



ANATOMY TEAM

LECTURE (2)
PRACTICAL

OBJECTIVES

- **Identify the superficial muscles associated with the shoulder girdle.**
- **Identify the intermediate muscles involved in respiration.**
- **Identify the deep muscles belonging to the vertebral column.**

Extrinsic

Superficial muscles:

- 1) **Trapezius.**
- 2) **Levator scapulae.**
- 3) **Rhomboid minor.**
- 4) **Rhomboid major.**
- 5) **Latissimus dorsi.**

Intermediate muscles:

- 1) **Serratus posterior superior**
- 2) **Serratus posterior inferior**

Intrinsic

Deep muscles:

Superficial: Splenius

Intermediate: Erector spinae

Deep: Transversospinalis

Extrinsic Muscles

Superficial group:

Connects axial skeleton to the shoulder girdle and humerus and are five:

1) **Trapezius**

Origin: Ligamentum nuchae of the cervical vertebrae and the tips of thoracic vertebrae spines and to the medial part of the superior nuchal line and to the external occipital protuberance.

Insertion: The Upper fibers of the trapezius are attached to the posterior border of the lateral end of the clavicle, medial border of the acromion and to all the upper border of the crest of the spine of the scapula.

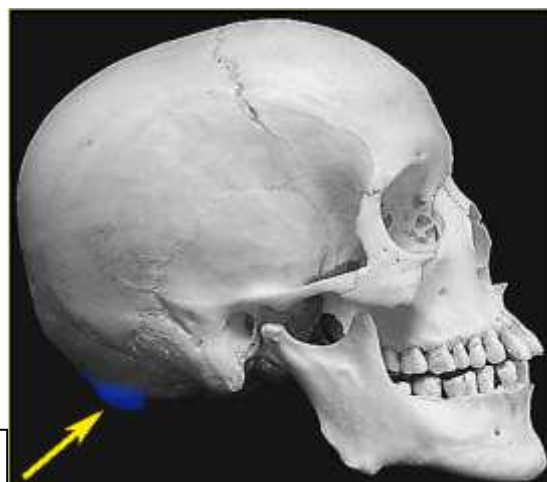
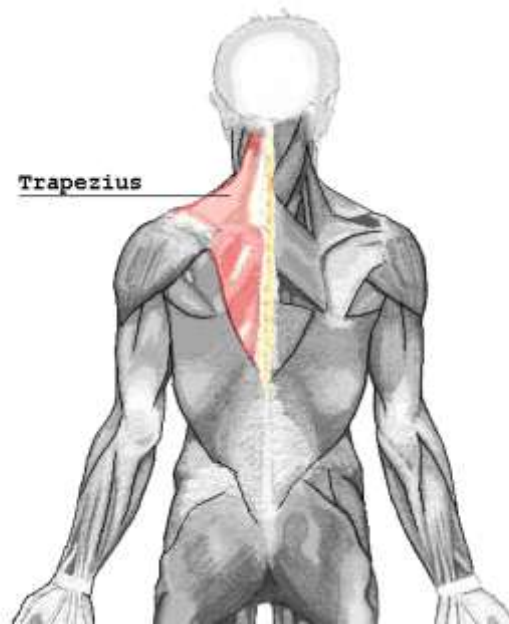
Innervation: Accessory nerve (11th cranial nerve).

Action:

The upper fibers: Elevate the scapula (producing a shrugging motion).

Middle fibers: Retract the scapula.

Lower fibers: Depress the medial end of the scapula (Acting with the upper fibers they can laterally rotate the scapula).



external occipital protuberance

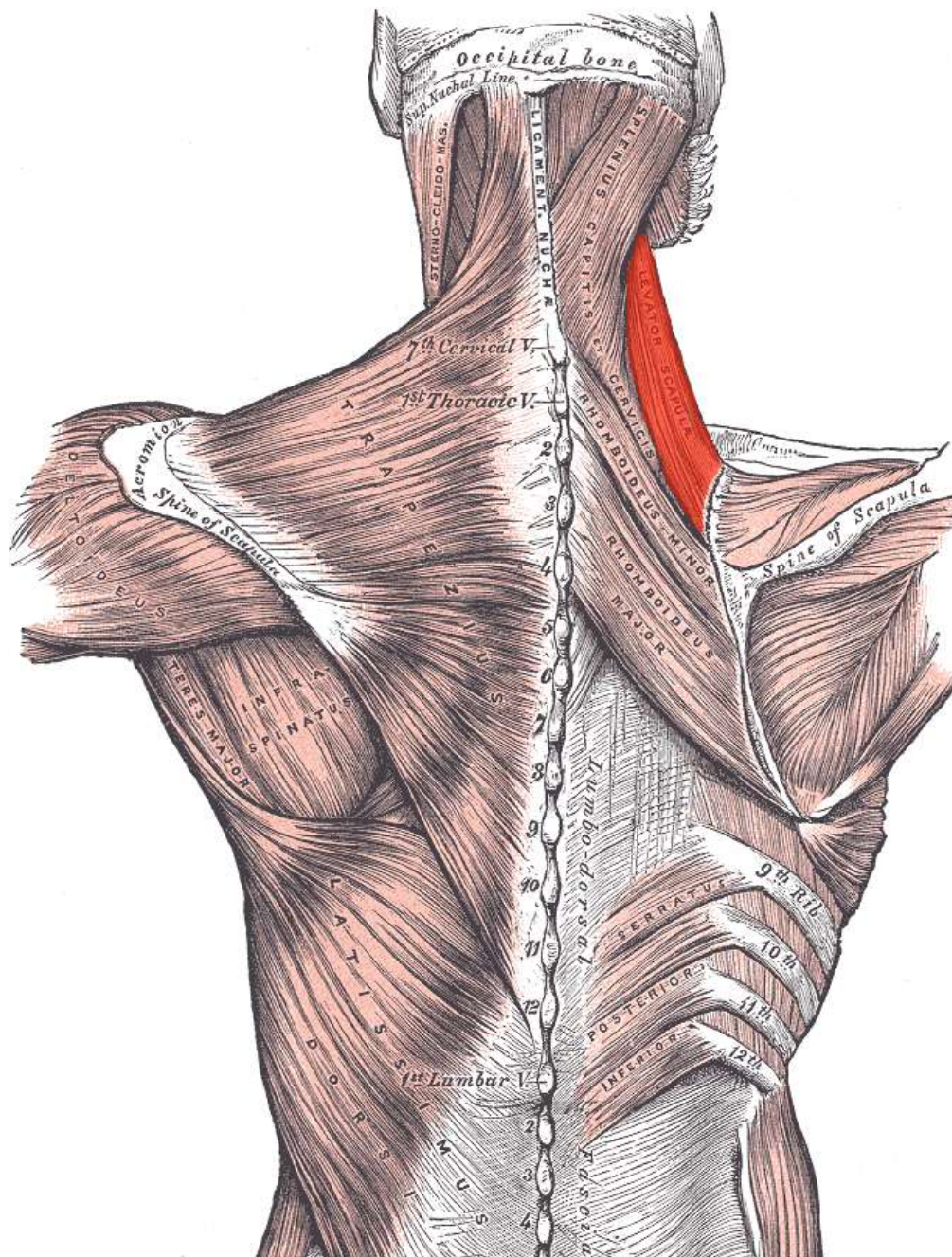
2) Levator scapulae.

Origin: Transverse process of the upper part of the cervical vertebrae from the posterior tubercle.

Insertion: Medial upper part of the scapula.

Innervation: Dorsal scapular nerve.

Action: Elevation of the scapula.



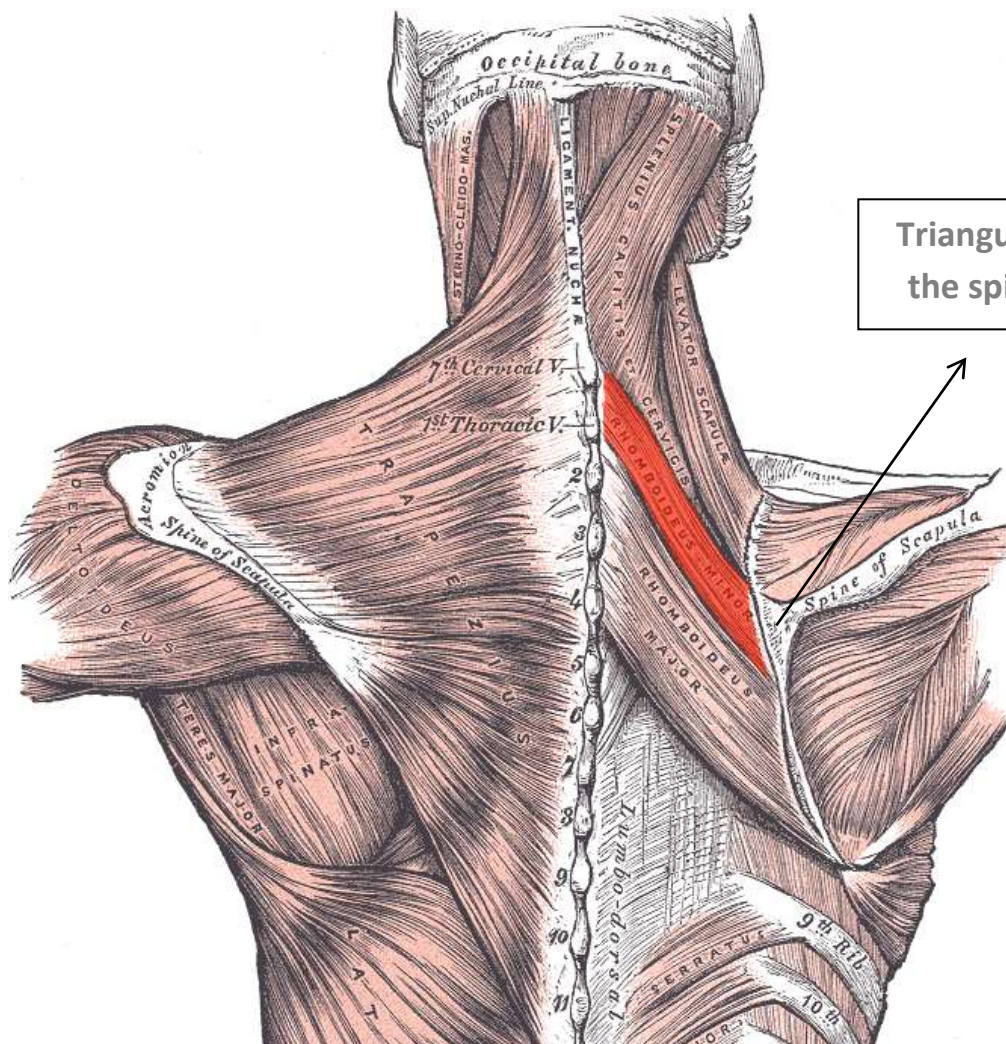
3) Rhomboid minor

Origin: From the lower end of the ligamentum nuchae and T1.

Insertion: Medial border of the scapula (in the triangular area opposite the spine of the scapula).

Innervation: Dorsal scapular nerve.

Action: Retraction of the scapula and medial rotation.



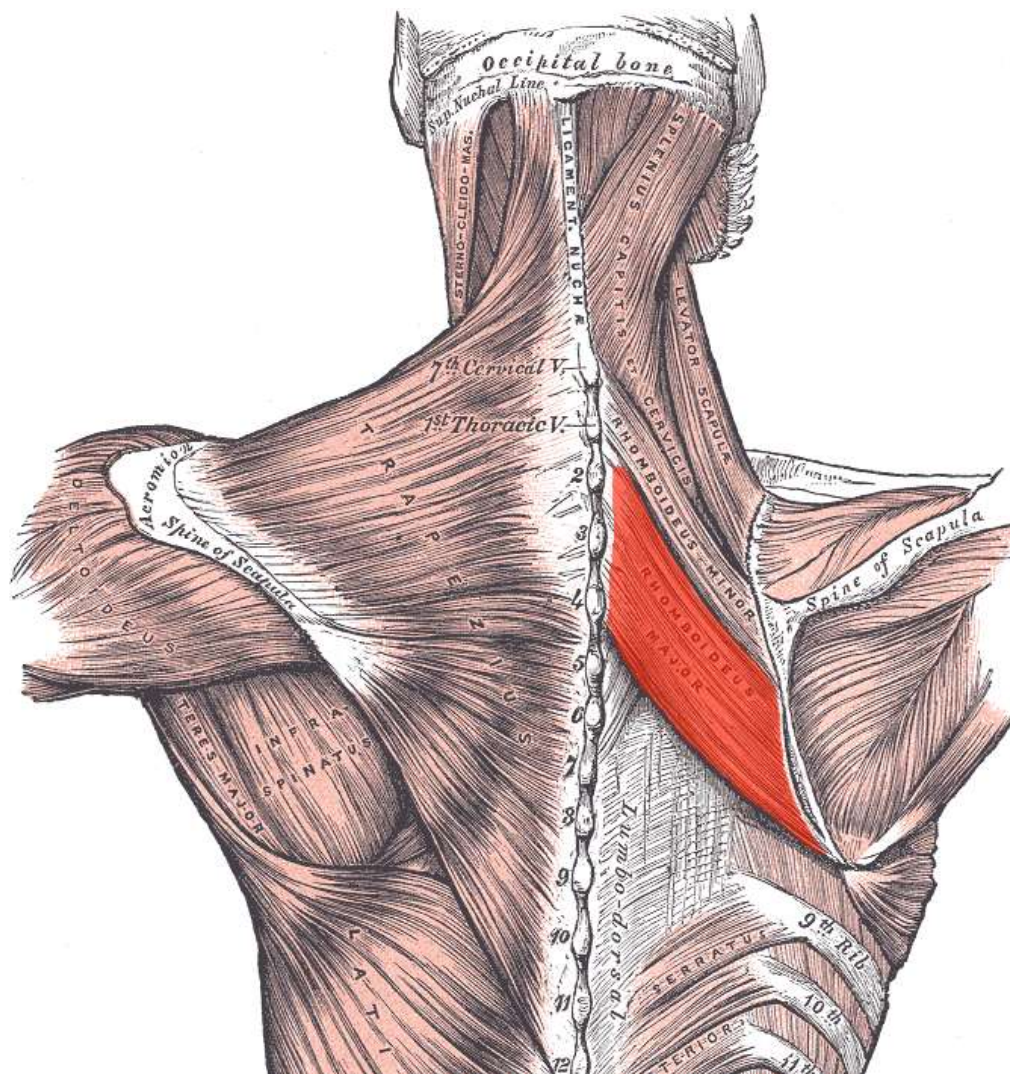
4) Rhomboid major

Origin: 2nd to 5th thoracic vertebrae.

Insertion: Medial border of the scapula.

Innervation: Dorsal scapular nerve.

Action: Retraction of the scapula and medial rotation.



5) **Latissimus dorsi**

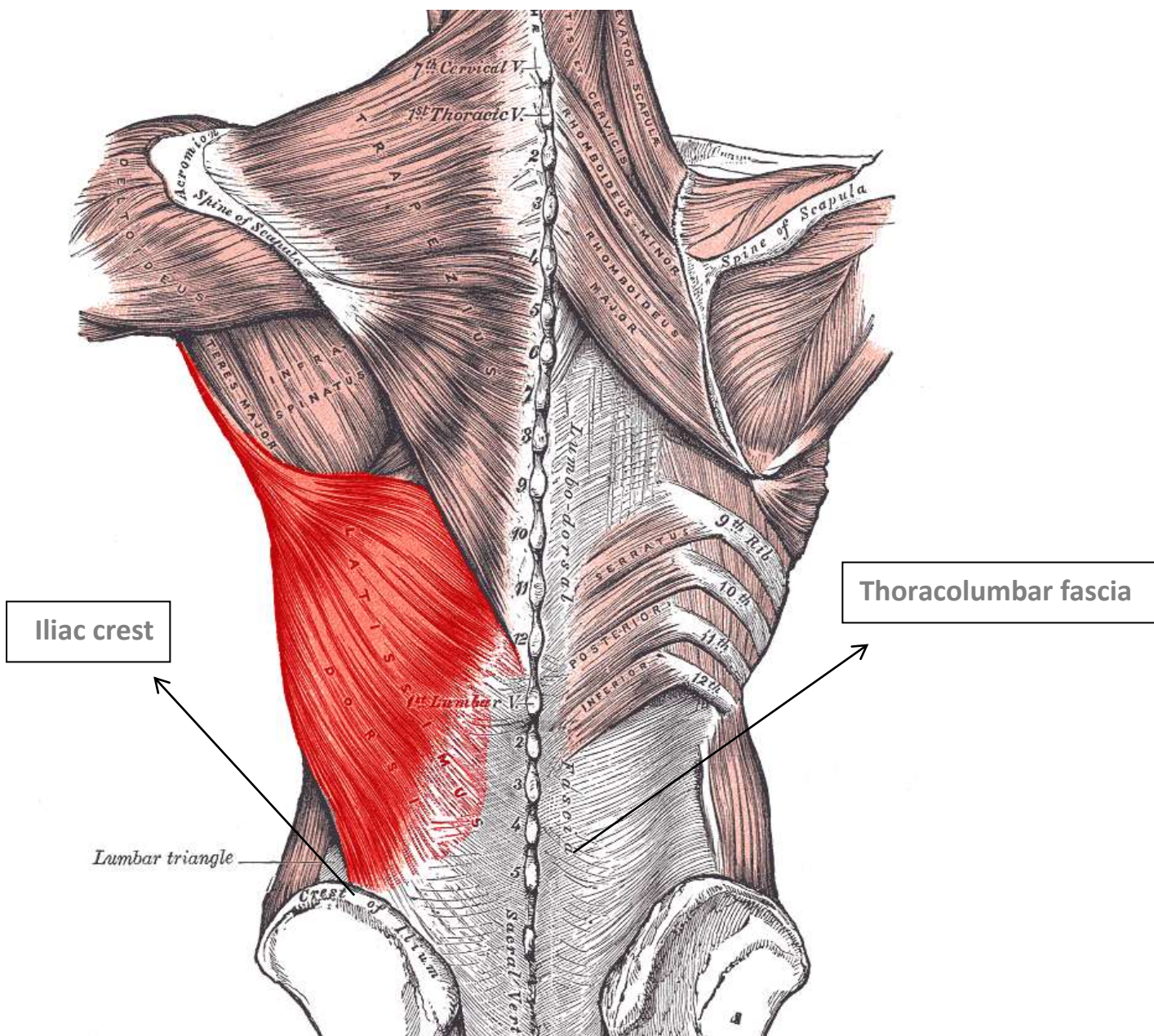
Big.

Origin: The spines of the thoracic vertebrae, outer surface of the lower 4 ribs, iliac crest, thoracolumbar fascia and outer surface of the inferior angle of the scapula.

Insertion: Intertubercular sulcus (bicipital groove) of the humerus.

Innervation: Thoracodorsal nerve.

Action: Extension, adduction and medial rotation.



Intermediate group:

1) **Serratus posterior superior**

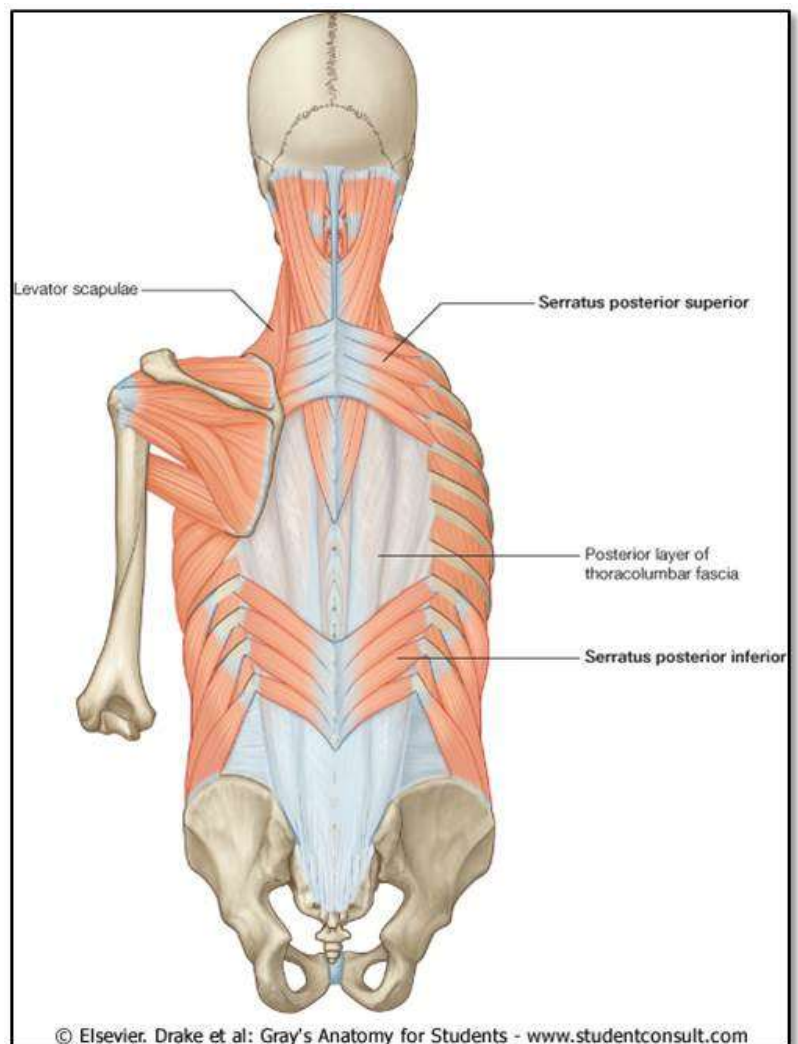
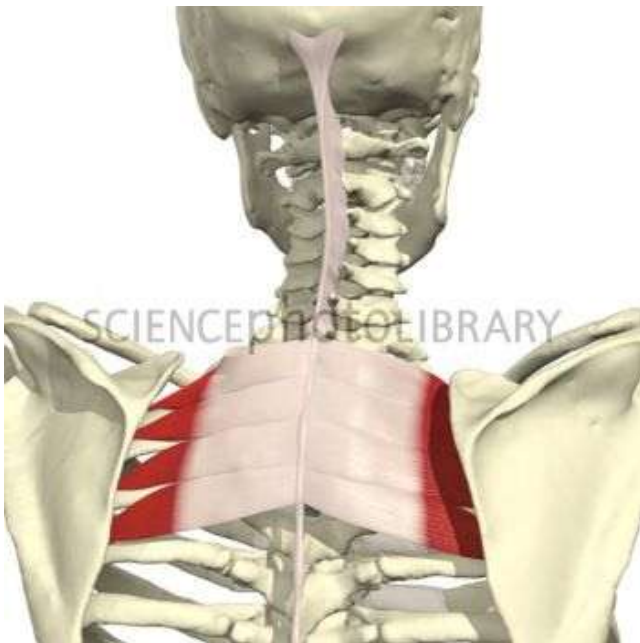
Underneath the Rhomboid and its Fibers are directed upward and laterally.

Origin: Lower cervical and upper thoracic spines.

Insertion: Outer surface of the upper ribs.

Innervation: Anterior rami of thoracic spinal nerves.

Action: Elevation of the ribs and helps respiration.



2) Serratus posterior inferior

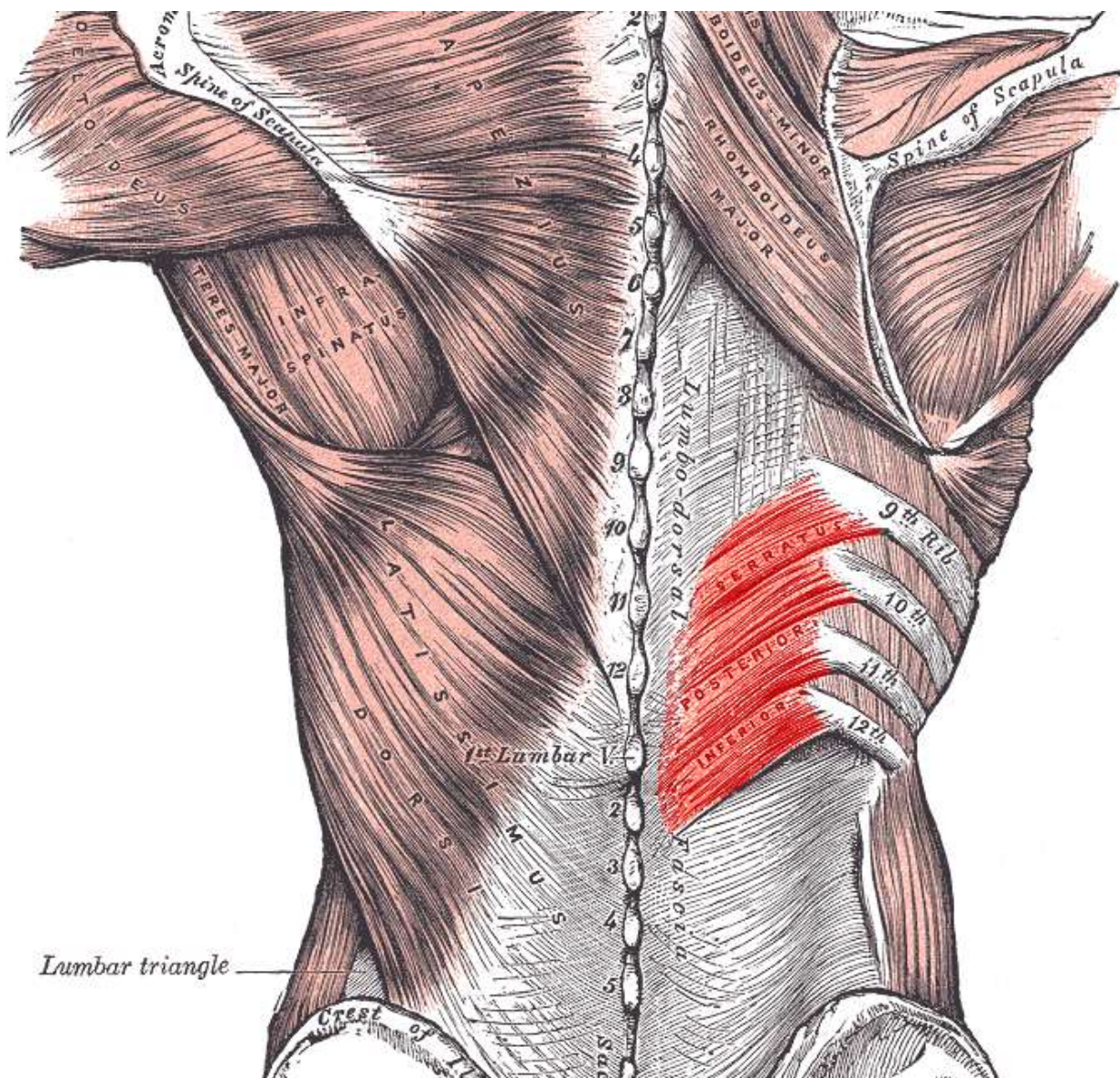
Underneath the latissimus dorsi and its fibers are directed downward and laterally.

Origin: Lower thoracic and upper lumbar spines to the.

Insertion: Outer surface of the lower ribs.

Innervation: Anterior rami of thoracic spinal nerves.

Action: Connects axial skeleton with the ribs and helps respiration.

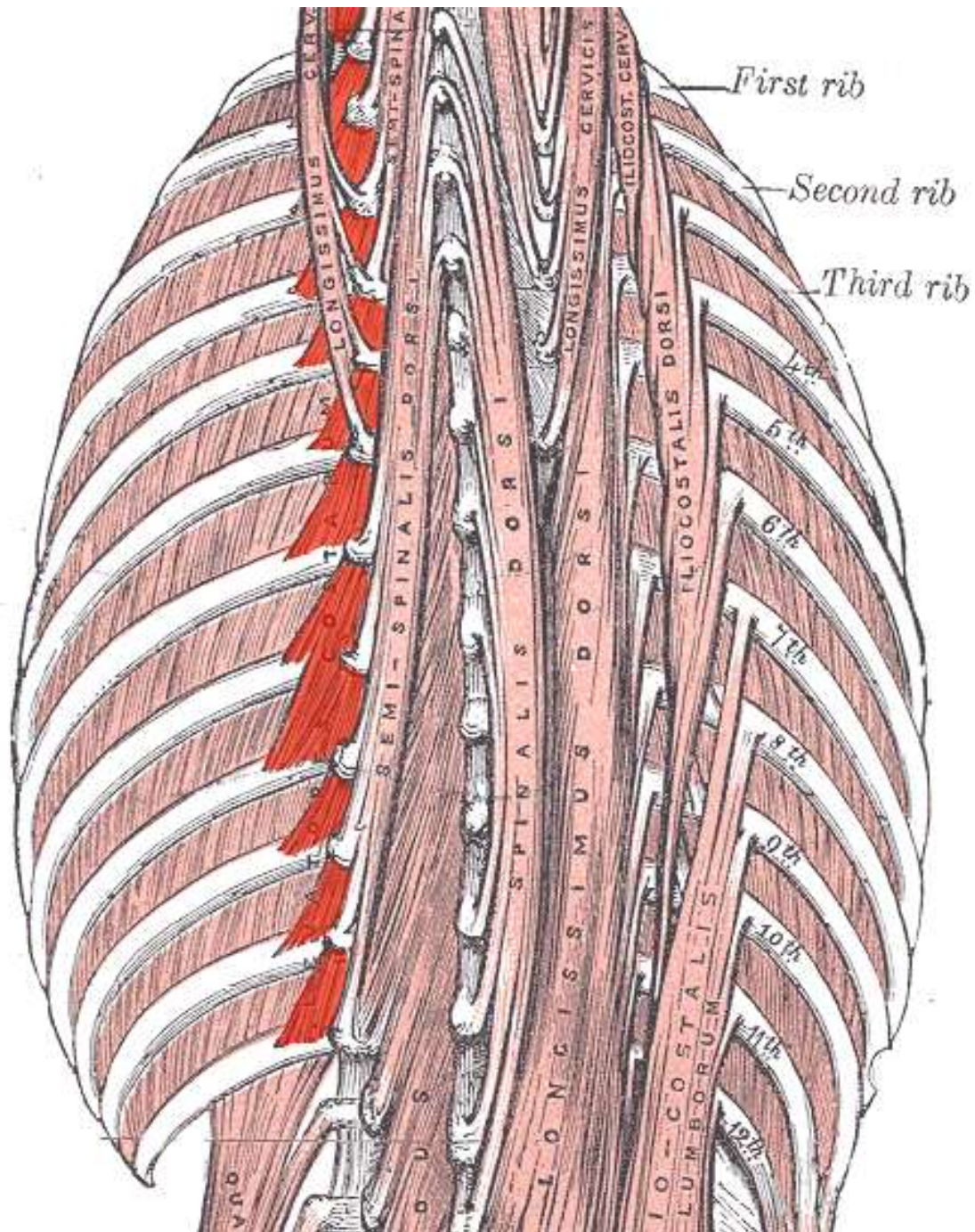


3) Levator costarum

Origin: Transverse processes of C7 to T12.

Insertion: The ribs below.

Action: helps in respiration by raising the ribs.



Intrinsic Muscles

Deep group:

They form a deep, broad muscle column, which occupies the hollow on each side of the spinous processes.

They extend from the sacrum to the skull.

This muscle mass is composed from many muscles of different length.

Each individual muscle helps one or several vertebrae to be extended or rotated on the vertebra below.

- **Superficial:**

Splenius

Has two parts: Splenius capitis and Splenius cervicis

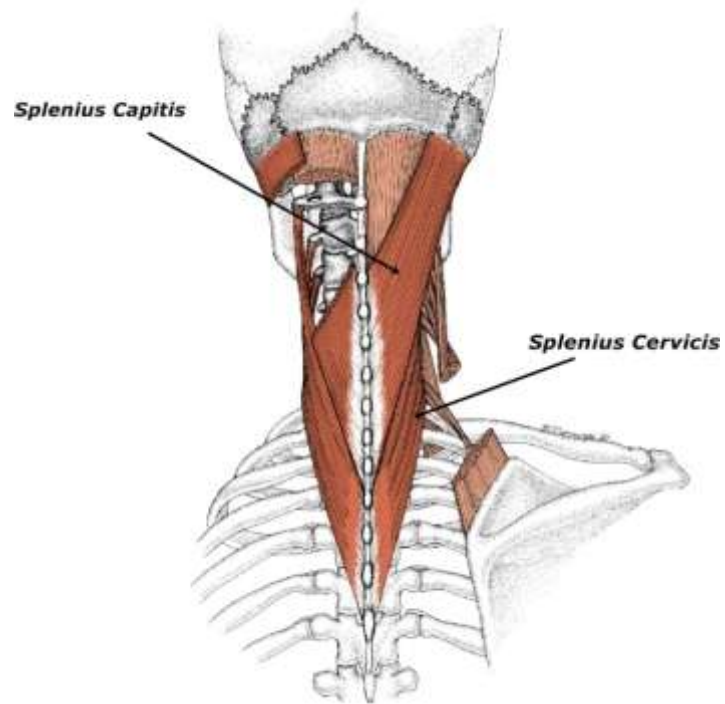
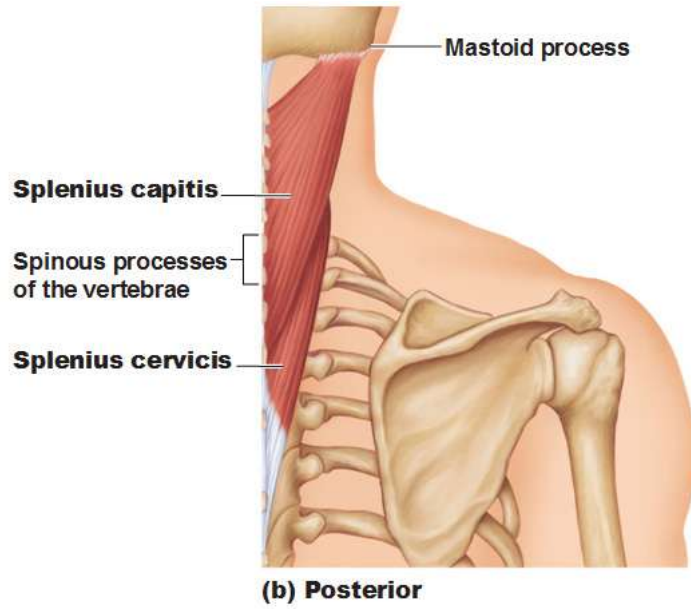
Splenius capitis:

Attached up to the T4 and ligamentum nuchae, fibers are going to the transverse process of the cervical vertebrae and to the above mastoid process and to the lateral half of nuchal line.

Splenius cervicis:

Fiber attached from the upper 4 of the thoracic vertebrae to the transverse process of the cervical vertebrae.

Action: extension of the neck



- **Intermediate:**

Erector spinae

Long muscle in the back on the side of the vertebral column.

Insertion: Sacrum, iliac crest, sacroiliac ligament and spines of sacral and lumbar vertebrae.

Has three columns: (From lateral to medial)

Lateral: Iliocostalis

Attached to the angles of the ribs

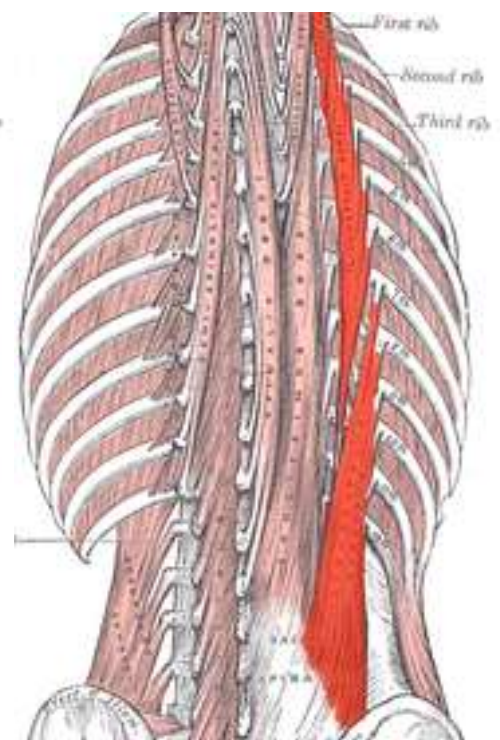
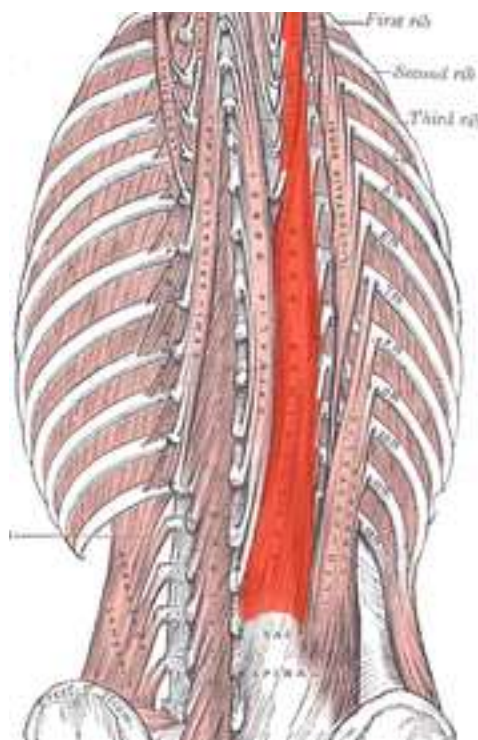
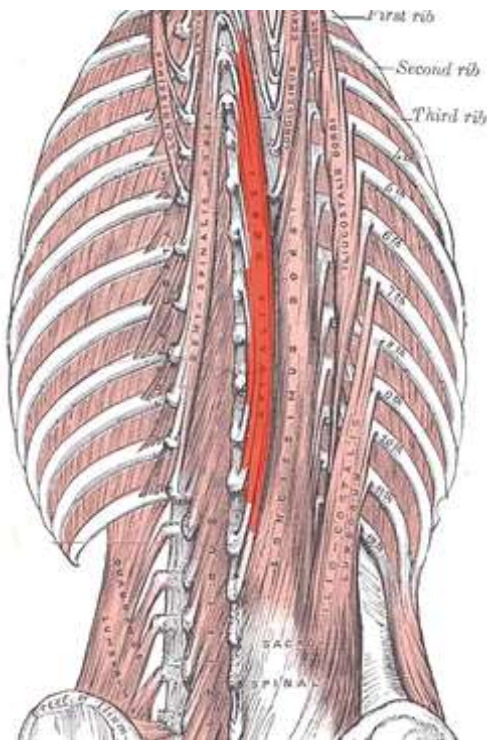
Intermediate: Longissimus

Medial: Spinalis

Spinalis

Longissimus

Iliocostalis



- Deep:

Transversospinalis

Are small muscles between the spines:

1) Semispinalis

2) Rotators

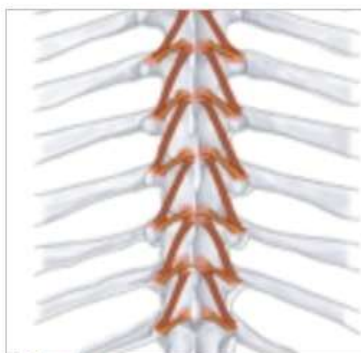
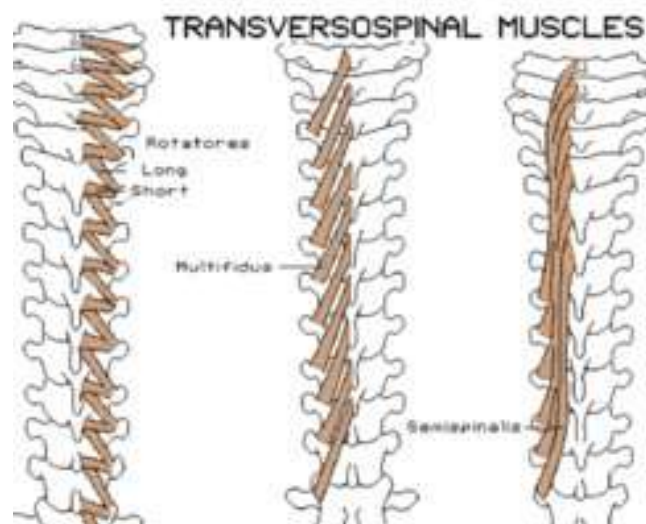
Best developed in the thoracic region.

Intertransverse (between the transverse processes).

3) Multifidus

Best developed in the lumbar region.

In the form of short triangular bundles .



Rotatores



Semispinalis



multifidus