



Introduction to Anatomy

1st Year Medical Students

2025-2026

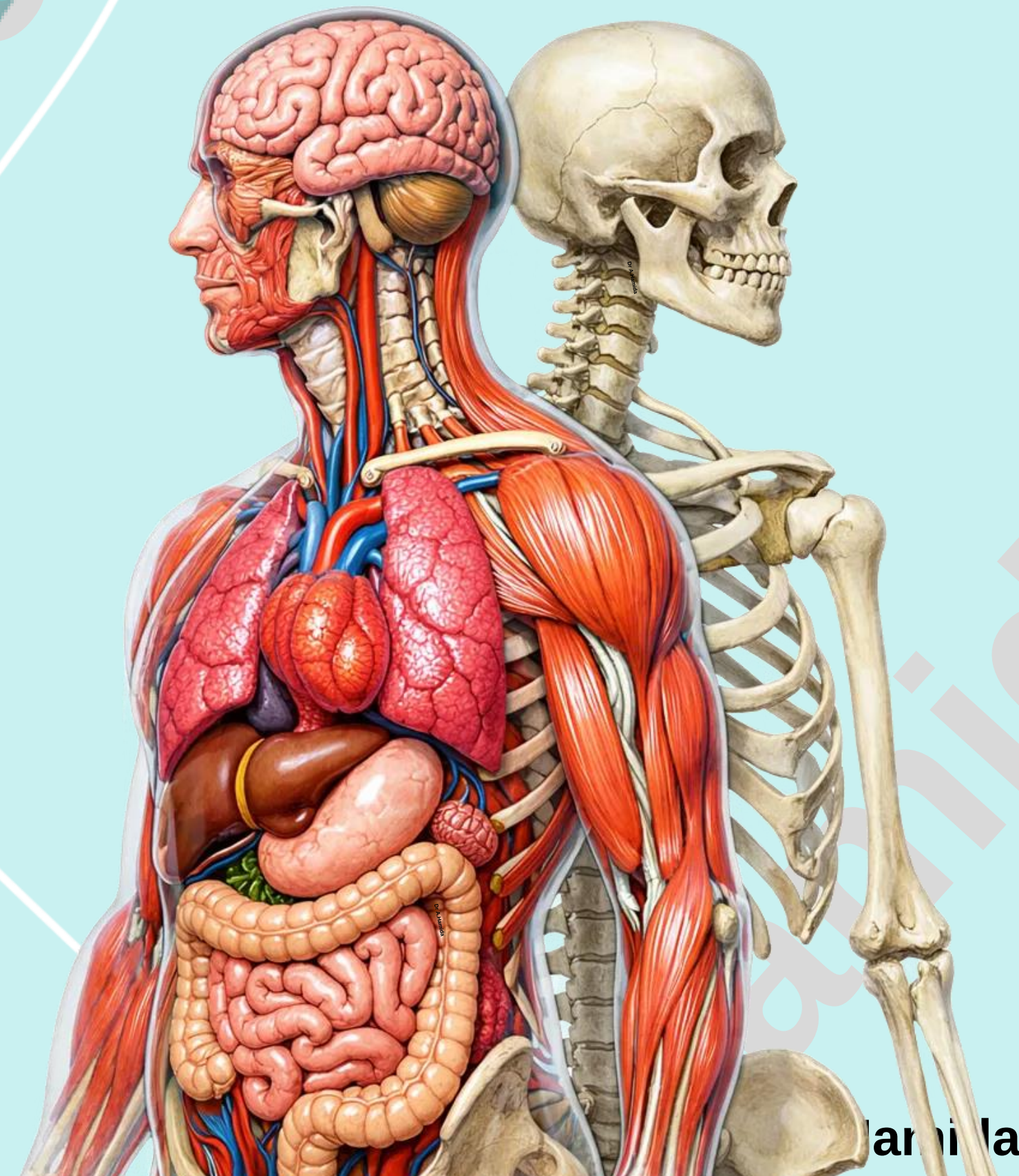
Second Semester

Dr. Abedallah Hamida, MBBS, PhD

Department of Anatomy and Histology

School of Medicine-The University of Jordan

a_hamida@ju.edu.jo



Hamida

6

Skeletal Muscles-1



Muscular System

➤ Types of Muscle Tissue

1. Skeletal muscle:

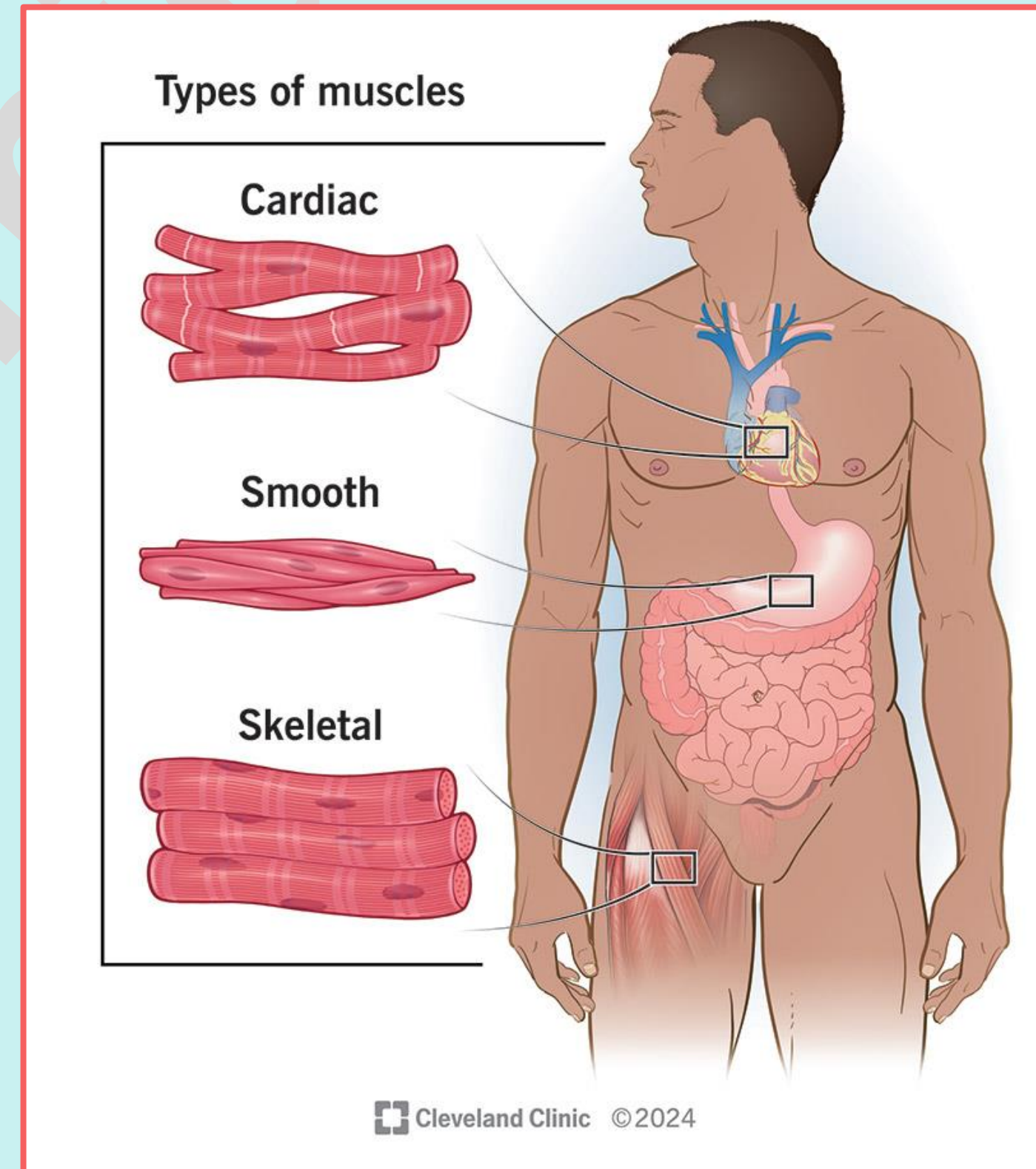
- Voluntary, attached to the skeleton

2. Cardiac muscle:

- Involuntary, found only in the heart, forming the walls of the heart.

3. Smooth muscle:

- Involuntary, forms the walls of internal structures such as blood vessels, airways, and most organs of the abdominopelvic cavity.



Lecture Outline:

6.1 General features of Skeletal Muscle

6.2 Muscles of the Head

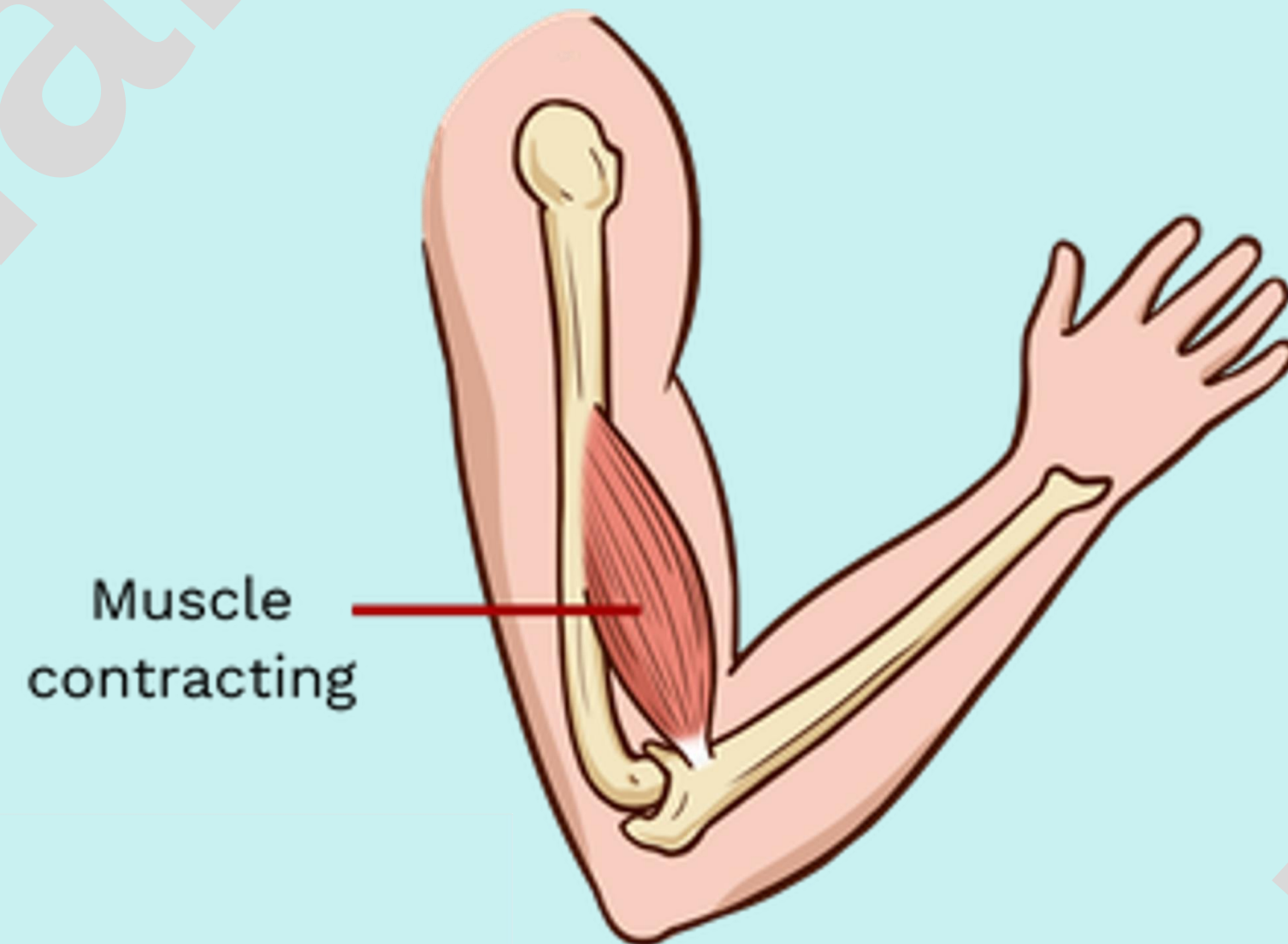
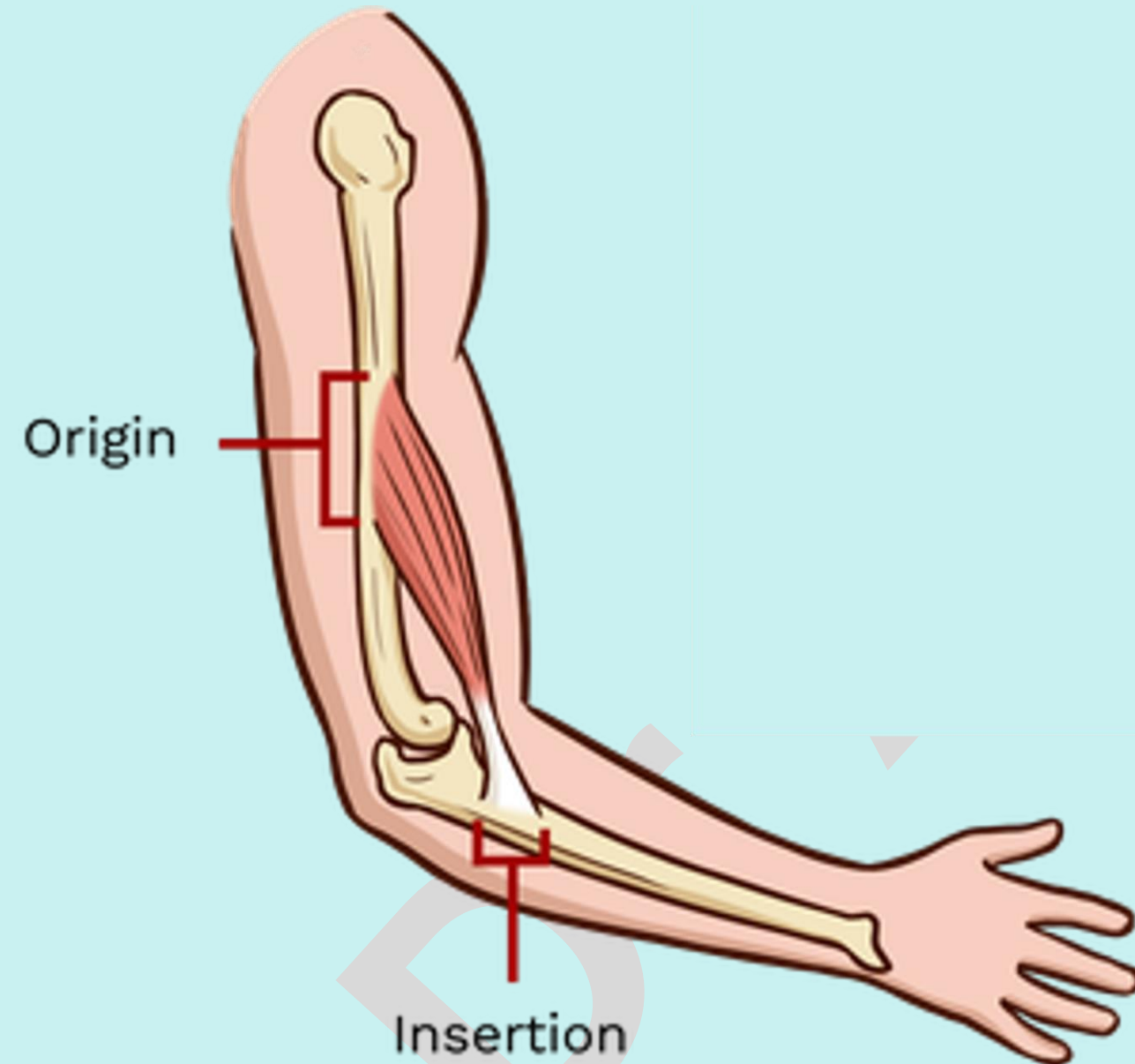
6.1 Muscles of the Neck

6.2 Muscles of the Trunk

General features of Skeletal Muscle

❖ Muscle Attachment Sites: Origin and Insertion

- Most muscles cross at least one joint and are usually attached to the bones forming that joint.
- The attachment of a muscle's tendon to the stationary bone is called the origin.
- The attachment of the muscle's tendon to the movable bone is called the insertion.



❖ Muscle Parts:

➤ Belly of the muscle:

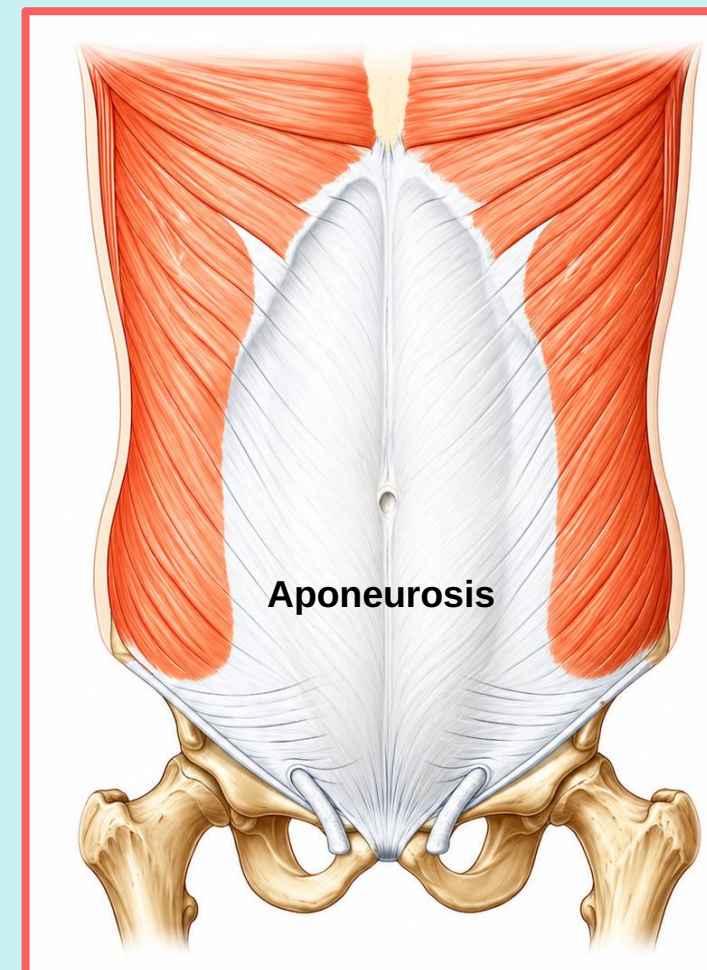
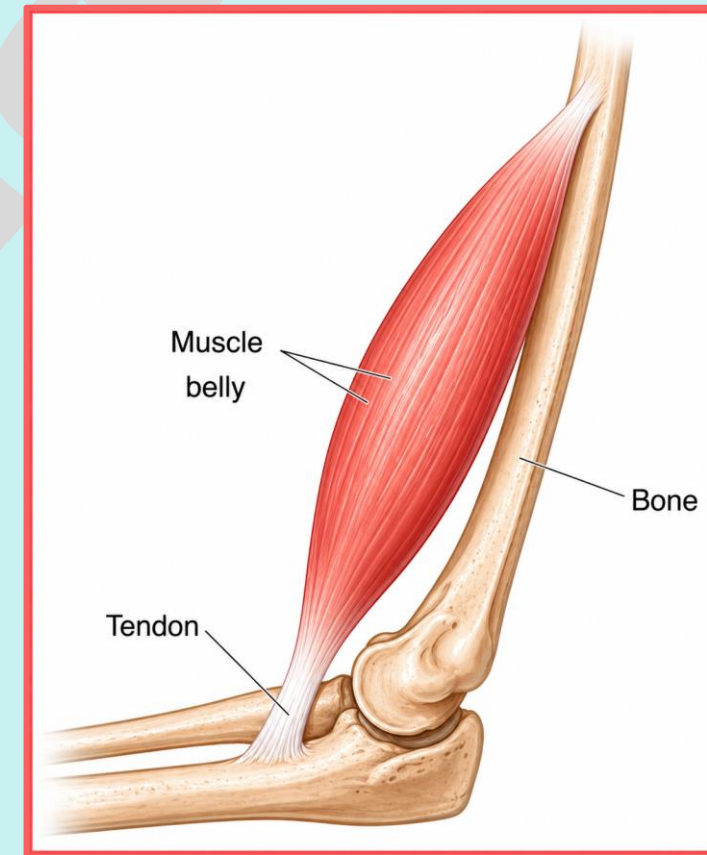
- Thickened, fleshy part; it is the contractile part of the muscle.
- Generally attached to the bone proximal to the bone that is to be moved.

➤ Tendon of the muscle:

- Cord- or rope-like fibrous structure, formed by dense regular connective tissue, connecting the muscle belly to the bone.
- Attached to the bone that is to be moved.

➤ Aponeurosis

- It is a wide, flat sheet of connective tissue that works like a flattened tendon.
- Instead of forming a rope-like structure, it spreads out into a thin but strong layer, allowing a muscle to attach over a large surface area and distribute force more evenly.



General features of Skeletal Muscle

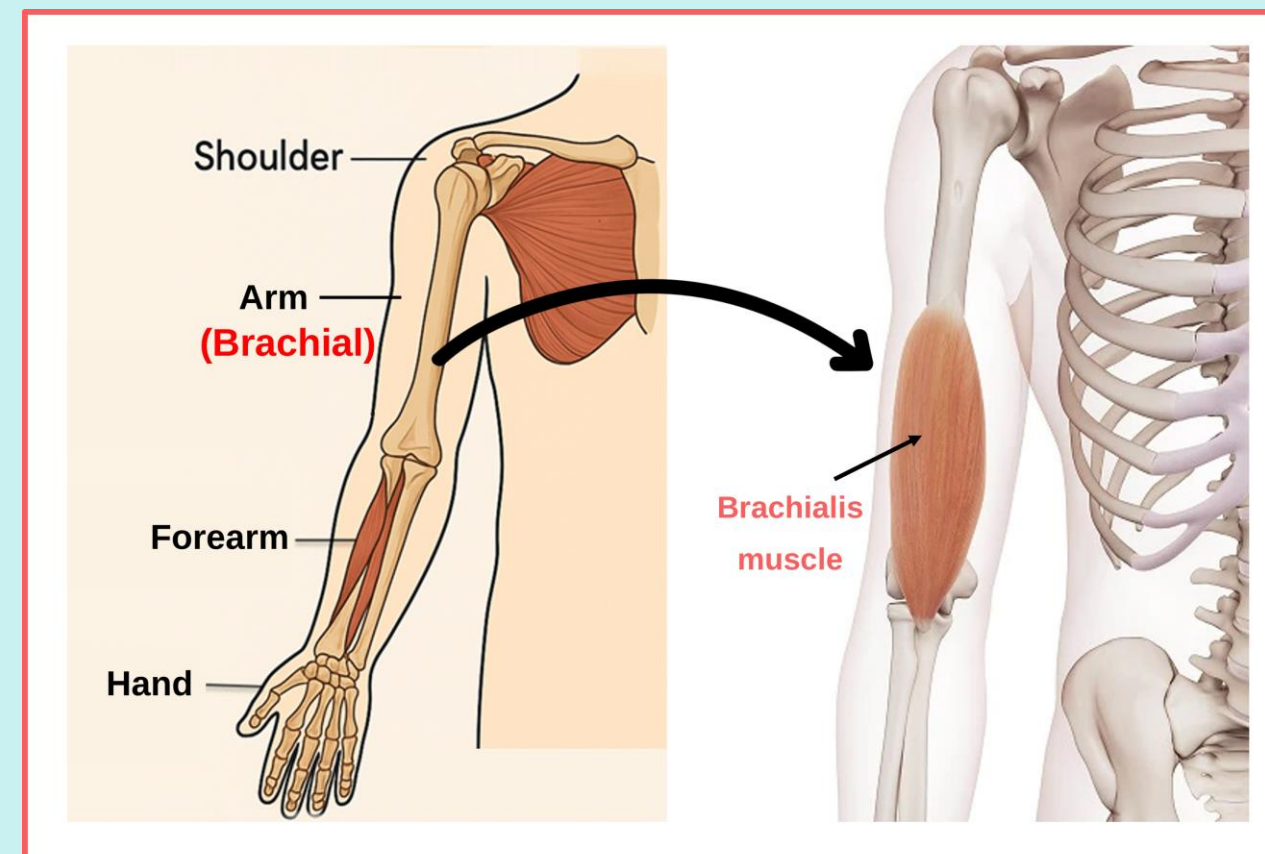
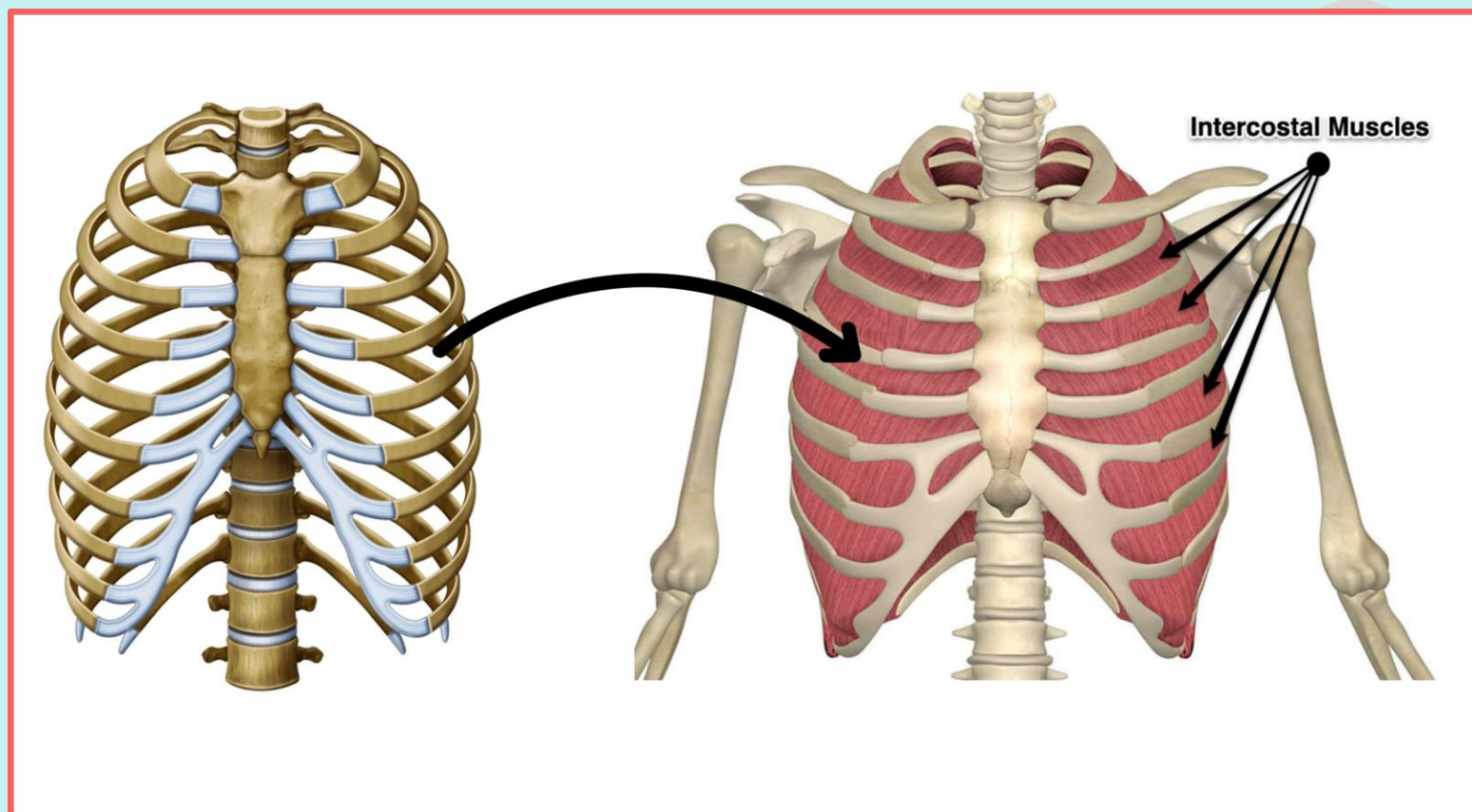
❖ Naming of skeletal muscles

➤ Muscles are named based on several criteria:

1. Location:

• Between the ribs → Intercostal muscles

• Arm region (Brachial region) → Brachialis muscle



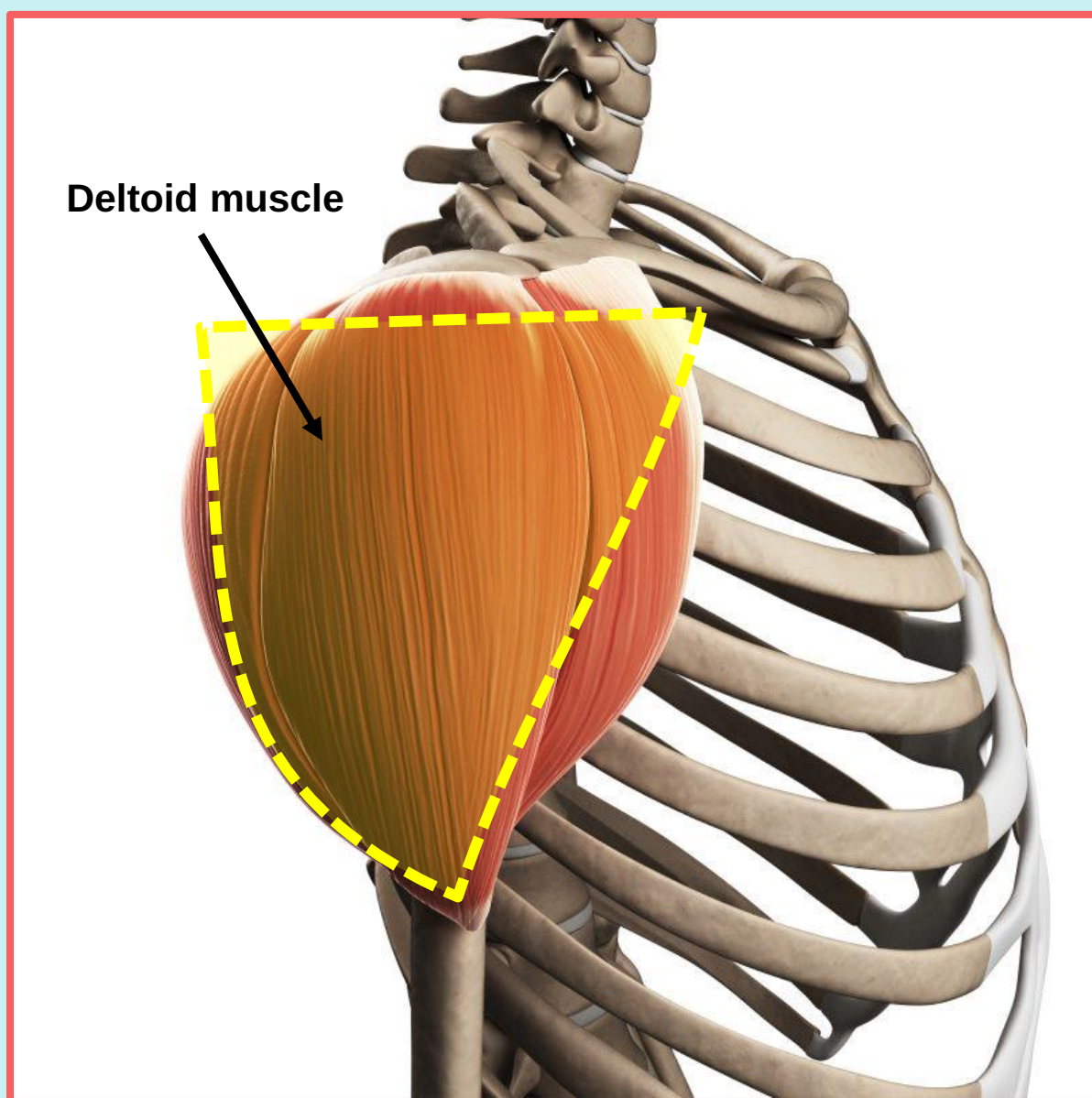
General features of Skeletal Muscle

❖ Naming of skeletal muscles

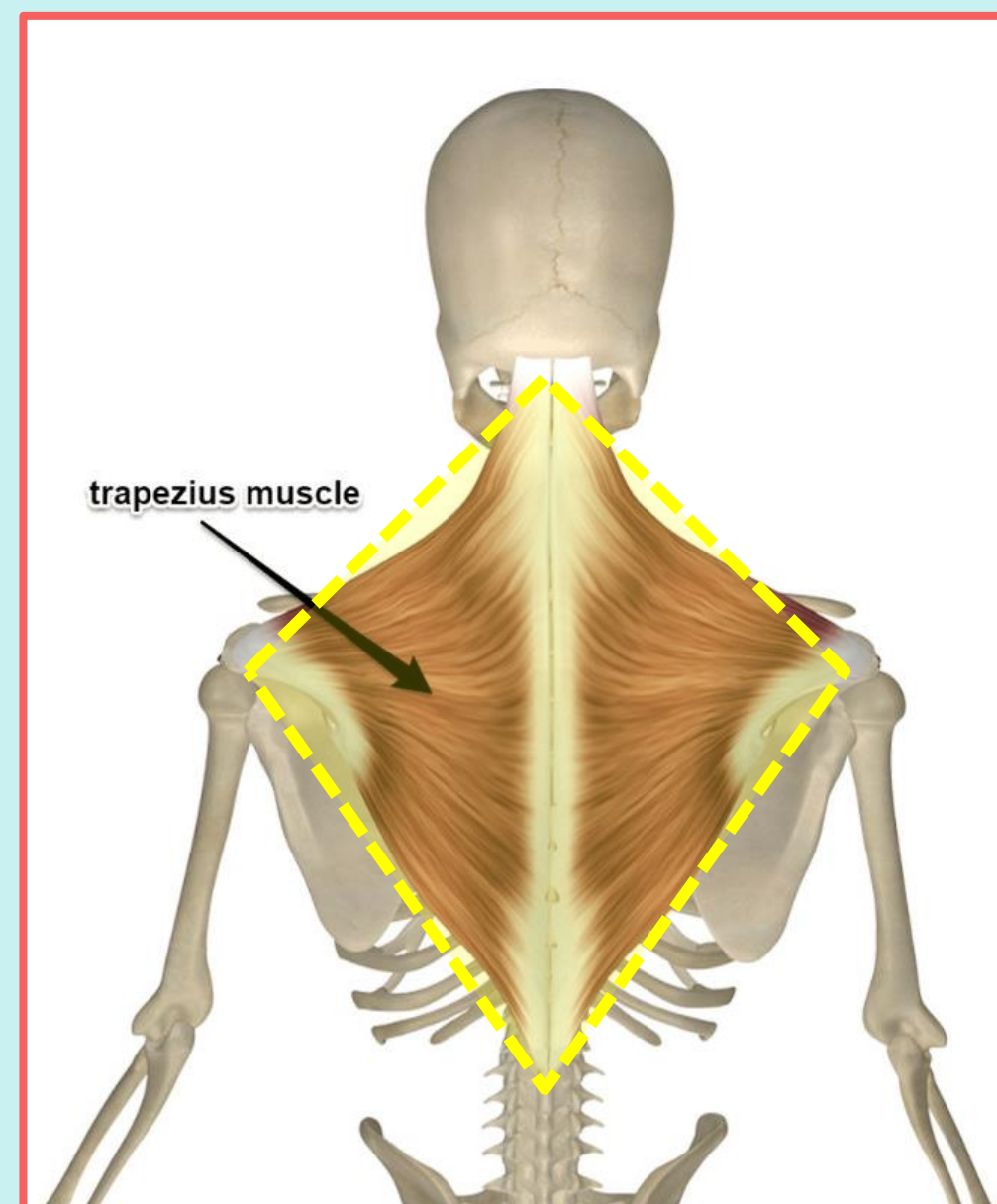
➤ Muscles are named based on several criteria:

2. Shape

• Triangular → Deltoid muscle



• Trapezoid → Trapezius muscle



General features of Skeletal Muscle

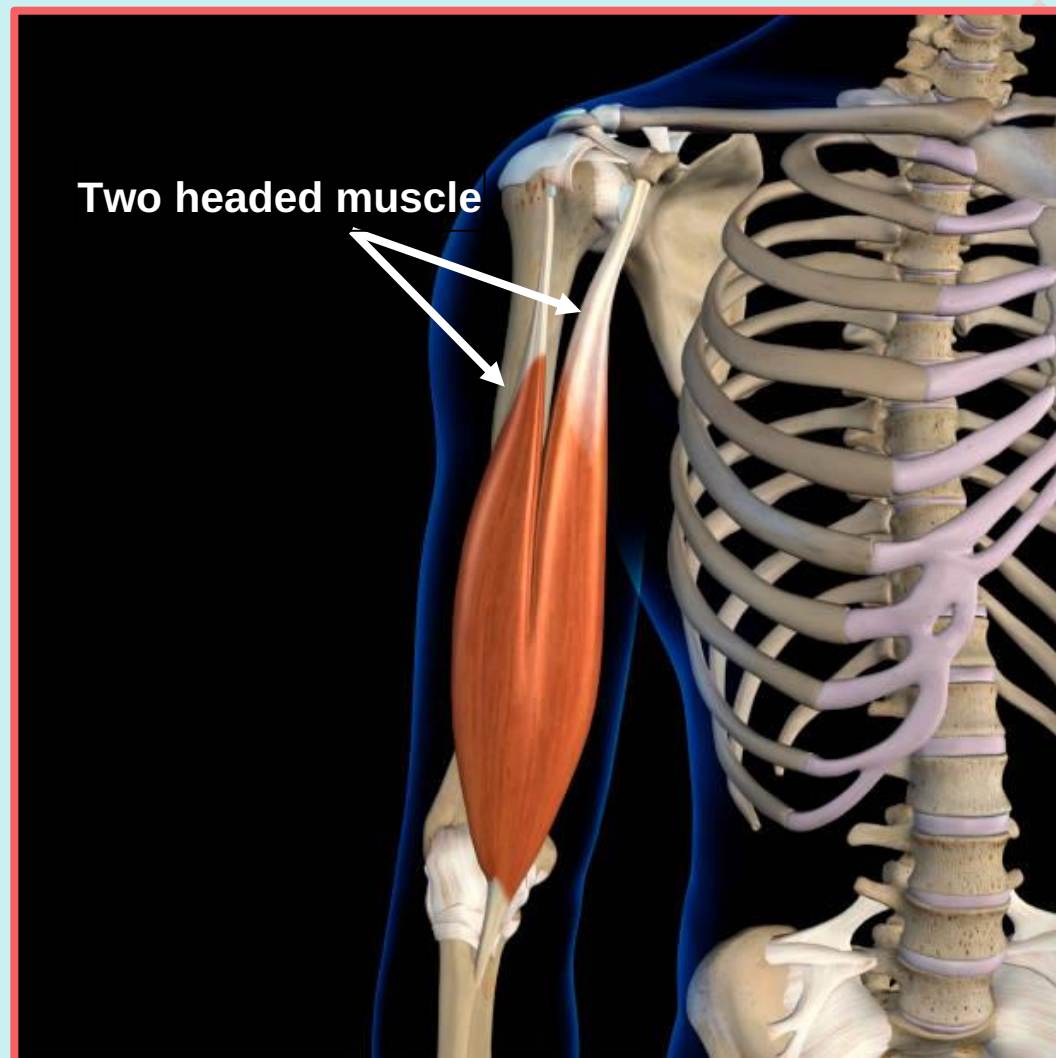
❖ Naming of skeletal muscles

➤ Muscles are named based on several criteria:

3. Number of heads:

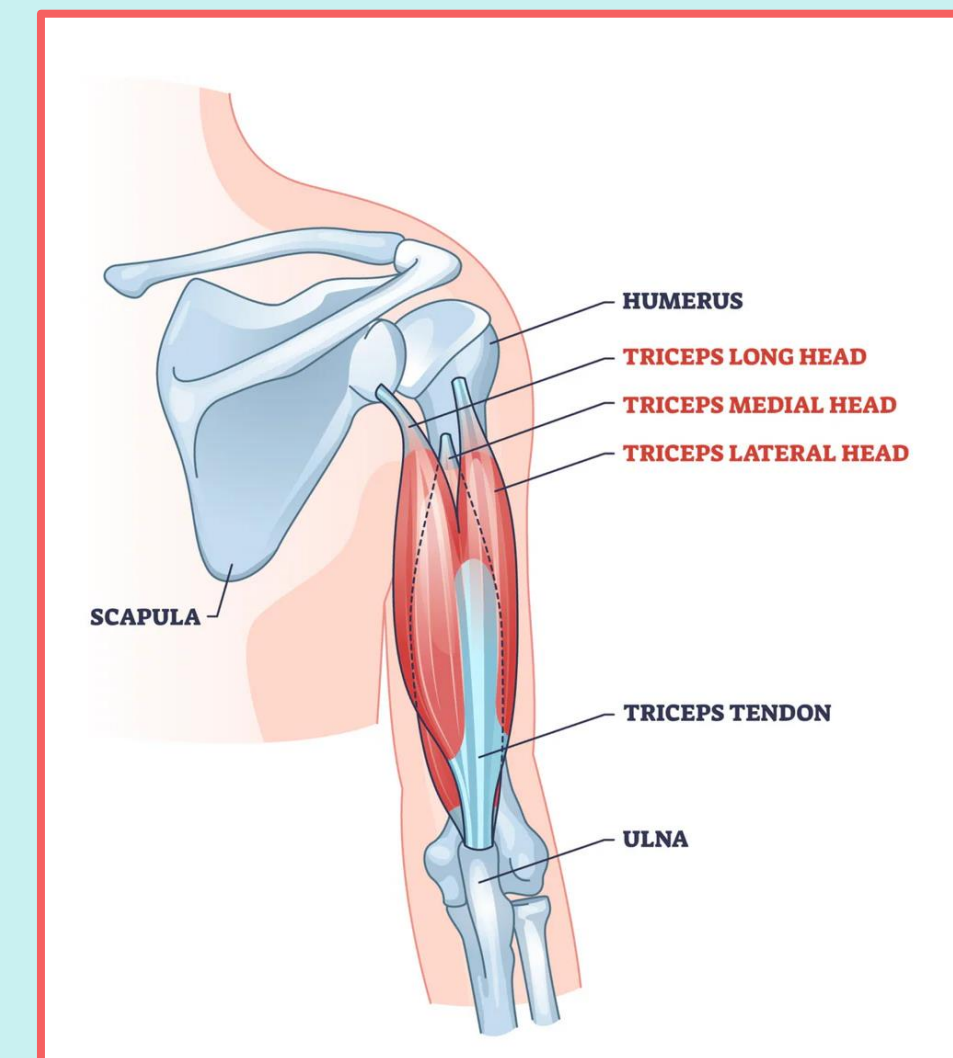
• Two-headed muscle on the front of the arm

→ Biceps brachii muscle



• Three-headed muscle on the back of the arm

→ Triceps brachii muscle



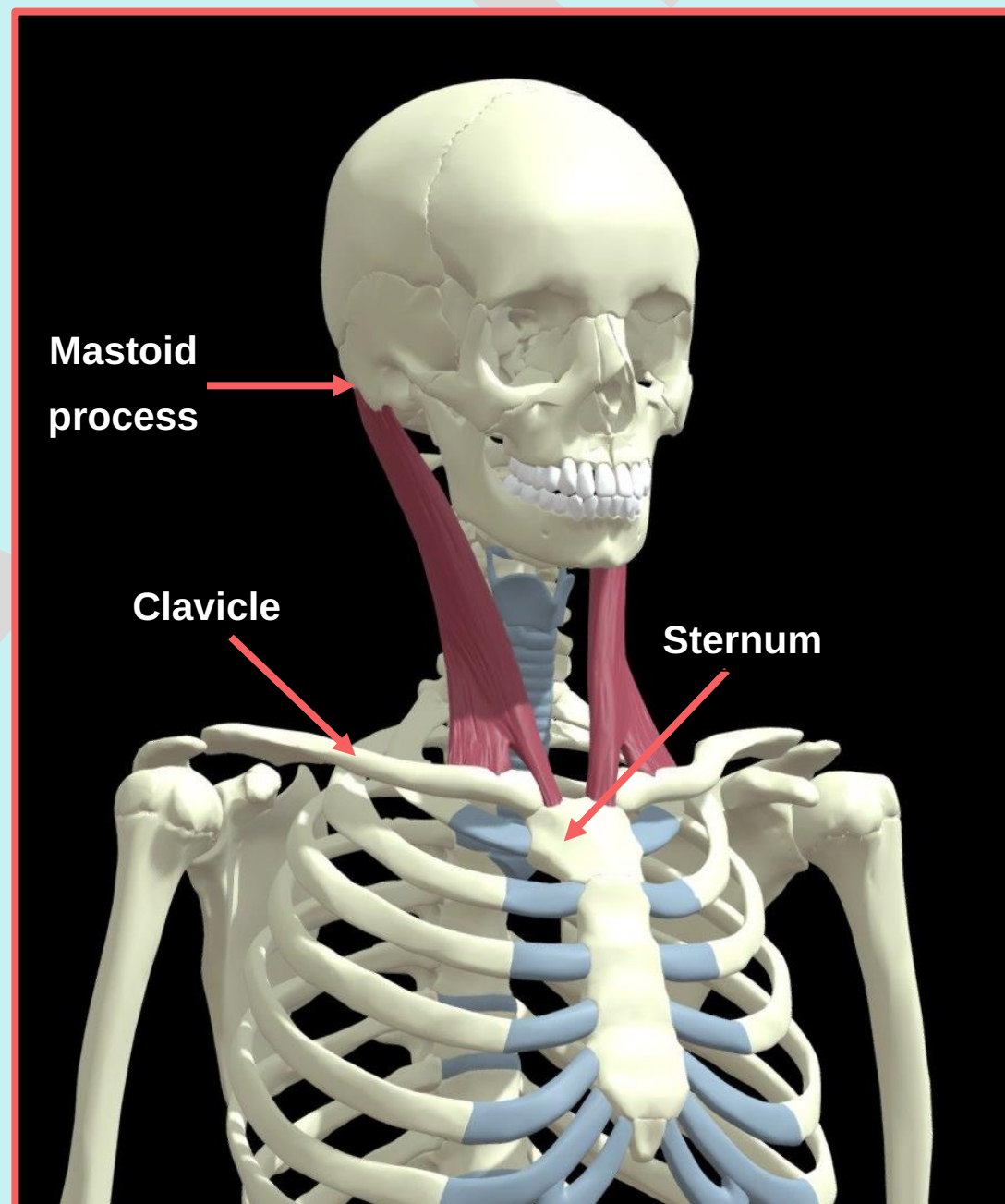
General features of Skeletal Muscle

❖ Naming of skeletal muscles

➤ Muscles are named based on several criteria:

4. Attachments (origin and insertion):

- Originates from the sternum and clavicle and inserts into the mastoid process → Sternocleidomastoid muscle



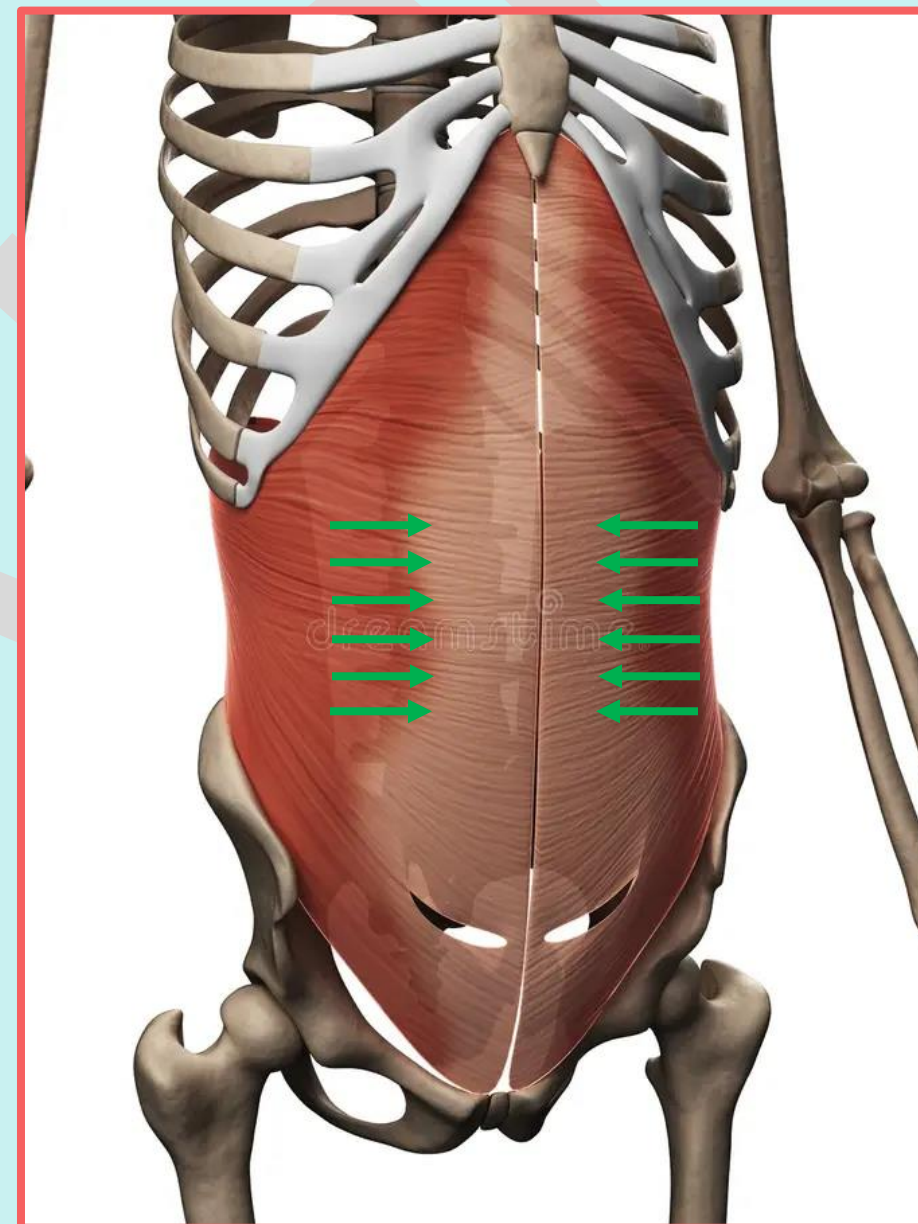
General features of Skeletal Muscle

❖ Naming of skeletal muscles

➤ Muscles are named based on several criteria:

5. Direction of fibers

- Muscle running transversely on the anterior abdominal wall → **Transversus abdominis muscle**



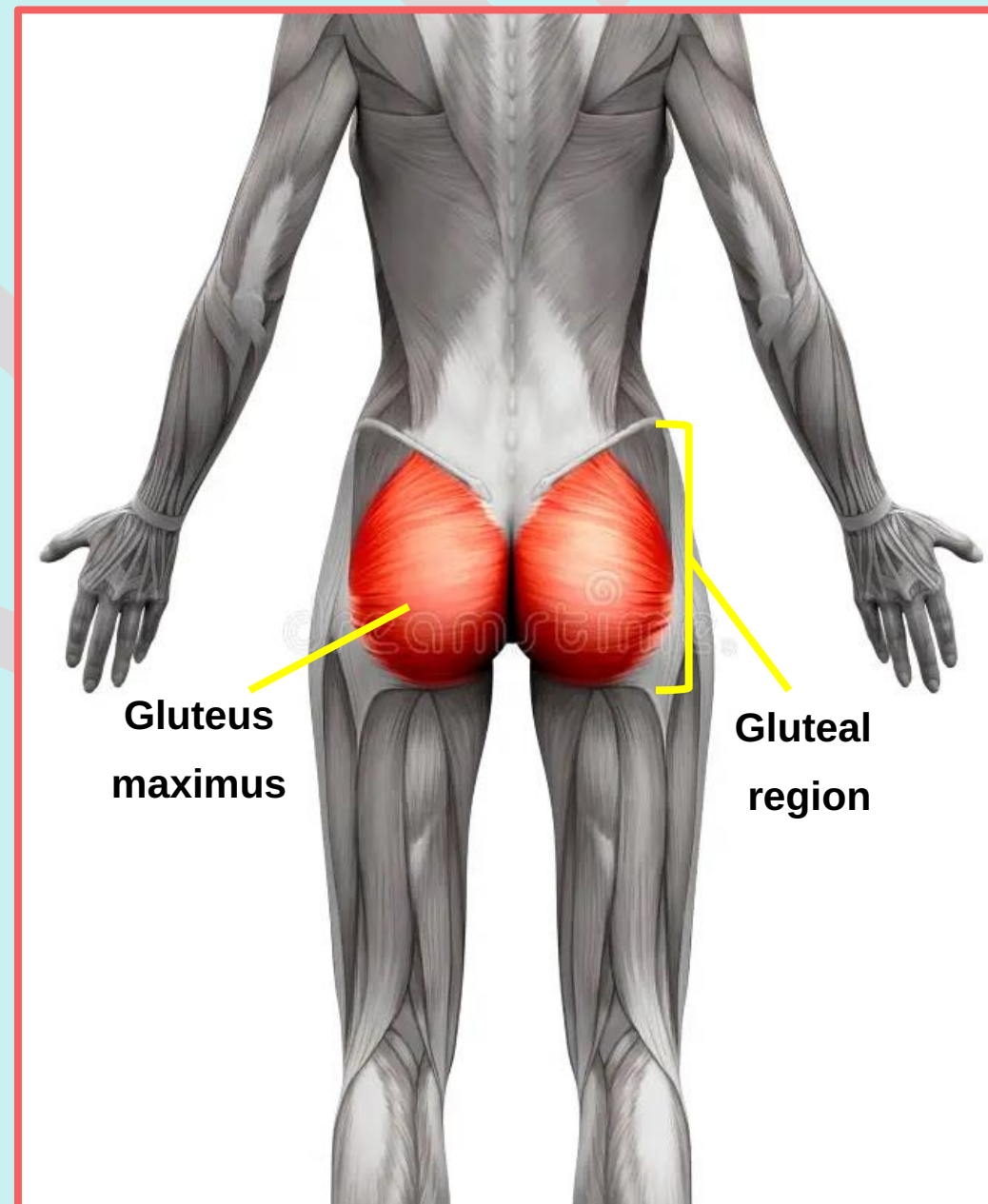
General features of Skeletal Muscle

❖ Naming of skeletal muscles

➤ Muscles are named based on several criteria:

6. Size of muscles:

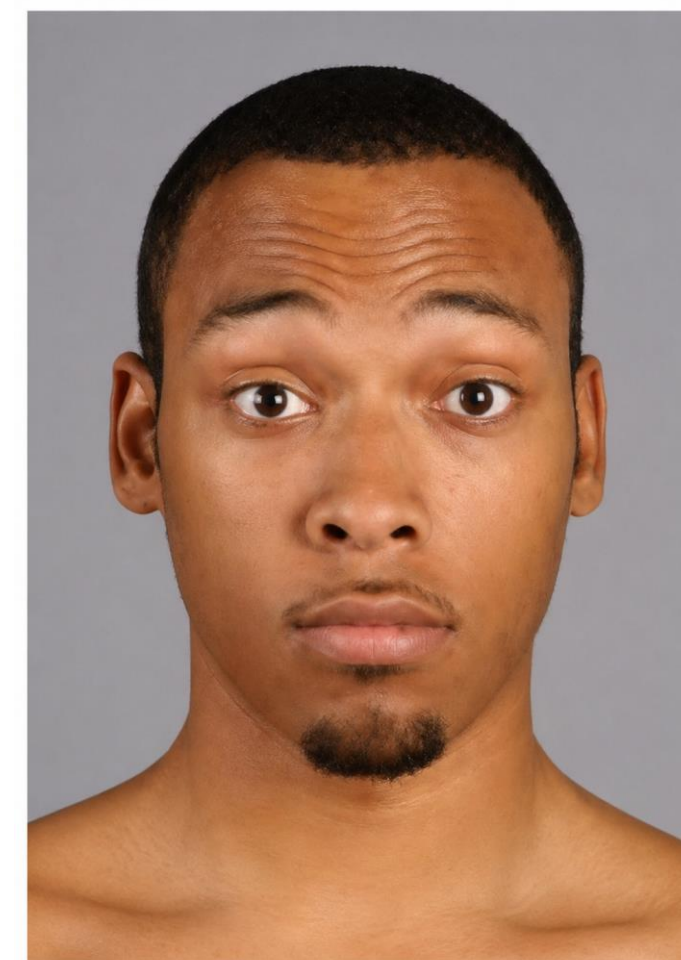
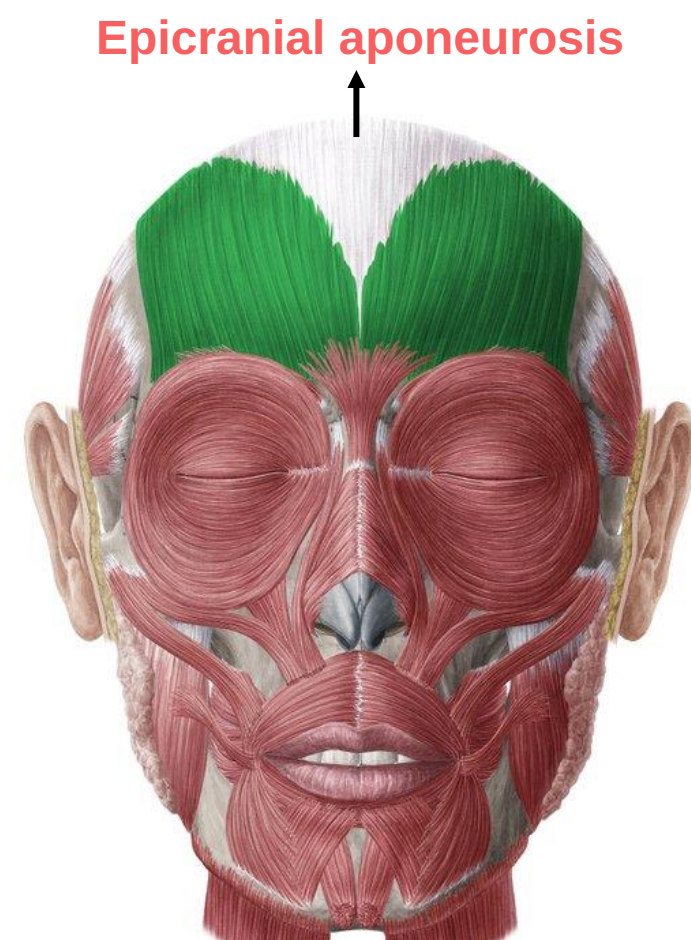
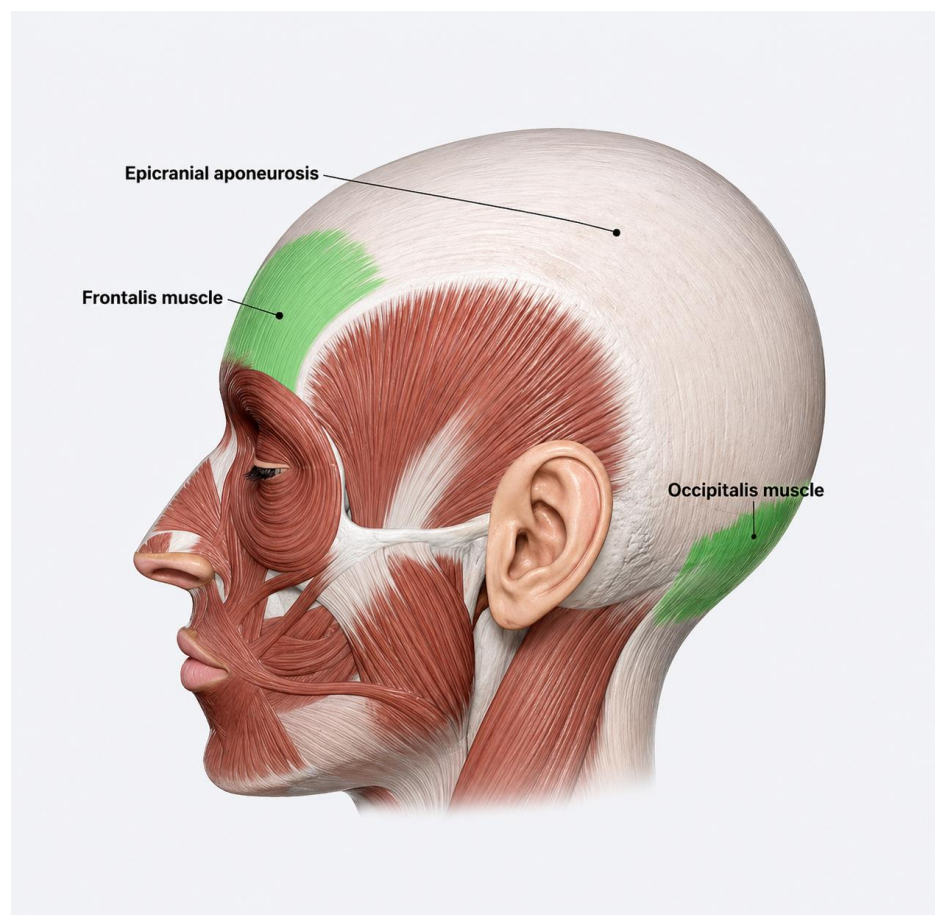
- Largest muscle attached to the gluteal surface of the hip bone → Gluteus maximus muscle



❖ Muscles of the Facial Expression

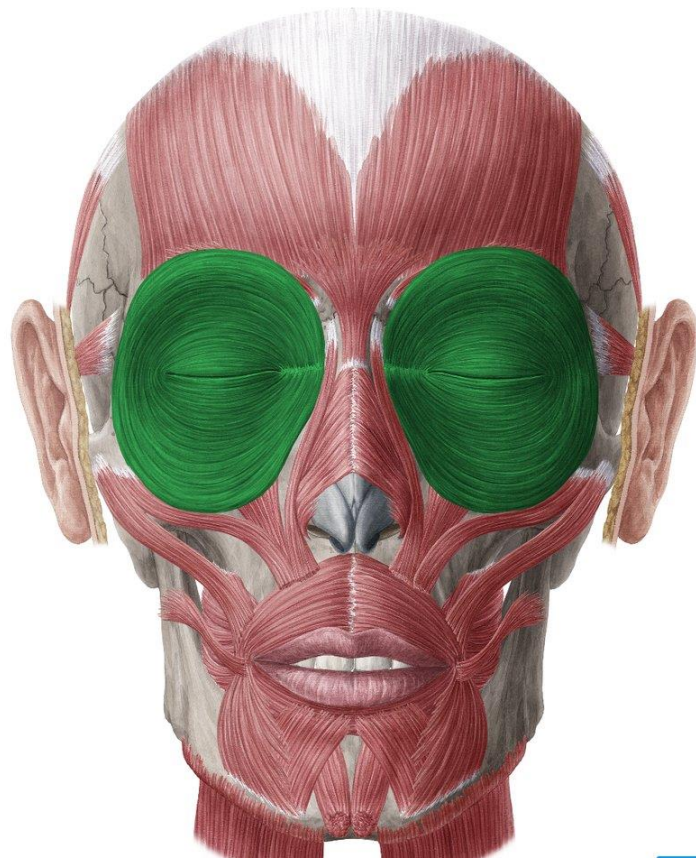
1. Frontalis muscle

Origin	<ul style="list-style-type: none"> • Epicranial aponeurosis
Insertion	<ul style="list-style-type: none"> • Skin of the forehead and eyebrows
Action	<ul style="list-style-type: none"> • Elevates eyebrows and wrinkles skin of forehead.
Nerve Supply	<ul style="list-style-type: none"> • Facial Nerve



❖ Muscles of the Facial Expression**2. Orbicularis Oculi**

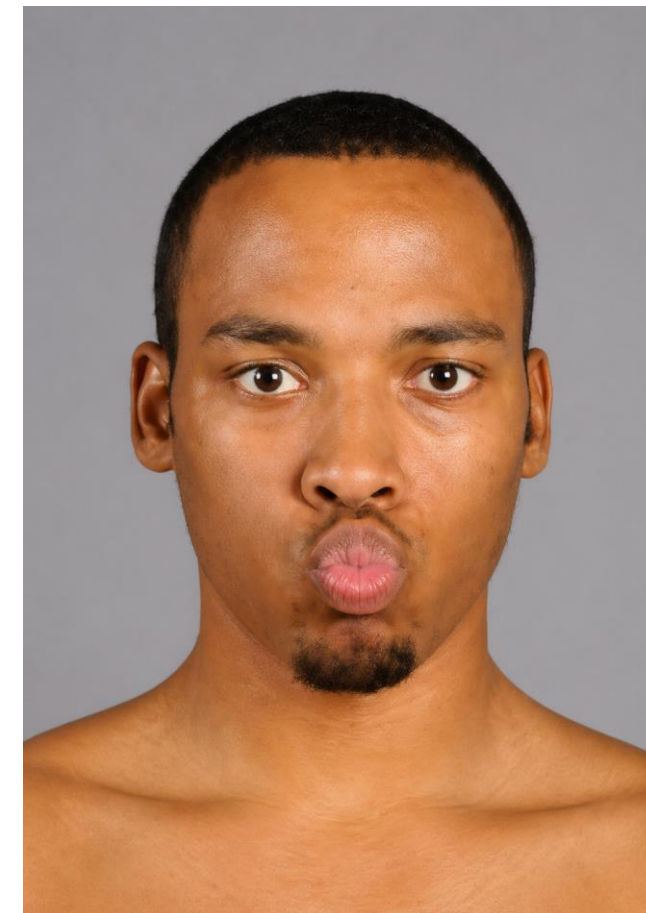
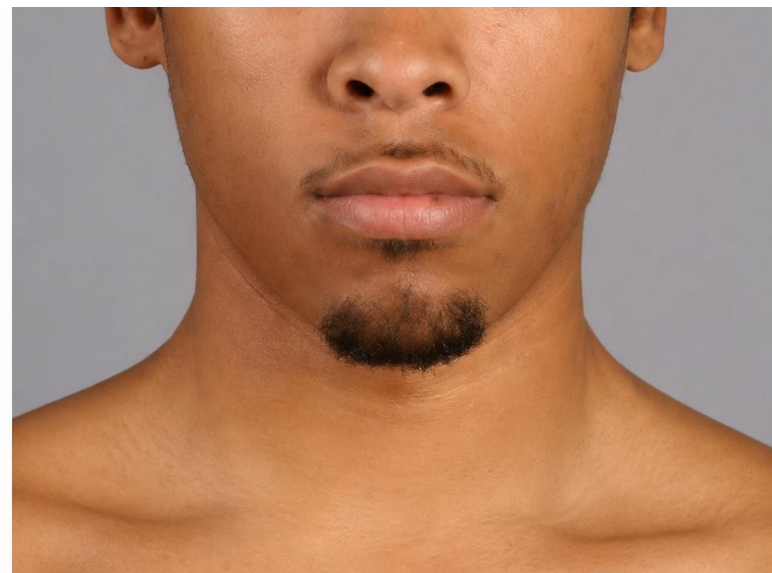
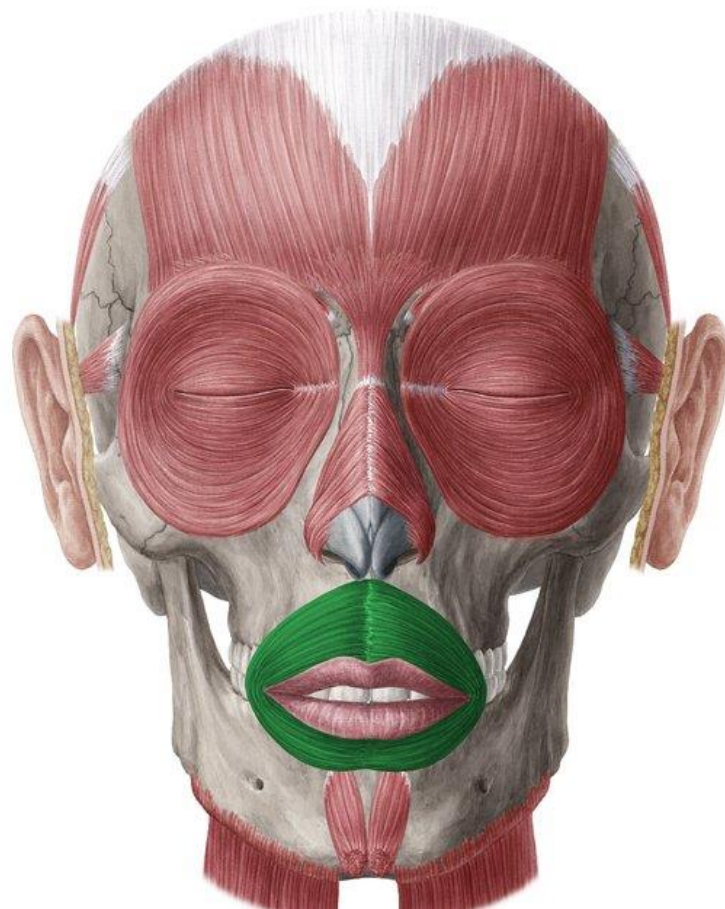
Origin	<ul style="list-style-type: none">• Frontal bone and maxilla (around the eye)
Insertion	<ul style="list-style-type: none">• Skin around the eyelids
Action	<ul style="list-style-type: none">• Closes eyelids
Nerve Supply	<ul style="list-style-type: none">• Facial Nerve



❖ Muscles of the Facial Expression

3. Orbicularis Oris

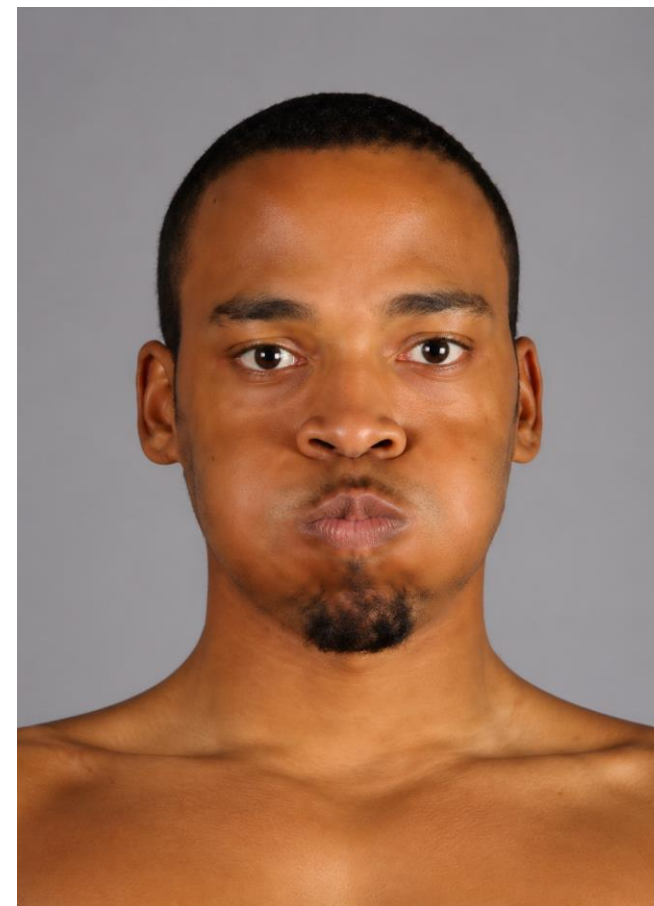
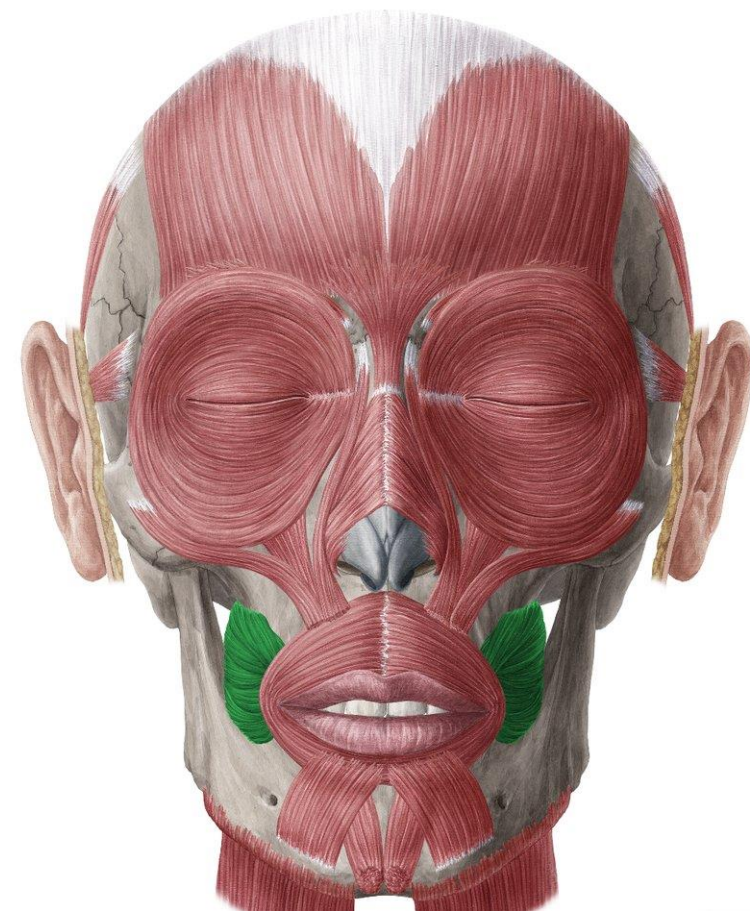
Origin	<ul style="list-style-type: none"> • Maxilla and mandible around the mouth
Insertion	<ul style="list-style-type: none"> • Skin and mucous membrane of lips
Action	<ul style="list-style-type: none"> • Close lips, compresses and protrudes lips
Nerve Supply	<ul style="list-style-type: none"> • Facial Nerve



❖ Muscles of the Facial Expression

4. Buccinator

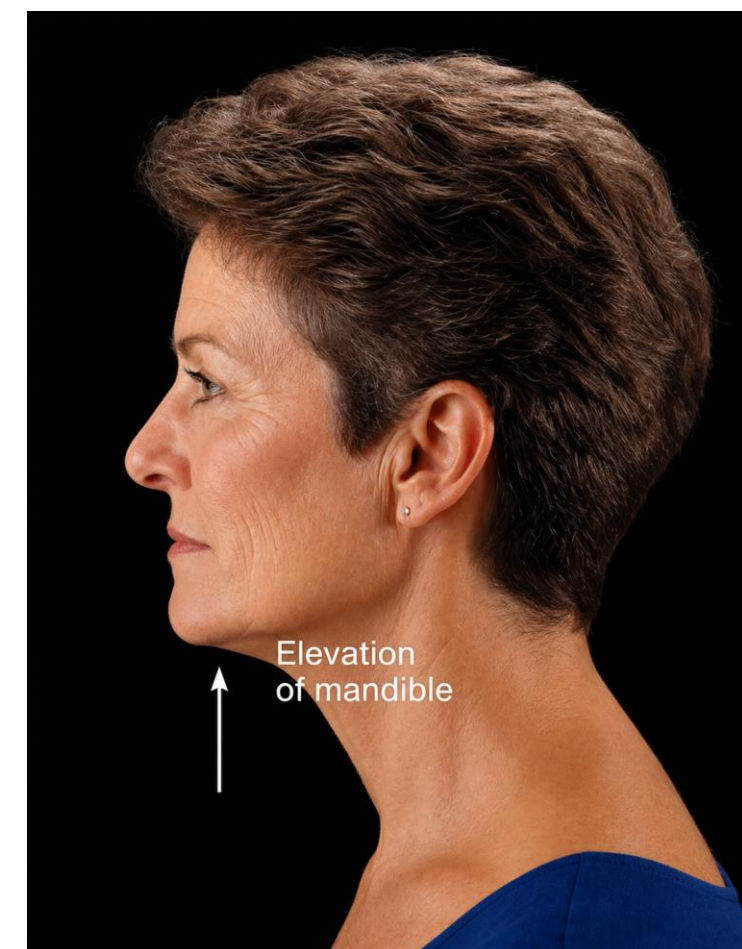
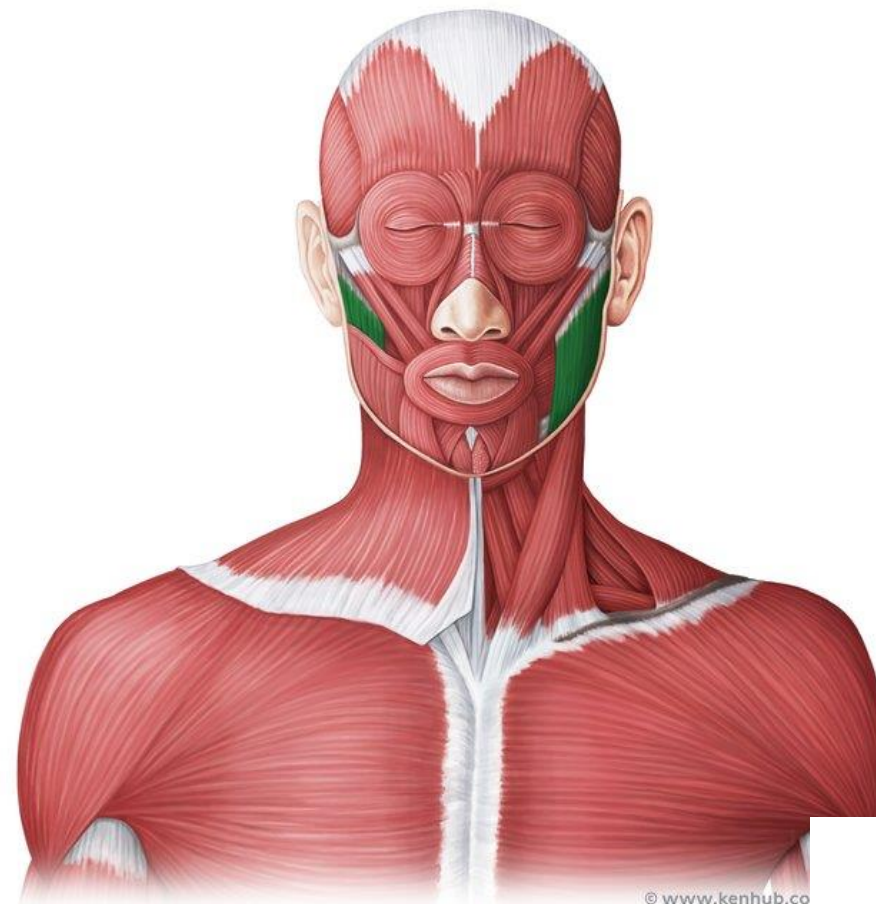
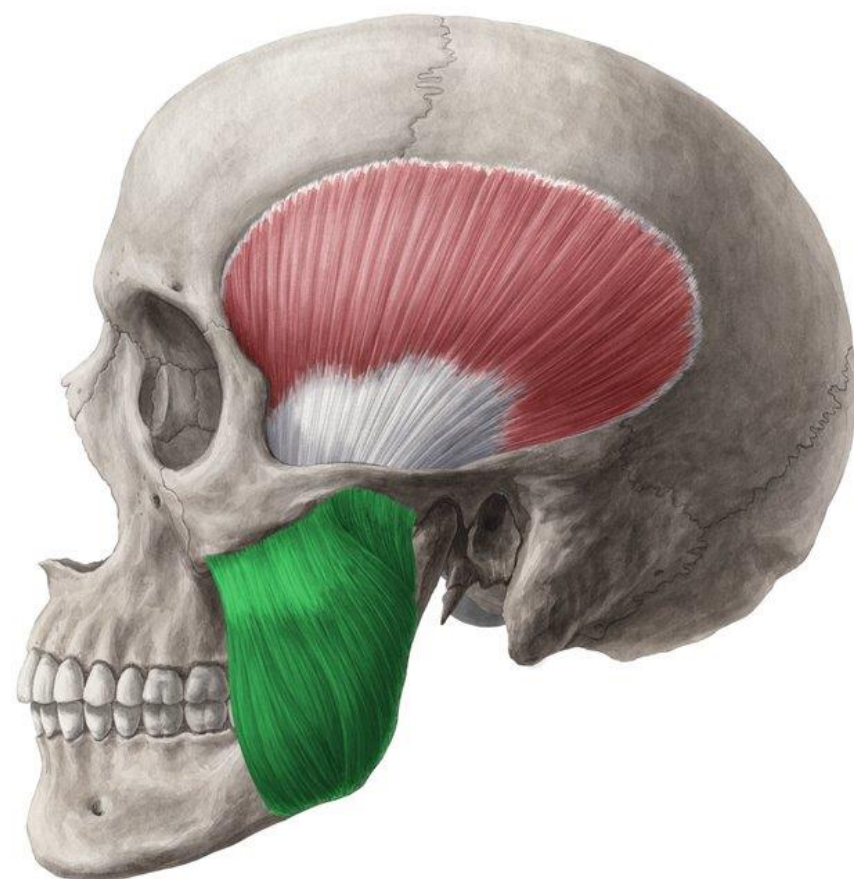
Origin	<ul style="list-style-type: none"> Lateral side of maxilla and mandible.
Insertion	<ul style="list-style-type: none"> Blends with muscles of upper lip
Action	<ul style="list-style-type: none"> Blowing, whistling, and sucking
Nerve Supply	<ul style="list-style-type: none"> Facial Nerve



❖ Muscles of the Mastication

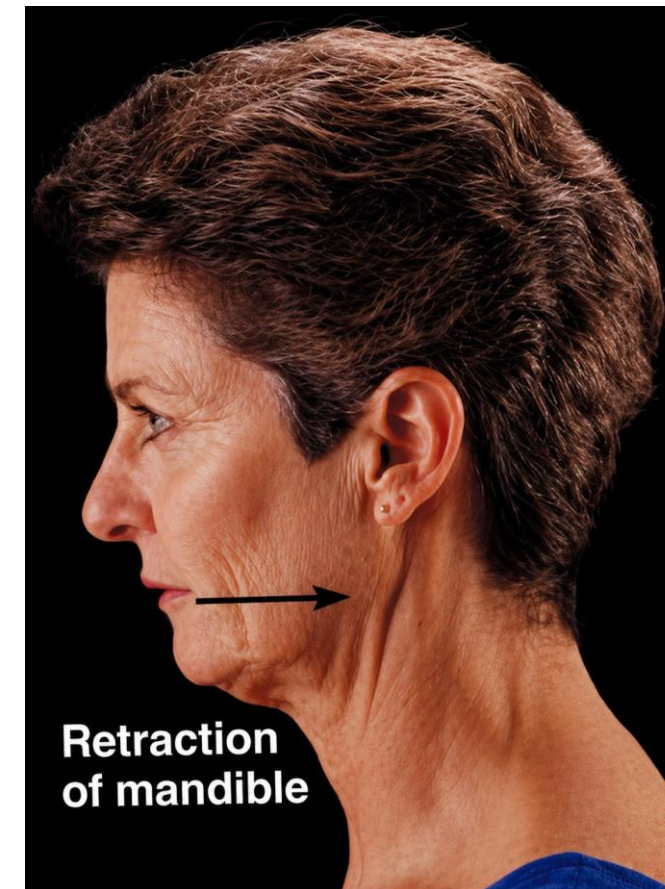
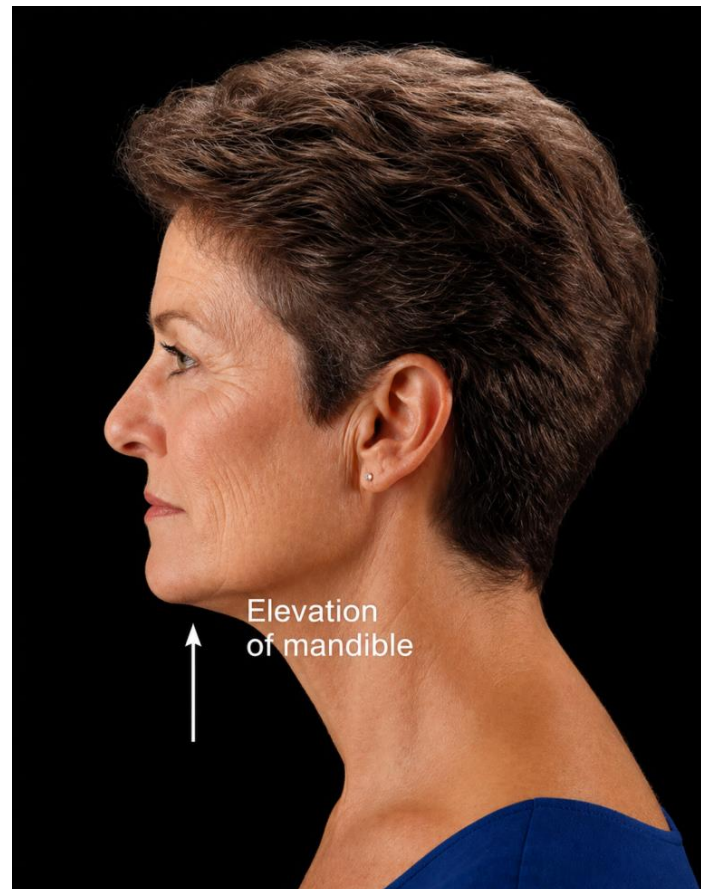
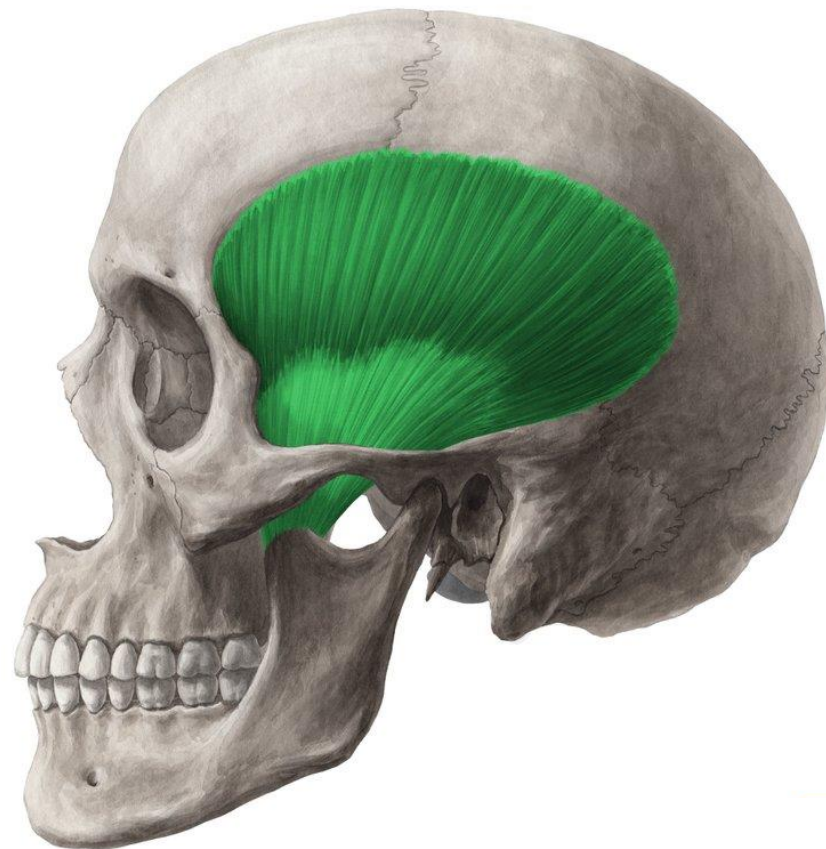
1. Masseter

Origin	<ul style="list-style-type: none"> Zygomatic bone
Insertion	<ul style="list-style-type: none"> Lateral surface of ramus and angle of mandible
Action	<ul style="list-style-type: none"> Elevates the mandible (closes the jaw, helps chewing)
Nerve Supply	<ul style="list-style-type: none"> Trigeminal Nerve



❖ Muscles of the Mastication**2. Temporalis**

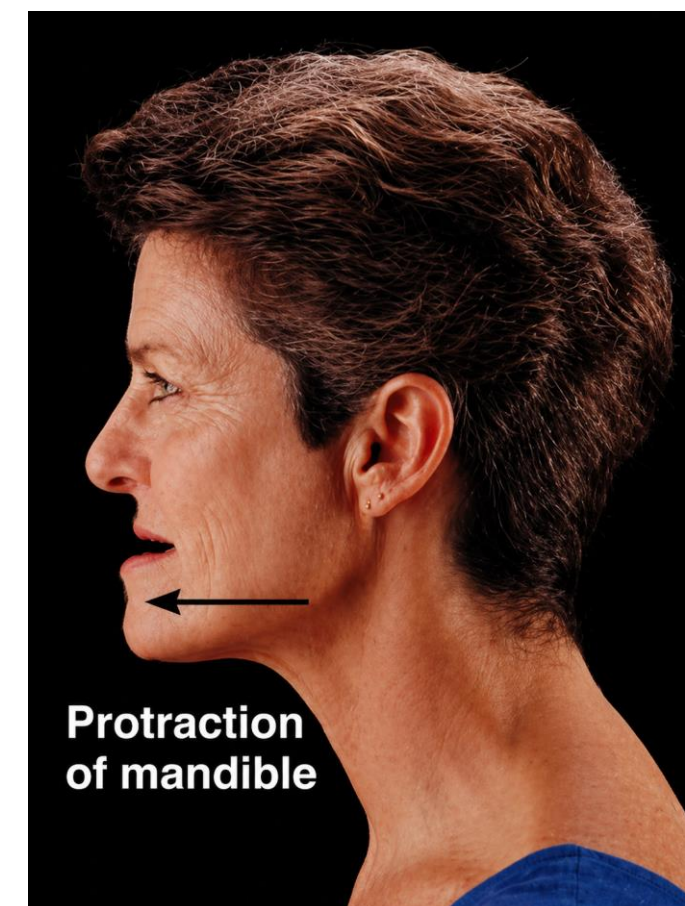
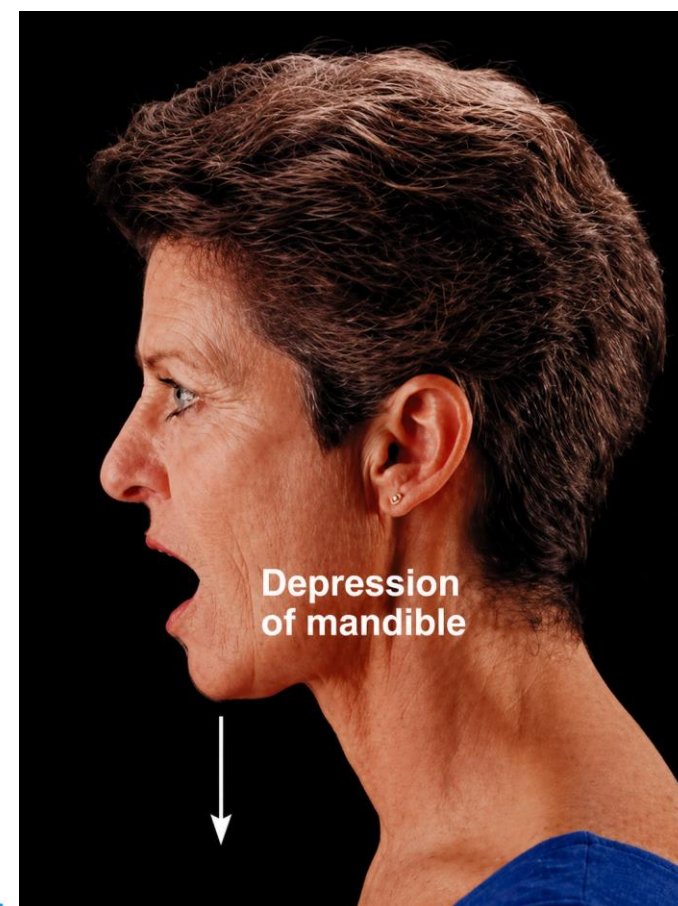
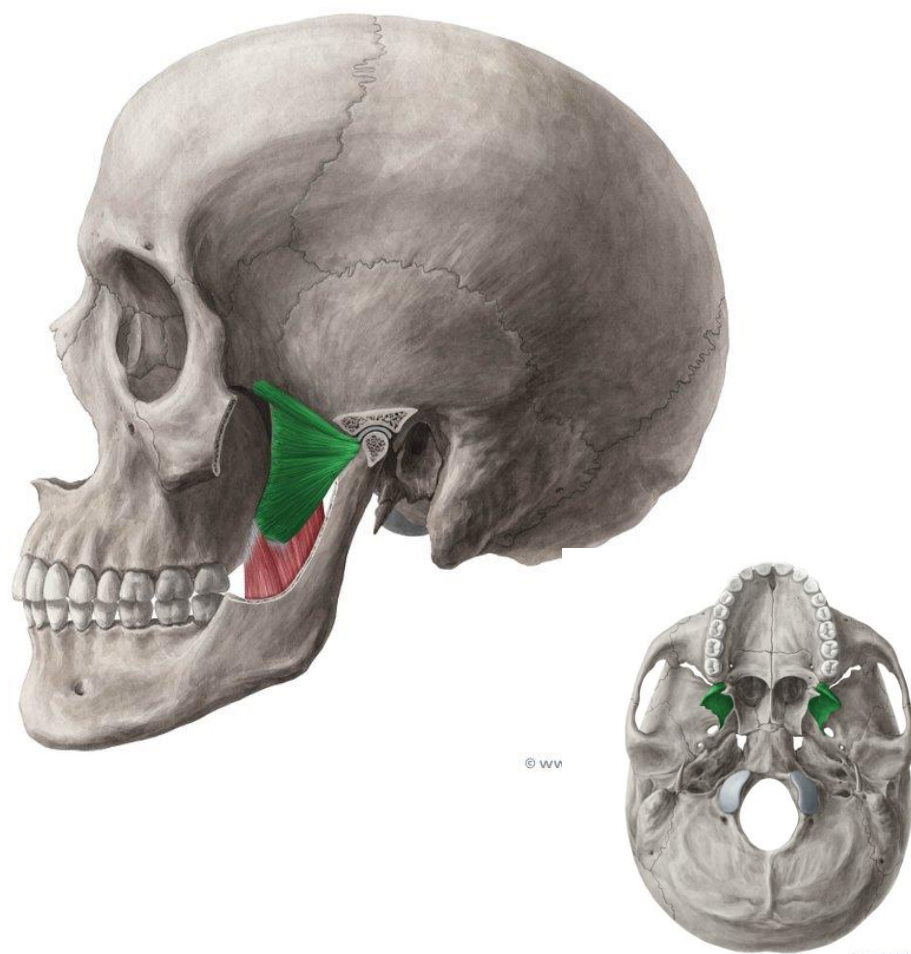
Origin	<ul style="list-style-type: none">• Temporal bone (side of the skull)
Insertion	<ul style="list-style-type: none">• Coronoid process of mandible
Action	<ul style="list-style-type: none">• Elevates and retracts the mandible (chewing movement)
Nerve Supply	<ul style="list-style-type: none">• Trigeminal Nerve



❖ Muscles of the Mastication

3. Lateral pterygoid

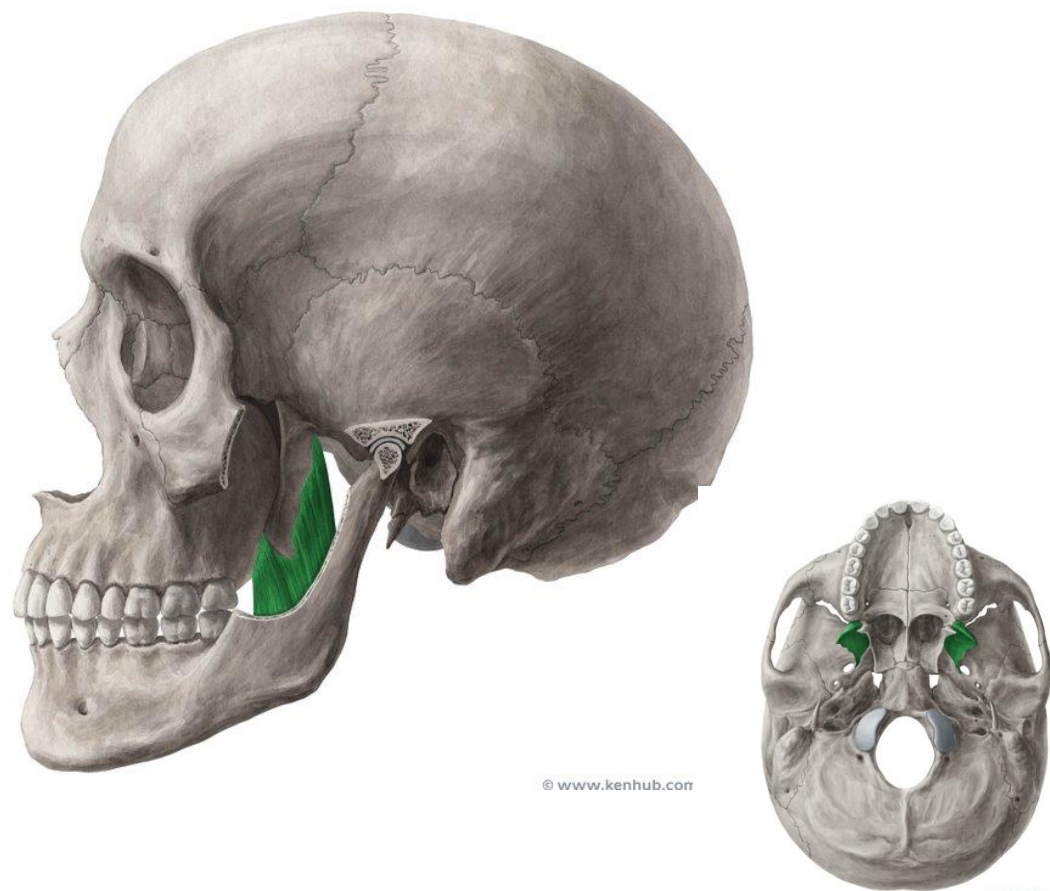
Origin	<ul style="list-style-type: none"> Lateral surface of lateral pterygoid plate of sphenoid bone
Insertion	<ul style="list-style-type: none"> TMJ and Neck of condyloid process of mandible
Action	<ul style="list-style-type: none"> Opens jaw, protrudes mandible, and moves it side to side
Nerve Supply	<ul style="list-style-type: none"> Trigeminal Nerve



❖ Muscles of the Mastication

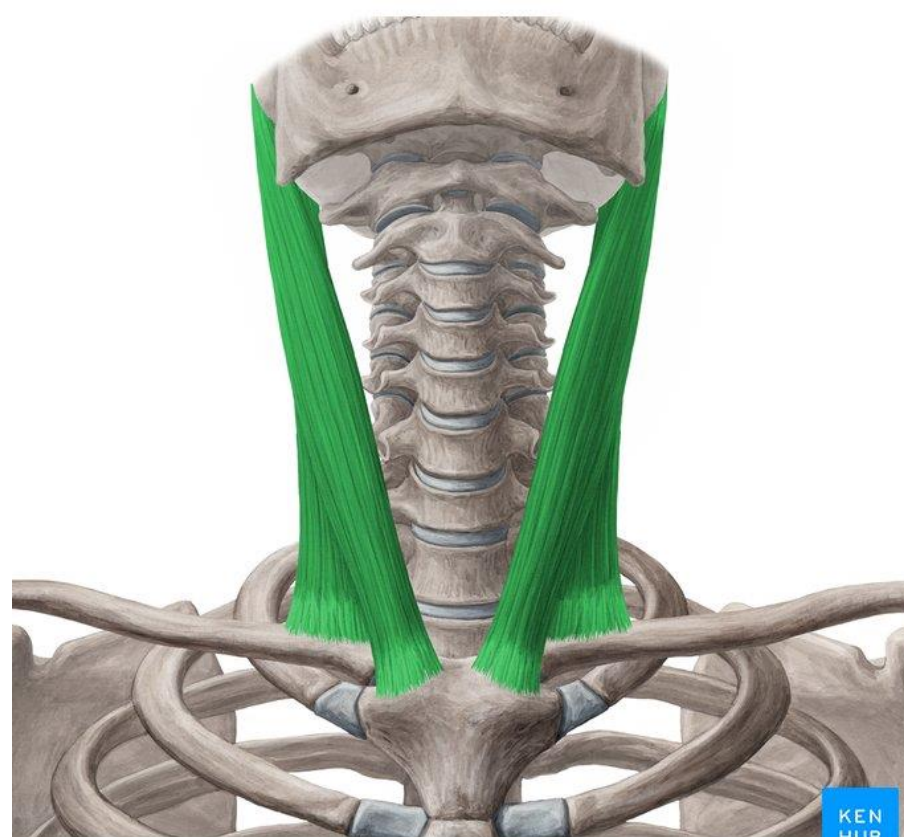
4. Medial pterygoid

Origin	<ul style="list-style-type: none"> • Medial surface of lateral pterygoid plate of sphenoid bone
Insertion	<ul style="list-style-type: none"> • Medial surface of ramus and angle of mandible
Action	<ul style="list-style-type: none"> • Elevates the mandible (closes jaw) and moves it side to side
Nerve Supply	<ul style="list-style-type: none"> • Trigeminal Nerve



1. Sternocleidomastoid

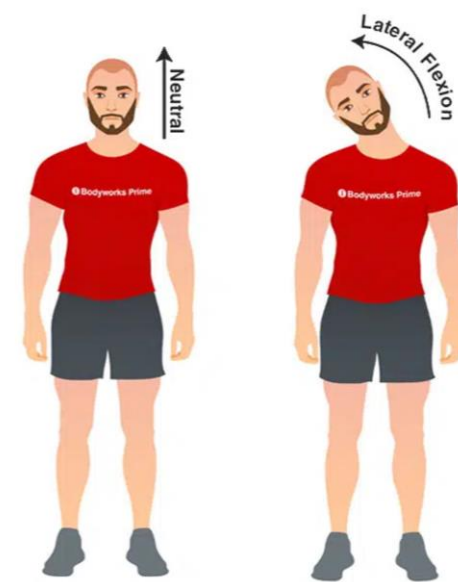
Origin	<ul style="list-style-type: none"> • Sternal head: superior part of manubrium sterni • Clavicular head: superior surface of medial third of the clavicle
Insertion	<ul style="list-style-type: none"> • Mastoid process of the temporal bone
Action	<ul style="list-style-type: none"> • Unilateral contraction: Neck lateral flexion, neck rotation • Bilateral contraction: Neck flexion.
Nerve Supply	<ul style="list-style-type: none"> • Spinal accessory nerve



© www.kenhub.com

KEN
HUB

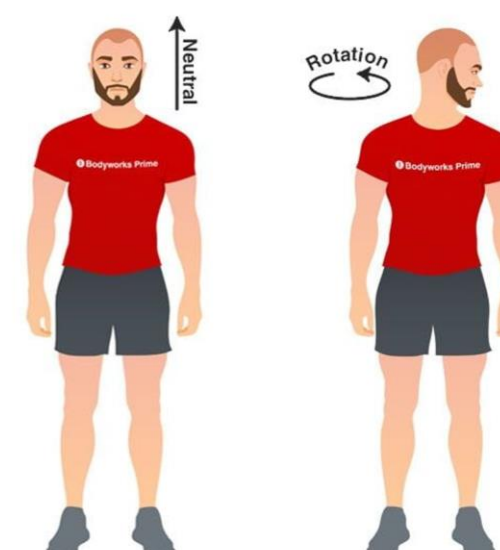
Neck Lateral Flexion



Bodyworks Prime

www.bodyworksprime.com

Neck Rotation



Bodyworks Prime

www.bodyworksprime.com

Neck Flexion



Bodyworks Prime

www.bodyworksprime.com

❖ Muscles of the Thoracic wall:

1. Pectoralis major

Origin

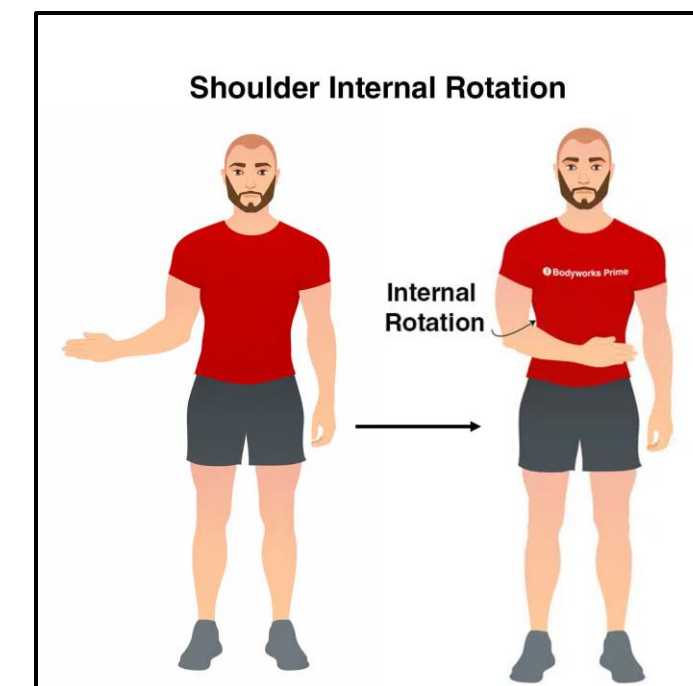
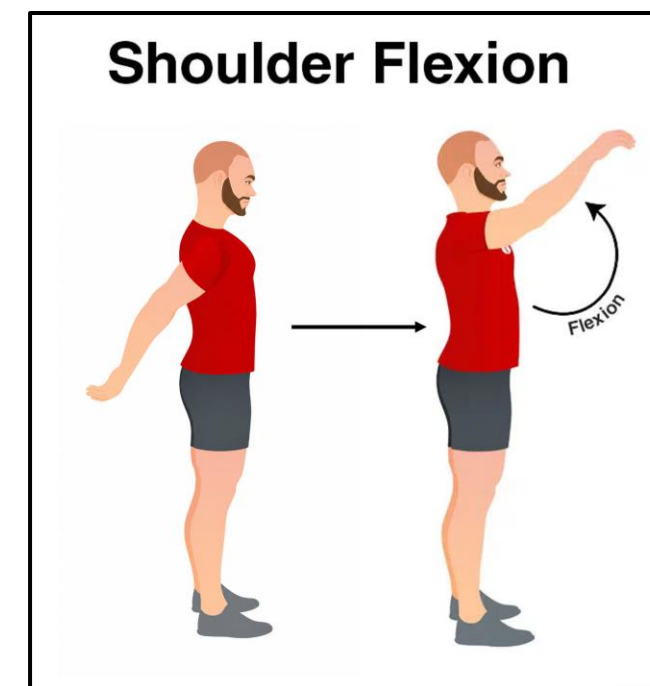
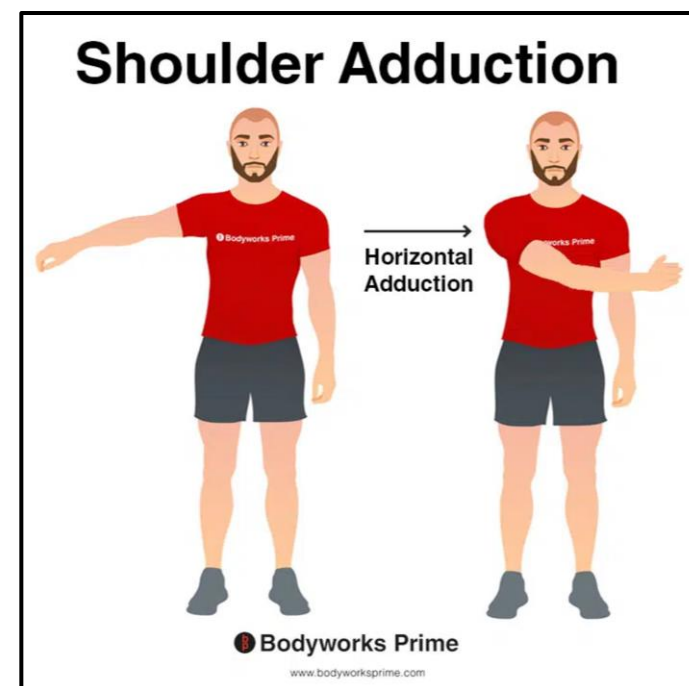
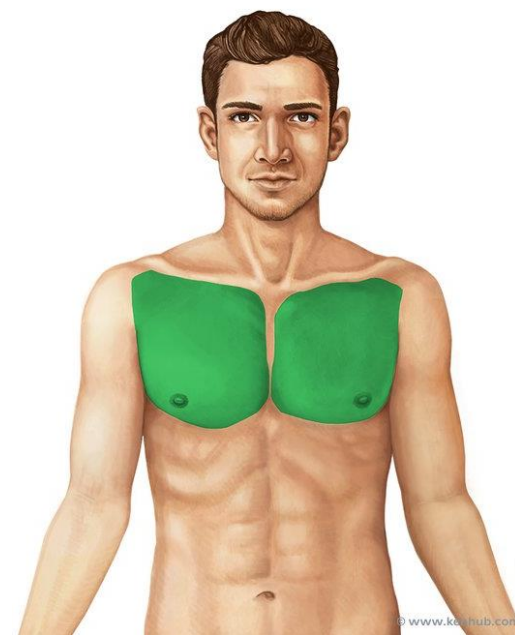
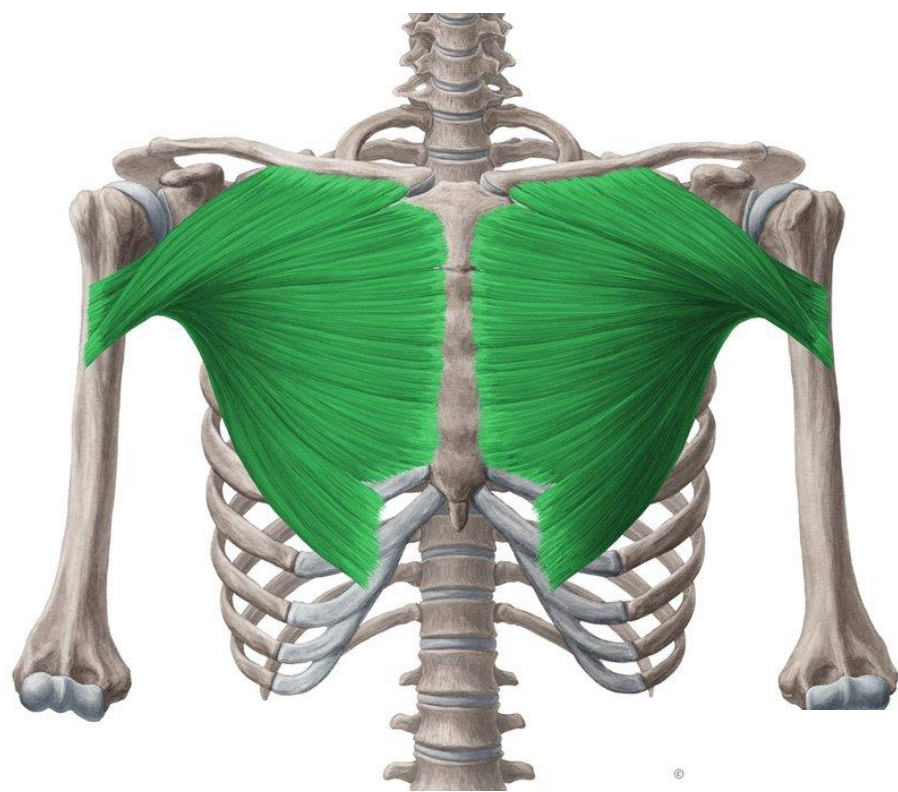
- Clavicular part: anterior surface of medial half of clavicle
- Sternocostal part: anterior surface of sternum and Costal cartilages of ribs 1-6

Insertion

- Lateral lip of intertubercular sulcus of humerus

Action

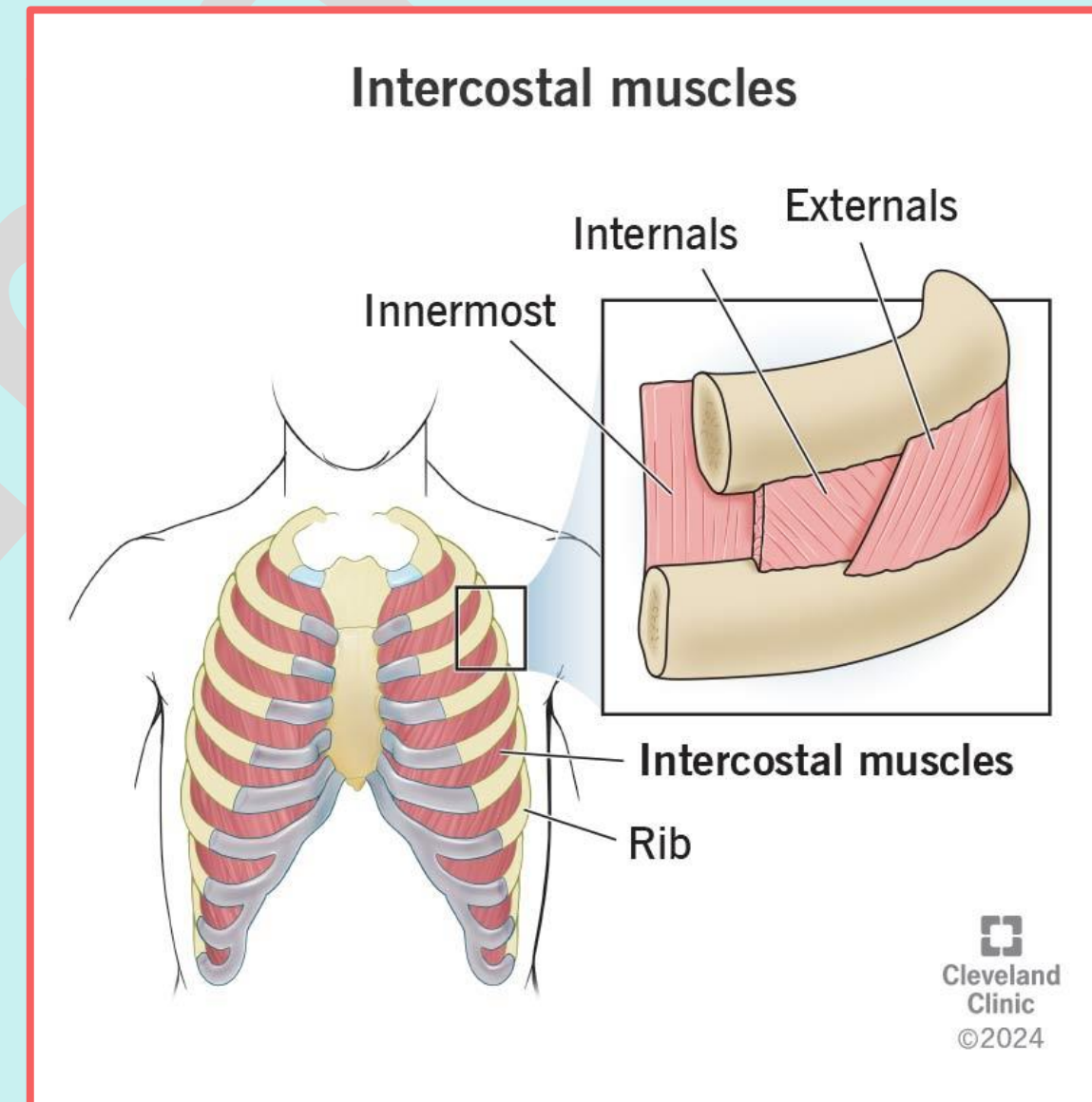
- Arm adduction, Arm internal rotation, Arm flexion



❖ Muscles of the Thoracic wall:

2. Intercostal muscles:

- The intercostal muscles are a group of muscles that occupy the 11 intercostal spaces.
- They are arranged in three layers from superficial to deep:
 1. External intercostal muscles
 2. Internal intercostal muscles
 3. Innermost intercostal muscles
- They are all accessory respiratory muscles that participate in the process of breathing.

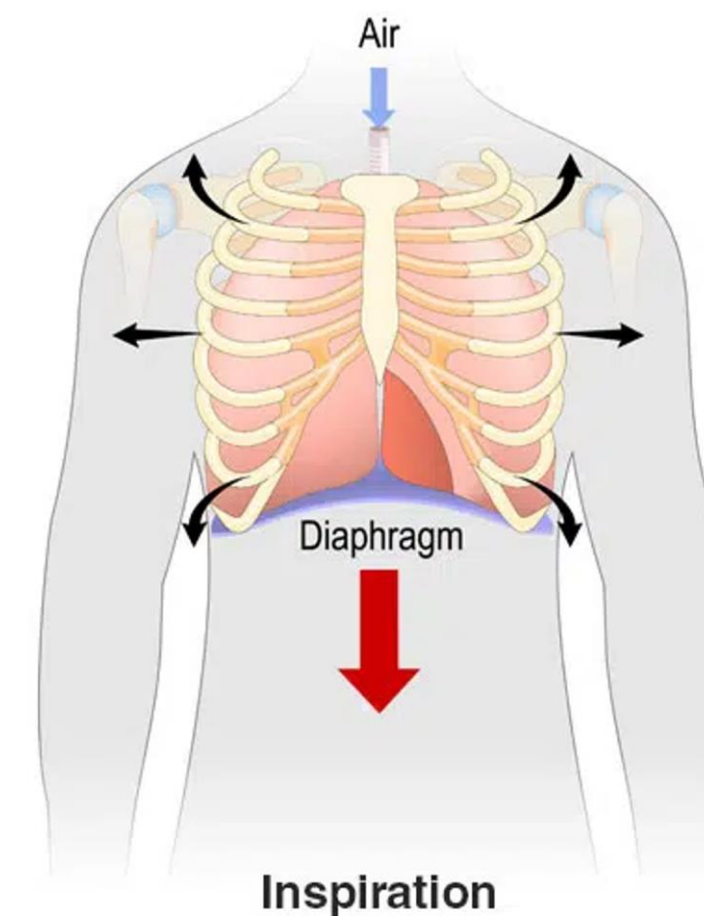
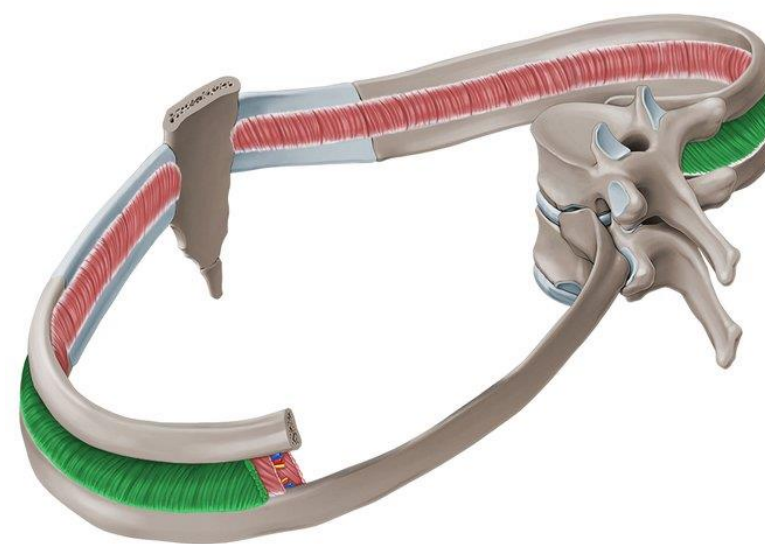
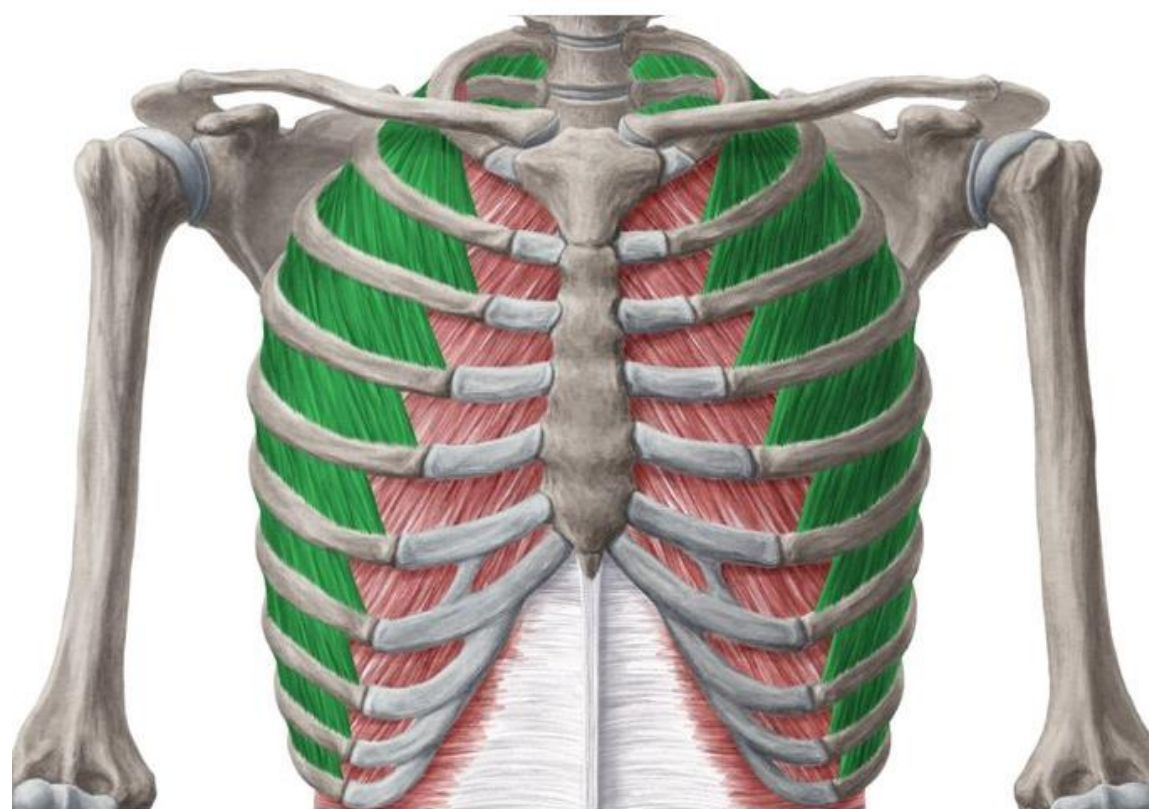


❖ Muscles of the Thoracic wall:

2. Intercostal muscles:

2.1 External intercostal muscle

Origin	<ul style="list-style-type: none"> Lower border of rib above. 	Fibers pass downward and forward
Insertion	<ul style="list-style-type: none"> Upper border of the rib below 	
Action	<ul style="list-style-type: none"> Elevates the ribs during inspiration (helps with breathing in). 	

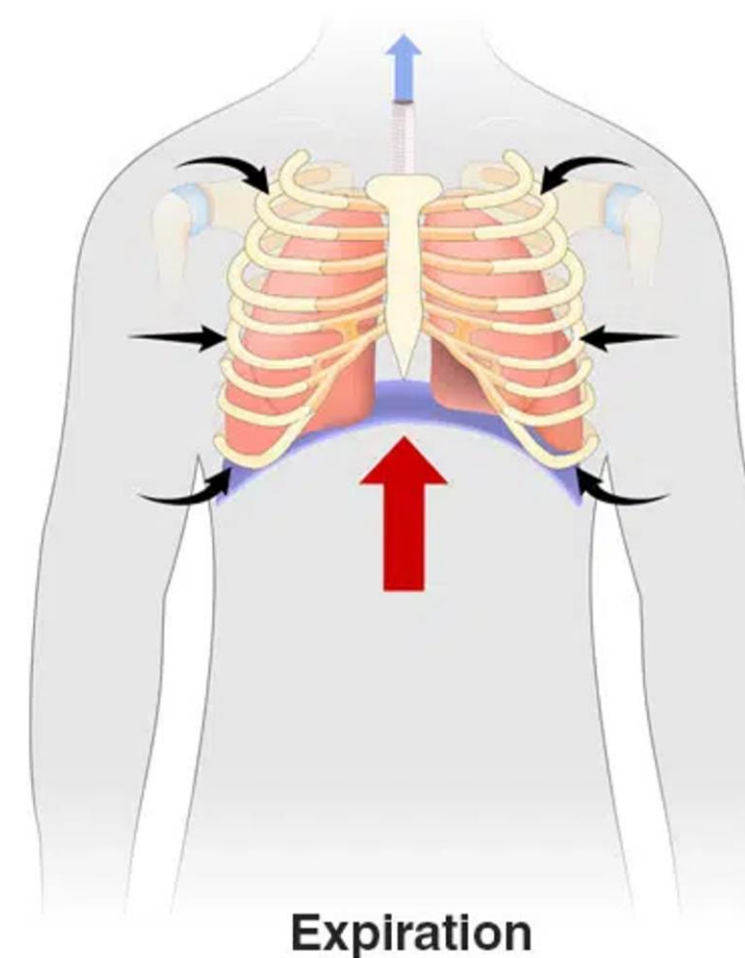
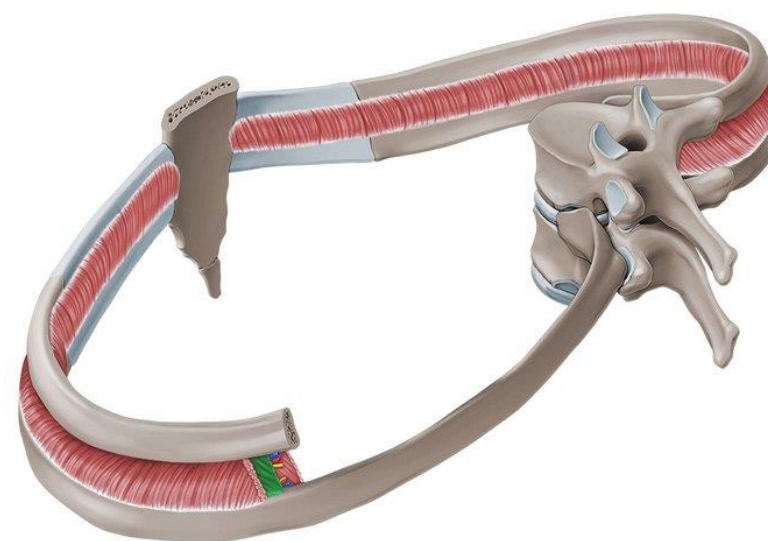
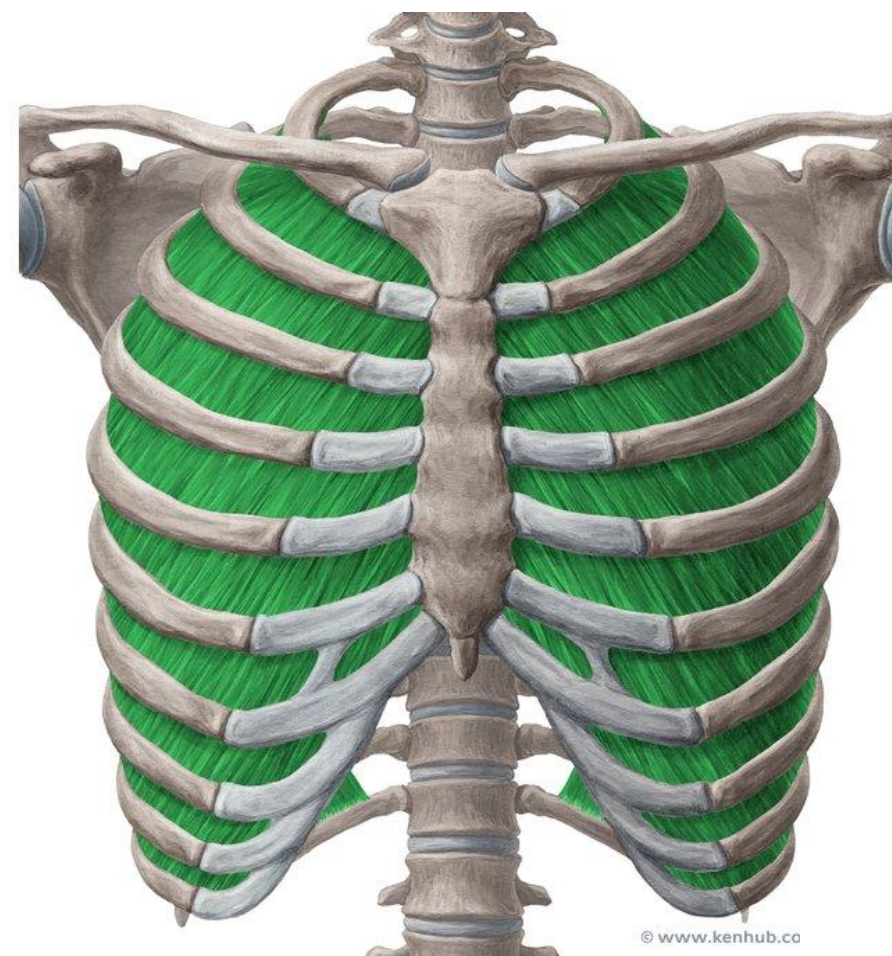


❖ Muscles of the Thoracic wall:

2. Intercostal muscles:

2.2 Internal intercostal muscle

Origin	<ul style="list-style-type: none"> Lower border of rib above. 	Fibers pass downward and backward
Insertion	<ul style="list-style-type: none"> Upper border of the rib below 	
Action	<ul style="list-style-type: none"> Depresses the ribs during forced expiration (helps with breathing out) 	

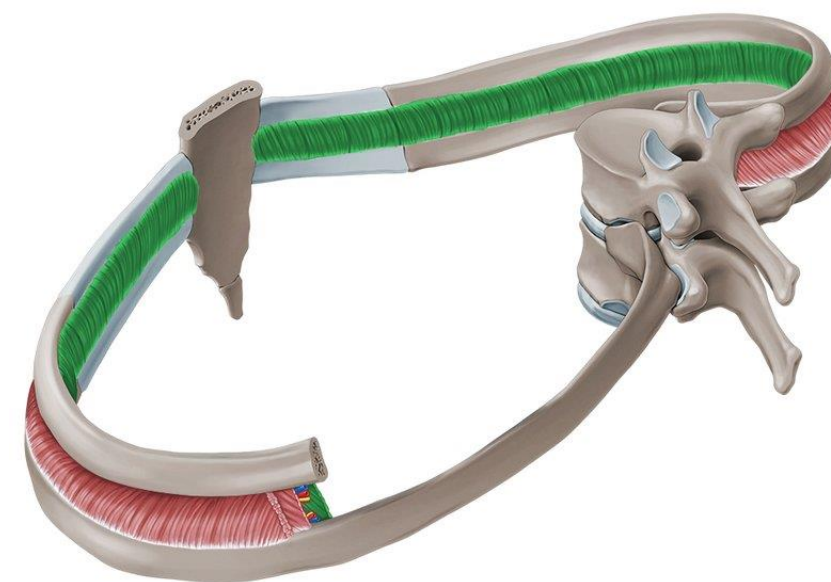
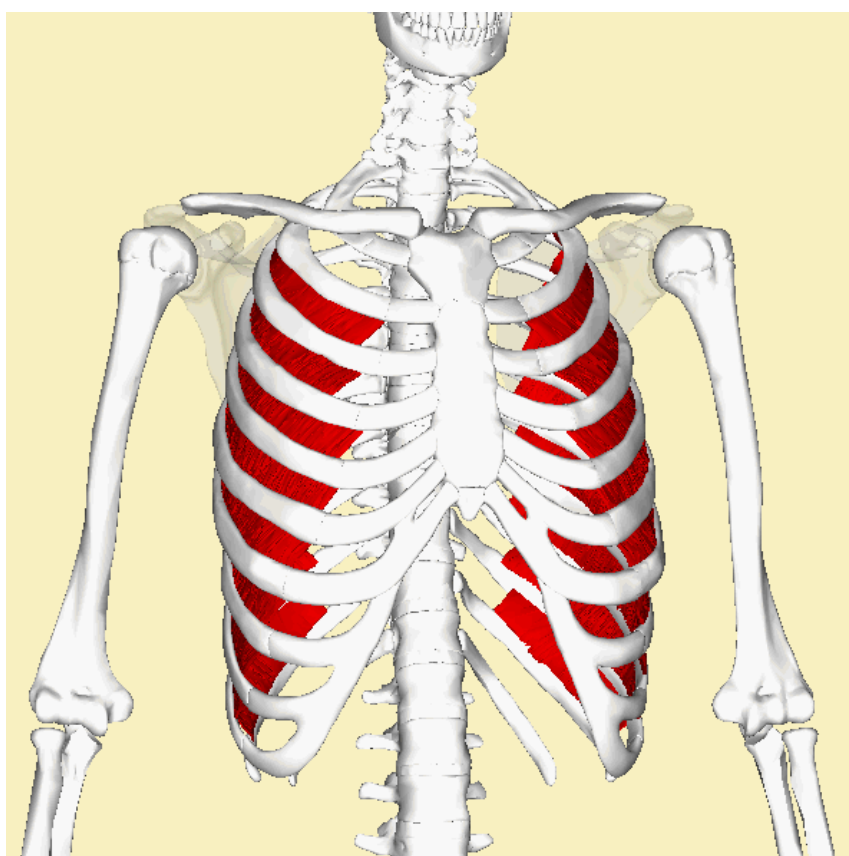


❖ Muscles of the Thoracic wall:

2. Intercostal muscles:

2.3 Innermost intercostal muscle

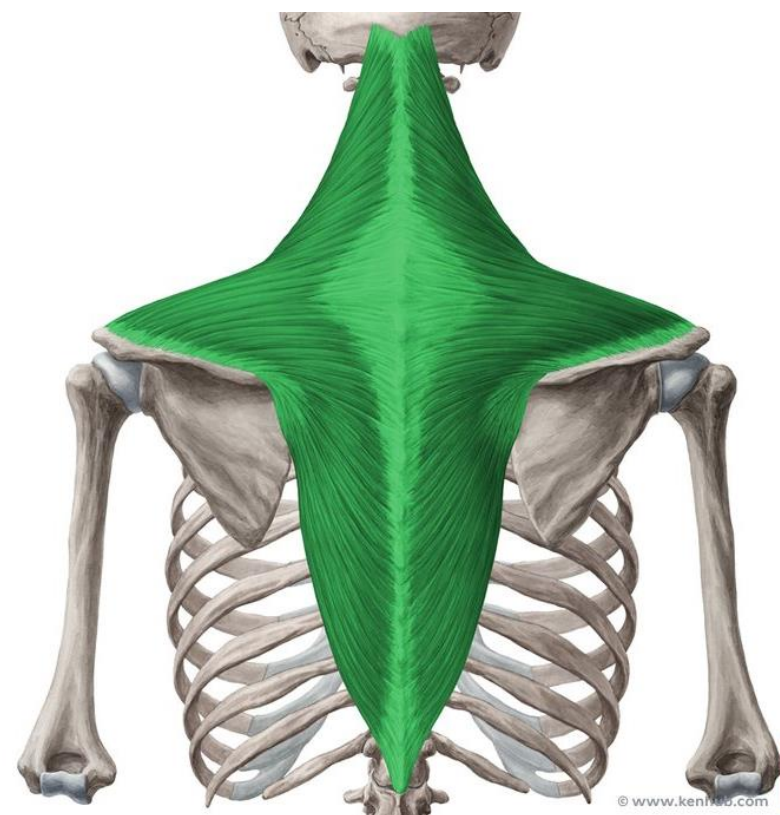
Origin	• Internal surface of the rib above	Fibers pass downward and backward
Insertion	• Internal surface of the rib below.	
Action	• Assist internal intercostals in forced expiration	



❖ Muscles of the Thoracic wall:

4. Trapezius

Origin	<ul style="list-style-type: none"> Occipital bone, spines of C7 and T1 to T12 vertebrae
Insertion	<ul style="list-style-type: none"> Lateral third of clavicle and spine of scapula.
Action	<ul style="list-style-type: none"> Elevation of the shoulder (as in shrugging) Retraction of the shoulder
Nerve Supply	<ul style="list-style-type: none"> Spinal accessory nerve



❖ Muscles of the Abdominal wall:

1. External oblique

Origin

- Lower eight ribs

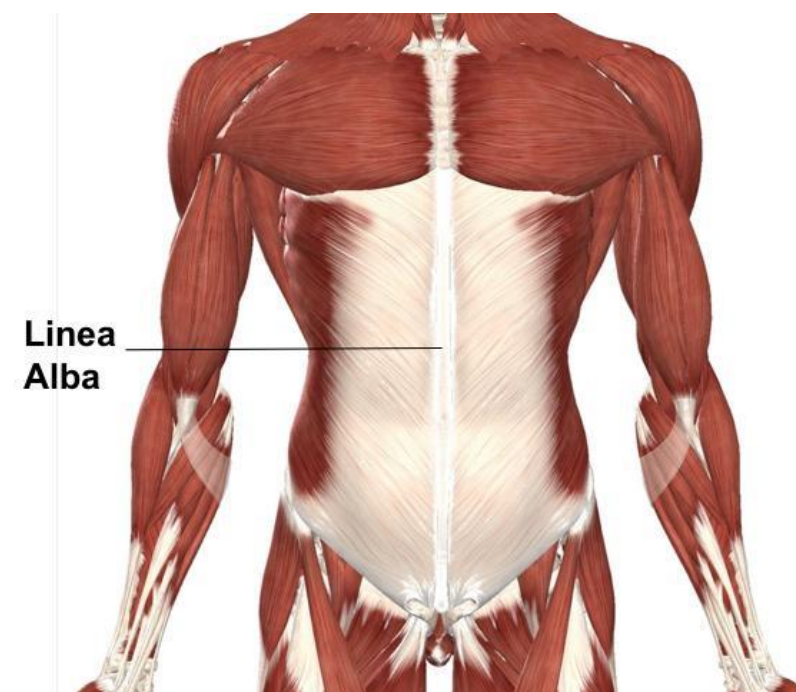
Insertion

- Xiphoid process, pubic tubercle, iliac crest, and Linea alba

Action

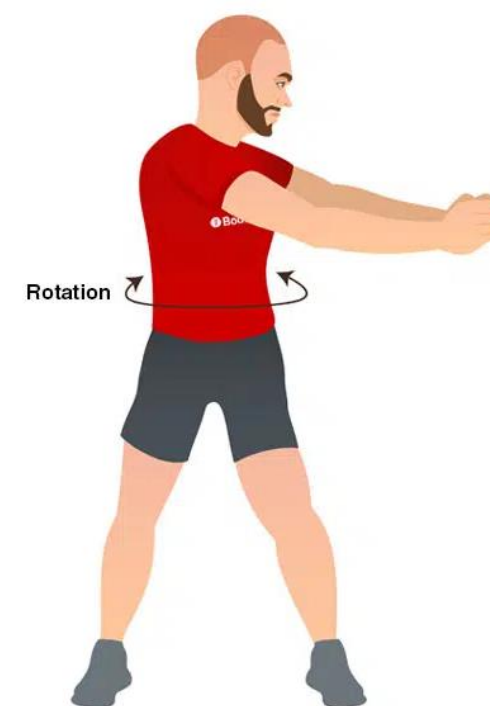
- Rotates trunk and bends trunk to the side.

Fibers pass downward and medially

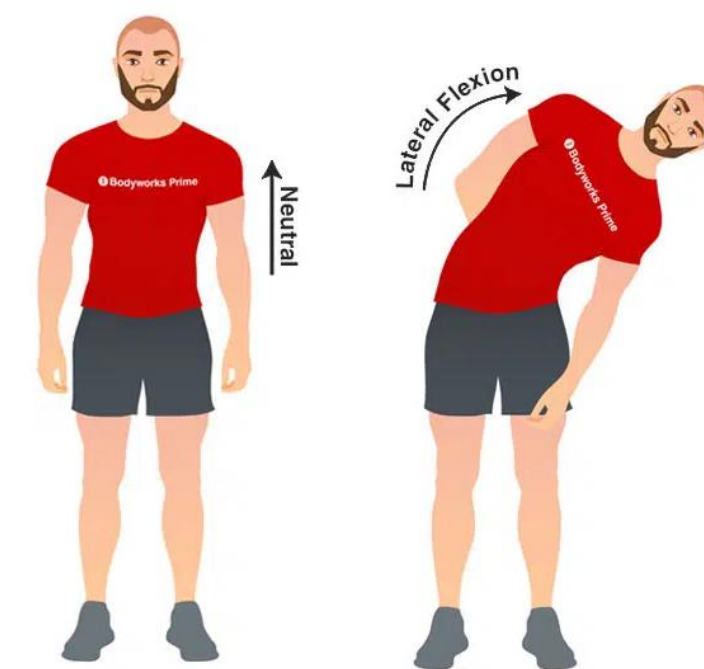


© www.kenhub

Trunk Rotation



Trunk Lateral Flexion

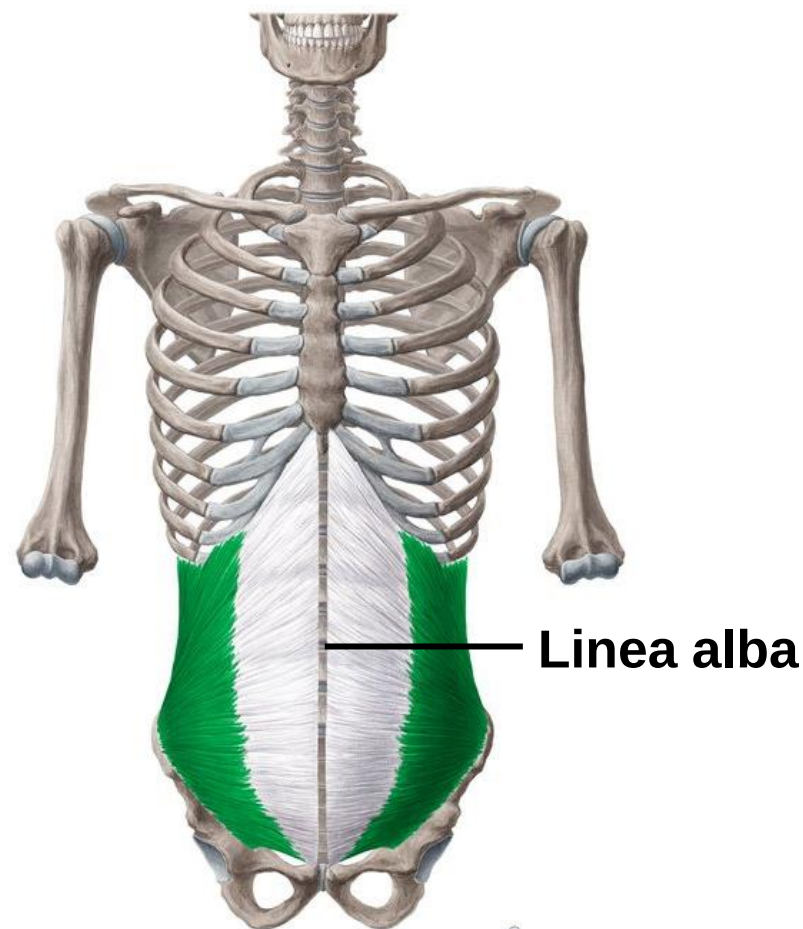


❖ Muscles of the Abdominal wall:

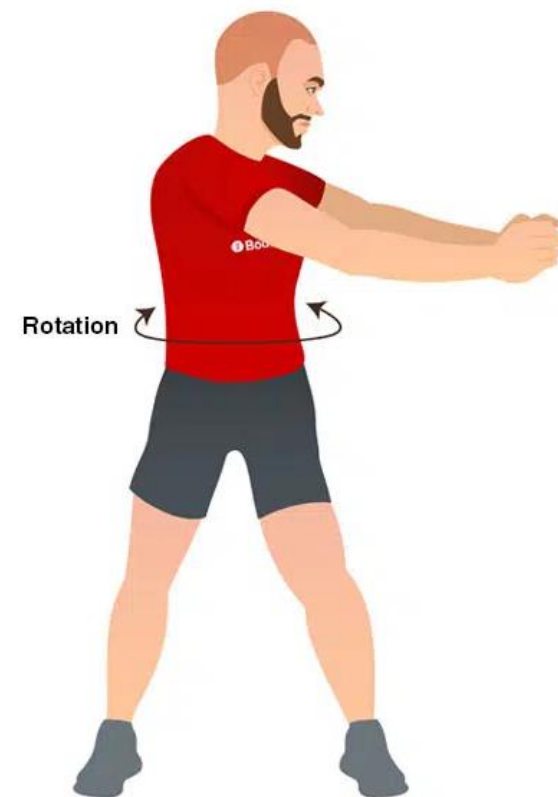
2. Internal oblique

Origin	• Iliac crest
Insertion	• Lower ribs (7 th –10 th ribs) and <u>Linea alba</u>
Action	• Rotates trunk and bends trunk to the side.

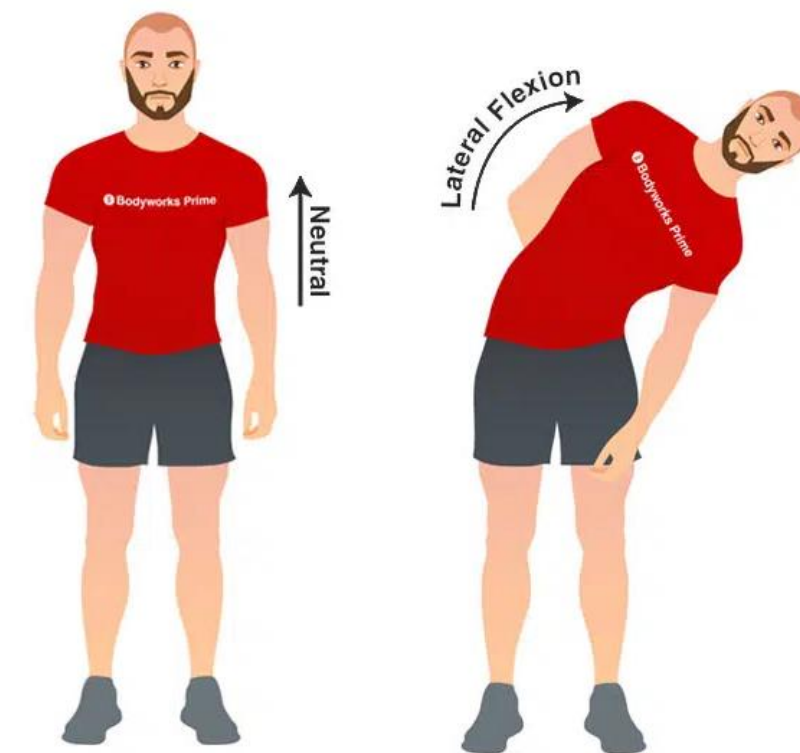
Fibers pass upward and medially



Trunk Rotation

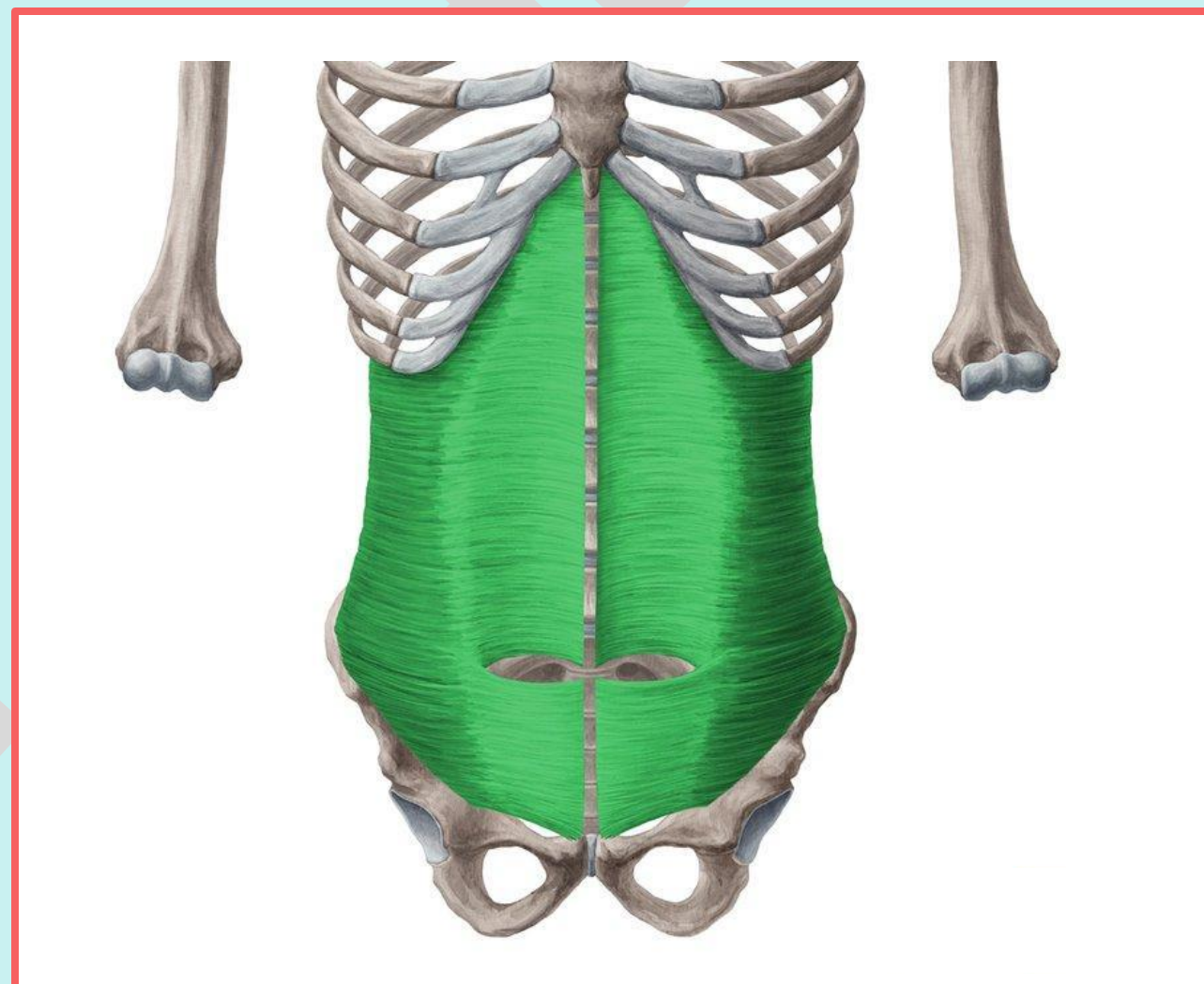


Trunk Lateral Flexion



❖ Muscles of the Abdominal wall:**3. Transversus Abdominis**

Origin	• Iliac crest and lower ribs (7 th –12 th ribs)	Fibers pass horizontal (transverse)
Insertion	• Linea alba, Aponeurosis of the anterior abdominal wall and Pubic bone	
Action	• Compresses abdomen; stabilizes trunk	



❖ Muscles of the Abdominal wall:

4. Rectus Abdominus

Origin

- Pubic bone and pubic symphysis

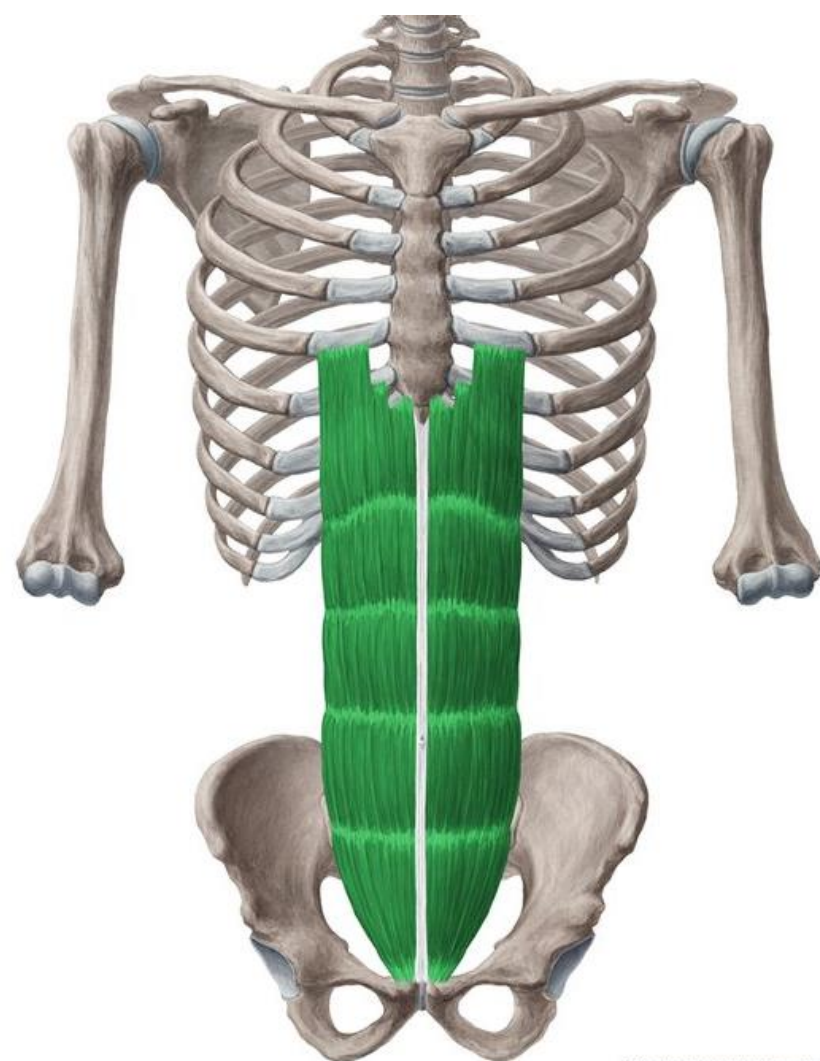
Insertion

- Xiphoid process and costal cartilages of ribs 5–7

Action

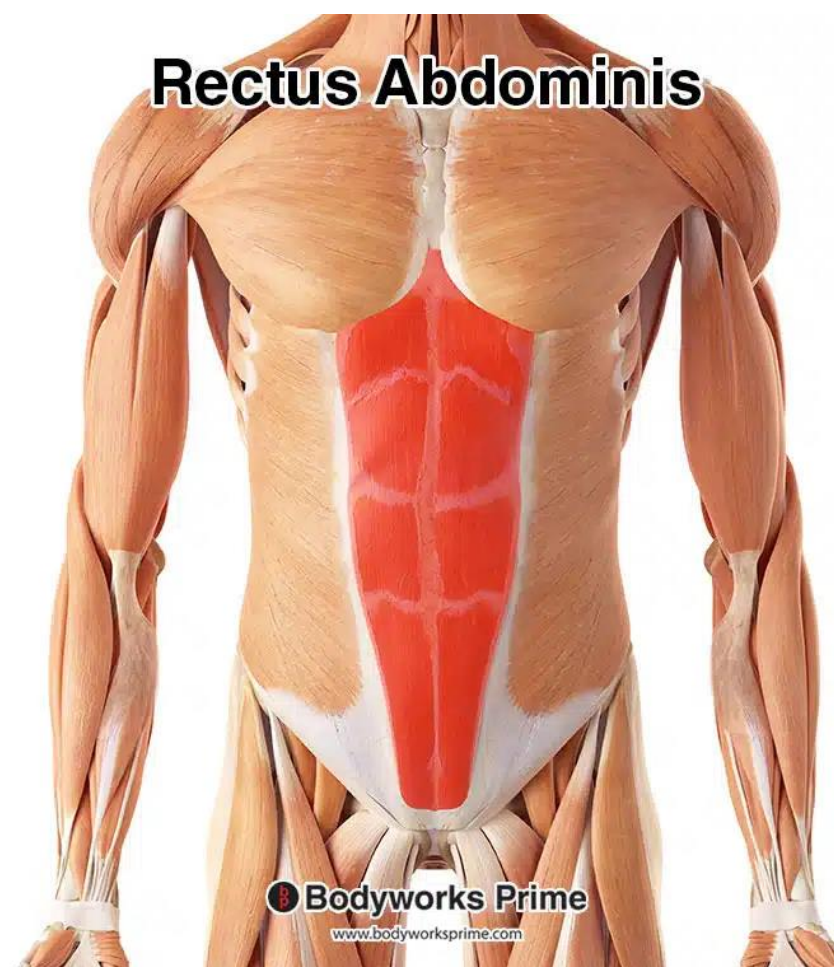
- Flex trunk (sit ups), Compresses abdomen

Fibers pass vertical



© www.kenhub.com

Rectus Abdominis



Bodyworks Prime
www.bodyworksprime.com

Trunk Flexion

