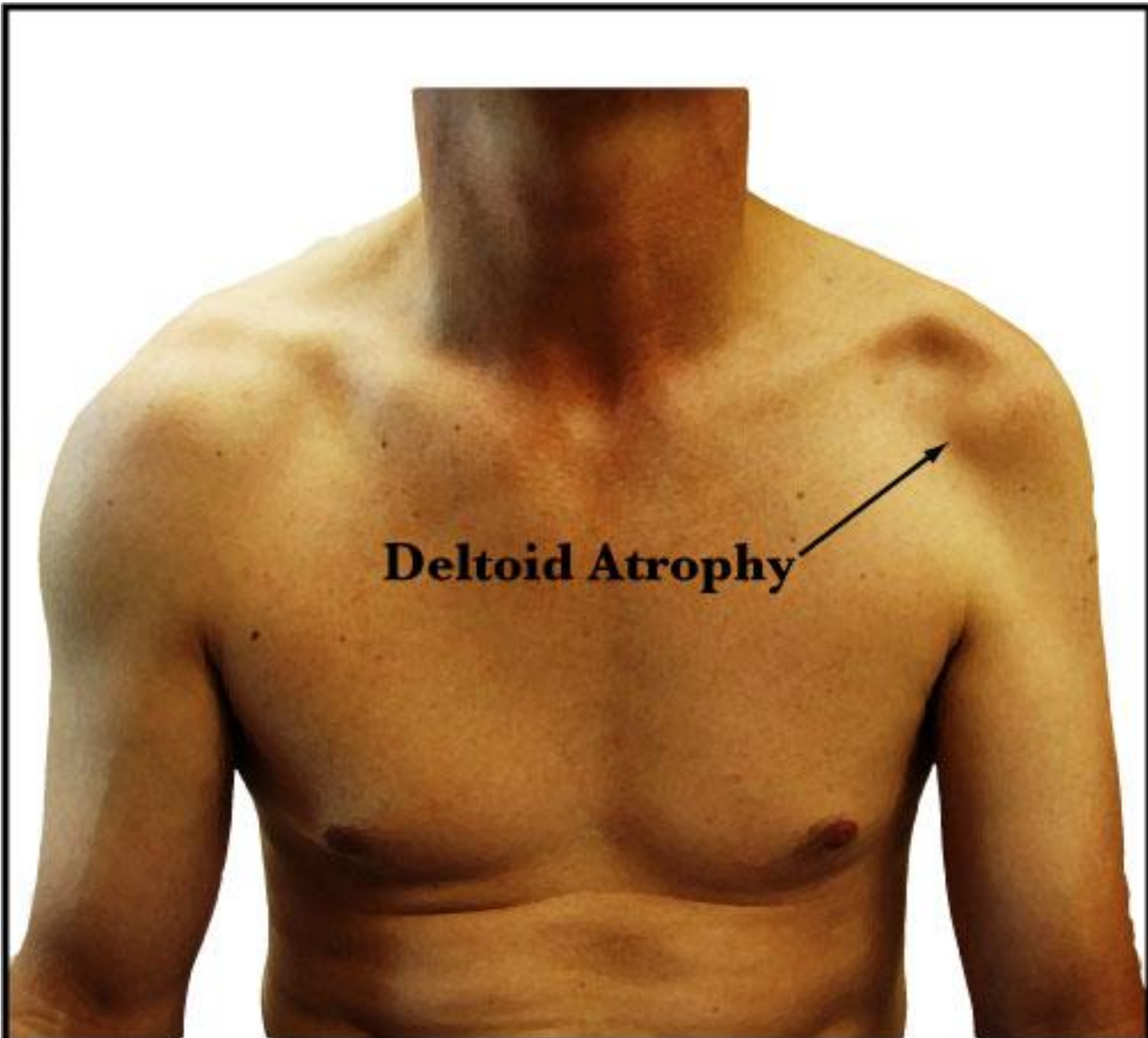
# ***Nerves of the Scapular Region***

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- ***Axillary (Circumflex) Nerve:***

Passes through the quadrangular space, supplying the Deltoid Ms. with 2 branches in addition to Teres Minor.

*Its injury leads to flattening of the shoulder*



**Deltoid Atrophy**







# *Nerves of the Scapular Region*

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- ***Suprascapular Nerve :***

Passes through the suprascapular foramen (*below* the *suprascapular ligament*) to reach the supraspinous fossa. Then, to the infraspinous fossa supplying its muscles.



# *Vessels of the Scapular Region*

---

- ***Suprascapular Artery:***

Branch of the thyrocervical trunk of the 1st part of the subclavian artery.

It passes *above* the *suprascapular ligament* to reach the supraspinous fossa.



# *Vessels of the Scapular Region*

---

- ***Dorsal Scapular Artery:***

Deep branch of the transverse cervical artery of the thyrocervical trunk of the 1st part of the subclavian artery.

Shares in the anastomosis around the scapula.



# *Gateways to the posterior scapular region*

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- The posterior scapular region **occupies the posterior aspect of the scapula and is located deep to the trapezius and deltoid muscles**
- It contains four muscles, which pass between the scapula and proximal end of the humerus: **the supraspinatus, infraspinatus, teres minor, and teres major muscles.**



# *Gateways to the posterior scapular region*

---

- Also contains part of one additional muscle, **the long head of the triceps brachii**, which passes between the teres minor and teres major.
- Together with these muscles and the humerus forms spaces through which nerves and vessels pass between regions (**Quadrangular space, Triangular space, and Triangular interval**).

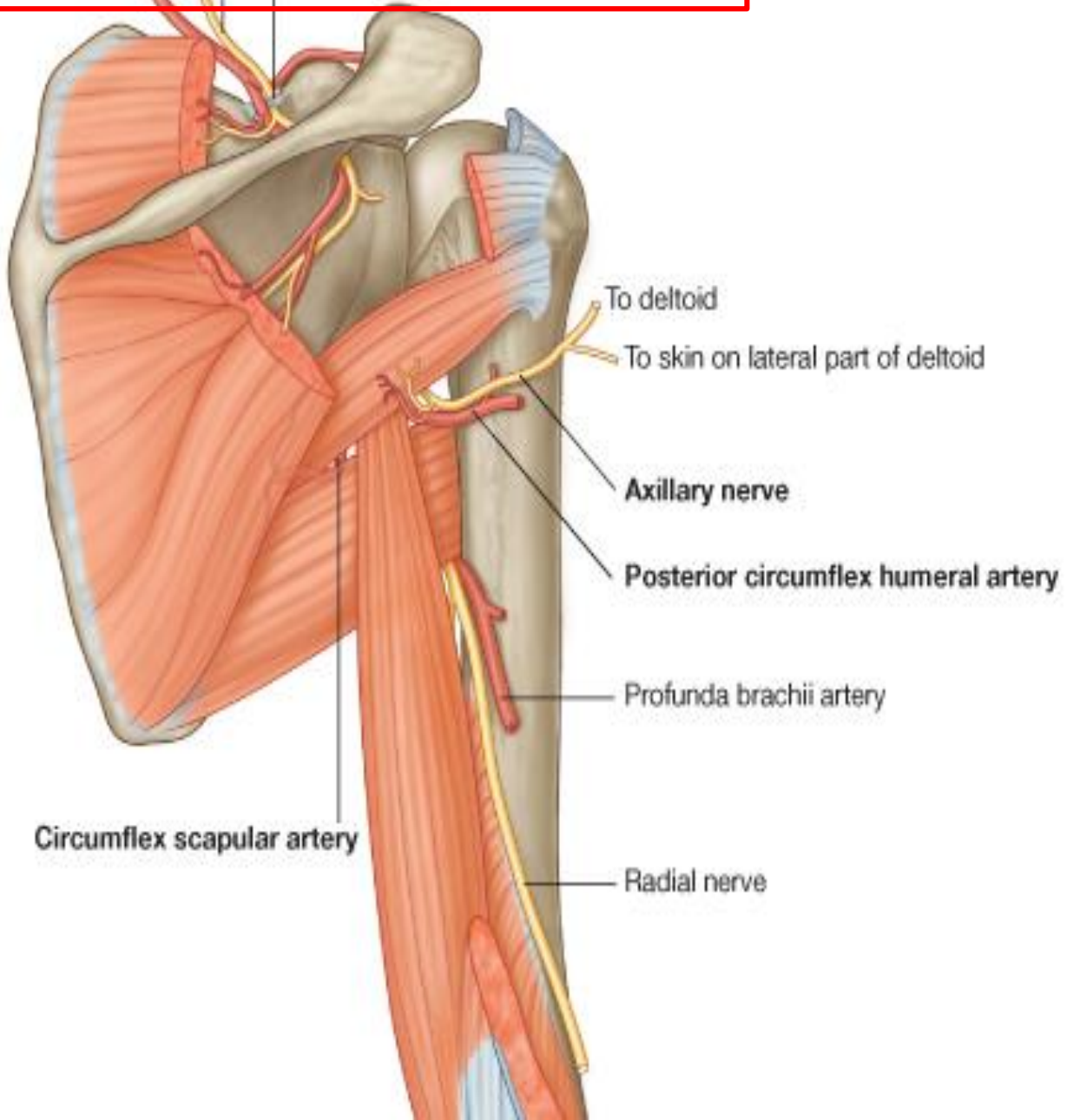


# *Suprascapular Foramen*

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- The route through which structures pass between **the base of the neck** and **the posterior scapular region**.
  - **It is formed by** the **suprascapular notch of the scapula** and the **superior transverse scapular (suprascapular) ligament**, which converts the notch into a foramen.
  - Transmits **the suprascapular nerve**.
- >>> suprascapular artery and vein pass superior to the foramen **not** through it).

**Suprascapular nerve**  
Suprascapular artery — Superior transverse scapular ligament







# *Quadrangular Space*

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- The route through which structures pass between the axilla and the posterior scapular region.

- **BOUNDARIES:**

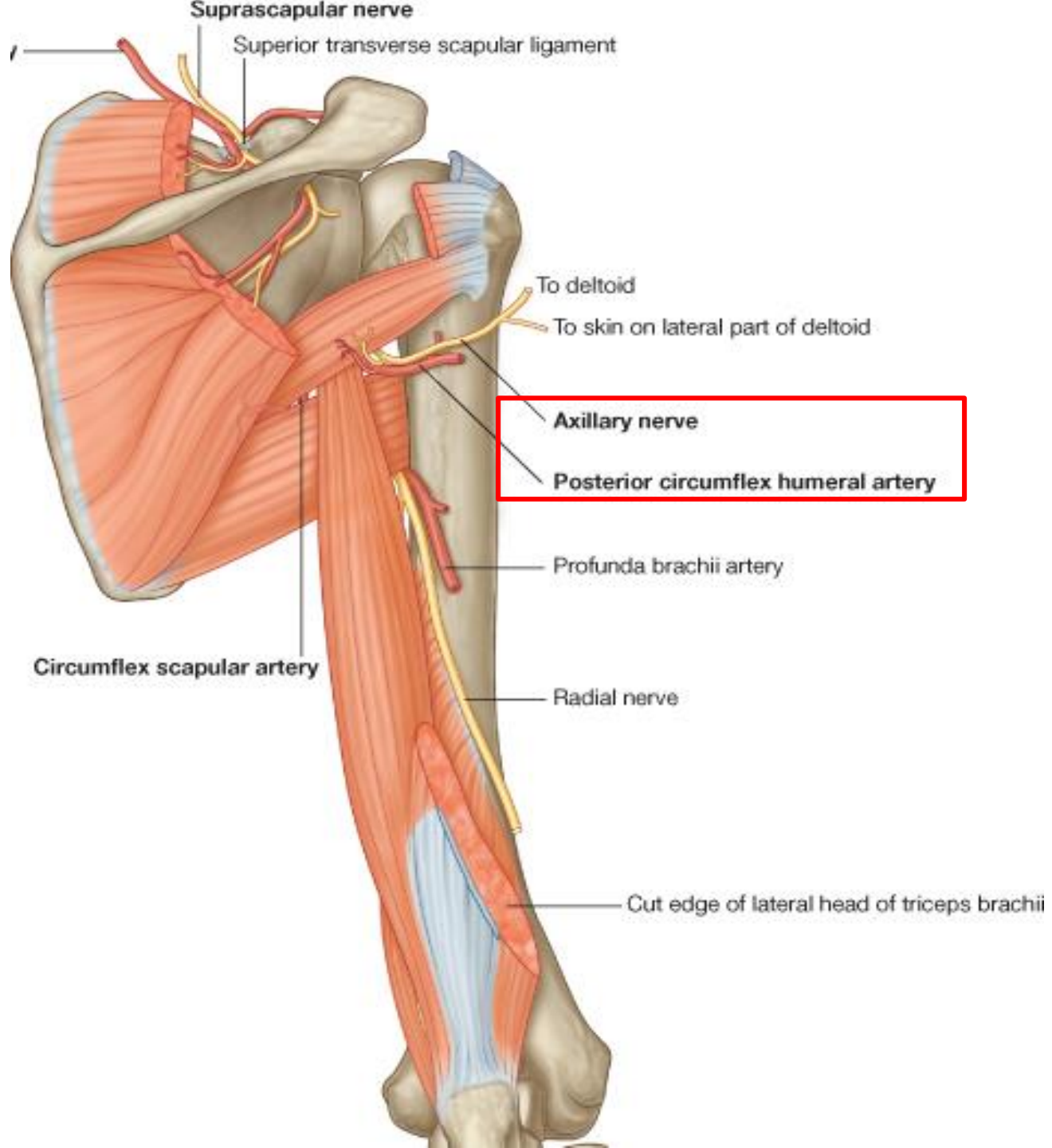
**Superiorly:** inferior margin of the teres minor

**Inferiorly:** the superior margin of the teres major

**Medially:** the surgical neck of the humerus

**Laterally:** lateral margin of the long head of triceps brachii

- Transmit the **axillary nerve** and the **posterior circumflex humeral artery and vein.**





# *Upper Triangular space*

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- The route through which structures pass between the axilla and the posterior scapular region.

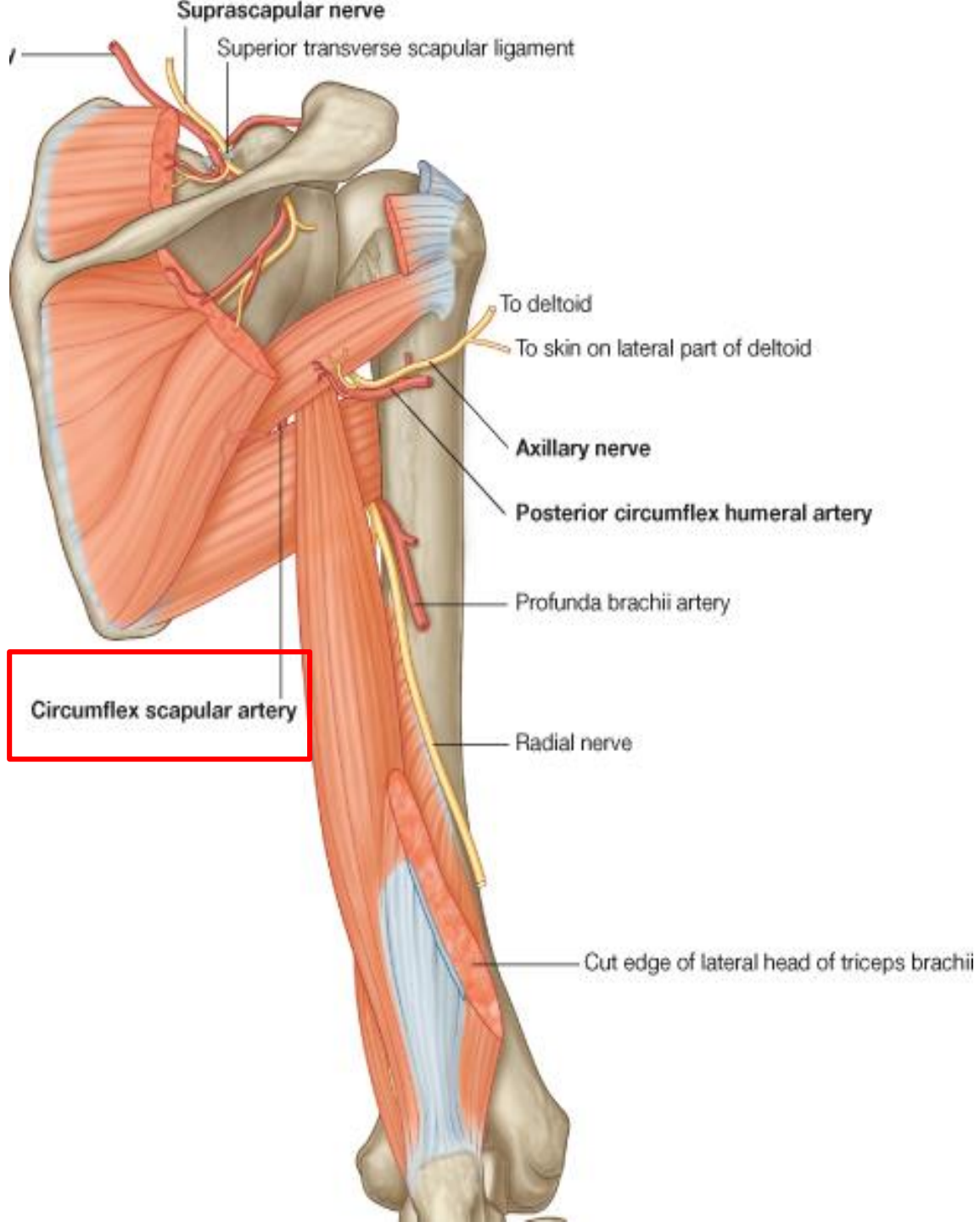
- **It is formed by:**

The medial margin of the long head of triceps brachii

The superior margin of the teres major

The inferior margin of the teres minor.

- Transmit **the circumflex scapular artery and vein pass**

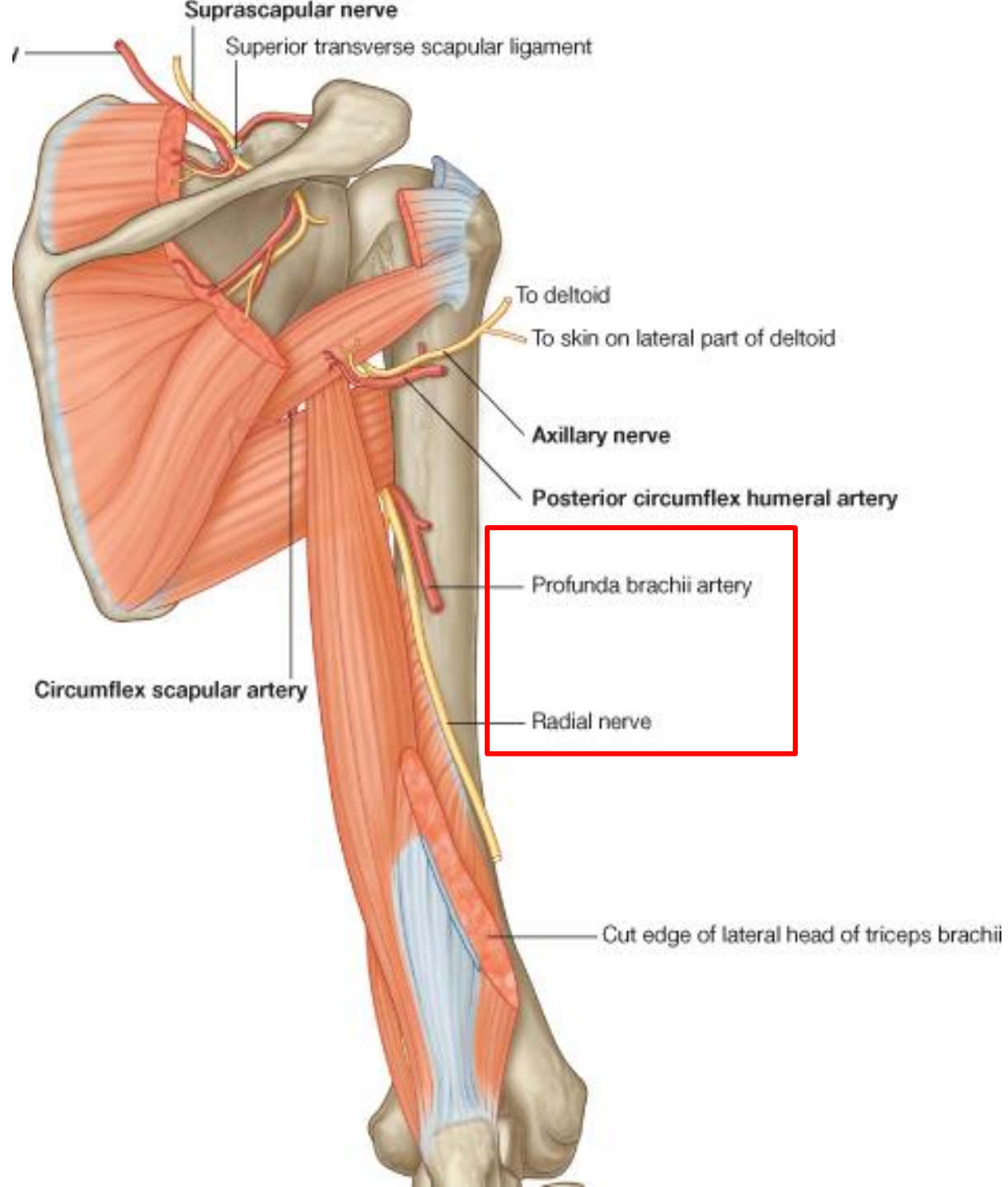


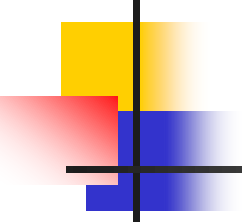


# *Lower Triangular Space*

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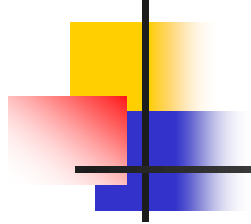
- The lower triangular space as a passageway between the anterior and posterior compartments of the arm.
- **It is formed by:**
  - The lateral margin of the long head of triceps brachii
  - The shaft of the humerus
  - The inferior margin of the teres major.
- Transmit the **radial nerve**, the **profunda brachii artery** (deep artery of arm), and **associated veins**



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- For further inquiries **PLZ** feel free to contact at any time through email

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*Thank You*