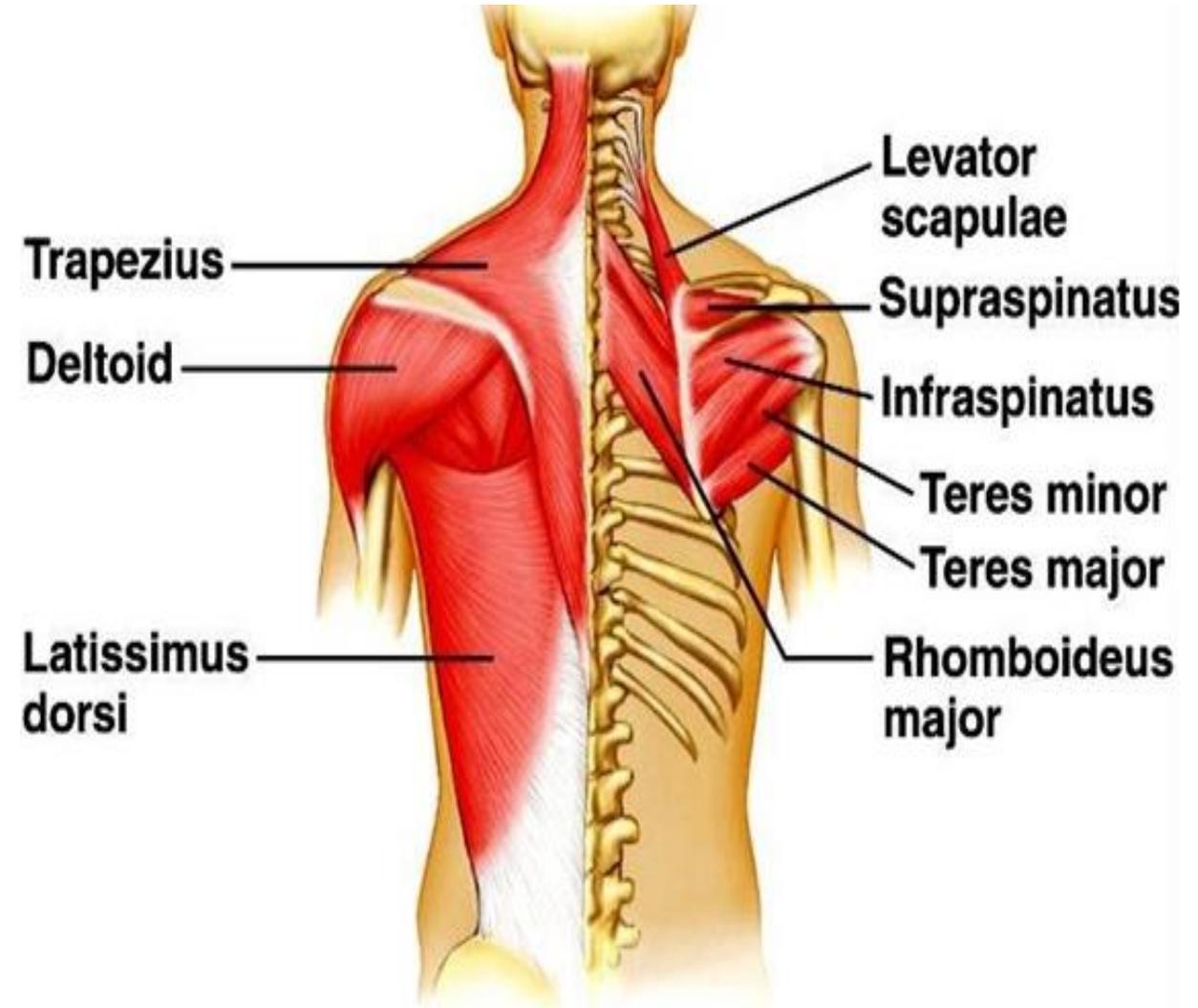


MUSCLES OF THE BACK

DR .DALIA M BIRAM

I- Superficial Extrinsic back muscles

- These muscles connecting upper limb to axial skeleton .
- They are related to movements of upper limb .
- These muscles are trapezius , latissimus dorsi , levator scapulae , and rhomboids major and minor .

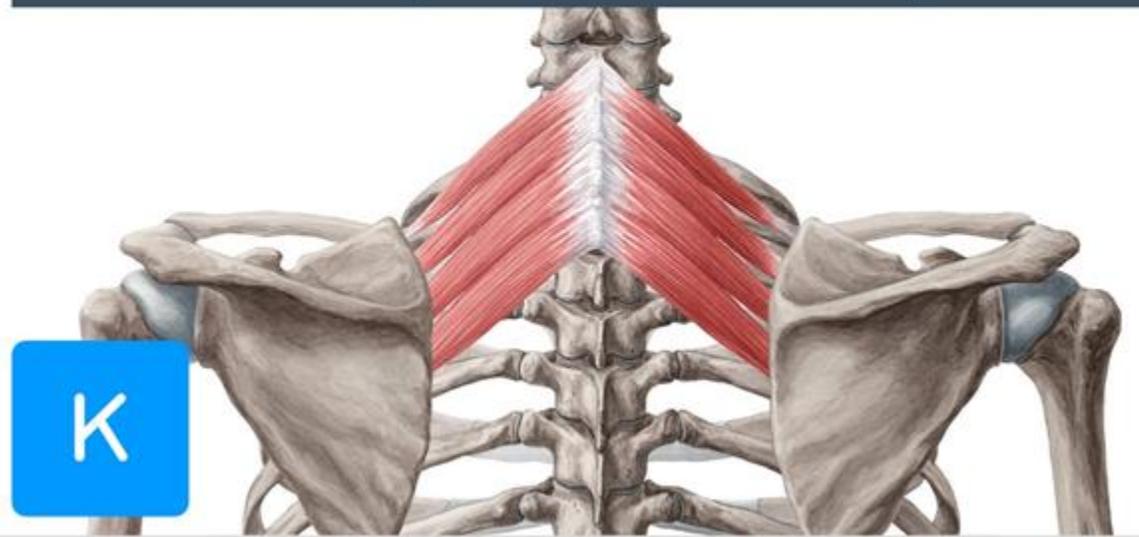


II-Intermediate extrinsic back muscles :

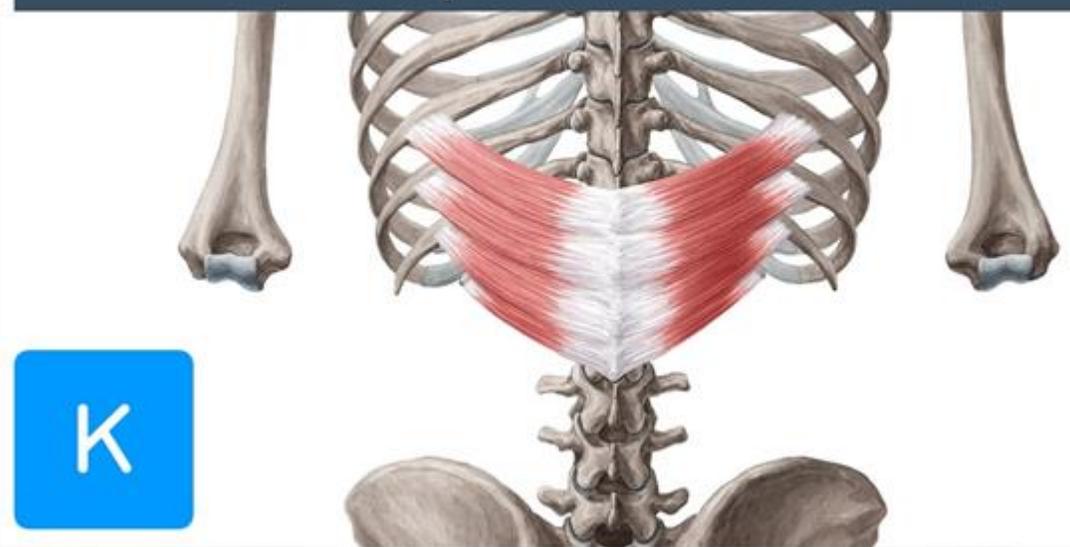
- These muscles are *respiratory muscles* .
- These muscles are *serratus posterior superior* (deep to rhomboids) and *serratus posterior inferior* (deep to latissimus dorsi) .
- These muscles are supplied by *intercostal nerves* .

Name	Origin	Insertion	Action
a) Serratus posterior superior	-Spinous processes of lower cervical & upper thoracic vertebrae deep to rhomboids .	- Upper ribs	-Raise upper ribs in forced inspiration
b) serratus posterior inferior	- Spinous processes of lower thoracic & upper lumbar vertebrae deep to latissimus dorsi .	- Lower ribs .	-Depress lower ribs in forced expiration

Serratus posterior superior



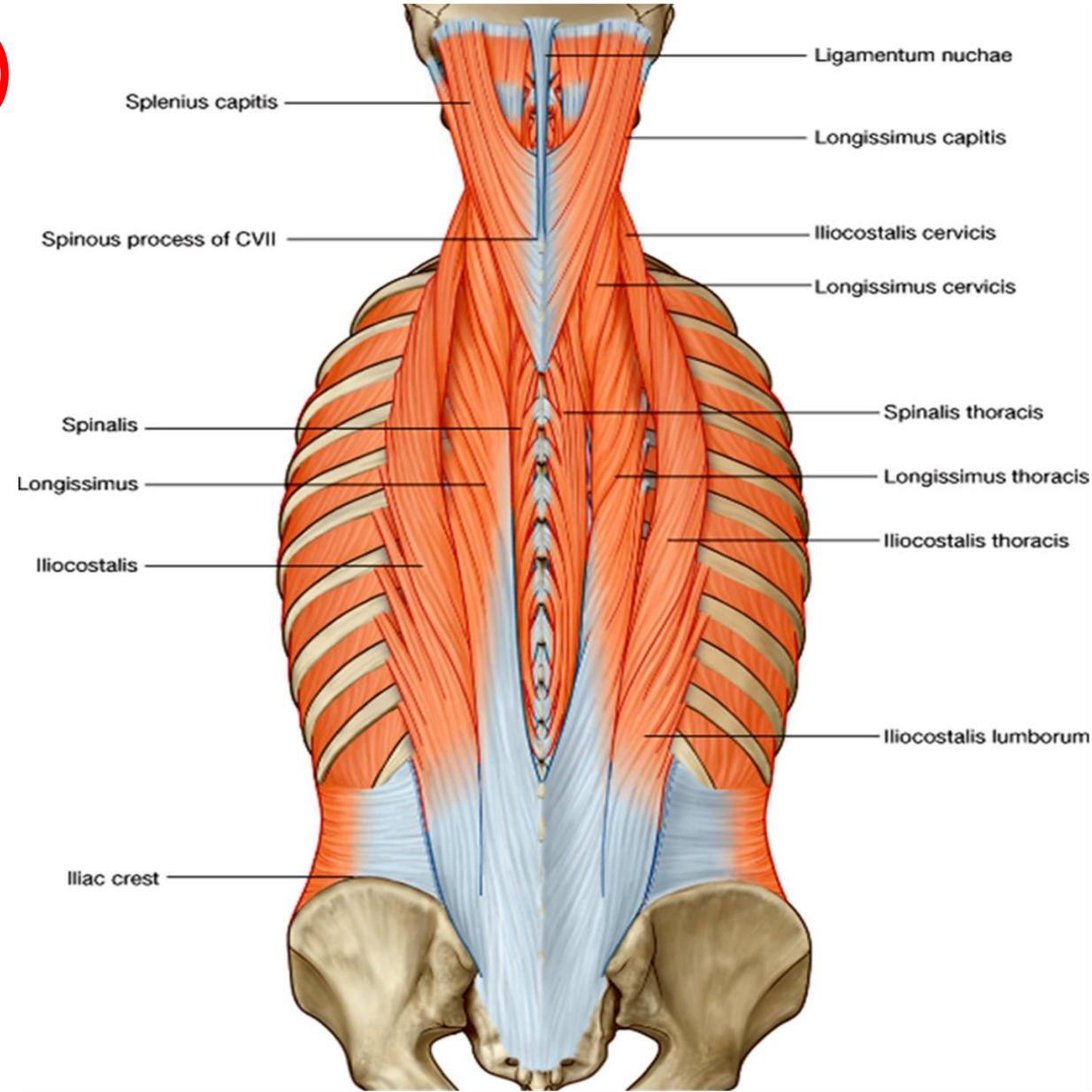
Serratus posterior inferior



III-Deep intrinsic back muscles:

(muscles of back proper)

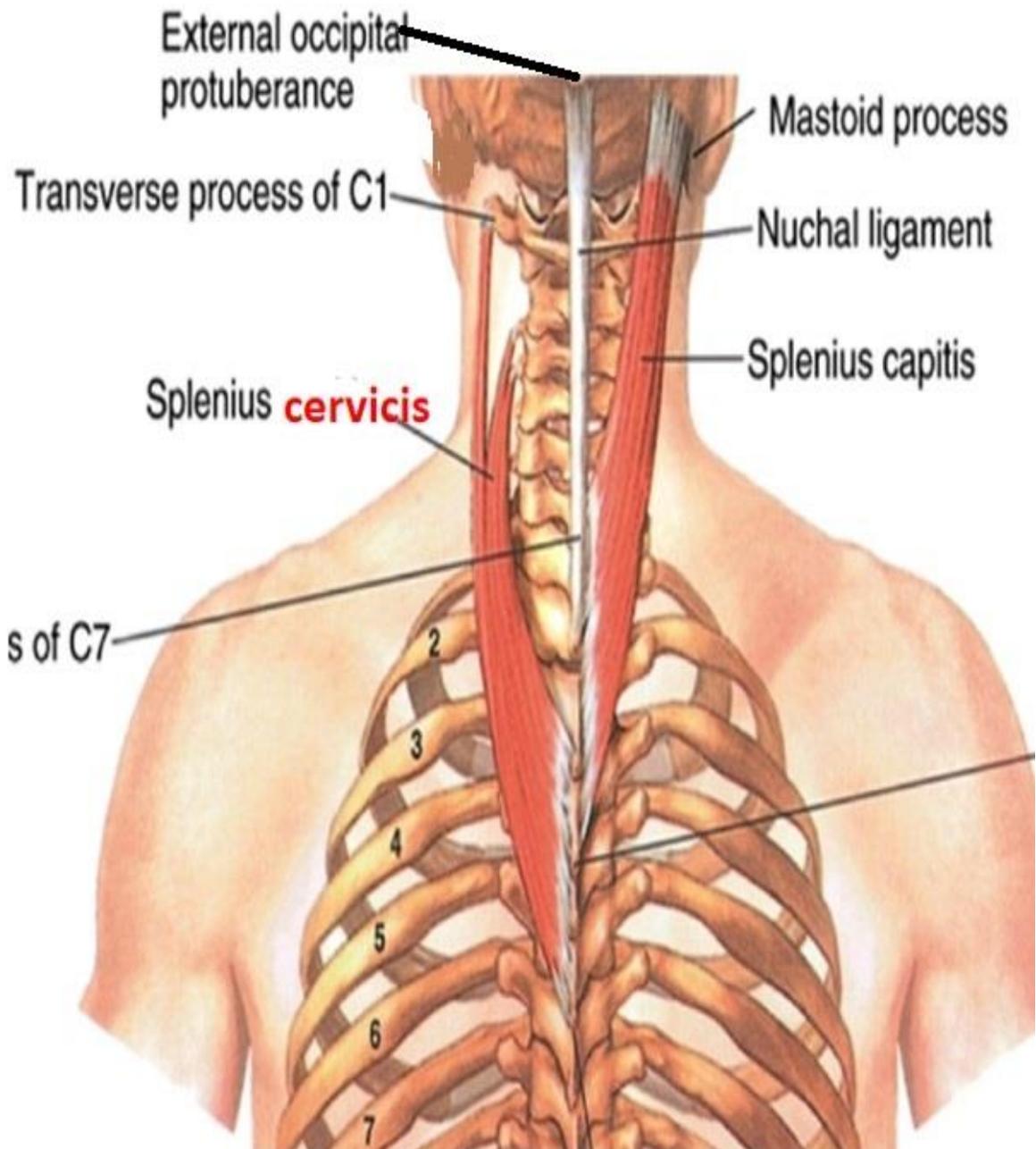
- These muscles *extends* from the pelvis to the skull .
- **Common origin** : mostly vertebral column , its related processes & ligament
- **Common insertion** : in the ribs (thoracis) , in the neck (cervicis) or in the skull (capitis)
- **Common action** : mostly control movements of the vertebral column (extension , lateral flexion & rotation of vertebral column) and *maintain posture* .
- These muscles are **innervated** by *posterior rami* of spinal nerves .
- These muscles are DERIVED from epimeres of somites
- These muscles are **classified into** superficial , intermediate and deep layers



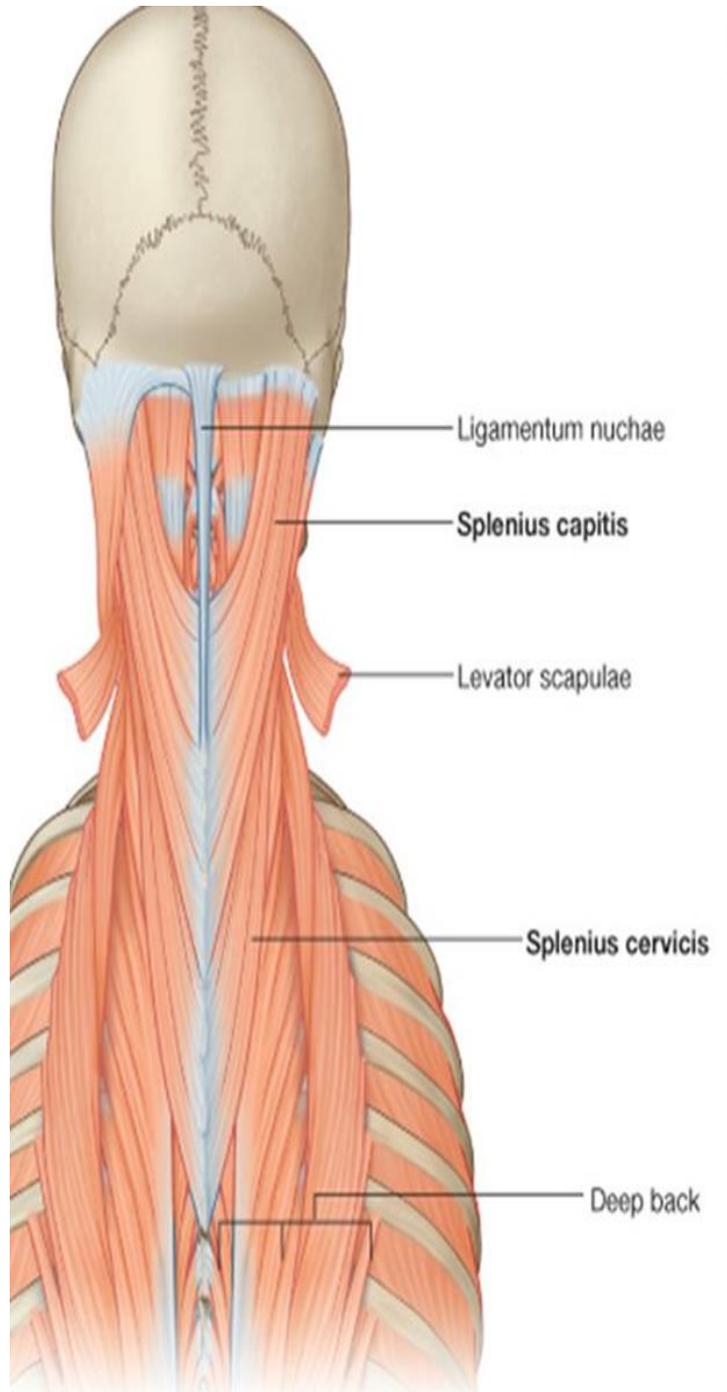
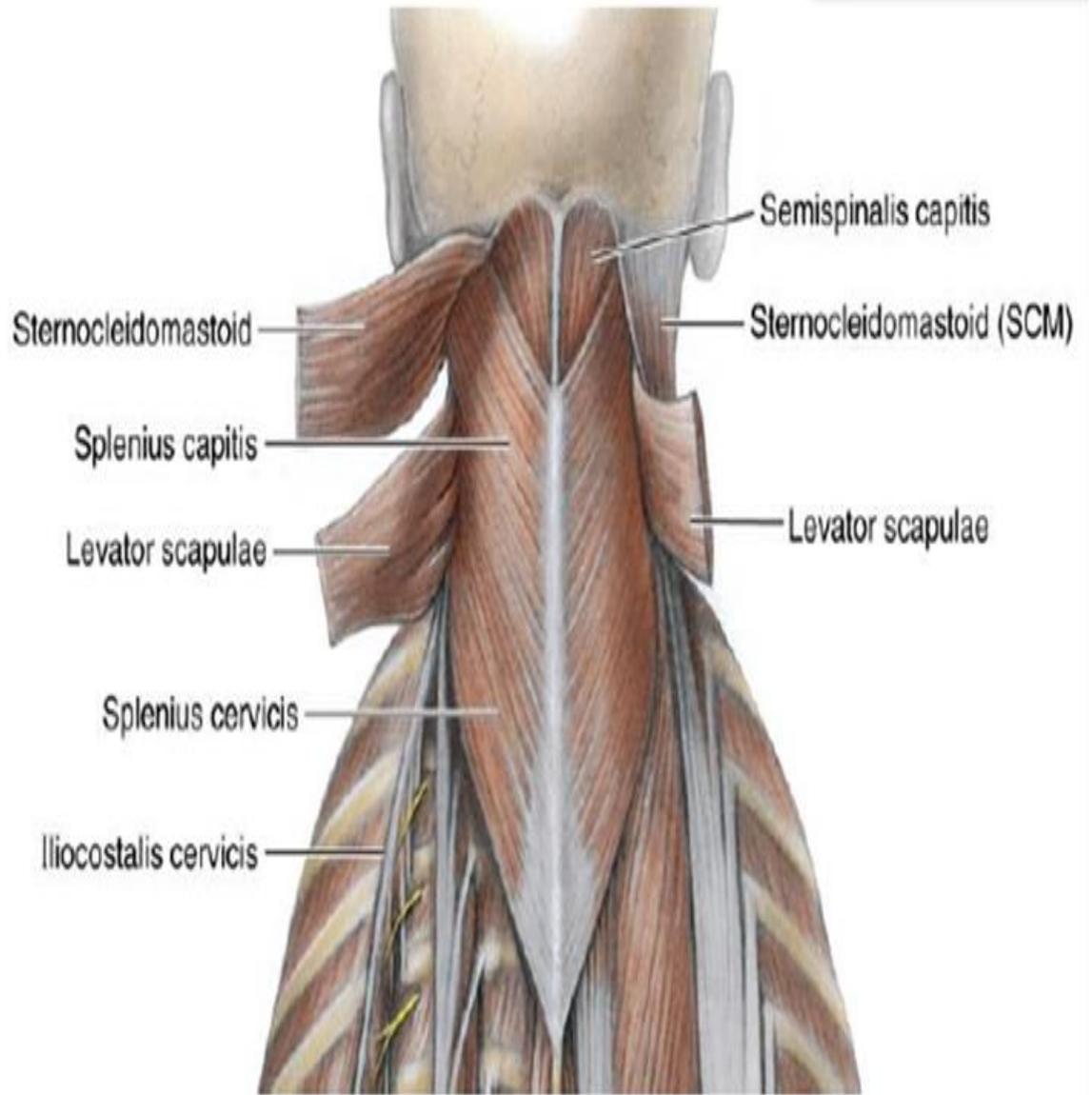
A- Superficial layer of intrinsic back muscles

Splenius muscle SPINO-TRANSVERSALIS

Name	Origin	Insertion	Action
Splenius muscle	Ligamentum Nuchae & spinous processes of C7-T4	<ul style="list-style-type: none"> - Splenius capitus Mastoid process & lateral 1/3 of superior nuchal line - Splenius cervicis transverse process of C1- C4 . 	<ul style="list-style-type: none"> - Contraction of both sides extend head & neck . - Contraction of one side lateral flexion & rotation of head & neck to the same side .



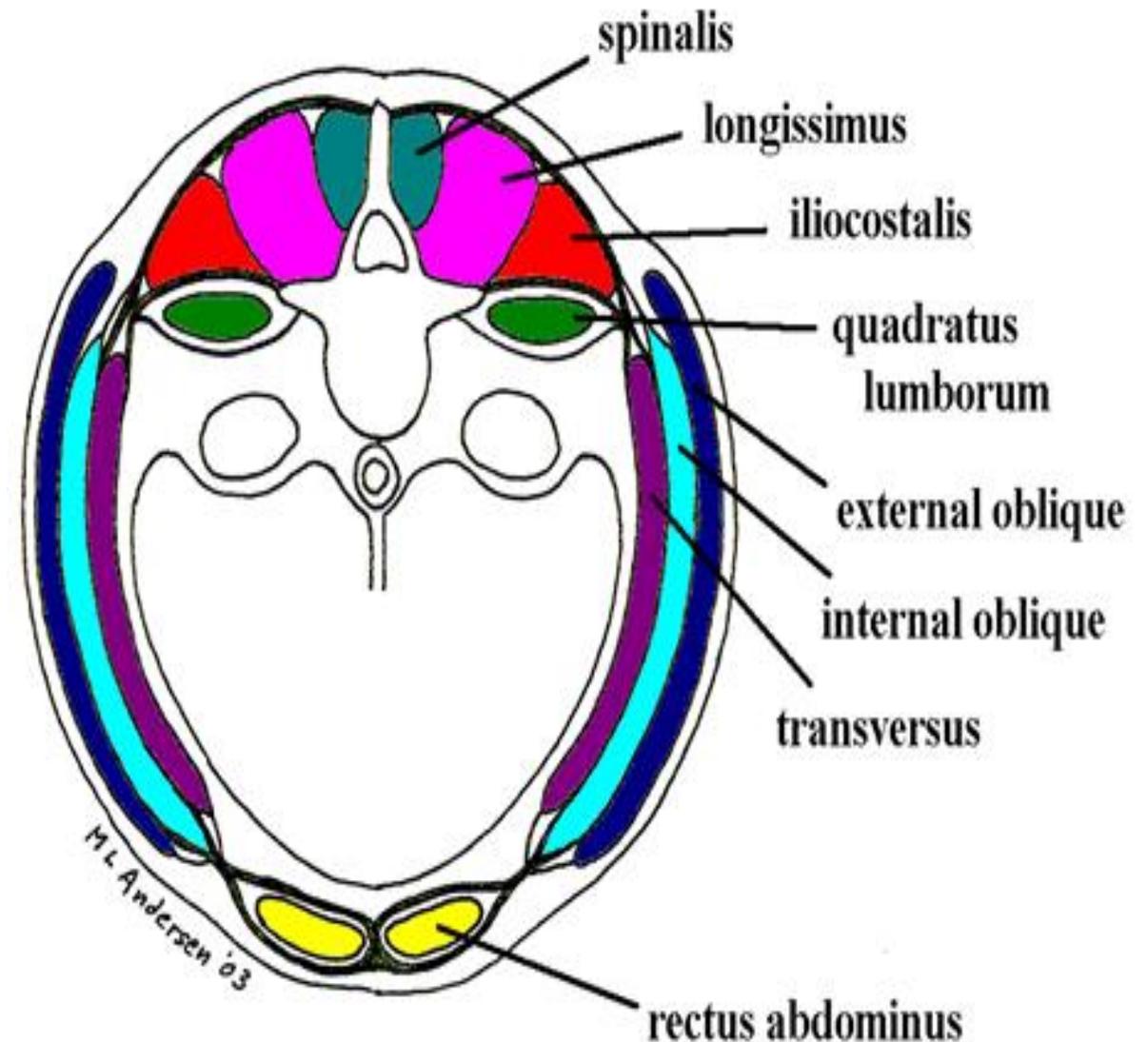
Spinotransversales



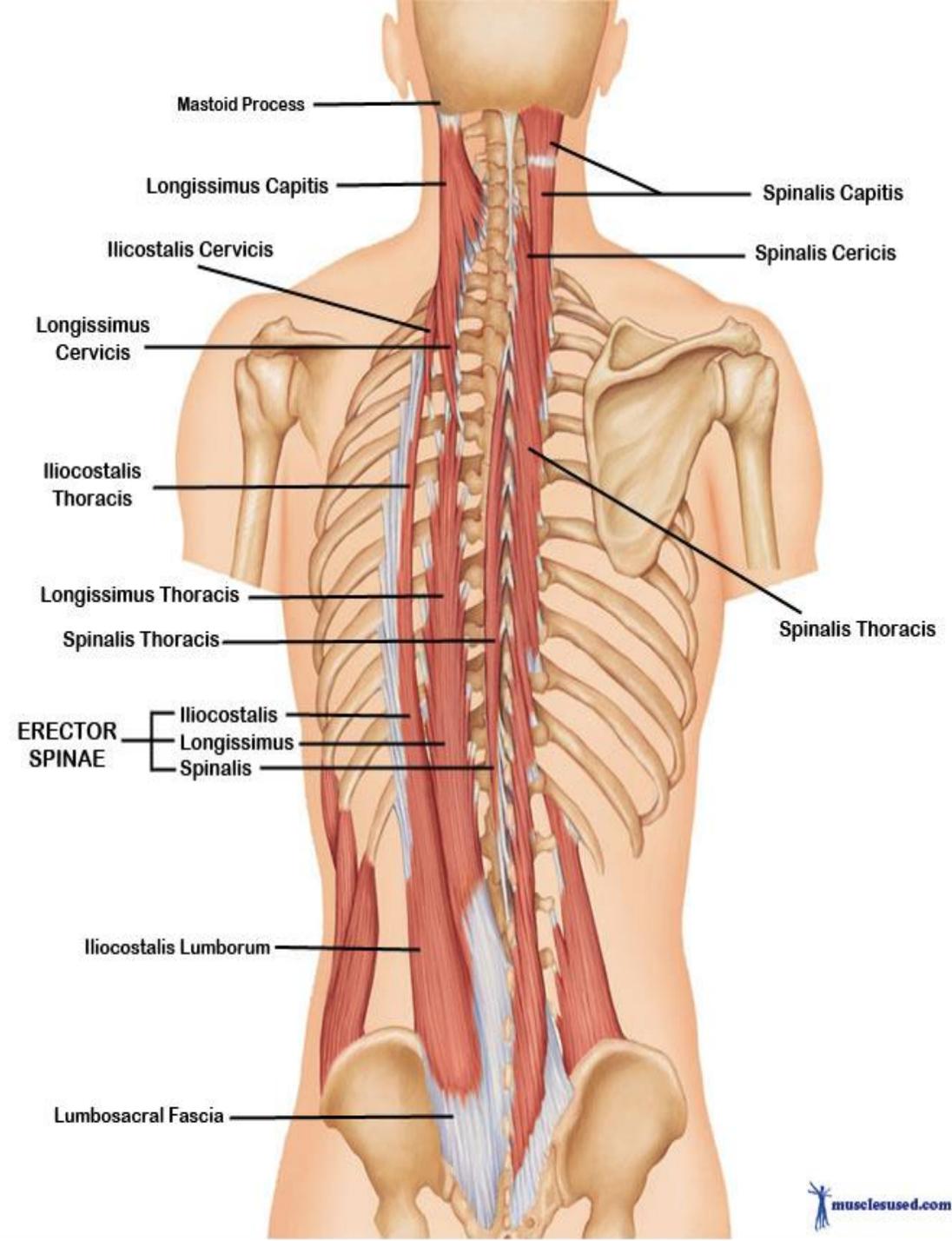
B-Intermediate layer of intrinsic back muscles

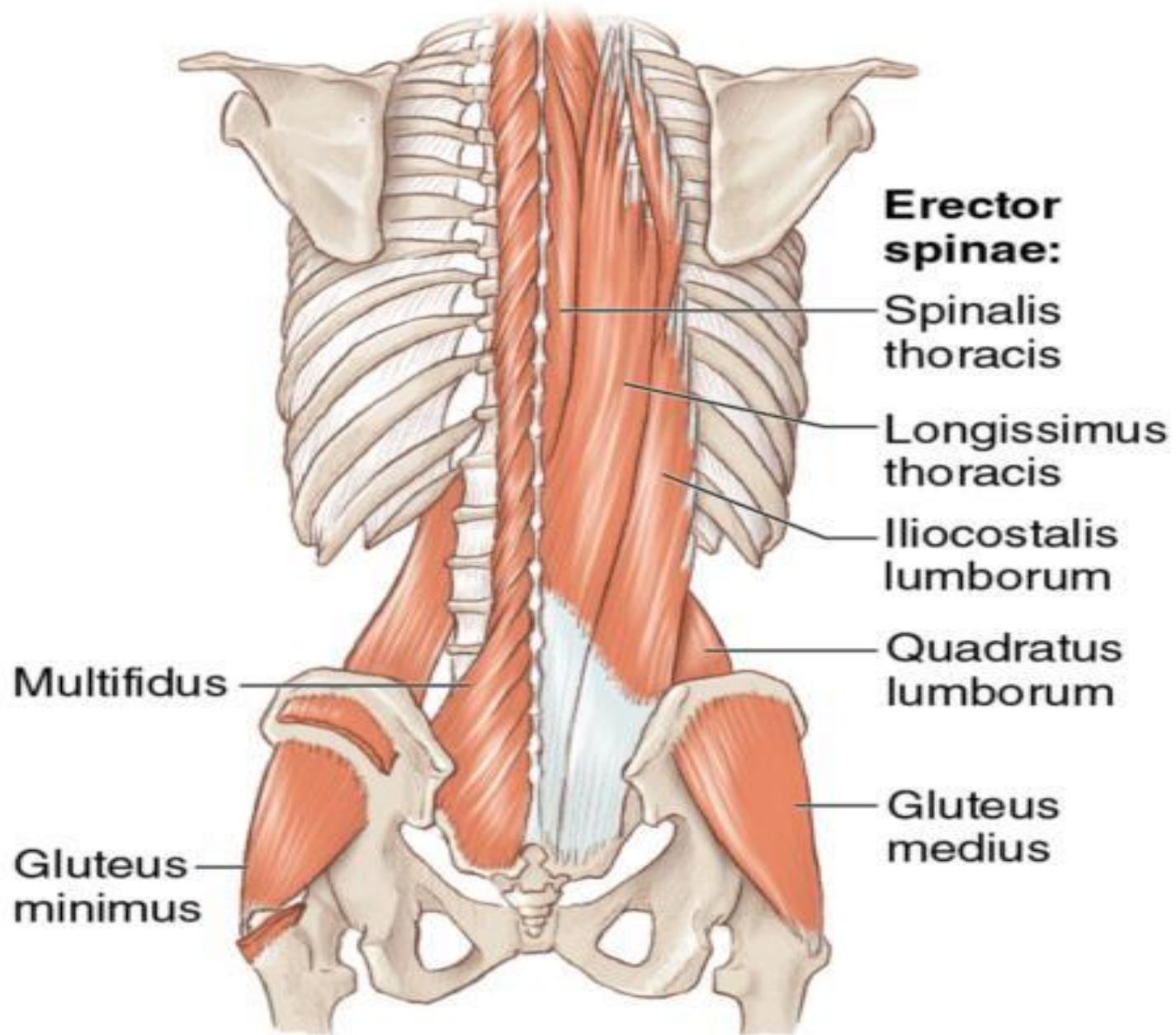
Erector spinae muscle

- It lies on each side *between* the spinous process and angle of ribs
- It is *divided into* 3 longitudinal columns : Iliocostalis laterally , Spinalis medially and longissimus in between .
- Each column is *divided into* parts according to the **superior attachment** into **lumborum , thoracis , cervicis and capitis** .



Muscle	Origin	Insertion	Action
Erector spinae	- Posterior part of iliac crest .	- Iliocostalis lumborum ,	- Acting unilateral :
Iliocostalis	- Back of sacrum	thoracis & cervicis : angles of lower 11 ribs & cervical transverse processes .	laterally flexion and rotation of the
Longissimus	- sacroiliac ligament .	- Longissimus thoracis , cervicis & capitis : ribs , transverse processes of thoracic &cervical vertebrae and mastoid process .	vertebral column to
Spinalis	- sacral & lower lumbar spinous processes .	- Spinalis thoracis , cervicis & capitis : spinous processes of upper thoracic&cervical vertebrae , ligamentum nuchae and skull .	the same side .
			- Acting bilateral :
			main extensor of vertebral column and head .

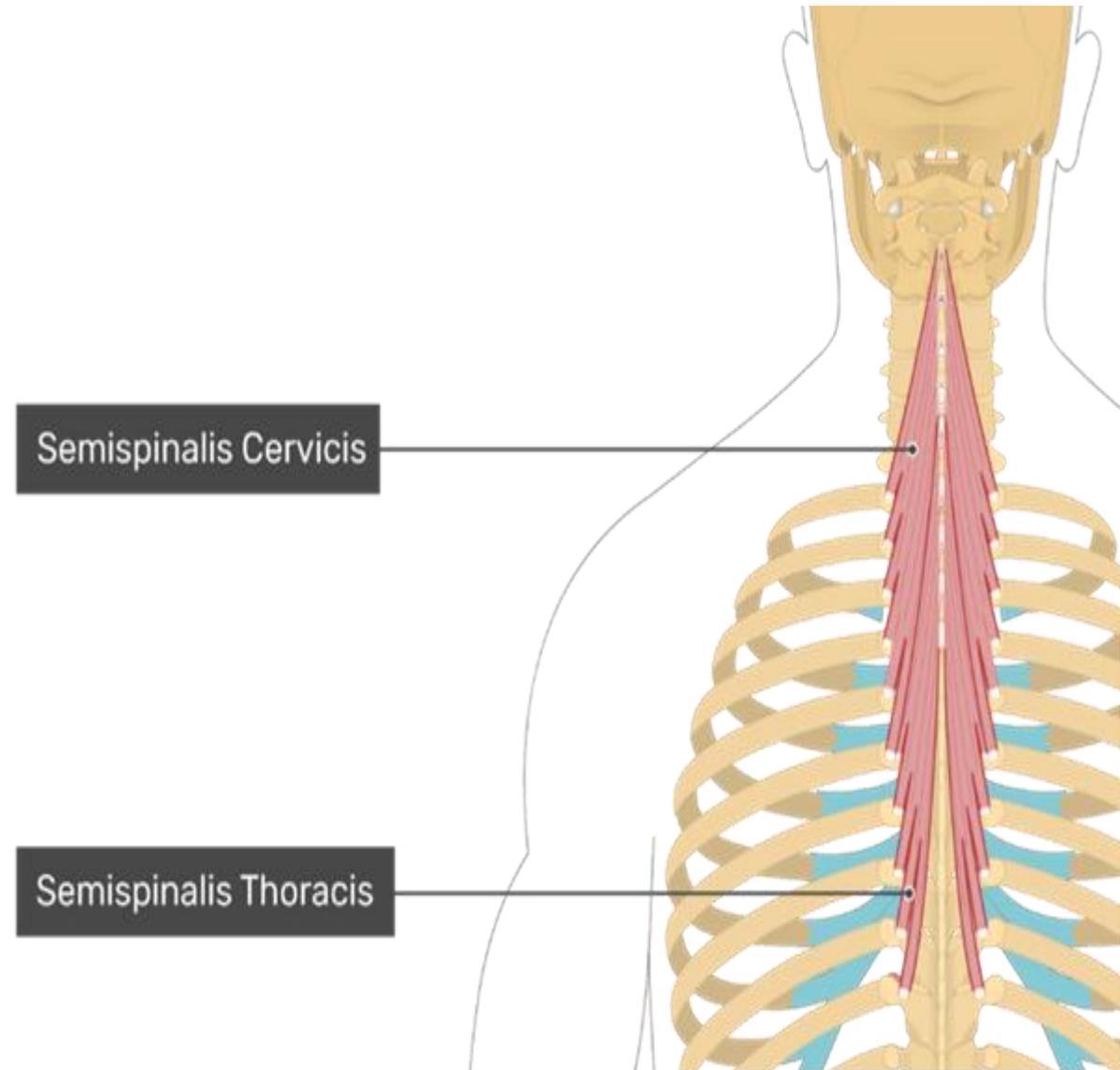




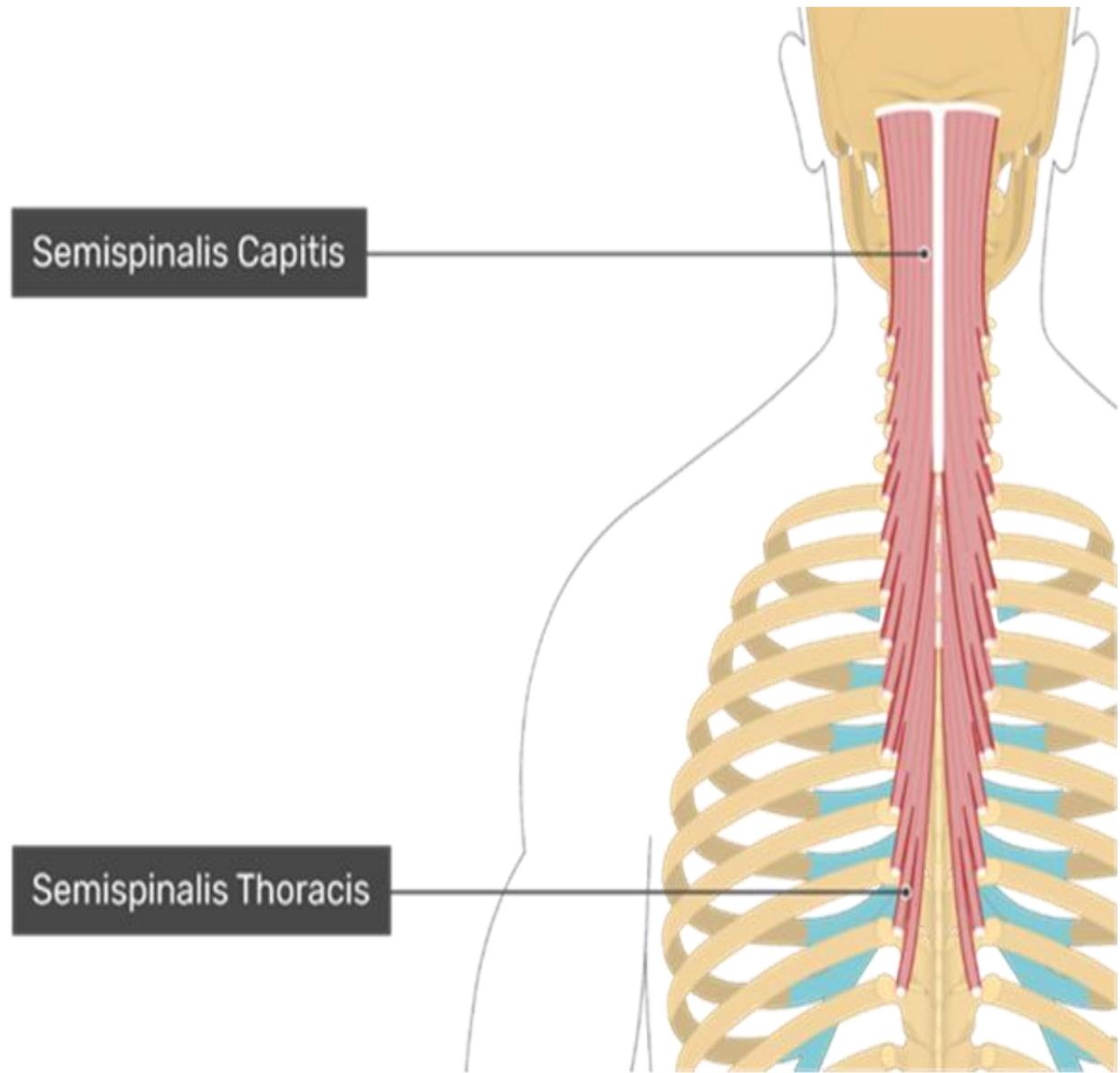
b

C-Deep layer of intrinsic back muscles (TRANSVERSO SPINALIS)

- Transversospinales which occupy the gutter between **spinous** and **transverse processes** and consists of semispinalis, multifidus and rotators from superficial to deep.
- **Common origin** : transverse processes of vertebrae .
- **Common insertion** : spinous processes of the vertebrae **above**
- **Common action** is extension , lateral flexion & rotation of vertebrae **to the opposite side.**

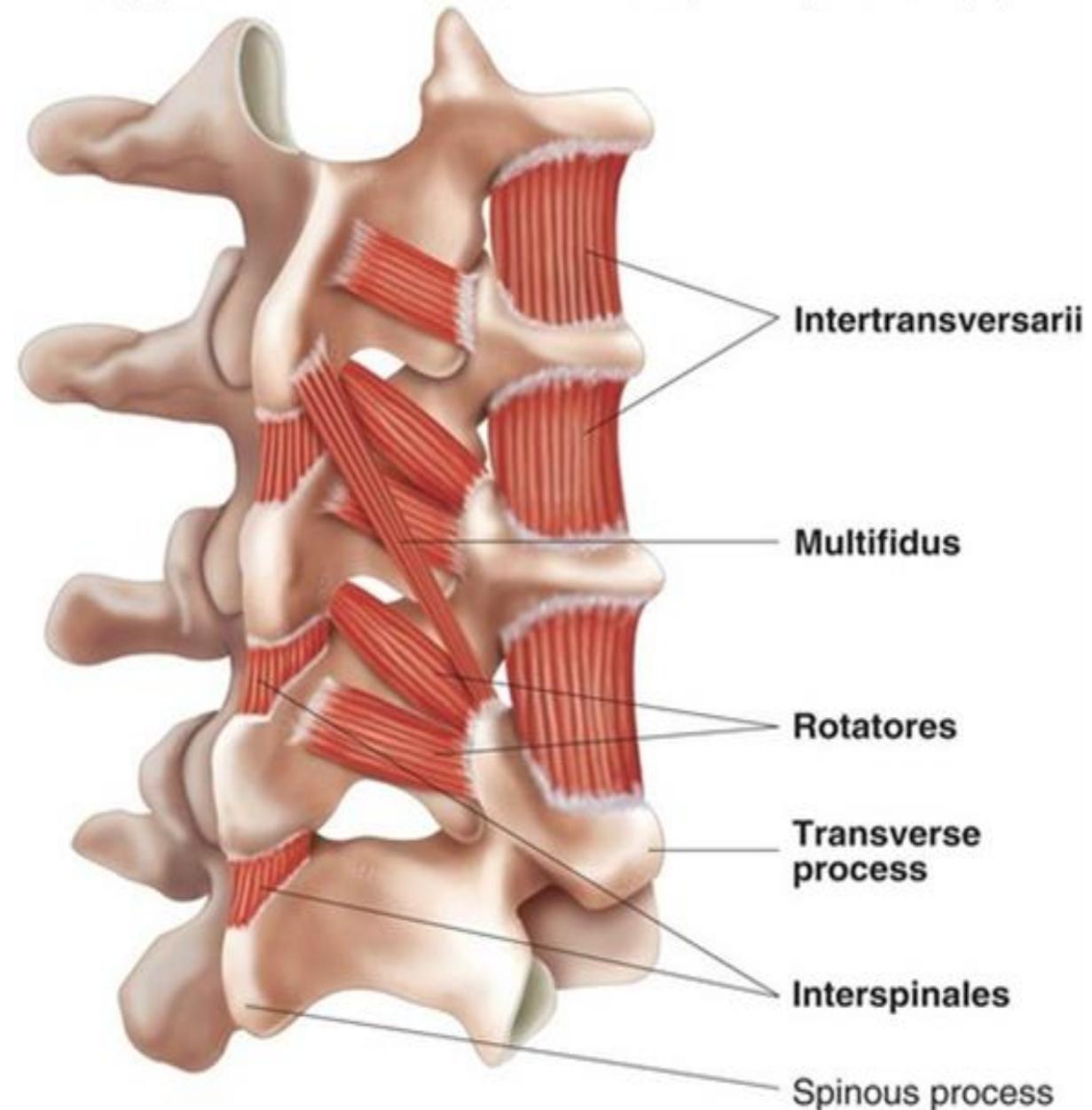


- **1-Semispinalis** muscle arises from approximately $\frac{1}{2}$ of the vertebral column, extends for **4-6** vertebrae and is divided into
 - Semispinalis thoracis
 - Semispinalis cervicis
 - Semispinalis capitis .

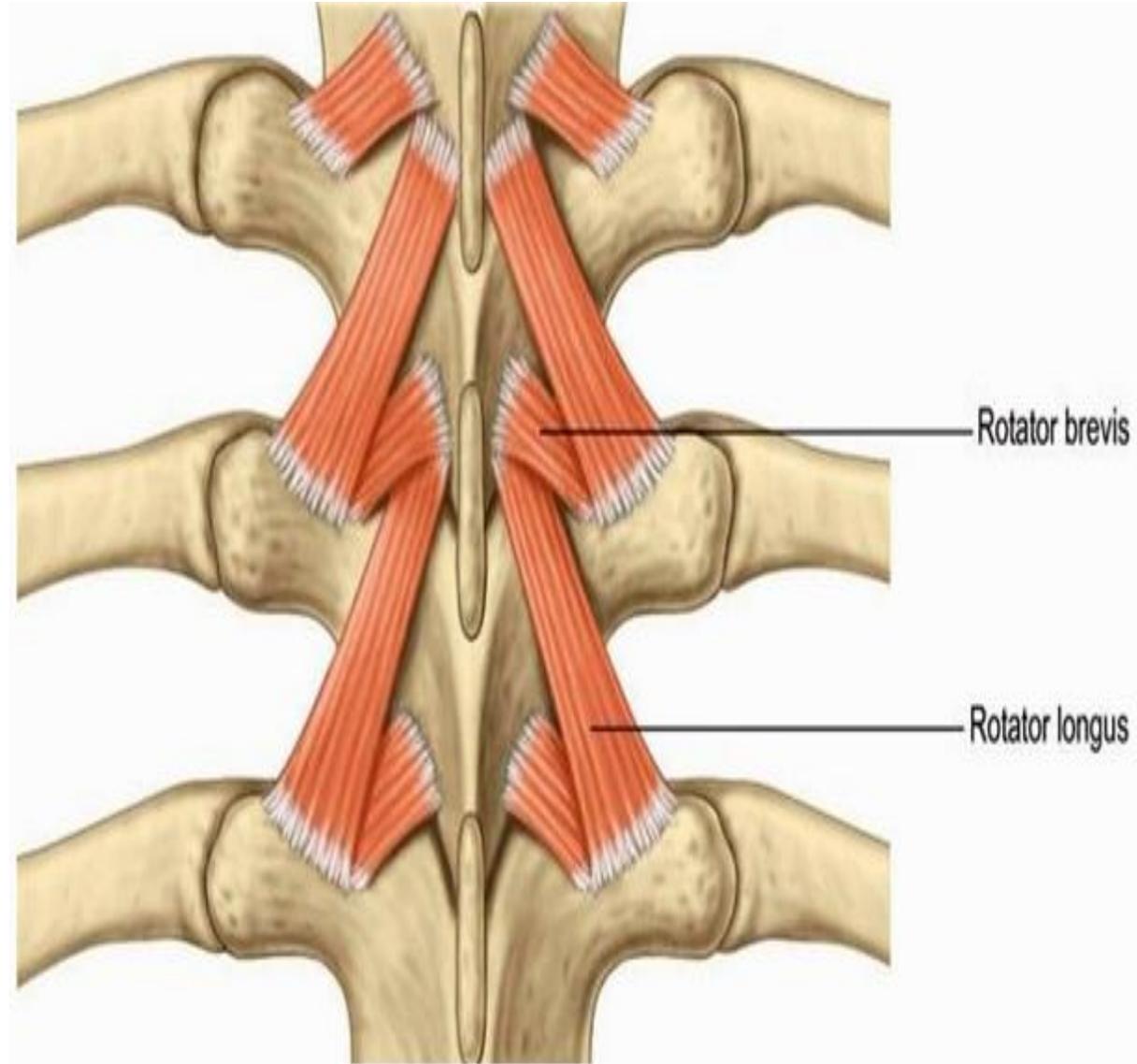
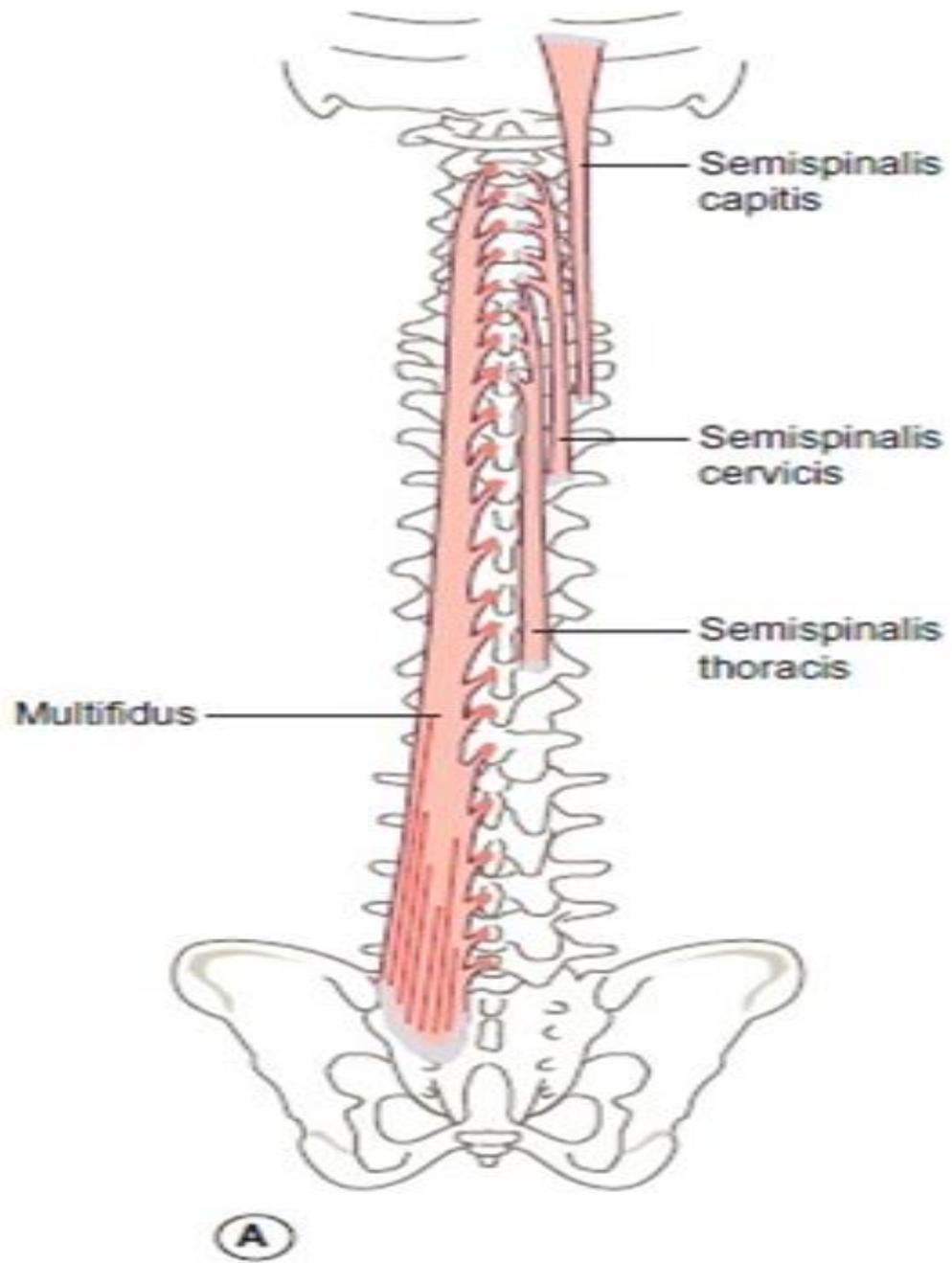


- **2-Multifidus** consists of *short* muscular bundles **thick** in the **lumbar region** . It *arises* from back of sacrum , posterior superior iliac spine , sacroiliac ligament , transverse & articular processes of lumbar , thoracic & lower cervical vertebrae . It extends *superiomedially* to be inserted into the spinous processes of **2- 4 vertebrae above** .

- **3-Rotators** consists of *short* muscular bundles **thick** in the **thoracic region** . It extends *superiomedially* to be *inserted* into the spinous processes of **one vertebra above** (rotator brevis) **or 2 vertebra above** (rotator longus) .



Posterolateral view



Minor deep muscles

Muscle	Origin	Insertion	Action
1. Interspinales	Upper border of spinous processes of cervical & lumbar vertebrae .	Lower border of spinous processes of the vertebra above the origin .	Extension of vertebral column .
2. Intertransversarii	Upper border of transverse processes of cervical & lumbar vertebrae .	Lower border of transverse processes of the vertebra above the origin .	Lateral flexion of vertebral column .
3. Levator costarum	Tips of transverse processes of C7- T11 vertebrae .	Pass inferolaterally to be inserted into the ribs .	Lateral flexion of vertebral column Elevate ribs assist respiration

