

“The more we do, the more we can do”
-William Hazlitt

Musculoskeletal Block
ANATOMY
team 435



- COLORCODES
- IMPORTANT NOTES
 - EXTRA NOTES
 - DEFINITION

OBJECTIVES

At the end of the lecture, students should be able to:

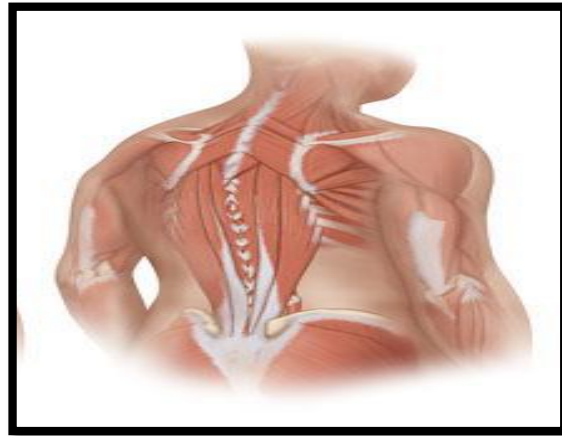
- *Distinguish between the different groups of back muscles.*
- *Compare between groups of back muscles as regard their nerve supply and action.*
- *List the back muscles of each group.*
- *Describe the attachments of each muscle of the superficial group, as well as, its nerve supply and action.*
- *Describe the triangles of back and their clinical significance.*



Groups of Back Muscles

They are organized into 3 groups:

Deep group: Attached to & involved in the movement of **vertebral column & head**.



Intermediate group: Attached to **ribs** & serve **respiratory functions**.



Superficial group: Attached to & involved in the movements of **upper limb**.



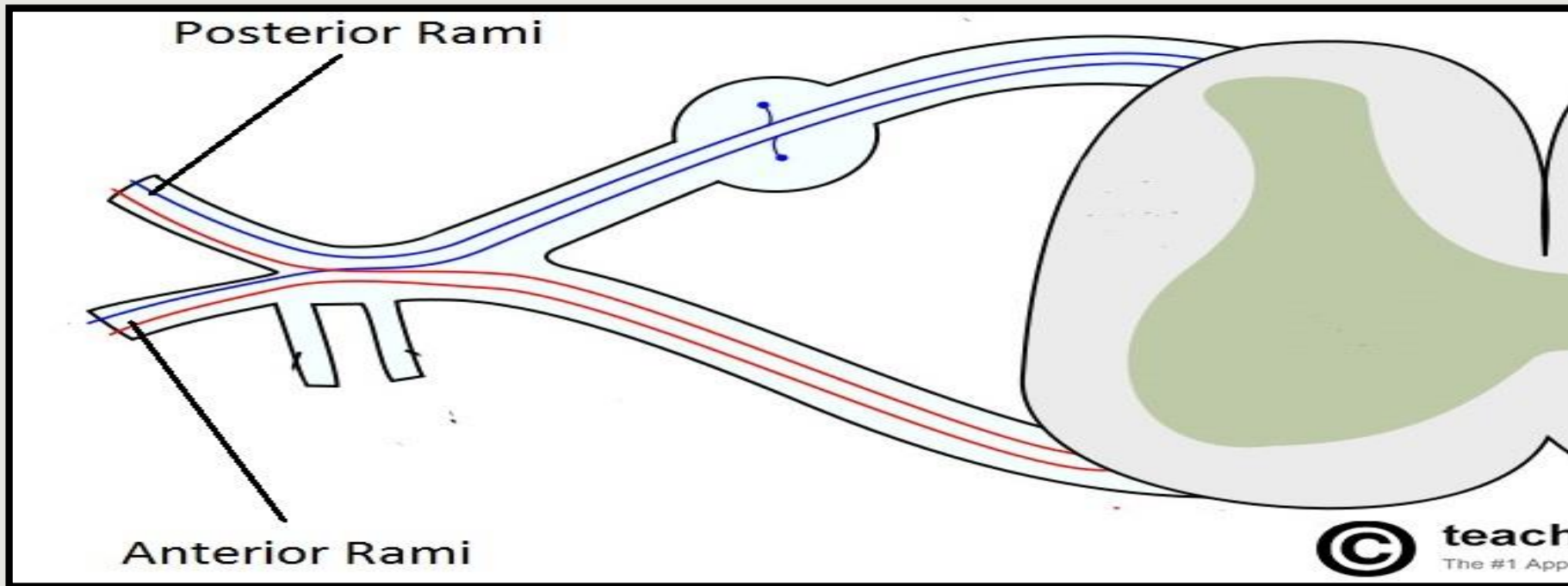
❖ Intrinsic muscles:

- ❑ Develop in the **back**
- ❑ Located within or situated **deeper** in a structure
- ❑ Supplied by **posterior rami** of spinal nerves

❖ Extrinsic muscles:

- ❑ **Not** developed in the back (but will later migrate to the back after development)
- ❑ **Superficially** on a structure
- ❑ Supplied by **anterior rami** of spinal nerves.

Extra slide
Not included in
original slides



Picture shows Anterior and posterior Rami

❖ Intrinsic muscles:

A group of muscles located within or situated deeper in a structure

❖ Extrinsic muscles:

A group of muscles lying superficially on a structure.

DEEP GROUP OF BACK MUSCLES

- They extend from **sacrum to the base of the skull**.
- They include extensors and rotators of head & vertebral column.
- Their tone is responsible for maintenance of normal curve of vertebral column.

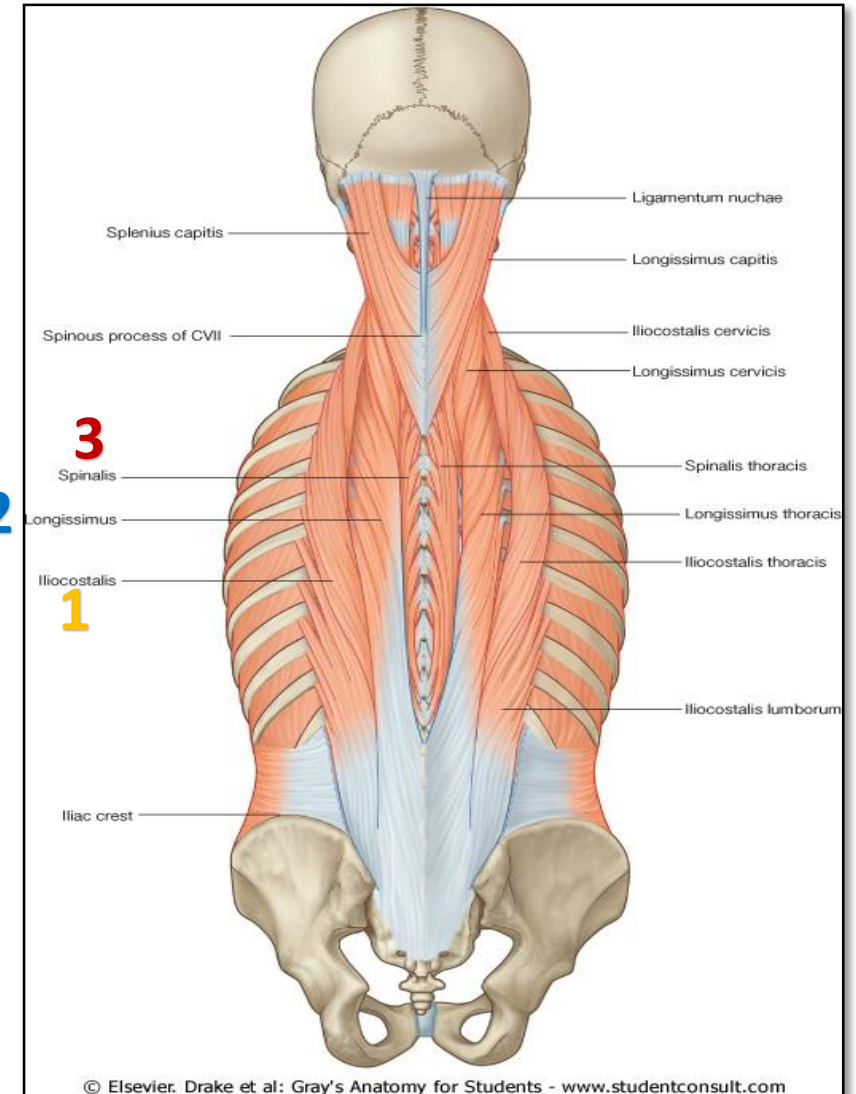
(يعني شدة هذه العضلات هي اللي تبقي على انحراف العمود الفقري حتى عند الراحة.)

- The largest muscle of this group is **“erector spinae”** which is formed of 3 vertical columns (**from lateral to medial**):

1. Iliocostalis

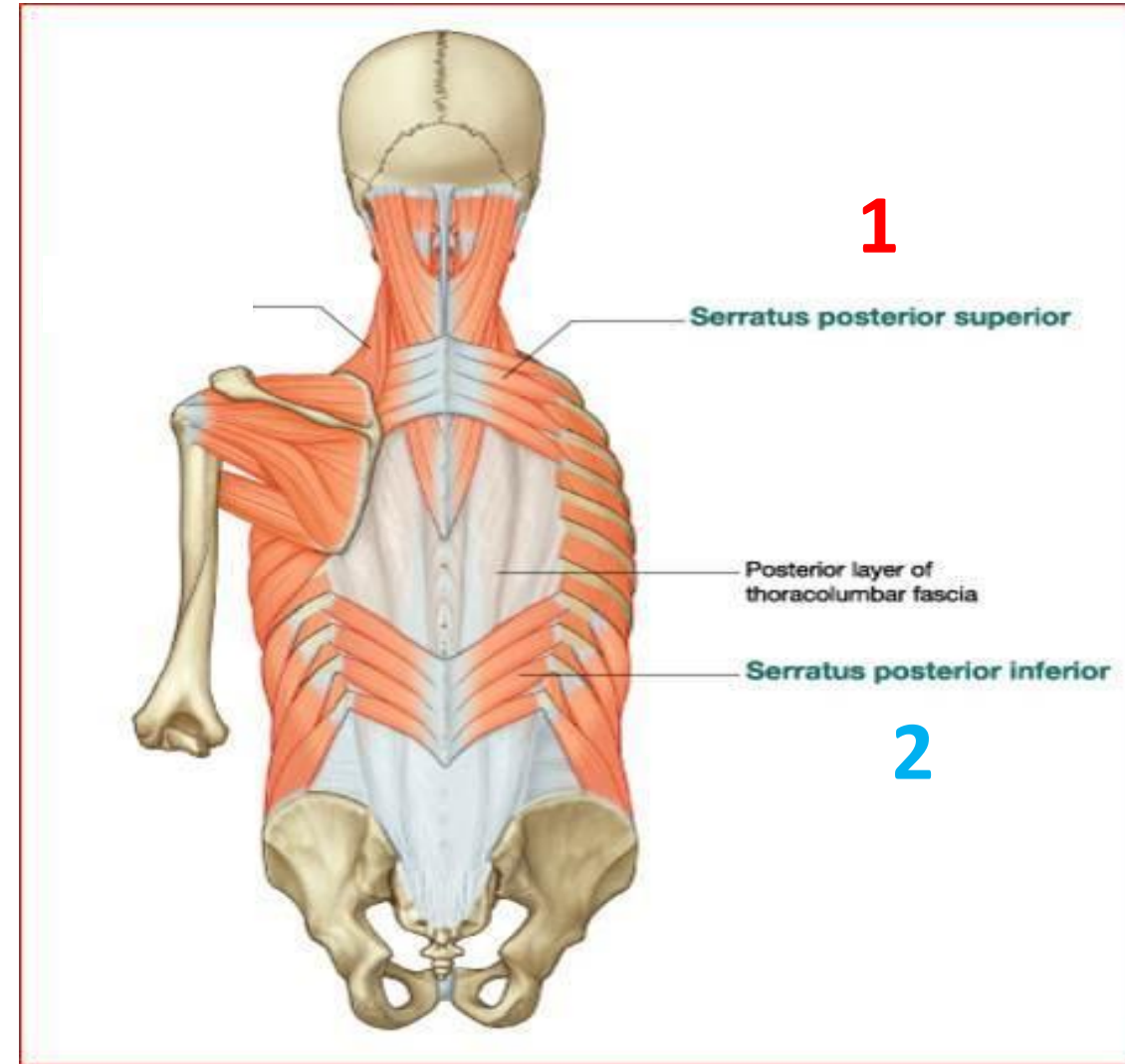
2. Longissimus

3. Spinalis



Intermediate Group Of Back Muscles

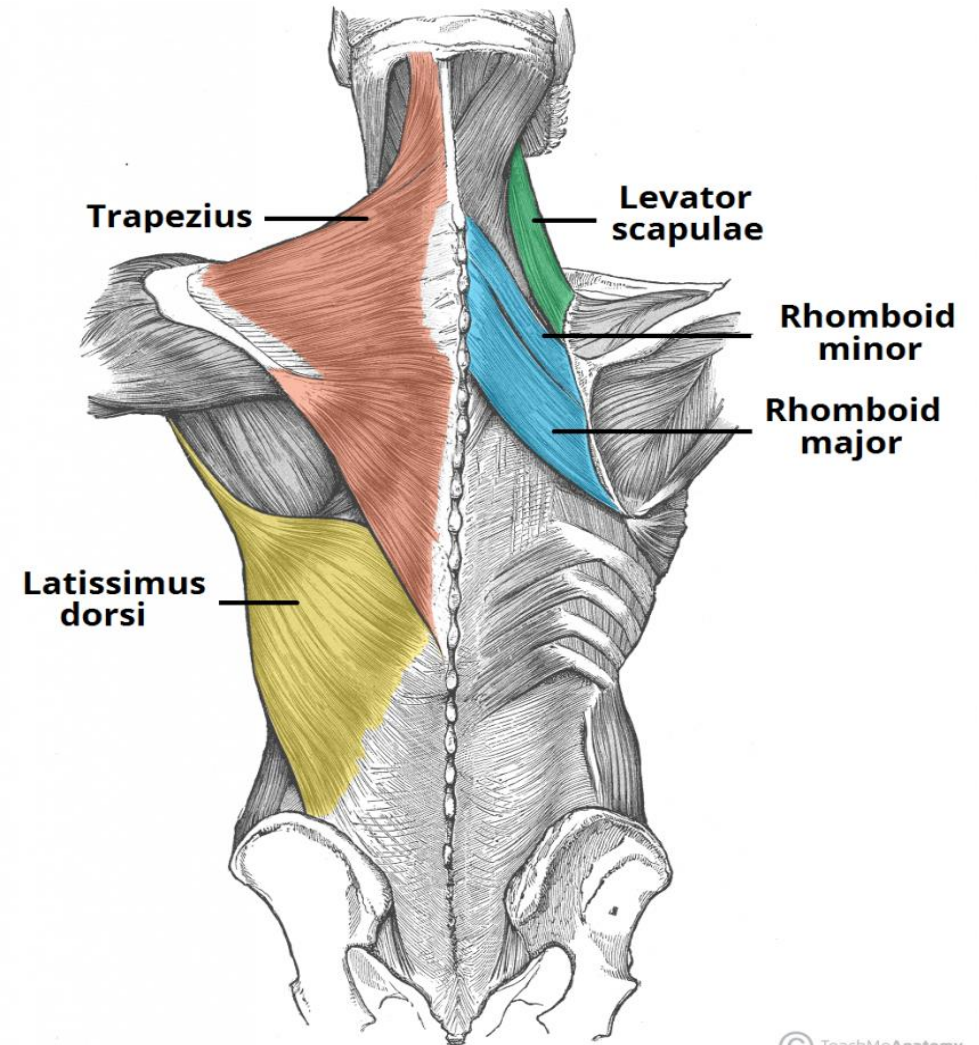
- It is separated from the deep group by thoracolumbar fascia.
- 1) *Serratus posterior superior (rib *elevator).
- 2) Serratus posterior inferior (rib *depressor).
- Nerve supply: anterior rami of thoracic spinal nerves.



Serratus: شكل منشاري Elevator: يرفع لفوق
Depressor: ينزل تحت

Superficial Group Of Back Muscles

- Muscles connecting **vertebral column** to **scapula** (move **scapula** through shoulder girdle joints):
 - 1) *Levator scapulae.
 - 2) *Rhomboid minor.
 - 3) Rhomboid major.
 - 4) Trapezius.
- Muscle connecting **vertebral column** to **humerus** (moves **humerus** through shoulder joint):
 - 1) Latissimus dorsi.



TRAPEZIUS

- ❖ **Origin:** Spines of cervical & thoracic vertebrae
- ❖ **Insertion:** lateral 1/3 of clavicle + acromion & spine of scapula.
- ❖ **Action:** rotation of scapula during abduction of humerus above horizontal.

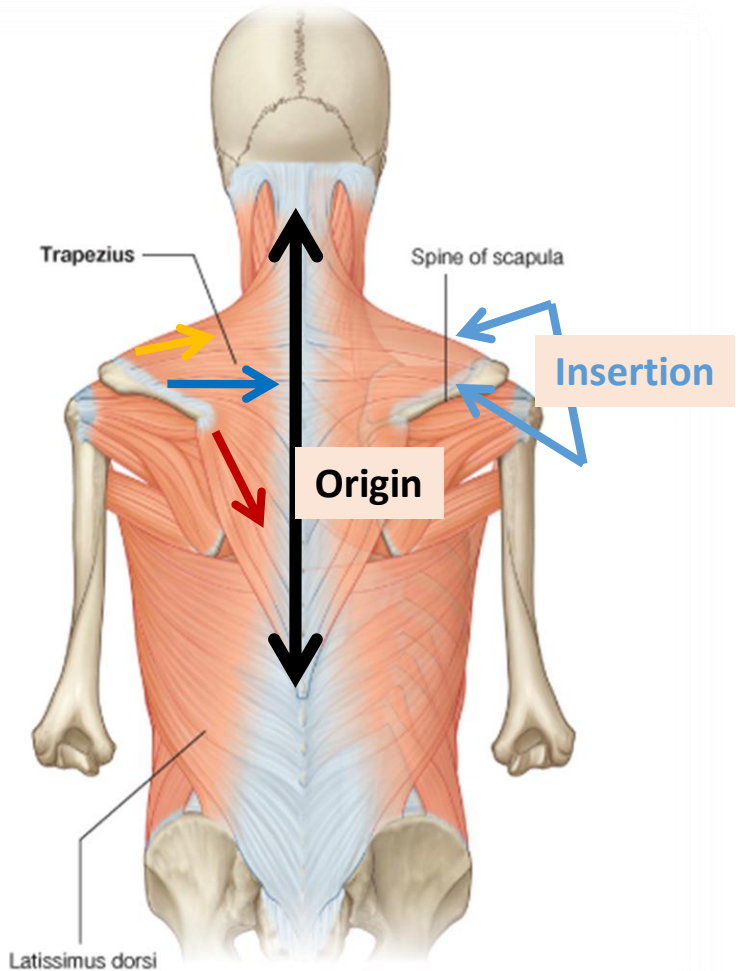
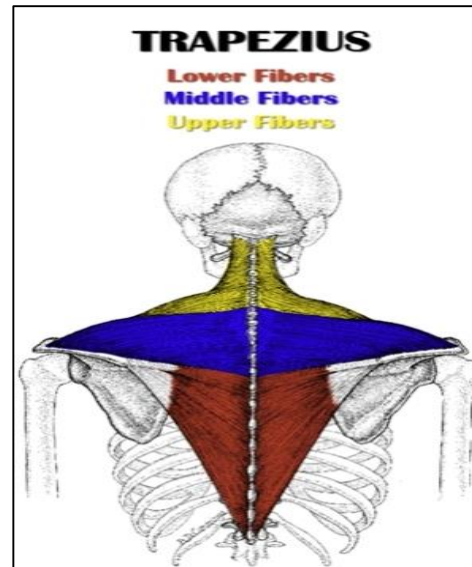
Trapezius is made up of 3 group fibers

Lower fibers
depress scapula

Middle fibers
retract scapula

Upper fibers
elevate
scapula.

❖ **Nerve supply:** Spinal part of accessory (11th cranial) nerve.



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LEVATOR SCAPULAE and RHOMBOID MINOR & MAJOR

❖ Origin:

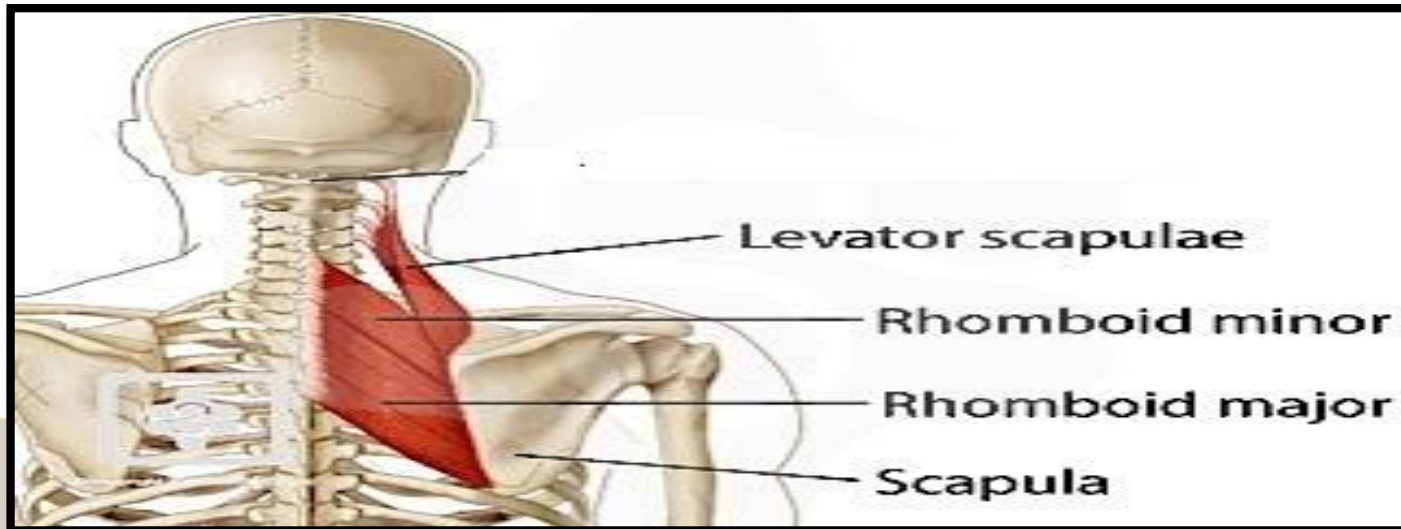
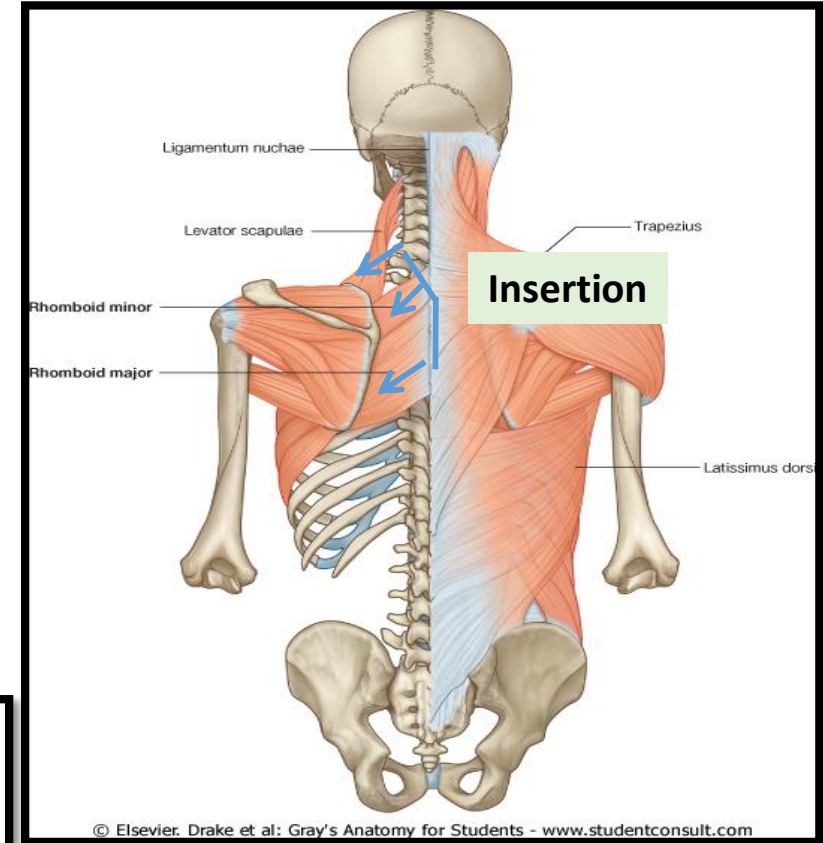
1. *Levator scapulae*: cervical transverse processes
2. *Rhomboid minor & major*: thoracic spines

❖ Insertion: Medial border of scapula

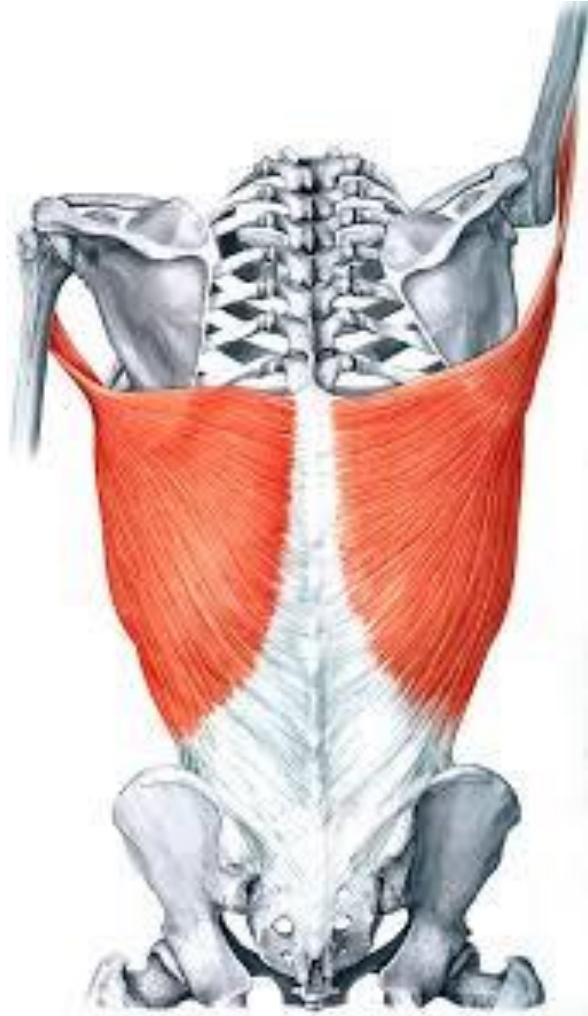
❖ Nerve supply: Dorsal scapular nerve.

❖ Actions:

1. *Levator scapulae*: elevates scapula.
2. *Rhomboid Major & Minor*: retract scapula



LATISSIMUS DORSI

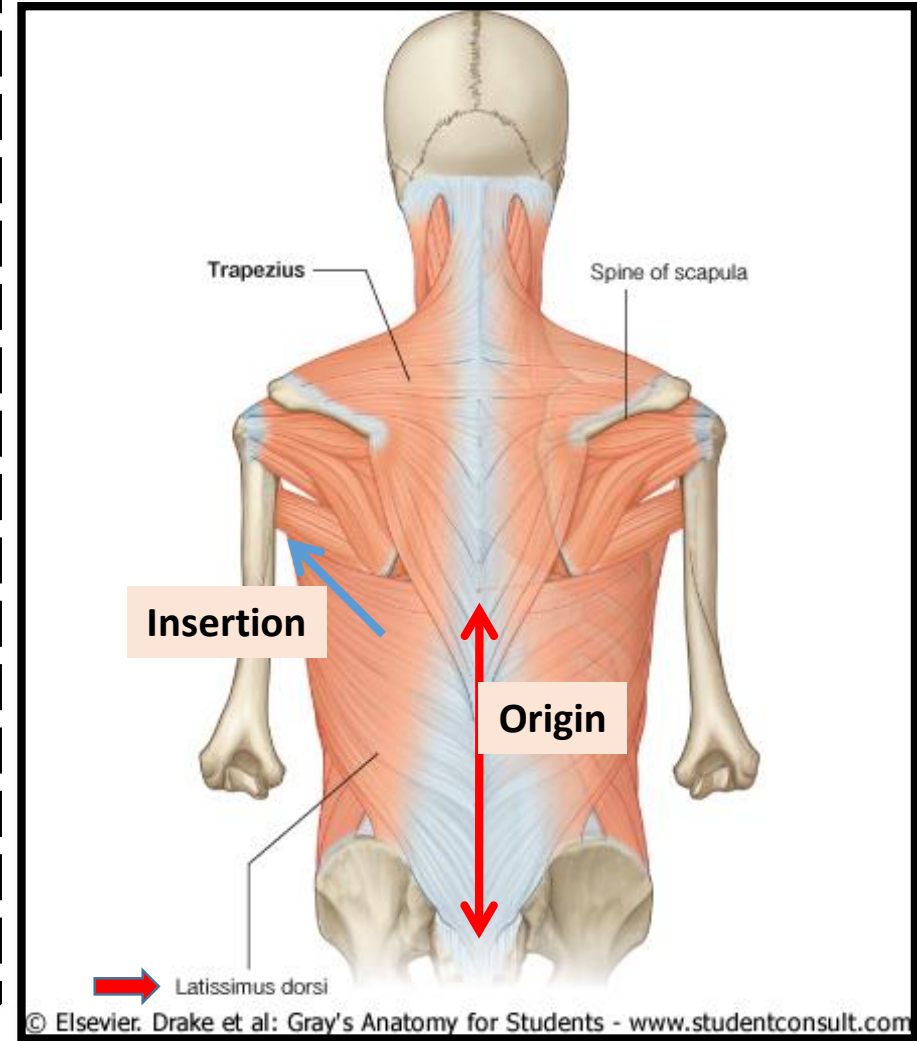


Origin: Spines of thoracic vertebrae.

Insertion: Bicipital groove of humerus.

Nerve supply: Thoracodorsal nerve.

Actions: *extension, adduction & medial rotation* of humerus (arm, shoulder joint).



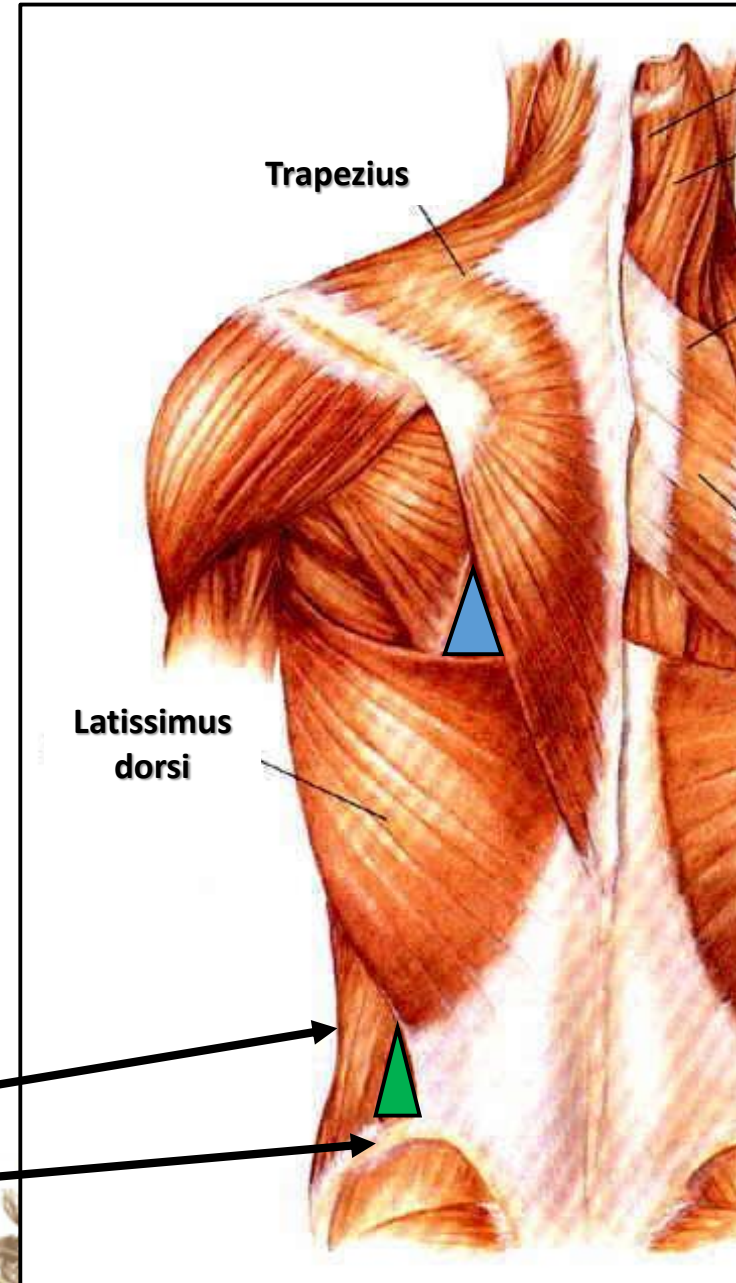
MUSCULAR TRIANGLES OF BACK

Auscultatory Triangle:

1. Site on back where **breath sounds are most easily heard** with a stethoscope.
2. **Boundaries:**
 - A) latissimus dorsi
 - B) trapezius
 - C) medial border of scapula

Lumbar Triangle:

1. Site **where pus may emerge from the abdominal wall.** (Or **site of an abdominal hernia**).
2. **Boundaries :**
 - A) latissimus dorsi
 - B) Posterior border of external oblique muscle of the abdomen
 - C) iliac crest.



Muscles

Trapezius

Rhomboid major

Rhomboid minor

Levator scapulae

Latissimus dorsi

Muscles

Serratus posterior superior

Serratus posterior inferior

Sets of muscles

Vertebral column to Scapula

Vertebral column to Humerus

Groups of back muscles

Intermediate group

Superficial group

Types of back muscles

Intrinsic muscle

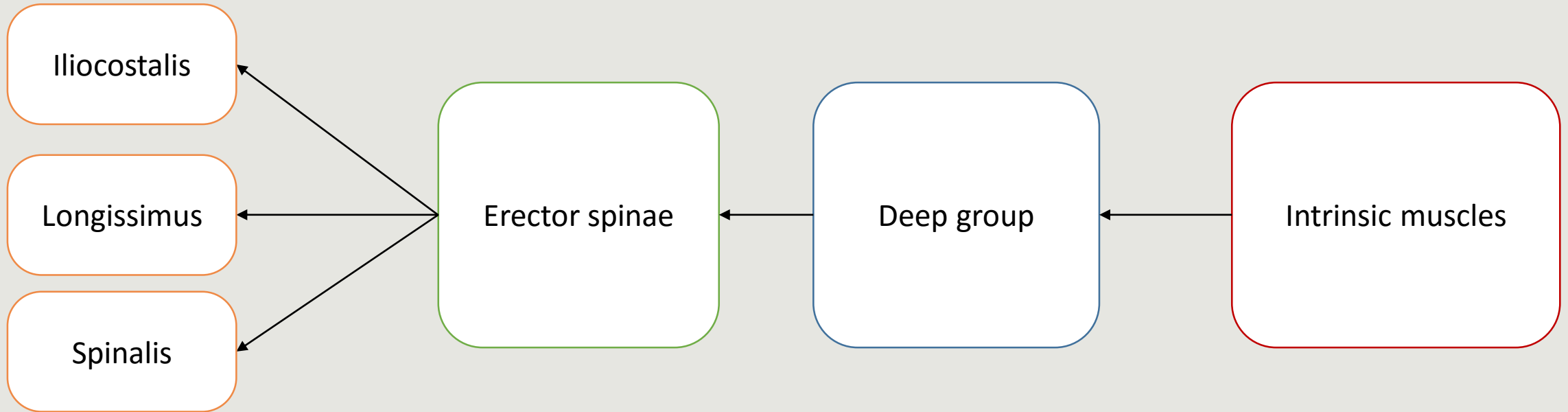
Next slide

Extrinsic muscles

Muscles

Groups of back muscles

Types of back muscles





Video: Superficial Muscles

<https://www.youtube.com/watch?v=JAdpqjaFU0s>

Video: Deep & Intermediate Muscles

<https://www.youtube.com/watch?v=-oxY2Duc-0c>



Website :

[MedicalMnemonics.com](http://www.MedicalMnemonics.com)

Website:

<http://www.innerbody.com/image/musfov.html>



Quiz: <https://www.onlineexambuilder.com/anatomy/exam-48037>

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TEAM MEMBERS:

Group (2) Leader:

Abdullah Al-Taweel

Group(2) members:

Fawzan Alotaibi

Abdullah Alghezi

Badr Alshehri

Meshal Alhazmi

Fahd Alfahd

Abdulaziz Almalki

Abdulmajeed Alotaibi

Mohammad Alamri

Moayyad Alyoussef

TEAM LEADERS:

Ghaida Aljamili

Elham Alzahrani

Abdullah Alfuraih

Bodour Julaidan

- For questions and suggestions
you can contact us on
Anatomy435@gmail.com

Editing Team (boys):

Khaled Al Jedia

Rawhdan Al Nahdi

Abdulwahab Sanari

