

Muscles of the Back

Anatomy Team 434

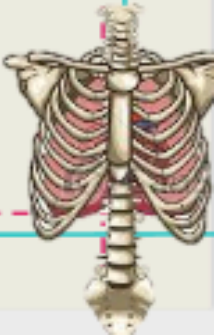
Color Index:

- **Important Points**
- Helping notes
- **Explanation**

If you have any complaint or suggestion please don't hesitate to contact us on:
AnatomyTeam434@gmail.com

OBJECTIVES

- 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.



Study Strategy

* Don't worry it's an **easy** lecture.

First take an overview in the mind map.

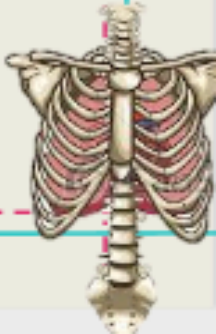
Second read every slide carefully, after that go through the tables to organize and differentiate between the information.

Third Take a final overview in the mind map.

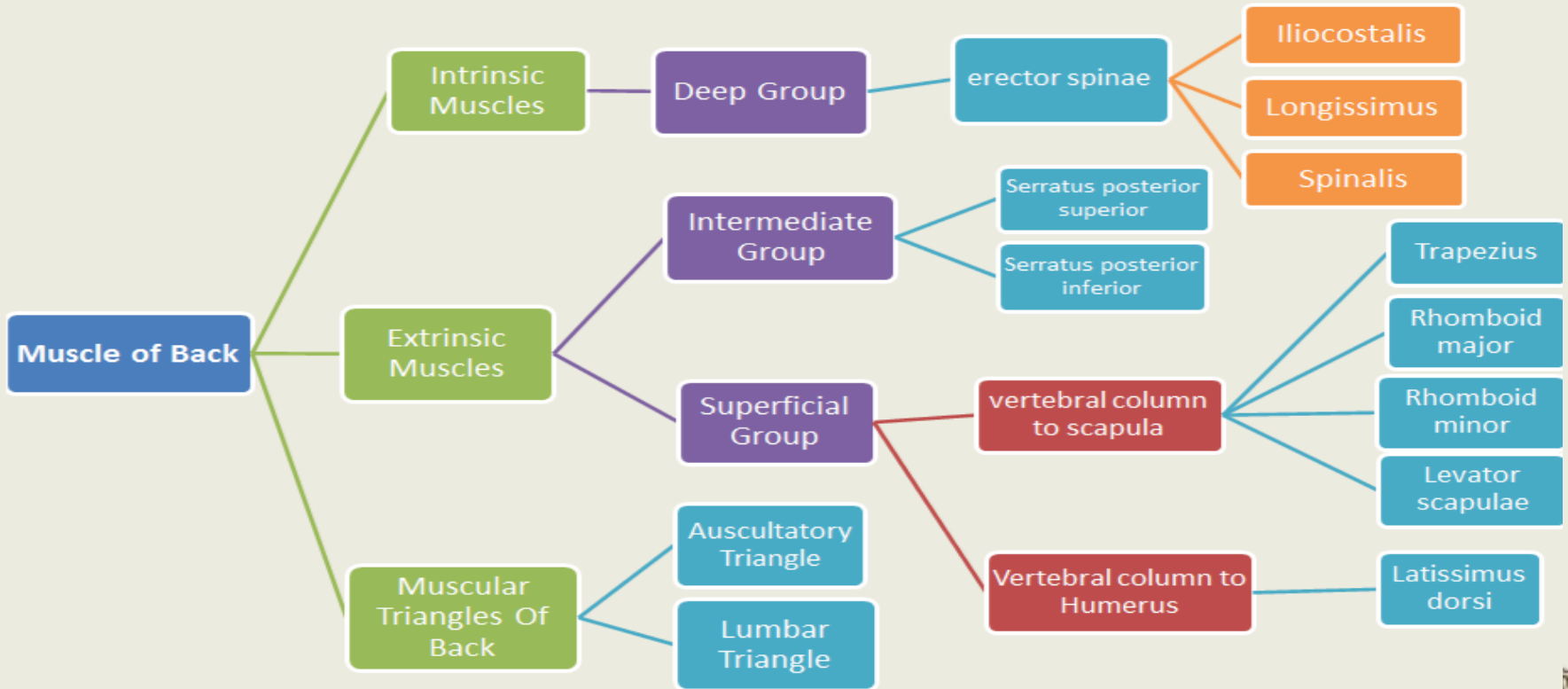
Finally watch videos and links.

Important note:

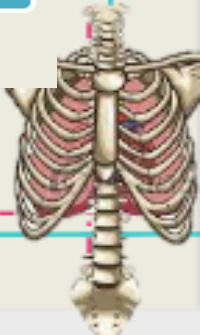
*Don't go **directly** to **table**, you should **read** the **slides**.



Mind Map



Classification of back muscles Gropes of back muscles Muscle classification according muscles connecting Part of muscle



MUSCLES of the BACK

They are organized into 3 groups:

Deep group:

- attached to & involved in the movement of vertebral column & head
- they are **Intrinsic muscles** (A group of muscles located within or situated deeper in a structure)
- Develop in the **back** and are supplied by **posterior rami** of spinal nerves.

Intermediate group:

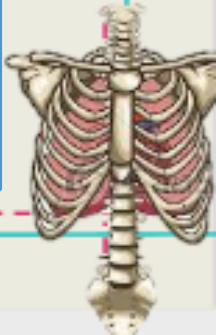
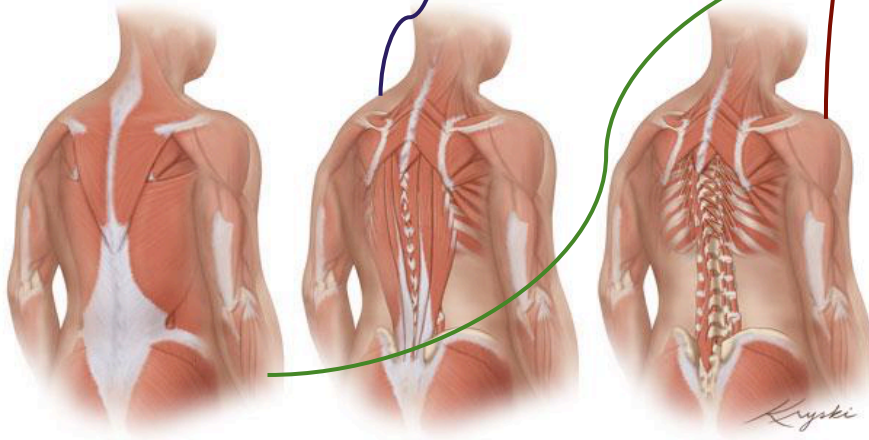
- attached to ribs & serve respiratory functions.

Superficial group:

- attached to & involved in the movements of upper limb.

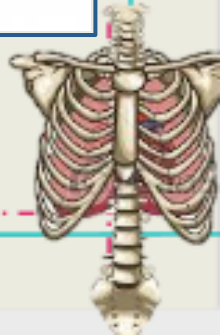
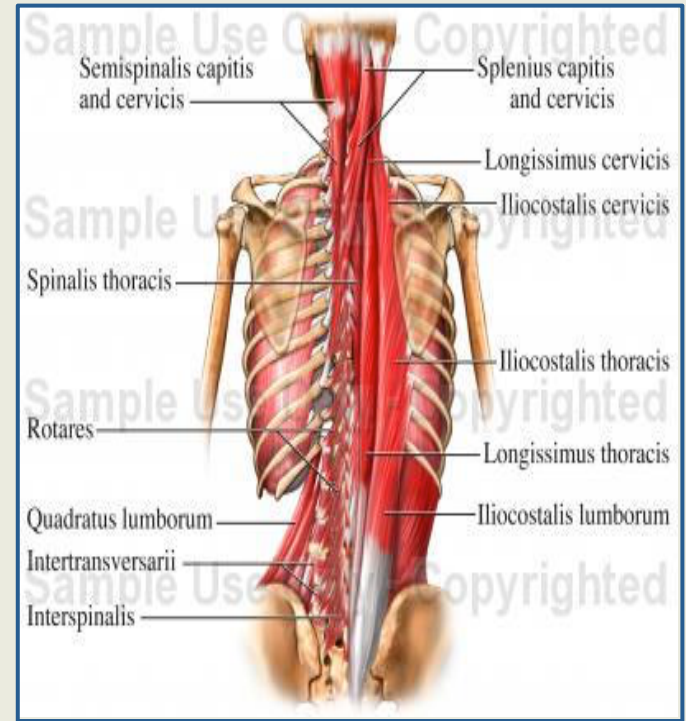
both superficial and intermediate groups are:

- **Extrinsic muscles** (A group of muscles lying superficially on a structure,)
- **Not** be developed in the back but will later migrate to the back after development and are supplied by **anterior rami** of spinal nerves.



DEEP GROUP OF BACK MUSCLES (intrinsic muscles)

- They extend from **sacrum to skull**. (remember: similar to the anterior and posterior longitudinal ligaments)
- since both **origin and insertion** are on the **vertebral column**, their action (**extension and rotation**) will also be on the **vertebrae** .
- They include **extensors and rotators** of head & vertebral column
- 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)



Nerve supply: ? (posterior rami of spinal nerves)

INTERMEDIATE GROUP OF BACK MUSCLES

intermediate group are attached to the ribs.

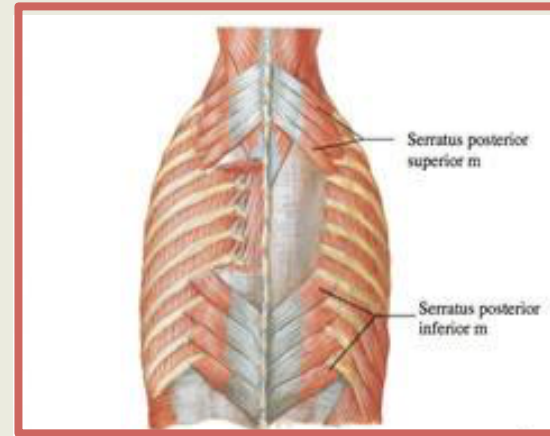
origin: vertebral column **insertion:** ribs

action: lead to movement of ribs and help in respiratory function. (no movement for the back)

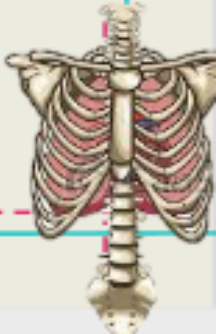
Nerve supply: anterior rami of thoracic spinal nerves.

it include **2** muscles:

- **Serratus posterior superior** (rib elevator).
- **Serratus posterior inferior** (rib depressor).



It is separated from the **deep** group by thoracolumbar fascia (made up of fibrous tissue).



SUPERFICIAL GROUP OF BACK MUSCLES

1) Muscles connecting vertebral column to scapula (move scapula through shoulder girdle joints) and include:

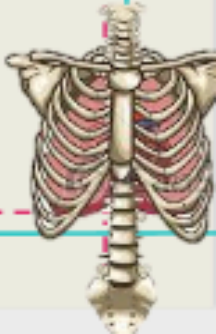
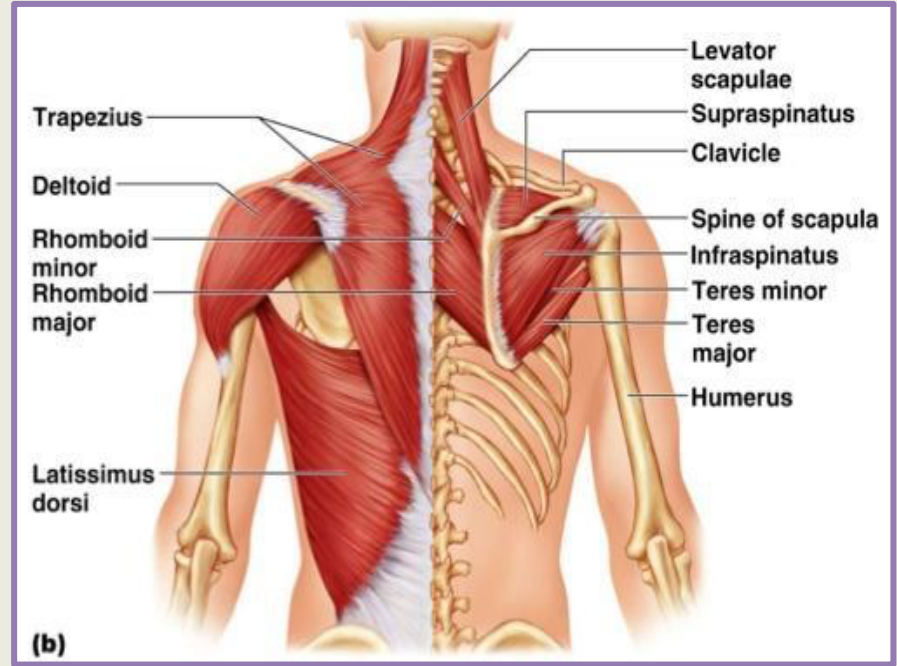
- Trapezius.
- Levator scapulae.
- Rhomboid minor.
- Rhomboid major.

Superficial muscles

Includes two sets of muscles

2) Muscle connecting vertebral column to humerus (move humerus through shoulder joint) and include:

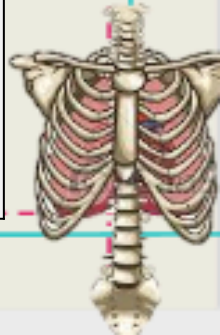
- Latissimus dorsi.



Muscles of the back

[Back Muscles in a Nutshell - Anatomy Tutorial](#)

Group	Attachment	Development	Muscles	Nerve	Other features
Deep	vertebral column & head	intrinsic	erector spinae which is formed of 3 vertical column (from lateral to medial) : iliocostalis , longissimus & spinalis	posterior rami	<ul style="list-style-type: none">-extend from sacrum to skull-they include extensors rotators of head and vertebral column-their tone is responsible for maintenance of normal curvature of vertebral column
Intermediate	ribs	extrinsic	<ol style="list-style-type: none">1-serratus posterior superior2- serratus posterior inferior	anterior rami in thoracic spinal nerve	separated from deep group by thoracolumbar fascia
Superficial	upper limbs	extrinsic	<ol style="list-style-type: none">1- trapezius2- levator scapulae3- rhomboid minor4- rhomboid major5- latissimus dorsi	anterior rami (except trapezius it's supplied by the 11th cranial nerve)	will be discussed later



TRAPEZIUS

Origin: Spines of cervical and thoracic vertebrae

Insertion: lateral 1/3 of clavicle + acromion and spine of scapula.(if you pull the insertion end of the muscle to its origin, 90% the muscle's action will be triggered)

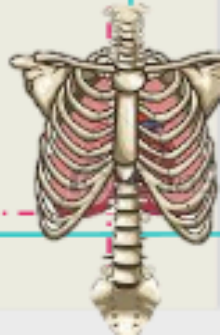
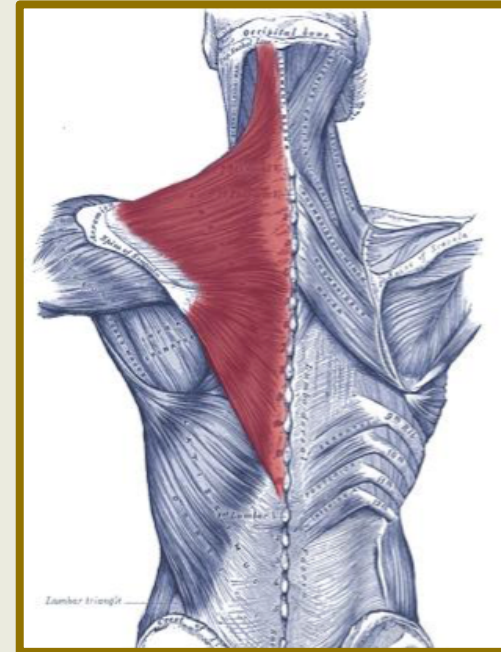
Nerve supply: Spinal part of accessory nerve (11th cranial nerve)

it is made up of 3 types of fiber:

- Upper fibers: **elevate** scapula.
- Middle fibers: **retract** scapula
- Lower fibers: **depress** scapula.

(both the **upper and lower** fibers will help in the **abduction of humerus**)

Action: rotation of scapula during **abduction of humerus** above horizontal.(above 90 degree)



LEVATOR SCAPULAE, RHOMBOID MINOR & MAJOR

LATISSIMUS DORSI

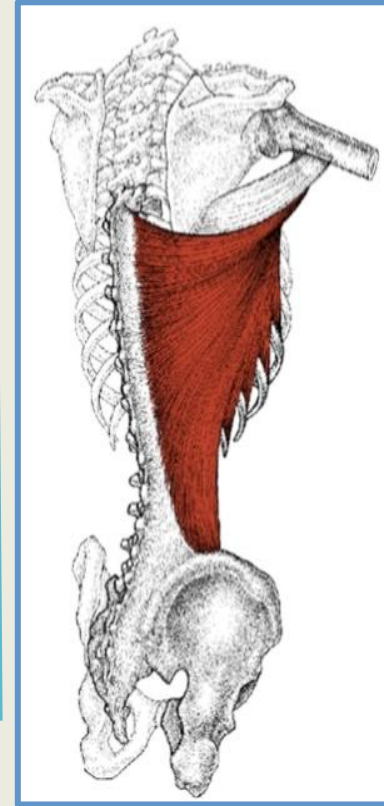
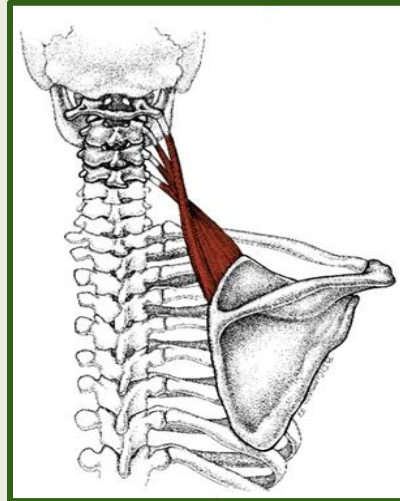
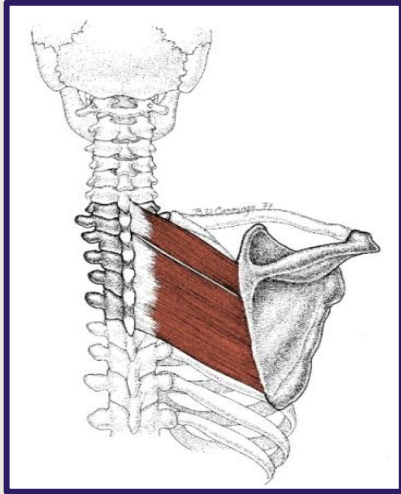
❖ Origin:

- **Levator scapulae:** cervical transverse processes
- **Rhomboid minor & major:** thoracic spines

❖ Insertion(for both): medial border of scapula.

❖ Actions:

- **Levator scapulae:** elevates scapula.
- **Rhomboid minor & major:** retract scapula.
- ❖ **Nerve supply:** dorsal scapular nerve.

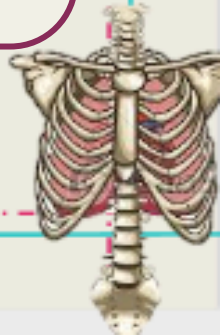


❖ Origin: spines of thoracic vertebrae.

❖ Insertion: bicipital groove of humerus.

❖ Nerve supply: thoracodorsal nerve.

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



Muscles of the Back (Superficial Group)

muscle	Muscle connecting	origin	Insertion	Action	Nerve supply
Trapezius	vertebral column to scapula	Spines of cervical and thoracic vertebrae	lateral 1/3 of clavicle + acromion and spine of scapula	rotation of scapula during abduction of humerus above horizontal. It is made up of 3 fibers: 1- Middle fibers: retract scapula 2- Upper fibers: elevate scapula. 3- Lower fibers: depress scapula.	<u>accessory nerve</u> (11th cranial nerve)
Rhomboid major & minor	vertebral column to scapula	thoracic spines	medial border of scapula.	retract scapula.	dorsal scapular nerve.
Levator scapulae	vertebral column to scapula	cervical transverse processes	medial border of scapula.	elevates scapula	dorsal scapular nerve.
Latissimus dorsi	Vertebral column to Humerus	spines of thoracic vertebrae	bicipital groove of humerus.	extension, adduction & medial rotation of humerus.	thoracodorsal nerve



MUSCULAR TRIANGLES OF BACK

Auscultatory Triangle:

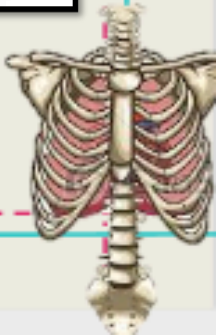
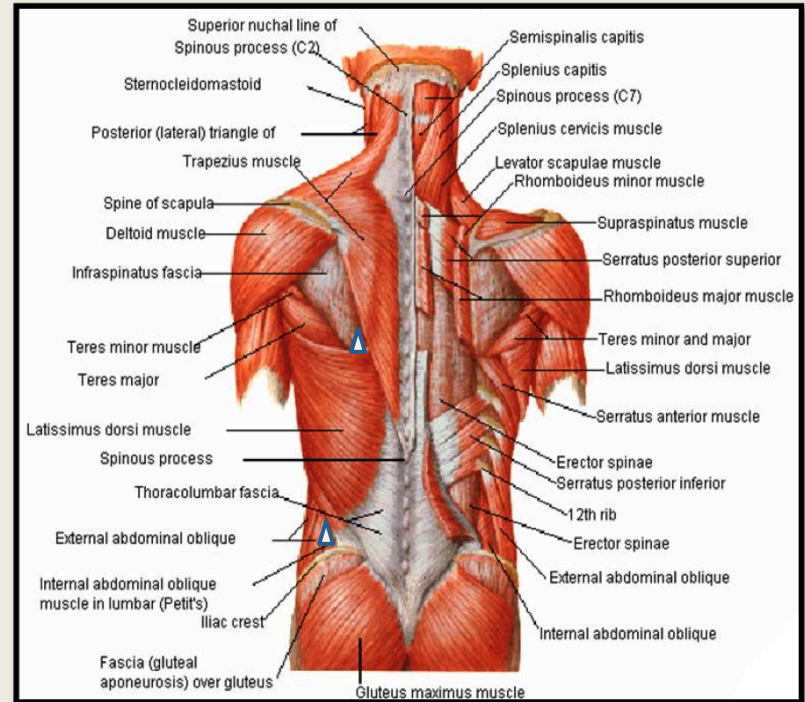
Boundaries(very important): latissimus dorsi, trapezius, and medial border of scapula.

Site: where **breath sounds** are most easily heard with a stethoscope.

Lumbar Triangle: (Or triangle of Petit)

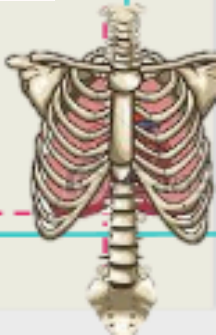
Boundaries : latissimus dorsi, posterior border of external oblique muscle of the abdomen, and iliac crest.

Site of an abdominal hernia or where **pus may** emerge from the abdominal wall (in the case of musculoskeletal TB of the spine due to bacterial infection → pus formation → pus will accumulate in the lumbar triangle or triangle of petit)



Muscular Triangles of Back

Muscle	Site	Boundaries
Auscultatory Triangle	where breath sounds are most easily heard with a stethoscope.	1- latissimus dorsi. 2- trapezius. 3- medial border of scapula.
Lumbar Triangle	<ul style="list-style-type: none">- Site of abdominal wall hernia.- where pus may emerge from the abdominal wall.	1- latissimus dorsi. 2- posterior border of external oblique muscle of the abdomen. 3- iliac crest.



MCQ's



1- Latissimus dorsi origin is :

- A) spines of thoracic vertebrae
- B) spines of cervical vertebrae
- C) spines of sacral vertebrae
- D) spines of lumbar vertebrae

2- the muscle of upper limb that is supplied by the spinal part of accessory (11th cranial) nerve is:

- A) trapezius
- B) levator scapulae
- C) rhomboid minor
- D) rhomboid major

3- Site where pus may emerge from the abdominal wall :

- A) auscultatory triangle
- B) erector spinae
- C) lumbar triangle
- D) shoulder girdle joint

4- Site where breath sound are most easily heard with stethoscope :

- A) lumbar triangle
- B) auscultatory triangle
- C) thoracolumbar
- D) Latissimus dorsi

5- group of muscle developed in the back :

- A) intermediate and superficial
- B) superficial group of back muscle
- C) deep group of back muscle
- D) intermediate group of back muscle

6- the muscle group that involves in respiratory function is

- A) deep and superficial group of back muscle
- B) superficial group of back muscle
- C) deep group of back muscle
- D) intermediate group of back muscle

7- one of the following is an action of latissimus dorsi muscle

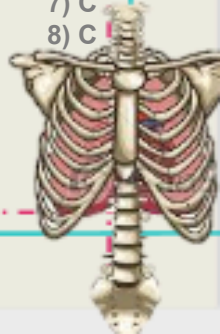
- A) flexion
- B) abduction
- C) medial rotation
- D) lateral rotation

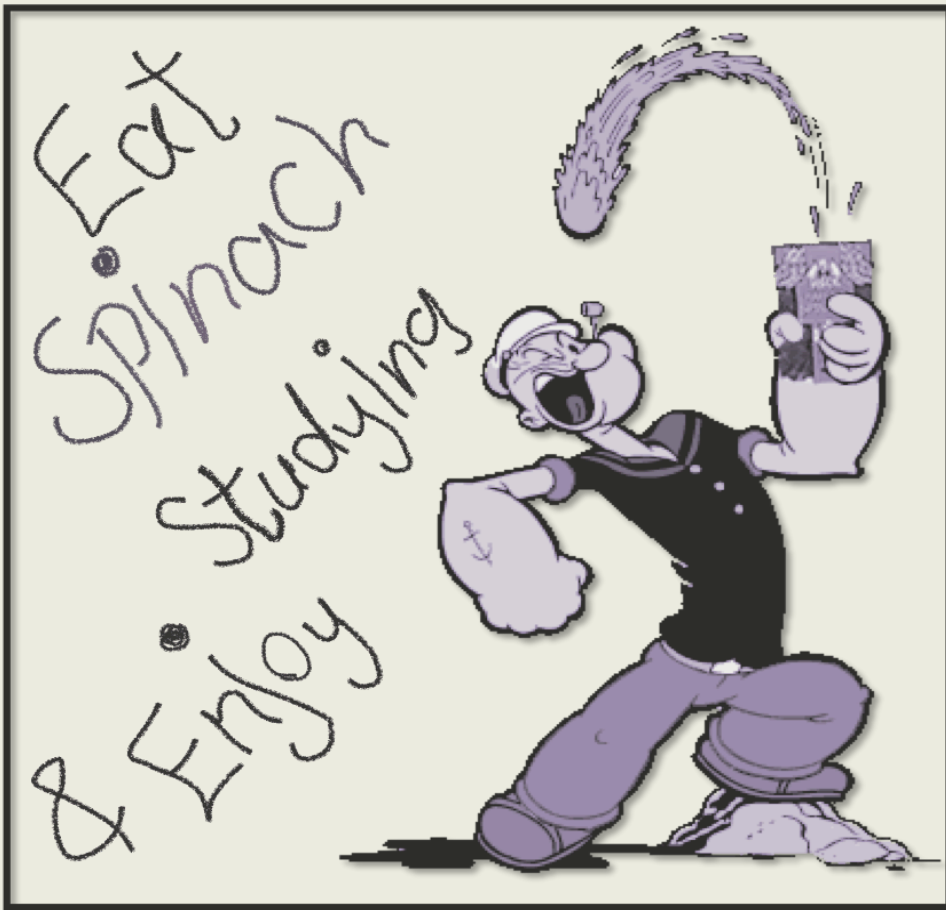
8- Action of levator scapula is :

- A) extensor vertebral
- B) elevate clavicle
- C) elevate scapula
- D) depress scapula

Answers:

- 1) A
- 2) A
- 3) C
- 4) B
- 5) C
- 6) D
- 7) C
- 8) C





GOOD
LUCK

Done By Anatomy Team 434 ..

Recommended Websites
MedicalMnemonics.com

