

Sports Massage – Myology

Trunk and Pelvis

Learning Objectives

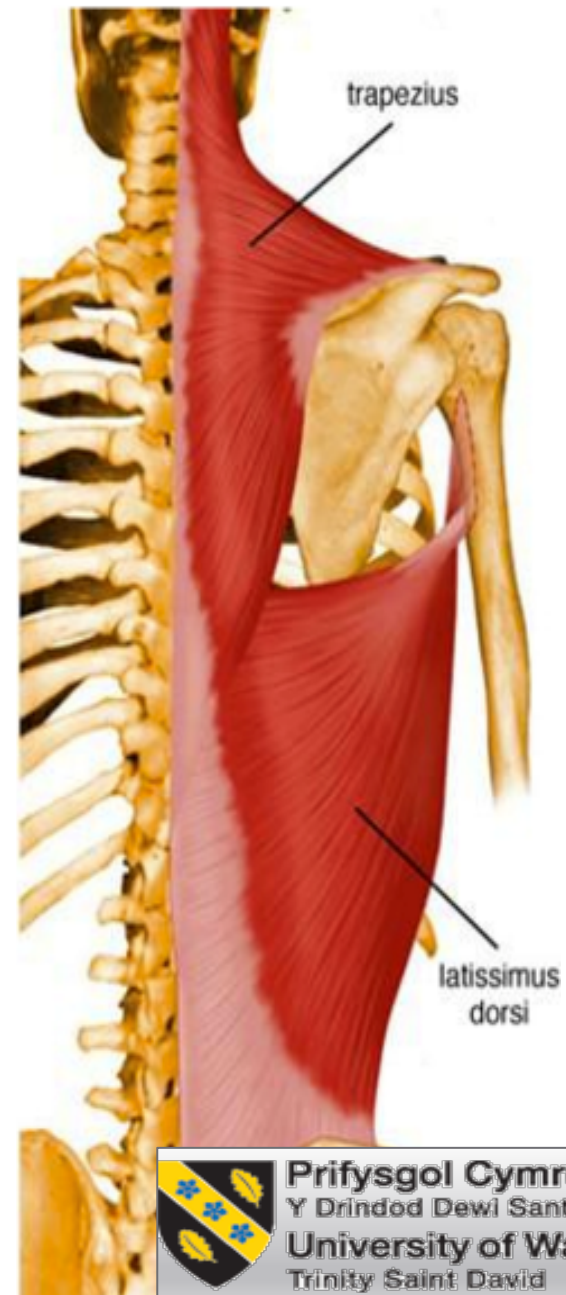
- Describe where the muscle of the core and pelvis are
- Describe the action of these muscles
- Describe the concept of core

The Upper Trunk Region



Trapezius

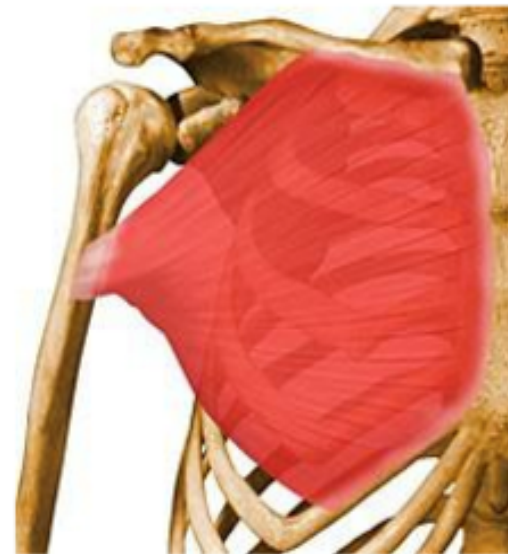
- **Origin** Medial third of superior nuchal line; base of the occipital bone
- **Insertion** Lateral third of clavicle, acromion, and spine of scapula
- **Action** Elevates, retracts and rotates scapula; superior fibers elevate, middle fibers retract, and inferior fibers depress scapula; superior and inferior fibers act together in superior rotation of scapula
- **Innervation** Spinal root of accessory nerve (CN XI) (motor) and cervical nerves (C3 and C4) (pain and proprioception)



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Pectoralis Major

- **Origin**
- **Clavicular head:** anterior surface of medial half of clavicle
- **Sternocostal head:** anterior surface of sternum, superior six costal cartilages
- **Insertion** Lateral lip of intertubercular groove of humerus
- **Action** Adducts and medially rotates humerus; draws scapula anteriorly
- **Innervation** Lateral and medial pectoral nerves;



Pectoralis Minor

- **Origin** 3rd to 5th ribs near their costal cartilages
- **Insertion** Medial border and superior surface of coracoid process of scapula
- **Action** Stabilizes scapula by drawing it inferiorly and anteriorly against thoracic wall
- **Innervation** Medial pectoral nerves;



Rhomboid Major and Minor

- **Origin**
- **Minor:** nuchal ligament and spinous processes of C7 and T1 vertebrae
Major: spinous processes of T2 - T5 vertebrae
- **Insertion** Medial border of scapula from level of spine to inferior angle
- **Action** Retract scapula and rotate it to depress glenoid cavity; fix scapula to thoracic wall
- **Innervation** Dorsal scapular nerve (C4 and **C5**)



Axial Muscles – Neck Muscles [3]

- **Sternocleidomastoid**

- **Origin:**

- Manubrium of sternum
 - Sternal end of clavicle

- **Insertion:**

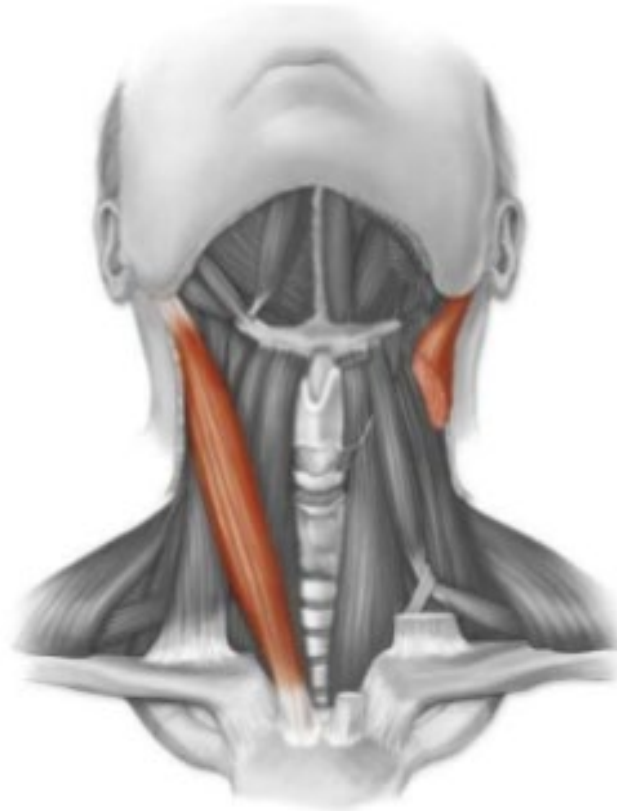
- Mastoid process of temporal bone

- **Action:**

- **One side:** lateral flexion with rotation of head to opposite side
 - **Both sides:** flexes head & neck

- **Textbook Reference:**

- Description: p. 336
 - Figures: 11.8, 11.9



Axial Muscles – Neck Muscles [3]

- **Splenius capitis**

- **Origin:**

- Ligamentum nuchae
(connective tissue covering
the spinal processes of the
cervical vertebrae)

- **Insertion:**

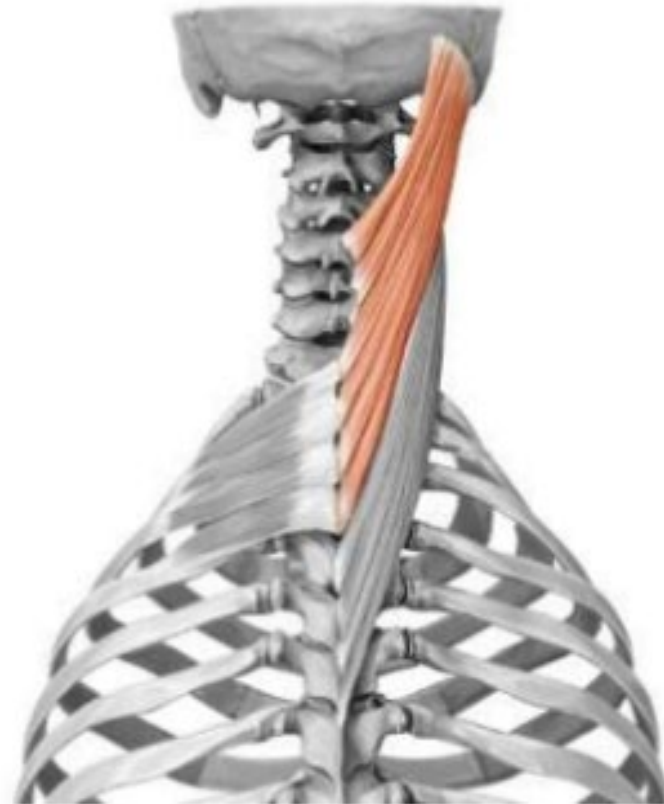
- Occipital bone
 - Mastoid process of temporal
bone

- **Action:**

- **One side:** turns head to same
side
 - **Both sides:** extends head &
neck

- **Textbook Reference:**

- Description: p. 336
 - Figures: 11.10, 11.11



Mnemonic:
**PUT THE CAP ON TO
CERVICIS**



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Axial Muscles – Neck Muscles [3]

- **Splenius cervicis**

- **Origin:**

- Spinous processes of T3-T6 vertebrae

- **Insertion:**

- Transverse processes of cervical vertebrae

- **Action:**

- **One side:** turns head to same side
 - **Both sides:** extends head & neck

- **Textbook Reference:**

- Description: p. 336
 - Figures: 11.10, 11.11



Mnemonic:

**PUT THE CAP ON TO
CERVICIS**



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Axial Muscles – Facial Expression Muscles [8]

- **Platysma**

- **Action:**

- Pulls lower lip inferiorly
 - Tenses skin of neck

- **Textbook Reference:**

- Description: p. 322
 - Figures: 11.2a & b

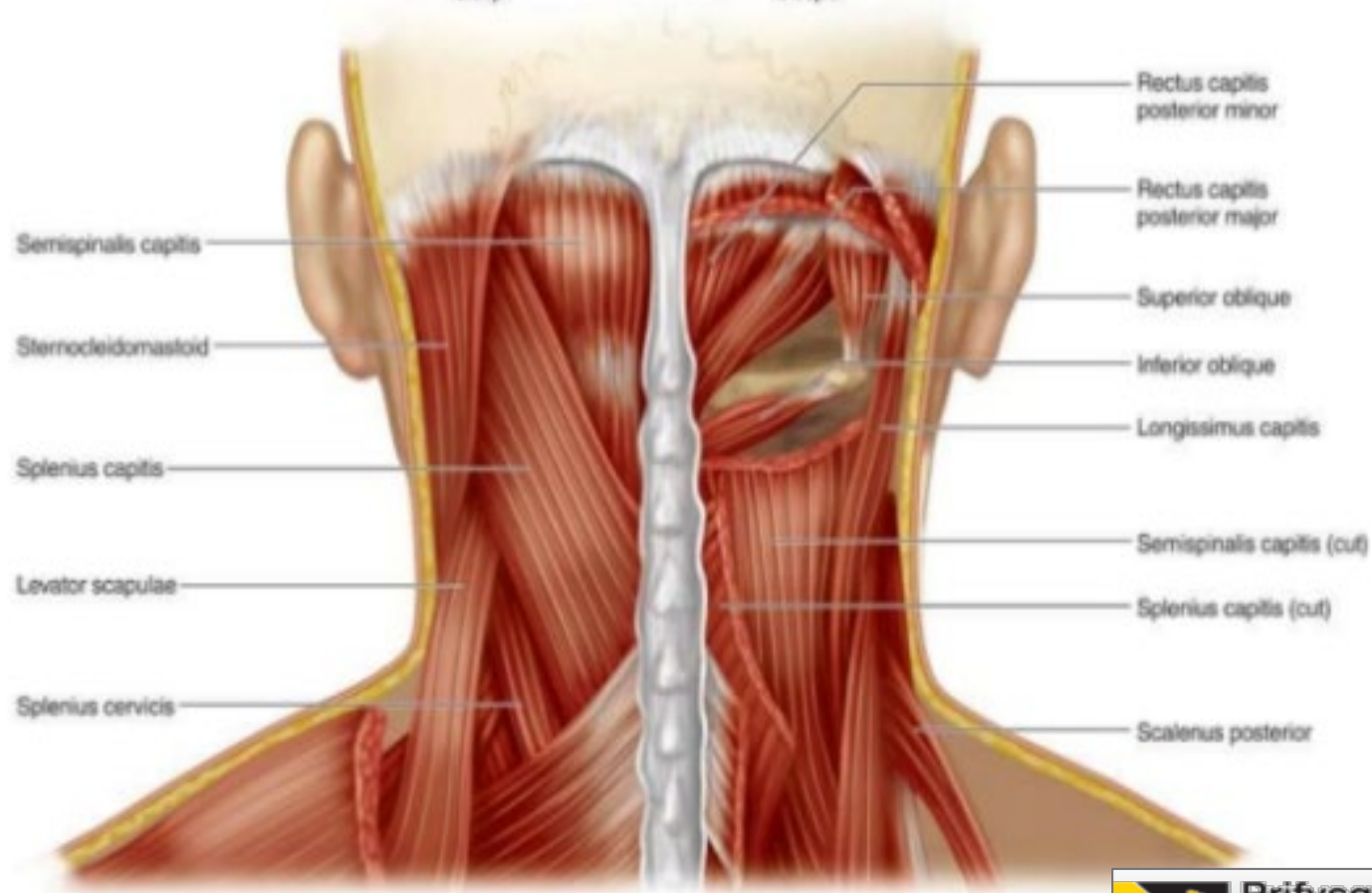


Posterior Neck Muscles

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Deep

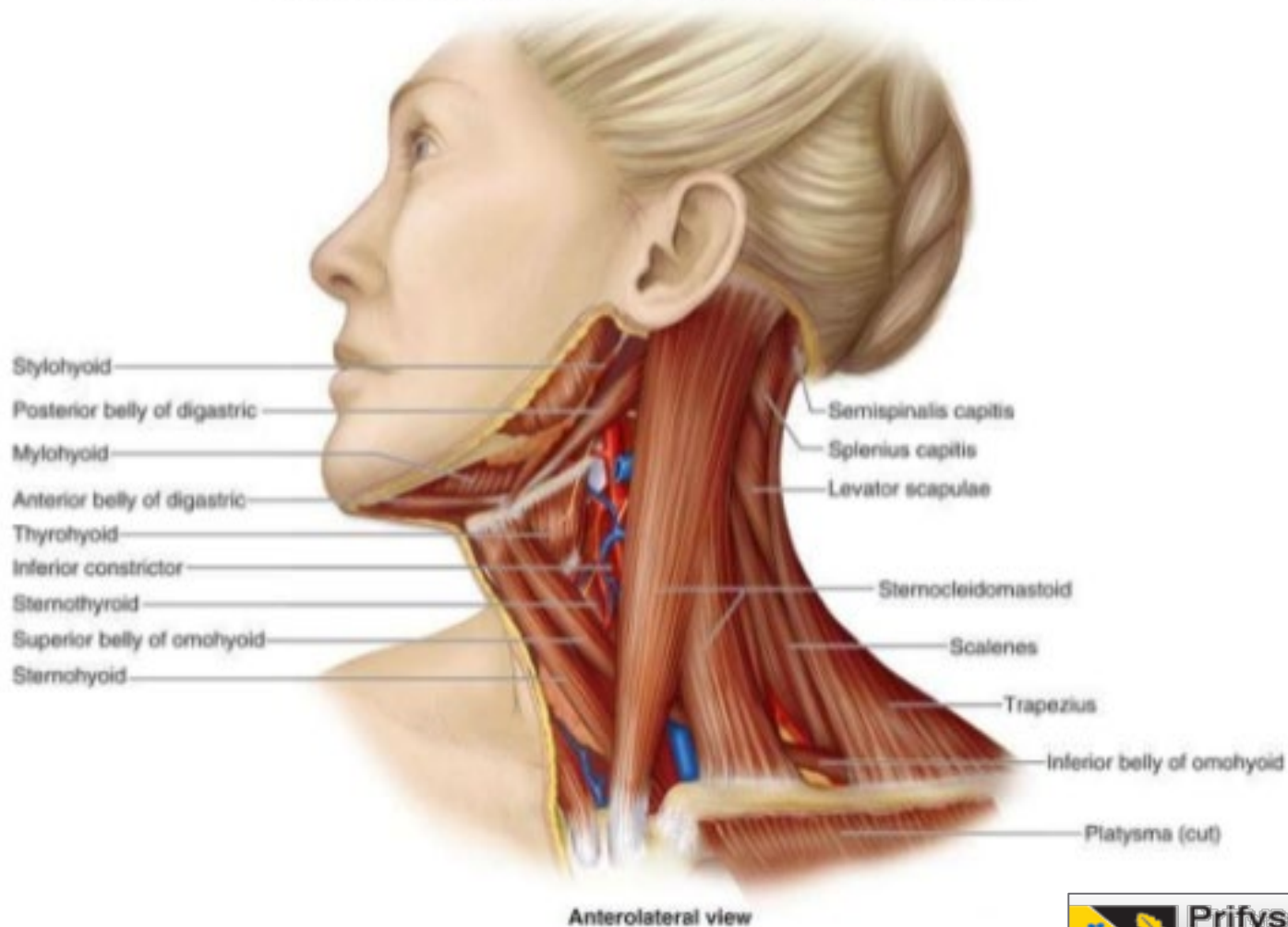
Deeper



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Neck Muscles

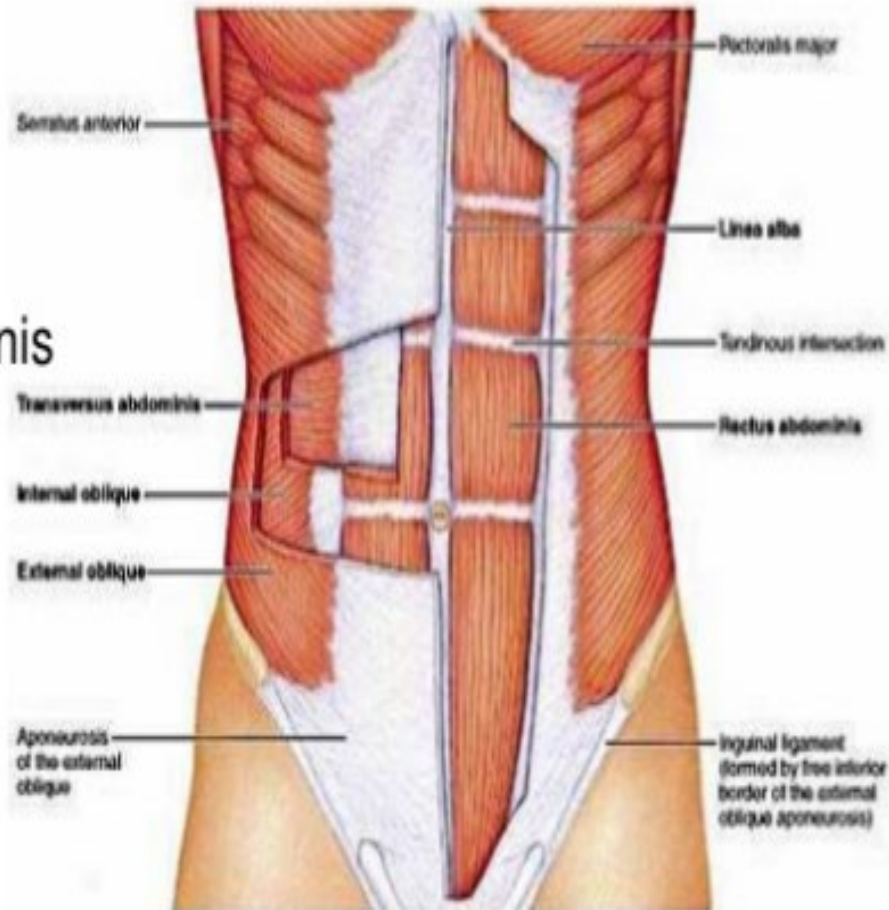
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Introduction

Muscles

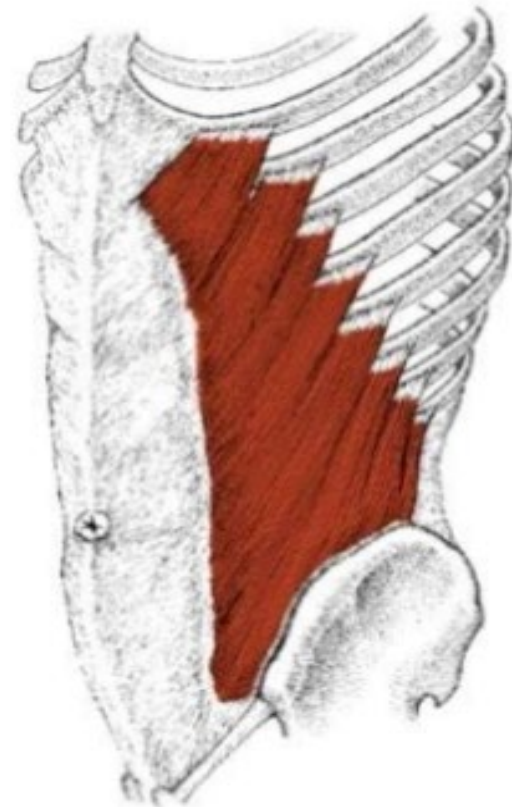
- External oblique
- Internal oblique
- Transversus abdominis
- Rectus abdominis
- Pyramidalis



Myology -

External oblique

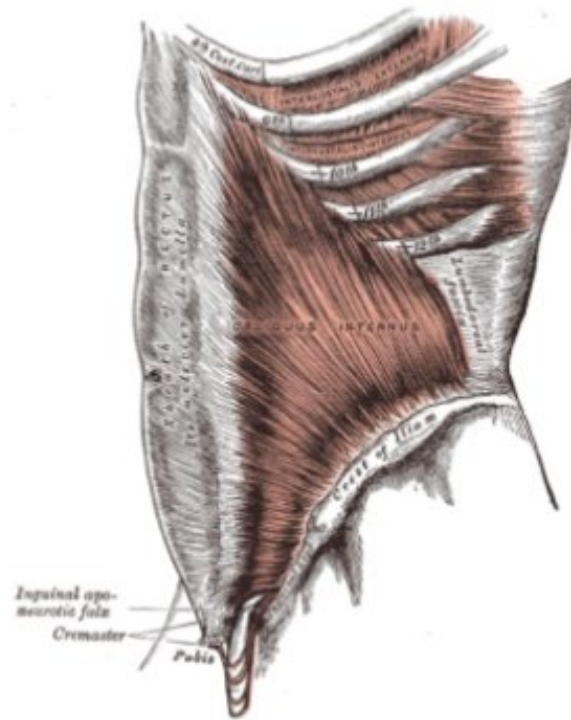
- **Origin:** external surfaces and inferior borders of 5-12 ribs with serr ant and lat dorsi
- **Insertion:** iliac crest, linea alba, forms inguinal ligament
- **Direction:** inferiorly and anteriorly
- **Nerve supply:** T7 – L1



Myology - Core and Pelvis

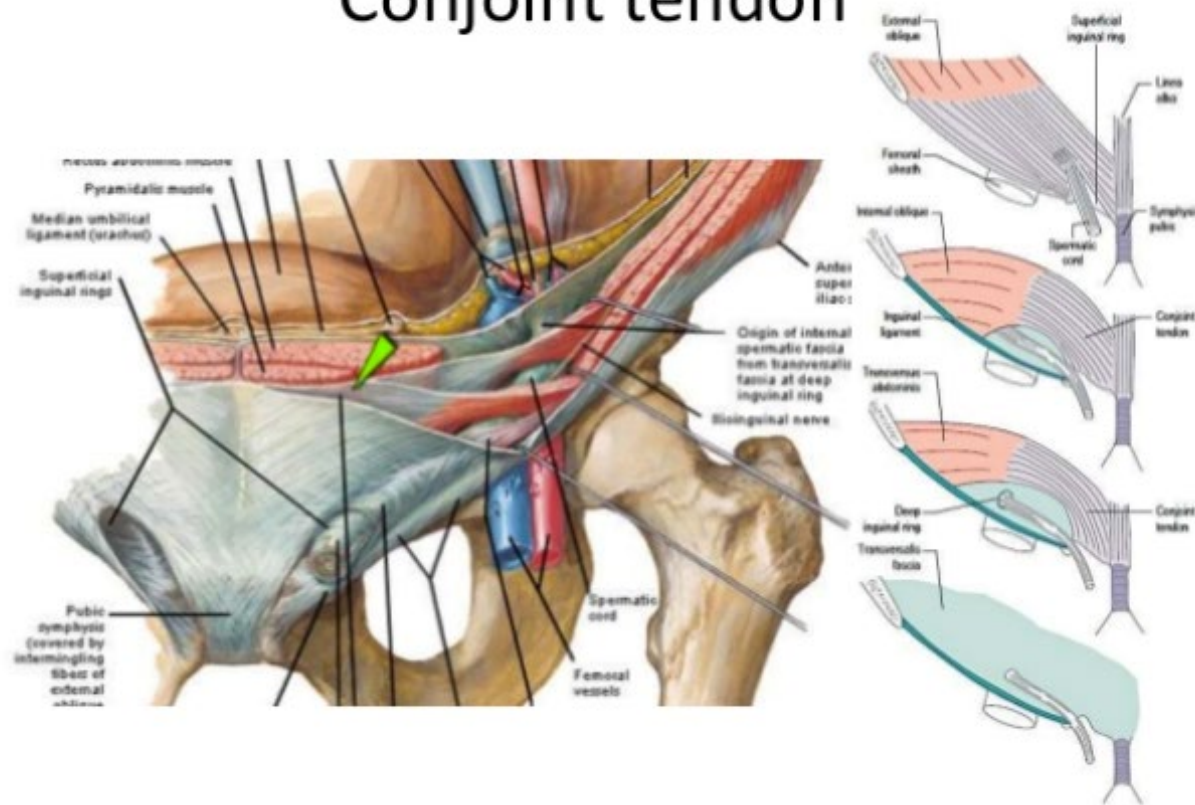
Internal oblique

- **Origin:** thoracolumbar fascia, iliac crest, lat 2/3 of inguinal ligament
- **Insertion:** pectan pubis (conjoint tendon), linea alba, 10-12 ribs
- **Direction:** superiorly and anteriorly
- **Nerve supply:** T7 – L1



Myology – Core and Pelvis

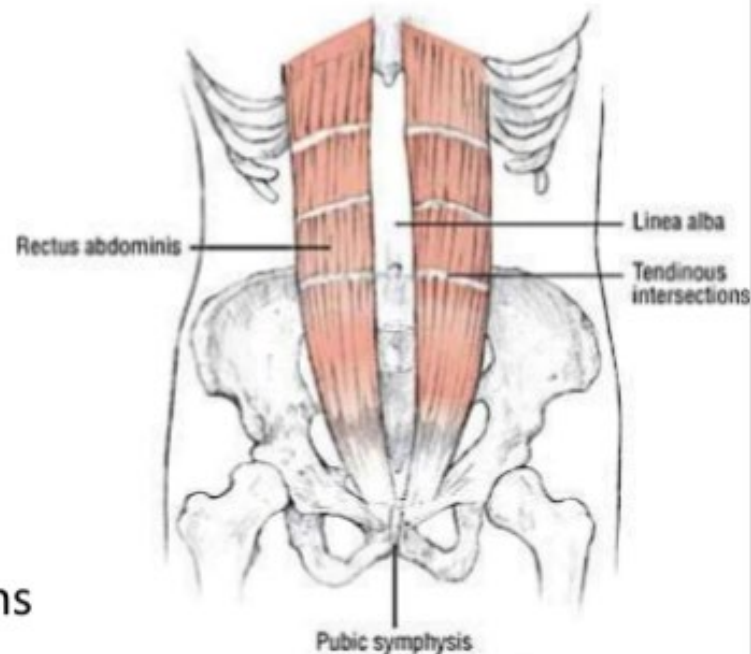
Conjoint tendon



Myology – Core and Pelvis

Rectus abdominis

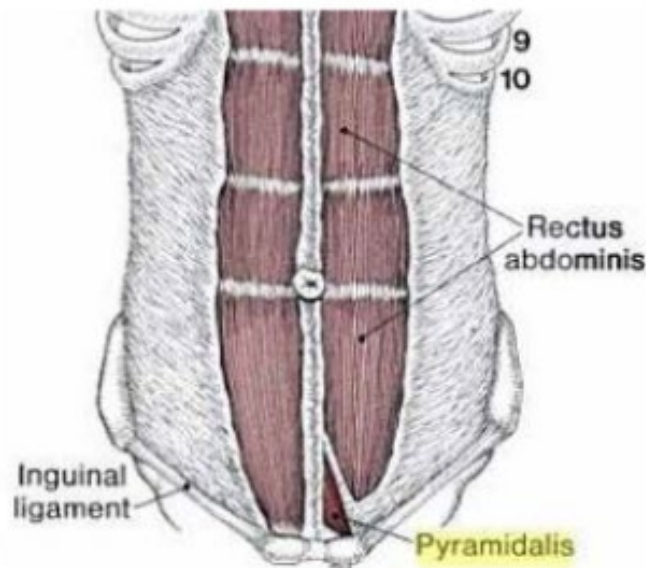
- **Origin:** Pubic crest
- **Insertion:** costal cartilage 5-7, xiphoid process
- **Direction:** vertical
- **Nerve supply:** T7-T11
- Tendinous intersections



Myology – Core and Pelvis

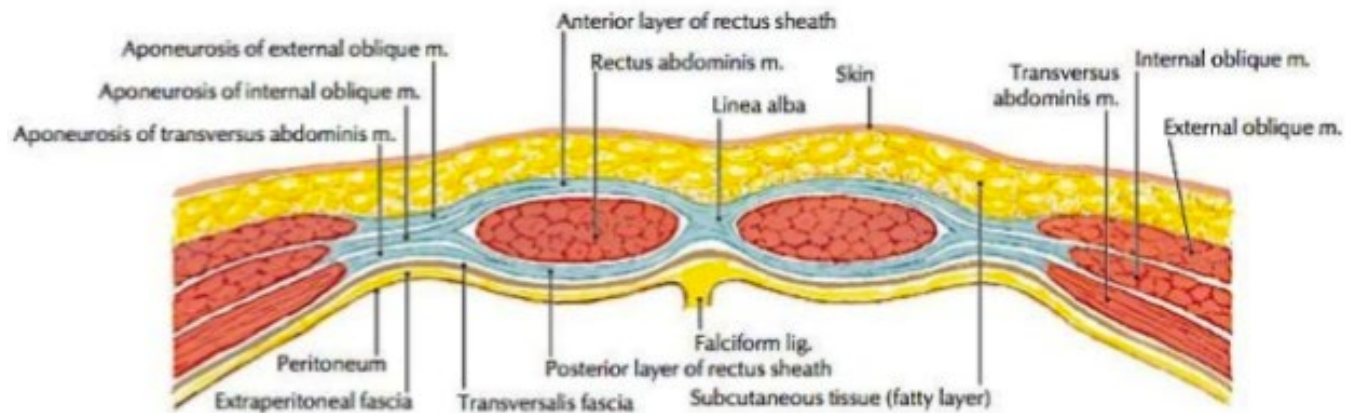
Pyramidalis

- Inconsistent muscle, within rectus sheath
- **Origin:** pubic symphysis and pubic crest
- **Insertion:** linea alba
- **Nerve supply:** T12

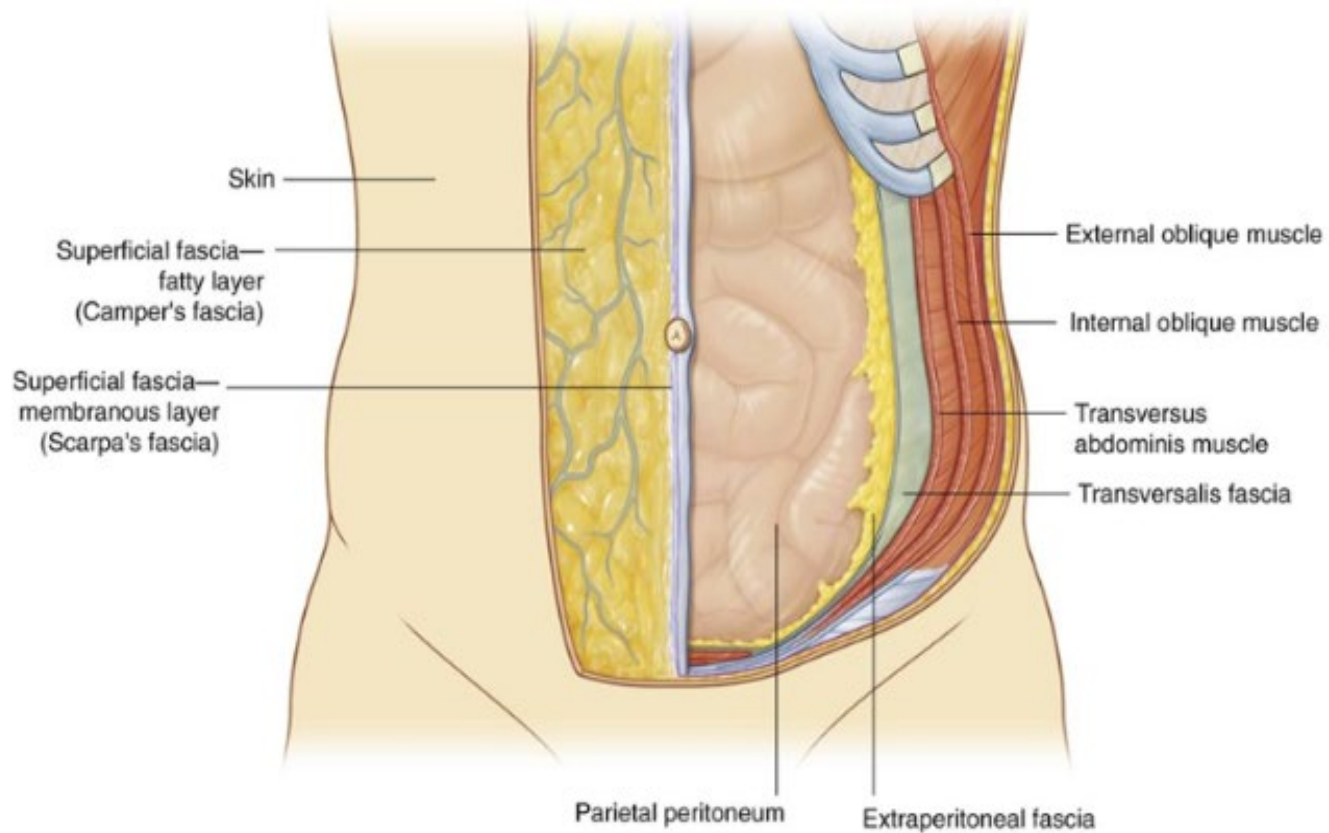


Myology – Core and Pelvis

Linea alba and rectus sheath



Myology – Layers



Myology – Core and Pelvis

Spinalis



Origin

- Spinous processes of cervical, thoracic and lumbar vertebrae

Insertion

- Spinous processes of superior vertebrae to origin

Joint crossed

- Vertebrae

Joint action

- Extends the spine

Myology – Core and Pelvis

Iliocostalis



Origin

- Ribs and iliac crest

Insertion

- Transverse processes of cervical vertebrae and ribs superior to origin

Joint crossed

- Vertebrae

Joint action

- Extends the spine

Myology – Core and Pelvis

Longissimus



Origin

- Transverse Processes of cervical, thoracic and lumbar vertebrae

Insertion

- Transverse Processes of superior vertebrae to origin

Joint crossed

- Vertebrae

Joint action

- Extends head and rotates it to same side, extends the spine

Myology – Core and Pelvis

Multifidus



Origin

- Sacrum, and transverse processes of vertebrae.

Insertion

- Spinous processes 2-4 vertebrae superior to origin.

Joint crossed

- Intervertebral joints of vertebral column.

Joint action

- Extension of vertebral column.
- Rotation of vertebral column.
- Important to lumbar spine stability because it is a 'local' muscle, controlling the fine positioning of adjacent vertebrae.

Myology – Core and Pelvis

Quadratus Lumborum



Origin

- Iliac crest and Iliolumbar fascia.

Insertion

- Upper 4 lumbar vertebrae and lower margin of 12th rib.

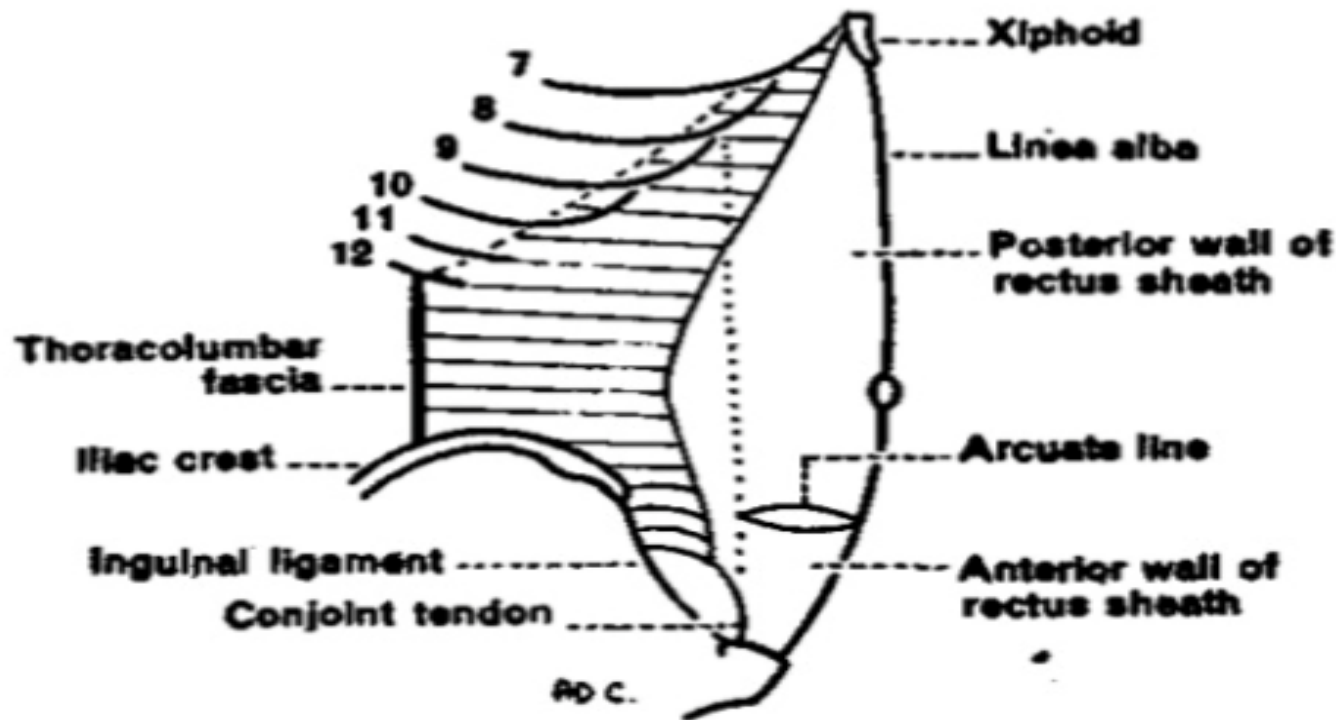
Joint crossed

- Intervertebral joints of lumbar vertebrae.

Joint action

- Unilateral concentric contraction: lateral flexion of lumbar spine.
- Unilateral isometric contraction: prevents lateral flexion of lumbar spine (e.g. when carrying a heavy suitcase in one hand).
- Bilateral eccentric contraction: assists in preventing hyperflexion of lumbar spine.

Myology – Core and Pelvis

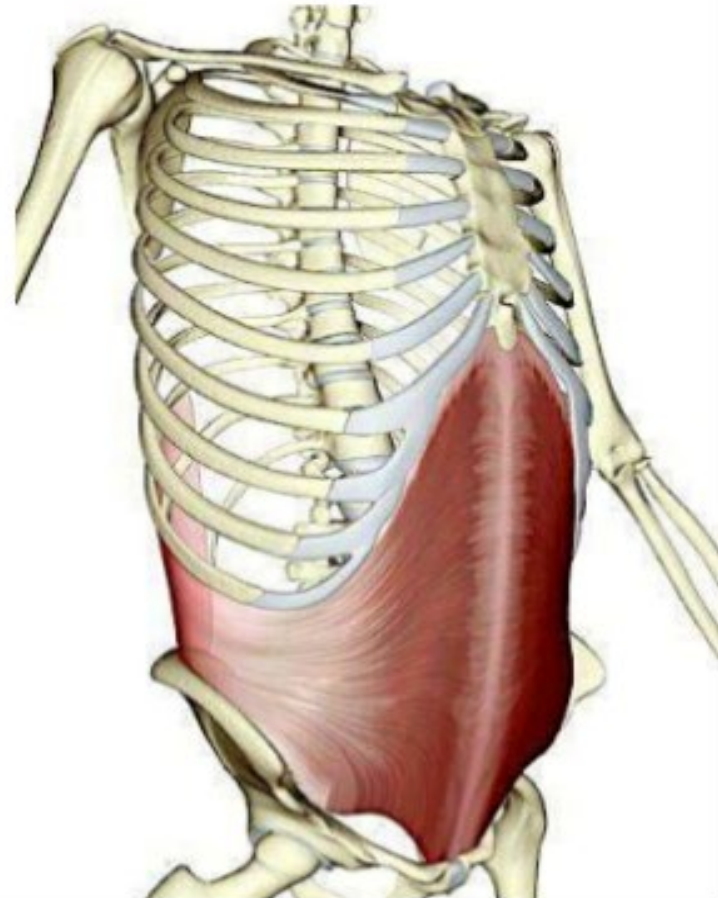


Right transversus abdominis muscle.

Myology – Core and Pelvis

Transversus abdominis

- **Origin:** thoracolumbar fascia, Iliac crest, lat ½ of inguinal ligament, and costal cartilages 7-12
- **Insertion:** Xiphoid process, linea alba, pubic crest and pecten pubis via conjoint tendon
- **Direction:** transverse
- **Nerve supply:** T6-L1



Diaphragm

