



# Muscles Of The Back

## Musculoskeletal block- Anatomy-lecture 3

Editing file



# 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.

## Color guide :

Only in boys slides in **Blue**

Only in girls slides in **Purple**

important in **Red**

Doctor note in **Green**

Extra information in **Grey**

# Back Muscles

They are organized into 3 groups:

## 1- Deep group

Attached to & involved in the movement of **Vertebral column & Head.**

**Intrinsic muscles:**  
Develop in the Back  
Supplied by **Posterior Rami of spinal nerves**

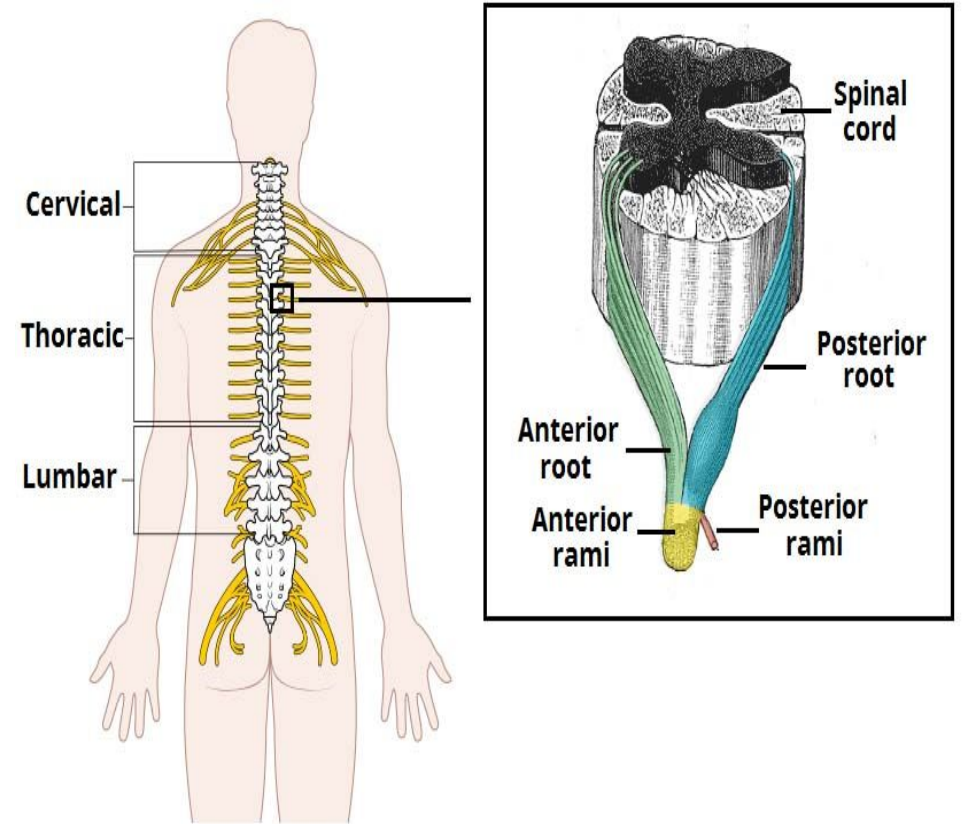
## 2- Intermediate group

Attached to **Ribs** & serve **Respiratory Functions.**

**Extrinsic muscles:**  
**Not Developed in the Back**  
Supplied by **Anterior Rami of spinal nerves**

## 3- Superficial group

Attached to & involved in the movement of **Upper limbs.**



# 1- Deep Group Of Back Muscles:

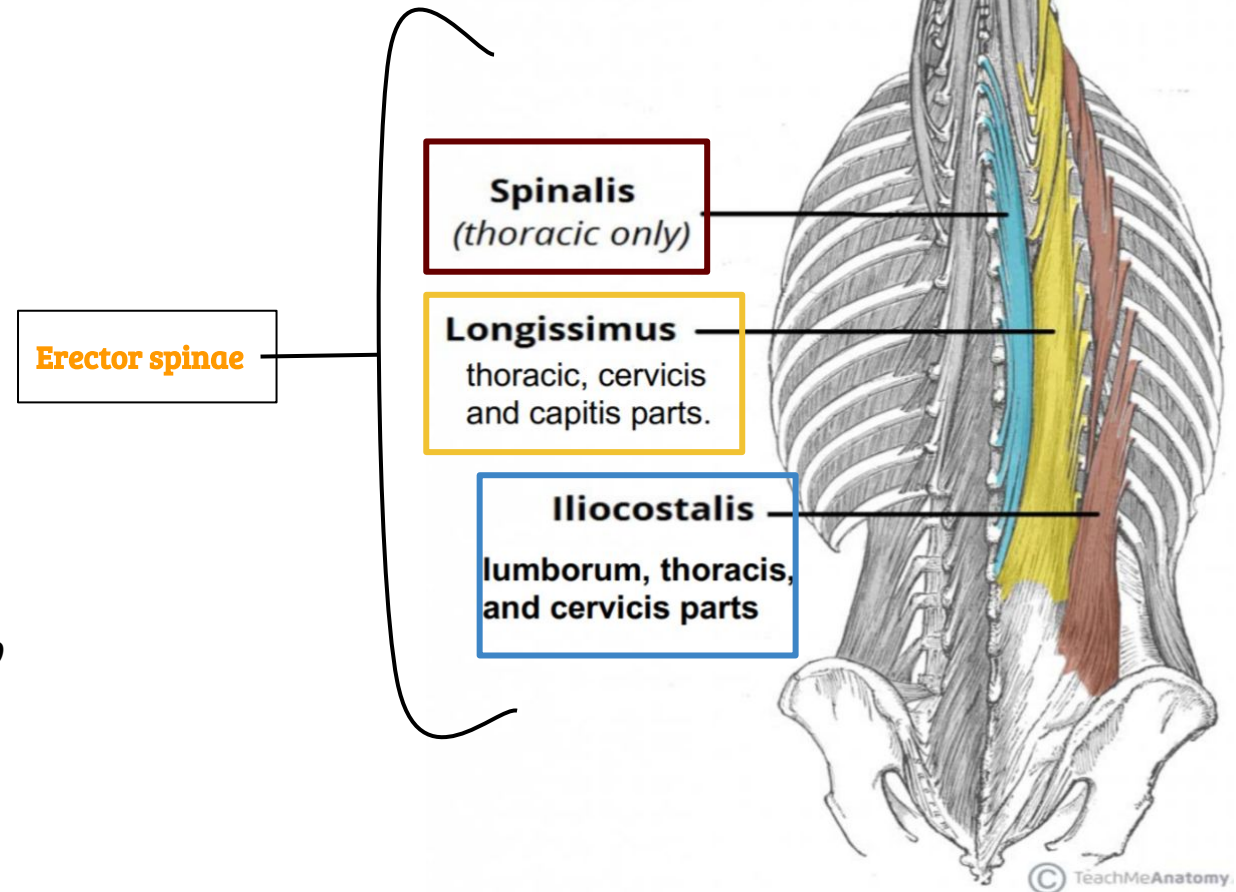
- They extend from **sacrum to the base of the skull**.
- They include **extensors** and **rotators** of head & vertebral column. So, It is a set of muscles that **straighten and rotate the back**.
- Their **tone** is responsible for maintenance of normal curvature of vertebral column.
- The largest muscle of this group is “**Erector spinae**” which is formed of 3 vertical columns (*from lateral to medial*):

**iliocostalis**  
**Longissimus**  
**spinalis**

(Note the length and attachment of the muscle fibers)

**Extensor:** a muscle whose contraction extends or straightens a limb or other part of the body.

**Rotator:** a muscle whose contraction causes or assists in the rotation of a part of the body.



## 2- Intermediate Group Of Back Muscles:

- Intermediate group is separated from the deep group by **(thoracolumbar fascia)** (a sheet of connective tissue covering or binding together body structures).

Intermediate group includes 2 muscles:

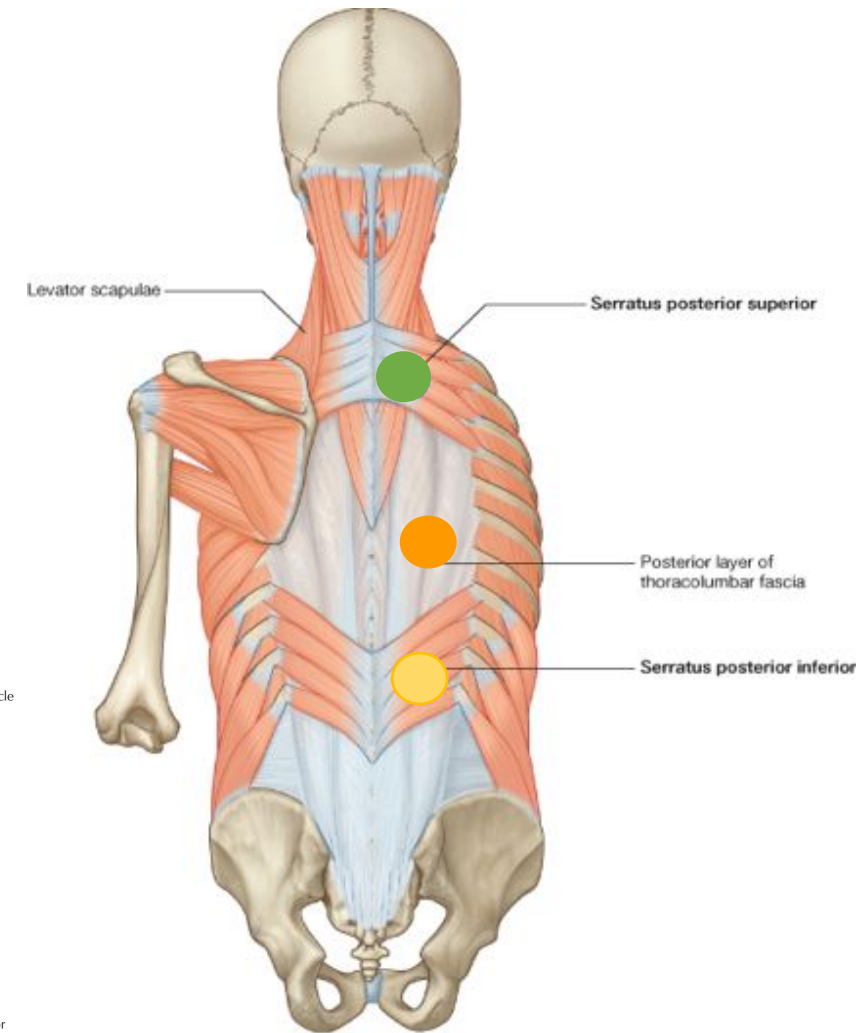
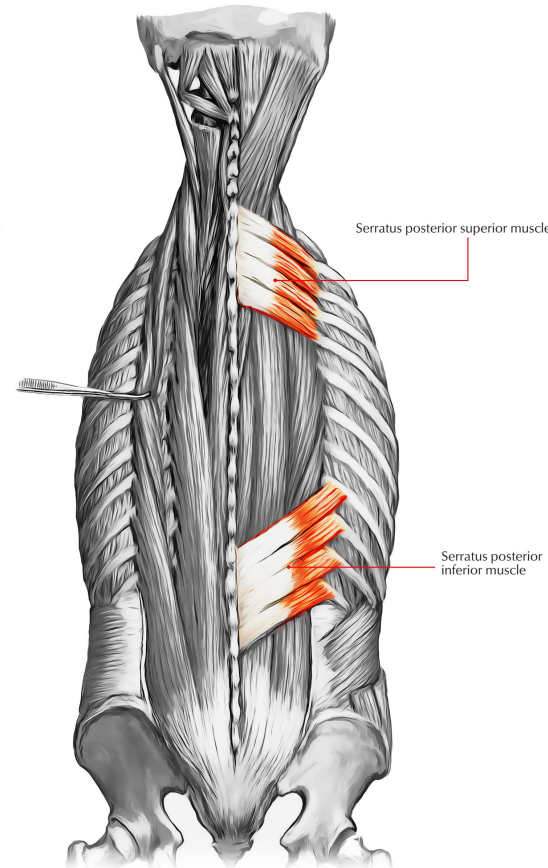
### 1. Serratus posterior superior

- (rib elevator) (= raise up)
- contributes in deep inspiration

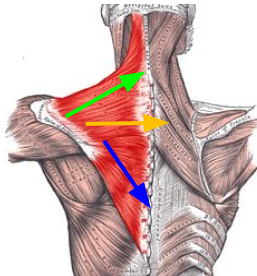
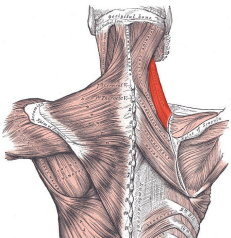
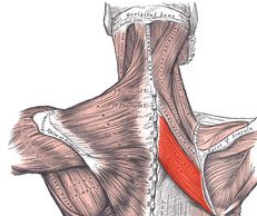
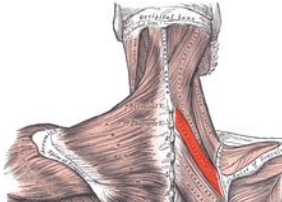
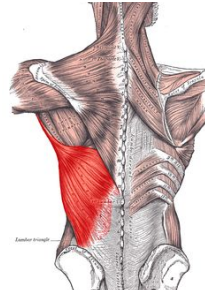
### 2. Serratus posterior inferior

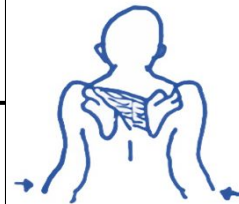
- (rib depressor). (= pull down.)
- contributes in forced expiration

- Nerve supply (innervation):  
**anterior rami of thoracic spinal nerves.**



# 3- Superficial Group Of Back Muscles:

	Muscles that connect vertebral column to scapula				Muscles that connect Vertebral column to humerus
<b>Muscles</b>	<b>Trapezius</b>	<b>Levator scapulae</b>	<b>Rhomboid major</b>	<b>Rhomboid minor</b>	<b>Latissimus dorsi</b>
<b>Origin</b>	Spines of cervical and thoracic vertebrae	Cervical transverse process	thoracic spines		Spines of thoracic and lumbar vertebrae
<b>Insertion</b>	lateral 1/3 of clavicle + acromion & spine of scapula	medial border of scapula.			bicipital groove of humerus.
<b>Action</b>	rotation of scapula during abduction of <b>humerus</b> above horizontal. >90 degree horizontal <b>Upper fibers: elevate scapula.</b> <b>Middle fibers: retract scapula.</b> <b>Lower fibers: depress scapula</b>	elevates scapula	retract scapula <b>Also called extension</b>		extension, adduction & medial rotation of <b>humerus</b> .(arm, shoulder joint) it's called the climbing muscle
<b>Nerve Supply</b>	Spinal part of <b>accessory</b> (11th cranial) nerve	dorsal scapular nerve. <b>From root of brachial plexus (C5)</b>			thoracodorsal nerve. (C6,7,8) <b>From posterior cord of brachial plexus (Also called nerve to latissimus dorsi)</b>
<b>Pictures</b>					



RETRACTION



ELEVATION



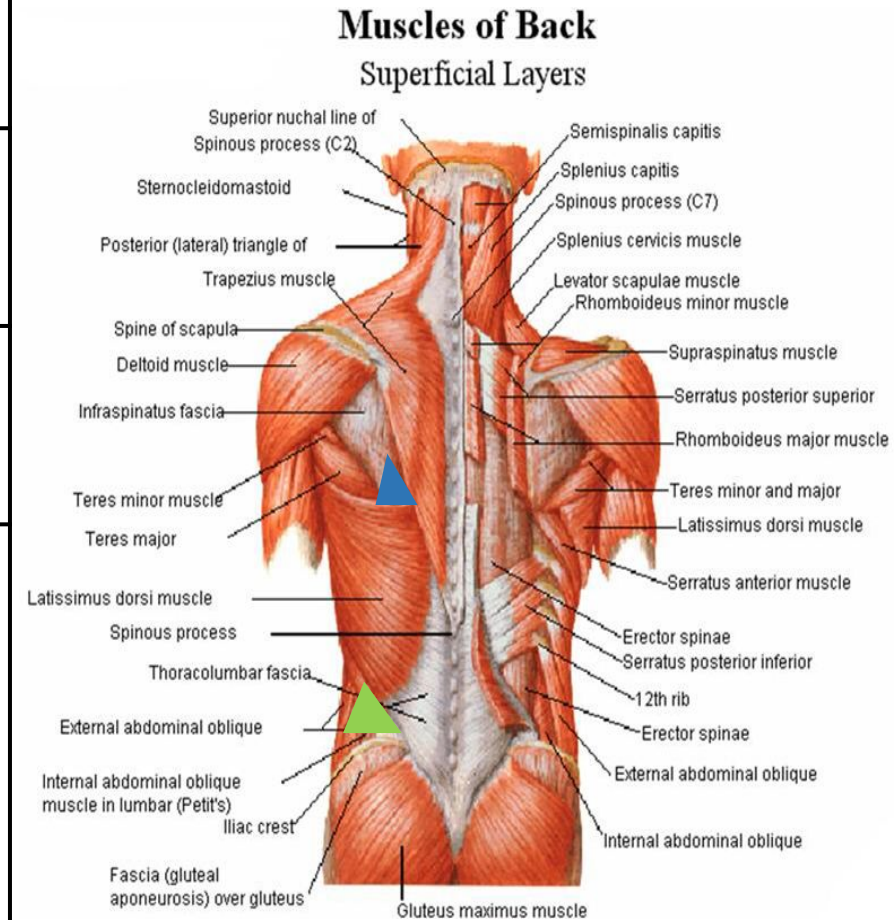
DEPRESSION



UPWARD ROTATION

# Muscular triangles of back

Triangular	Site	Bordaries		
		Upper right (medial border)	Upper left (lateral border)	Base (posterior border)
Auscultatory Triangle	where breath sounds are most easily heard with a stethoscope	trapezius	medial border of scapula	latissimus dorsi
Lumbar Triangle (Triangle of Petit)	of an abdominal hernia or where pus may emerge from the abdominal wall in extra-abdominal lumbar abscess.	latissimus dorsi	posterior border of external oblique muscle of the abdomen	iliac crest.



# MCQs

**Question 1:** which of the following separates the intermediate group from the deep group of back muscle:

- A. thoracolumbar fascia
- B. iliac crest
- C. Rhomboid Minor
- D. lumbosacral fascia

**Question 2:** intermediate back muscles are supplied by:

- A. The anterior rami of the lumbar spinal nerve
- B. The anterior rami of thoracic spinal nerves
- C. Spinal part of accessory (11th cranial) nerve

**Question 3:** A patient came to the neurology department after a car accident, he was told that his dorsal scapular nerve was affected. What muscle would be affected?

- A. Trapezius
- B. Rhomboid Minor
- C. Levator Scapulae
- D. Rhomboid Major
- E. ALL B C and D

**Question 4:** A patient came into the clinic with back pain due to falling. You did the clinical examination and the patient couldn't raise his left arm above horizontal line. What is the most likely affected muscles?

- A Trapezius
- B. Rhomboid Minor
- C. Levator Scapulae

**Question 5:** Which nerve supplies the superficial and intermediate group of muscles?

- A. Anterior rami of spinal cord
- B. Posterior rami of spinal cord
- C. Radial plexus root of C5
- D. Radial plexus of C6 C7 T1

**Question 6:** which muscle of the following contributes in forced expiration in patient with asthma:

- A. Serratus posterior superior
- B. Serratus posterior inferior
- C. Levator scapulae.

# SAQ

**Question 1: Which nerve supplies the latissimus dorsi muscle?**

**Answer:** thoracodorsal nerve

**Question 2: Name two of the muscle triangles of the back?**

**Answer:** Auscultatory Triangle & Lumbar Triangle



# Team members

## Boys team:

- Khalid AL-Dossari
- Naif Al-Dossari
- Faisal Alqifari
- Salman Alagla
- Ziyad Al-jofan
- Suhail Basuhail
- Ali Aldawood
- Khalid Nagshabandi
- Mohammed Al-huqbani
- Jihad Alorainy
- ★ Khalid AlKhani
- Omar Alammari

## Team leaders

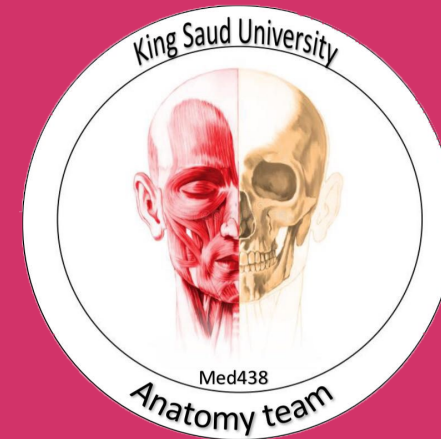
- Abdulrahman Shadid
- Ateen Almutairi

★ =This lecture done by

## Girls team :

- Ajeed Al Rashoud
- Taif Alotaibi
- Noura Al Turki
- Amirah Al-Zahrani
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- Sara Al-Abdulkarem
- Rawan Al Zayed
- Reema Al Masoud
- Renad Al Haqbani
- Nouf Al Humaidhi
- Fay Al Buqami
- Jude Al Khalifah
- Nouf Al Hussaini
- Alwateen Al Balawi
- Rahaf Al Shabri
- Danah Al Halees
- Haifa Al Waily
- Rema Al Mutawa
- Amirah Al Dakhilallah
- Maha Al Nahdi
- Renad Al Mutawa
- Ghaida Al Braithen
- Reham Yousef

Special thank for  
Anatomy team 436



Good luck

Give us your feedback:

