



MUSCLES OF BACK

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Objectives

At the end of the lecture, you 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.*

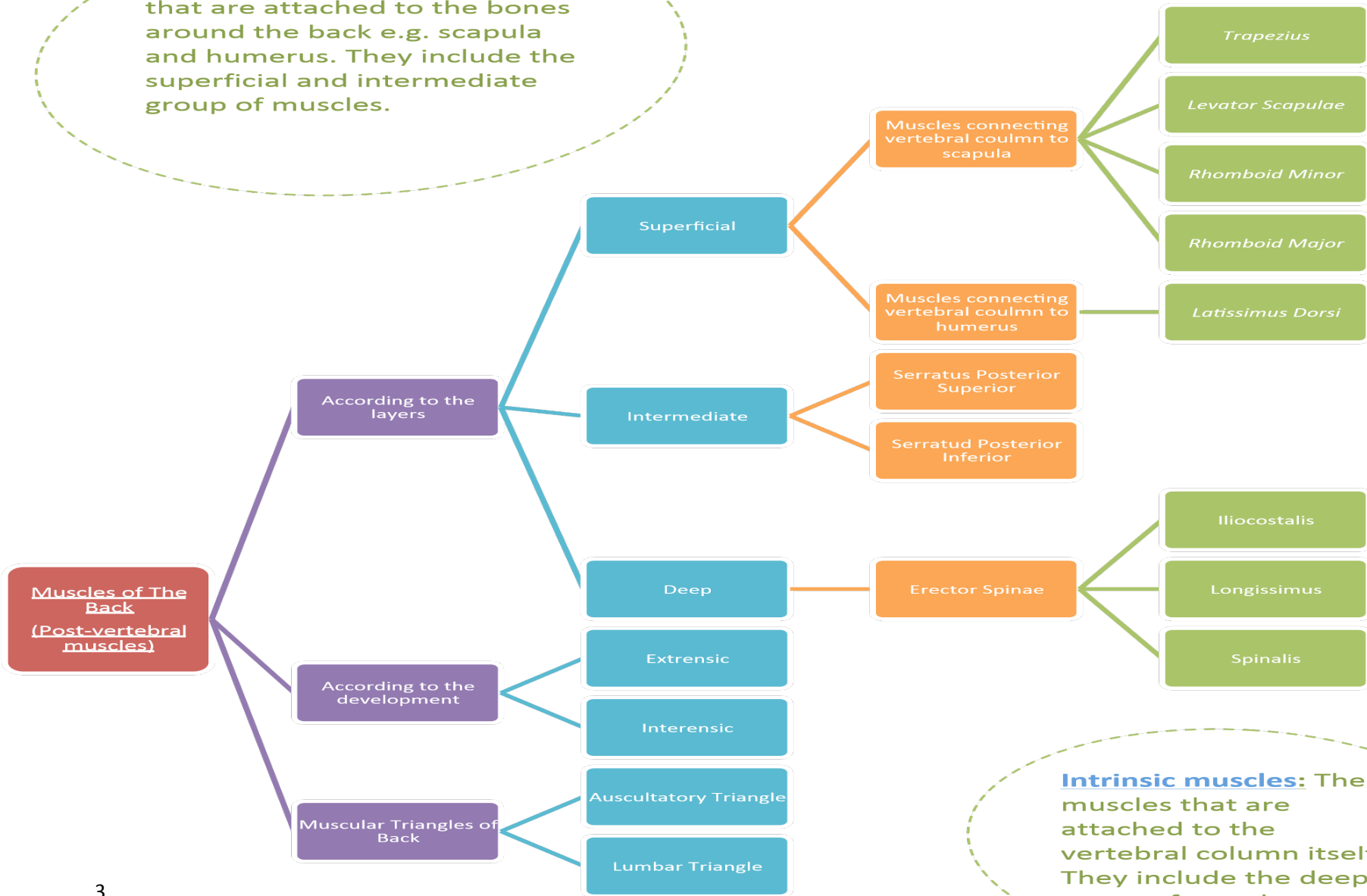
Color Index:

- Red : Important.
- Violet: Explanation.
- Other colors are for Coordination

(Post-Vertebral Muscles)

Mind Map

Extrinsic muscles: The muscles that are attached to the bones around the back e.g. scapula and humerus. They include the superficial and intermediate group of muscles.



Intrinsic muscles: The muscles that are attached to the vertebral column itself. They include the deep group of muscles.

Muscle of back- according to layers

Muscle group	Characteristic- in general	Muscle within the groups	Innervation	Development
Deep	<ul style="list-style-type: none"> -Attached to the vertebral column and head . -Movement of the vertebral column and head (extensors and rotators) -responsible for maintenance of normal curve of vertebral column. -extend from sacrum to skull. 	The largest muscle is " erector spinae " which is formed of 3 vertical columns (<i>from lateral to medial: iliocostalis, longissimus & spinalis</i>).	- Supplied by posterior rami	develop in the back(intrinsic muscles)
INTERMEDIATE	<ul style="list-style-type: none"> - attached to & moves ribs. - separated from the deep group by (thoracolumbar fascia). 	<ol style="list-style-type: none"> 1- Serratus posterior superior (<i>rib elevator</i>). 2- Serratus posterior inferior (<i>rib depressor</i>). 	- Supplied by anterior rami of thoracic spinal nerves.	<i>Not develop in the back</i> (extrinsic muscles)
SUPRERFICIAL	Attached and move the upper limb.	<p>Muscles connecting vertebral column to scapula : Trapezius, Levator scapulae, Rhomboid minor and Rhomboid major.</p> <p>Muscle connecting vertebral column to humerus: Latissimus dorsi.</p>	- Supplied by anterior rami (EXCEPT trapezius: 11th cranial nerve).	<i>Not develop in the back</i> (extrinsic muscles)

		Type	origin	Insertion	Action	Innervation
Superficial Group Of Back Muscles	Muscle connecting the vertebral column to the scapula	Trapezius	Spines of cervical & thoracic vertebrae	lateral 1/3 of clavicle + acromion & spine of scapula.	rotation of scapula during abduction of humerus above horizontal. 1-Upper fibers: elevate scapula. 2-Middle fibers: retract scapula 3-Lower fibers: depress scapula.	Supplied by Spinal part of accessory (11th cranial) nerve.
		Levator scapulae	transverse processes of cervical vertebrae	medial border of scapula.	elevates scapula.	Supplied by dorsal scapular nerve
		Rhomboid minor and major	spines of thoracic vertebrae		retract scapula.	
	Muscle connecting vertebral column to humerus	Latissimus dorsi			bicipital groove of humerus	extension, adduction & medial rotation of humerus (arm, shoulder joint)

MUSCULAR TRIANGLES OF BACK

MUSCULAR TRIANGLES OF BACK	Role	Boundaries
Auscultatory Triangle	<ul style="list-style-type: none"> - Used to listen to (articulate) the lungs, because this site where the breath sound is easily heard with a stethoscope. 	<ol style="list-style-type: none"> 1- Latissimus Dorsi. 2- Trapezius. 3- medial border of scapula.
Lumbar Triangle	<ul style="list-style-type: none"> - Site where pus may emerge from the abdominal wall. - Site of abdominal wall hernia. 	<ol style="list-style-type: none"> 1- Latissimus dorsi. 2- Posterior border of external oblique muscle of the abdomen. 3- iliac crest.

SUMMARY

- ❖ ***Deep group***: attached to & moves vertebral column, supplied by posterior rami of spinal nerves.
- ❖ ***Intermediate group***: attached to & moves ribs, supplied by anterior rami of spinal nerves.
- ❖ ***Superficial group***:
 - ❖ - ***Origin***: vertebral column.
 - ❖ - ***Insertion***: scapula (**EXCEPT** latissimus dorsi: humerus).
 - ❖ - ***Action***: moves scapula (**EXCEPT** latissimus dorsi: moves humerus).
 - ❖ - ***Nerve supply***: anterior rami of spinal nerves through brachial plexus (**EXCEPT** trapezius: 11th cranial nerve).

Multiple Choice Questions

1-What group of muscle is functionally involved in the movement of vertebral column:-

- a- Deep group
- b- superficial group
- c- Intermediate group
- d- all of the above

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

- a- erector spinae
- b- shoulder girdle joints
- c- Lumbar Triangle
- d- Auscultatory Triangle

3- levator scapulae, rhomboid minor & major have the same:-

- a- Origin
- b- Action
- c- insertion
- d- all of them

Q Ans. :

1-a 2-c 3- c

4- origin of Levator scapulae is:-

- a- Spines of cervical & thoracic vertebrae
- b- Spines of thoracic vertebrae
- c- thoracic spines
- d- cervical transverse processes

5- one of the following is an action of LATISSIMUS DORSI muscle;-

- a- extension
- b- adduction
- c- medial rotation
- d- all of the above

6- group of muscle developed in the back;-

- a- deep group of back muscles.
- b- intermediate group of back muscles.
- c- superficial group of back muscles.
- d- intermediate and superficial

Q Ans. :

4-d 5-d 6-a