

Anatomy Practical

OSPE

Foundation Block

- the information in this file is based on the things that was given during practical sessions along with doctors' notes
- “We recommend you to read the theoretical lectures before studying this file”**

To ensure your grade on each question :

- 1-Make sure your SPELLING is correct
- 2-Make sure you write the FULL name or location of the object precisely

- **Red** : important
- **Green** : notes, Extra
- **Pink**: Girls notes

Good luck and
have a nice OSPE :)

SKELETAL SYSTEM

Brief recap

Types of bones:

- 1) **Flat:** sternum, skull bones, scapula, ribs
- 2) **Irregular:** vertebrae, hip bone
- 3) **Long:** humerus, radius, ulna, femur, tibia, fibula
- 4) **Short:** carpals, tarsals
- 5) **Sesamoid:** patella

The skeleton is divided into :

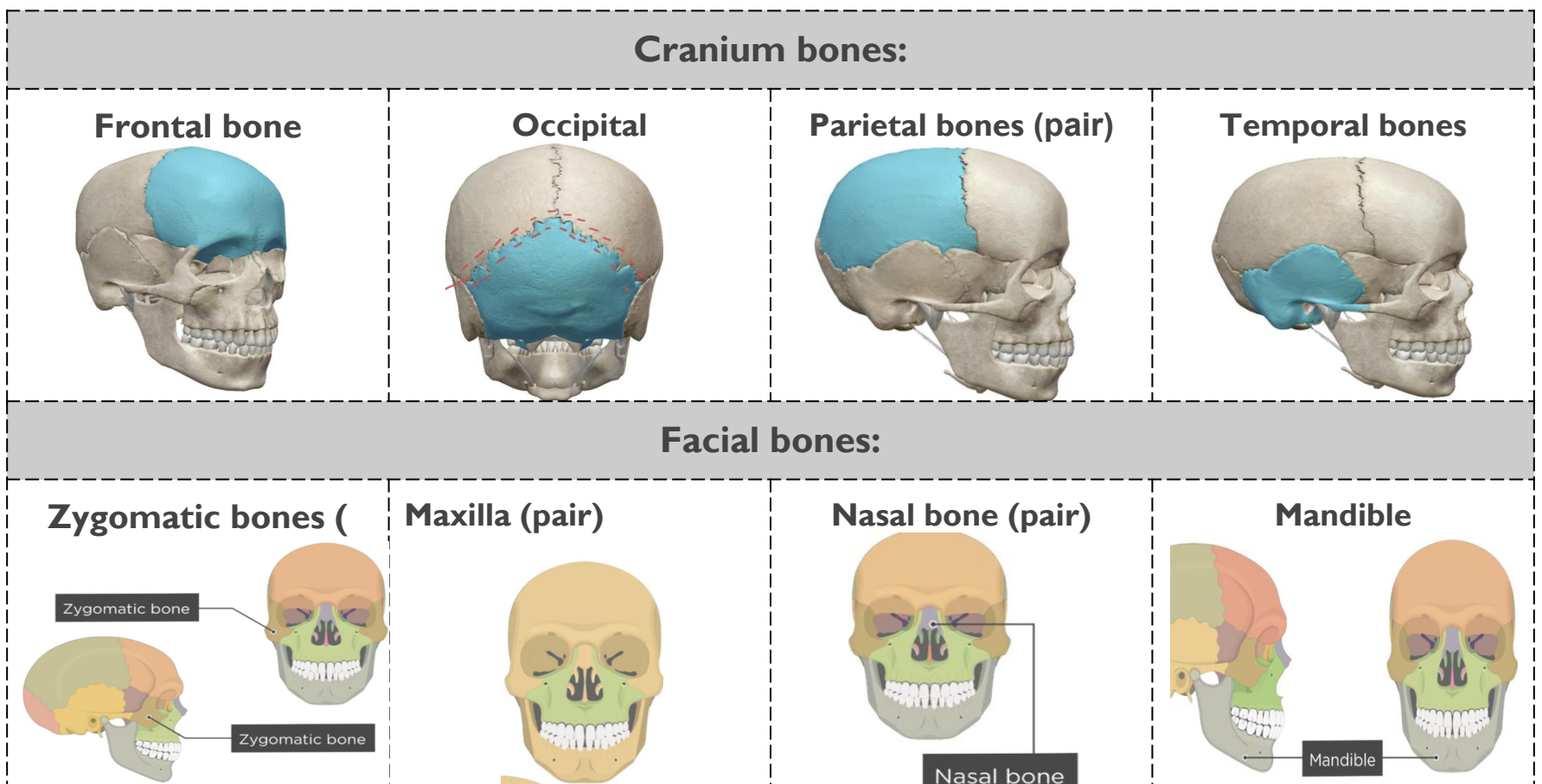
- Axial skeleton
- Appendicular skeleton

What you need to mention in bones :

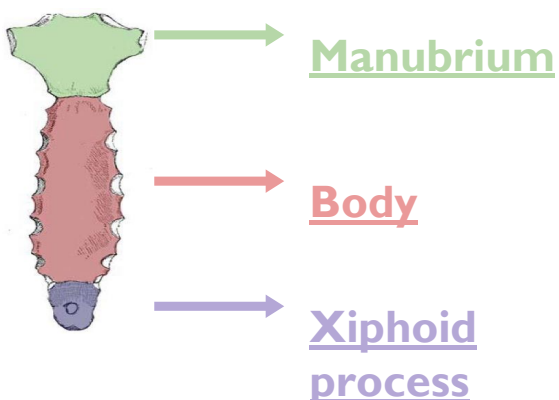
- **Name** Eg: Ulna
- **Type of each bone** long bone
- **Anatomical position** medial bone of the forearm

Axial skeleton: skull, sternum, ribs, vertebral column

- 1) **skull** **Note:** Not all the skull is flat. It's separated into skull cap -cranial bone (flat bones) and facial bones (irregular bones).



2) Sternum



Located in the center of the chest
Type of bone : **Flat** bone

3) Ribs

enclose and protect the chest cavity

12 pairs

True ribs are 1-7

False ribs are 8-10




Floating ribs are 11&12

Flat bone







Bones of Appendicular Skeleton

Pectoral (shoulder) Girdle:

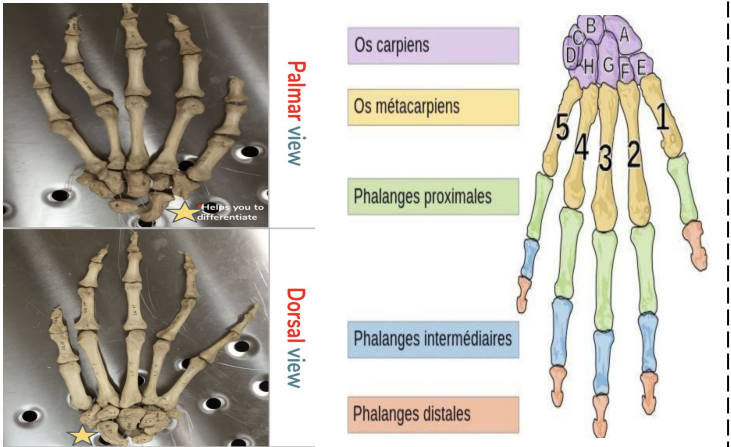
<p>Clavicle</p>		<p>Scapula</p>	
<p>(in the pectoral girdle) -Type: long bone. - 'S' shaped</p>		<p>Type: flat bone. - part of the pectoral girdle -triangular in shape</p>	

Bone of the upper limb:

<p><u>Humerus:</u>(in the arm)</p>	 
<p>- Long bone because the length is greater than the width and has two ends. <i>How can I differentiate?</i> It has a semi-ball at one of its ends (without neck)</p>	

<p><u>Ulna:</u> (in the forearm)</p>		<p><u>Radius:</u> (in the forearm)</p>	
<p>Long bone -shaped curve -medial bone of the forearm <i>How can I differentiate?</i> -Has a (U)</p>		<p>Long bone -Has a circle at the bottom (cap) (تشبه الكرملة) - lateral bone of the forearm</p>	

Hand:

<p>-Carpals: short bones (8) -Metacarpals:long bones (5) -phalanges: long bones (14) <i>Counting starts from lateral to medial (starting from the thumb).</i> العد معنا للبلوك الجاي</p>	 <p>Palmar view Dorsal view</p> <ul style="list-style-type: none"> Os carpiens Os metacarpiens Phalanges proximales Phalanges intermédiaires Phalanges distales
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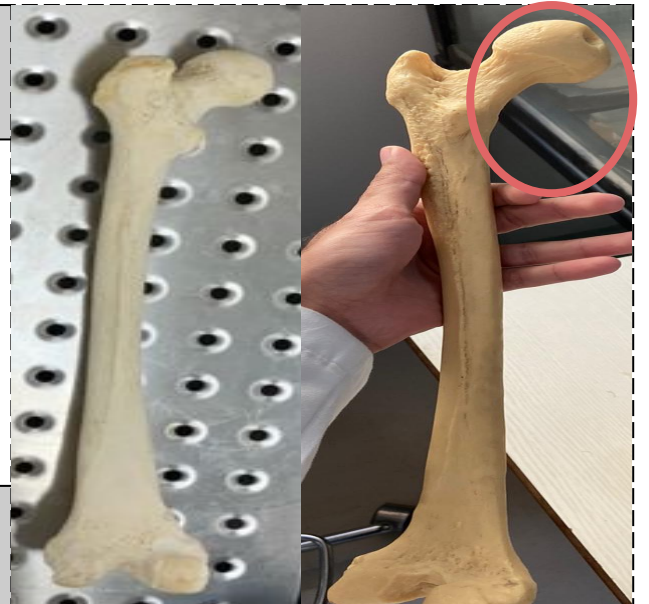
Bone of the lower limb

Femur:(in the thigh)

- type **long** bone

How can I differentiate?

- it has a **ball** and a clear **“neck”** at one of its ends.



Patella:

- in front of the knee.
- protect the knee.

Sesamoid bone



Fibula :(in the leg)

lateral

- **Long** bone

How can I differentiate?

- Doesn't have ball
- very **thin**.



Tibia :(in the leg)

- **medial**

- **Long** bone

How can I differentiate?

- it has a **triangular** shape at one end



Foot:

★ **tarsals:** there are (7)

- found in the **foot**.

- **short** bones

★ - **metatarsals:** **long** bone (5)

- **phalanges:** **long** bones (14)



Hip bone:

Type: **irregular**

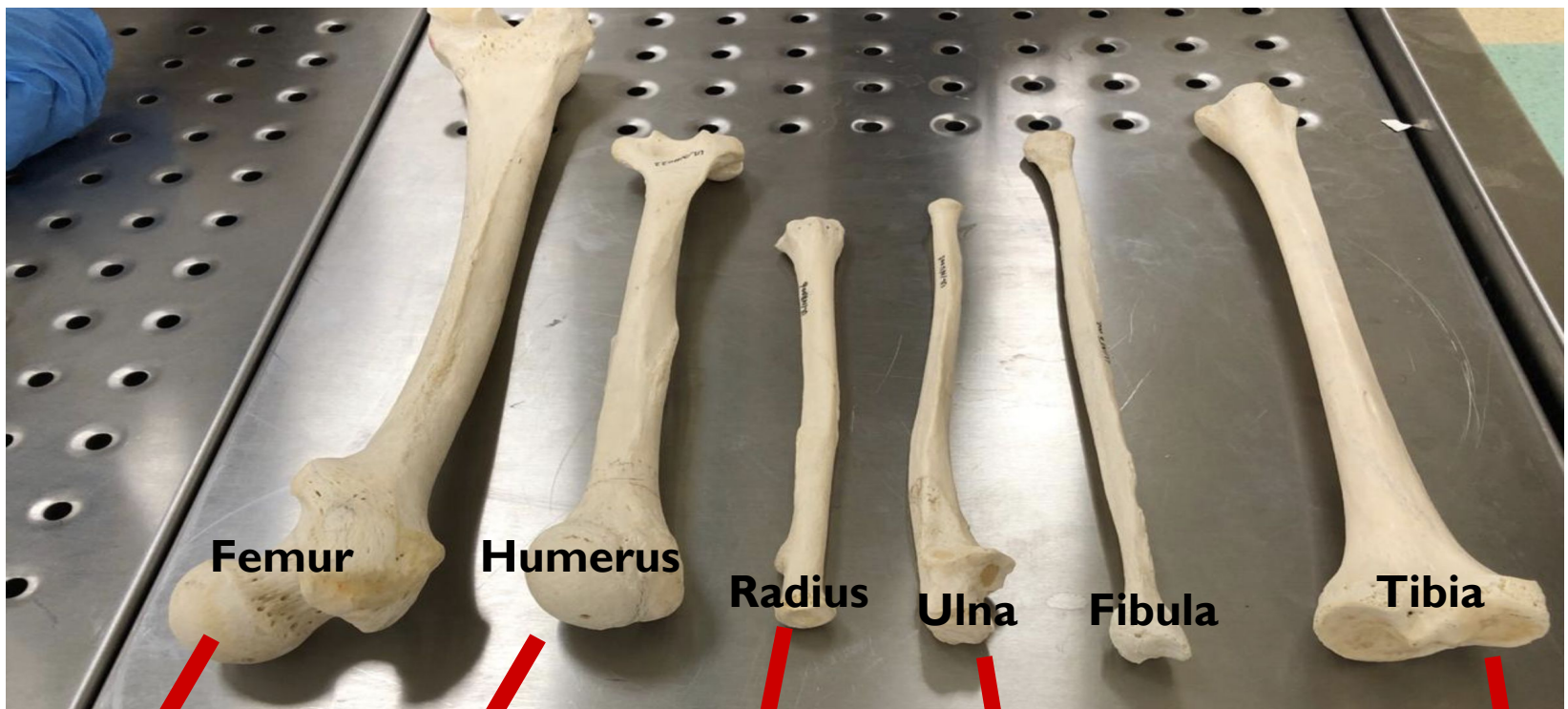


Vertebra

irregular bones

-found in the vertebral column

-part of the axial skeletal system



Femur

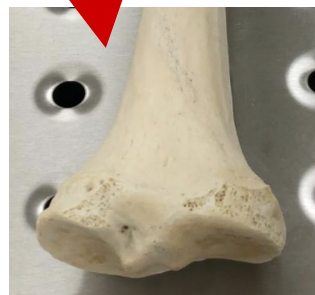
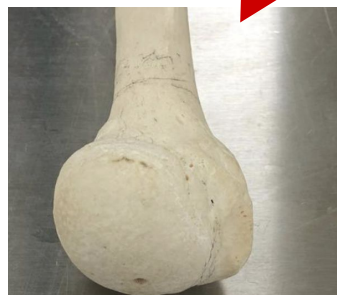
Humerus

Radius

Ulna

Fibula

Tibia



SKELETAL MUSCLES

BRIEF RECAP

Muscle attachment

Origin:

- Mostly **fleshy**
- **Least** movable
- The **Proximal** end

Insertion:

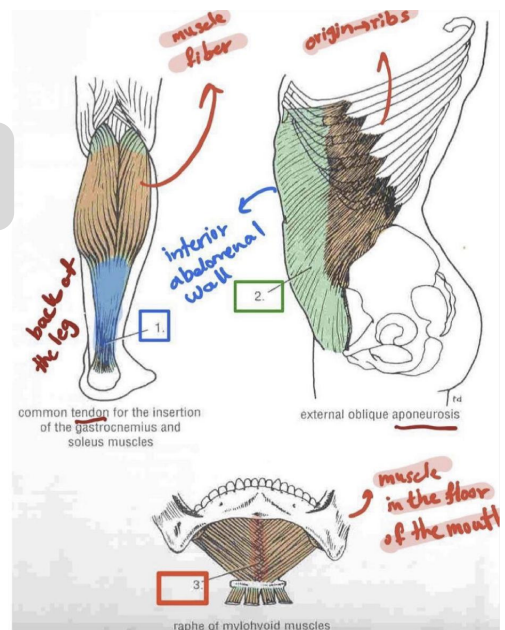
- Mostly **fibrous**
- **Most** movable
- The **Distal** end

Types of attachment

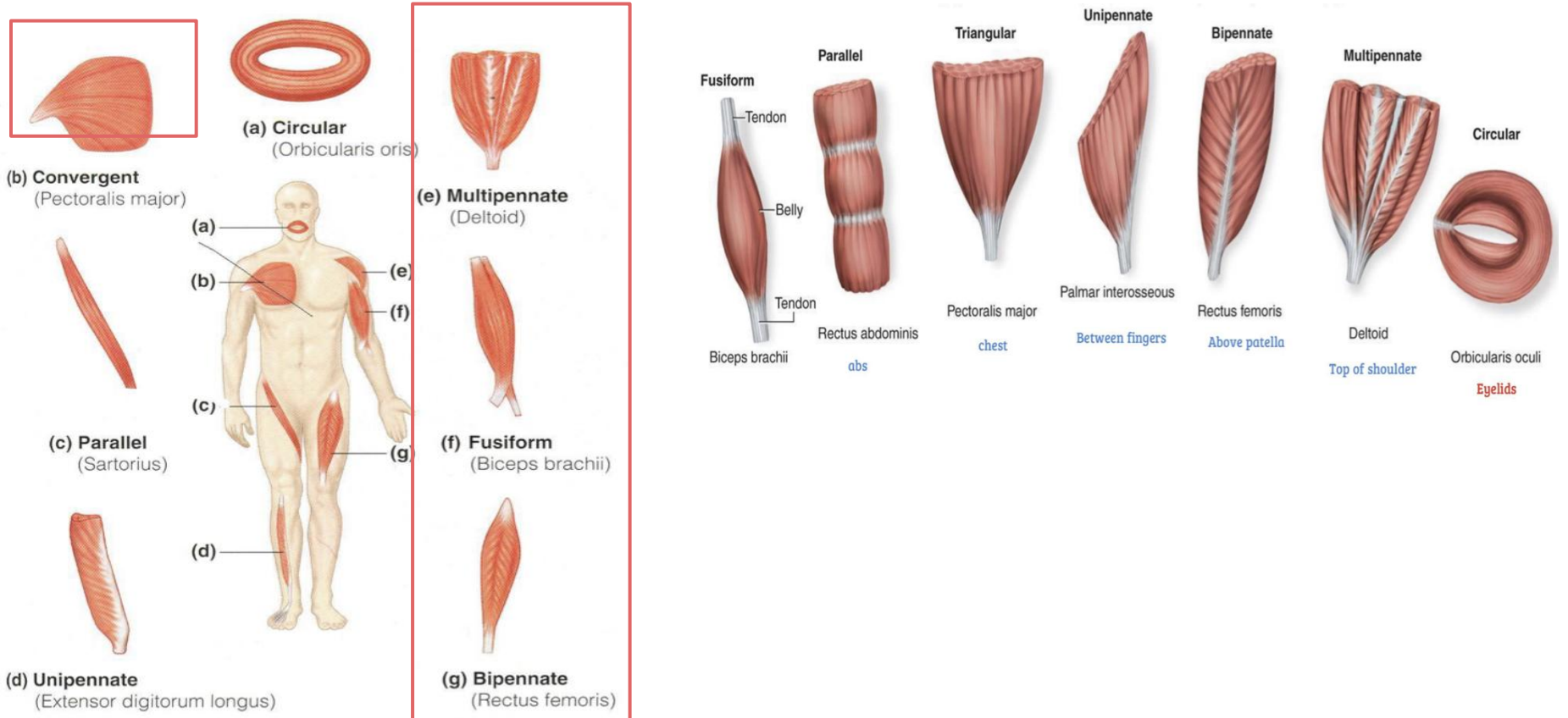
Tendons

Aponeurosis

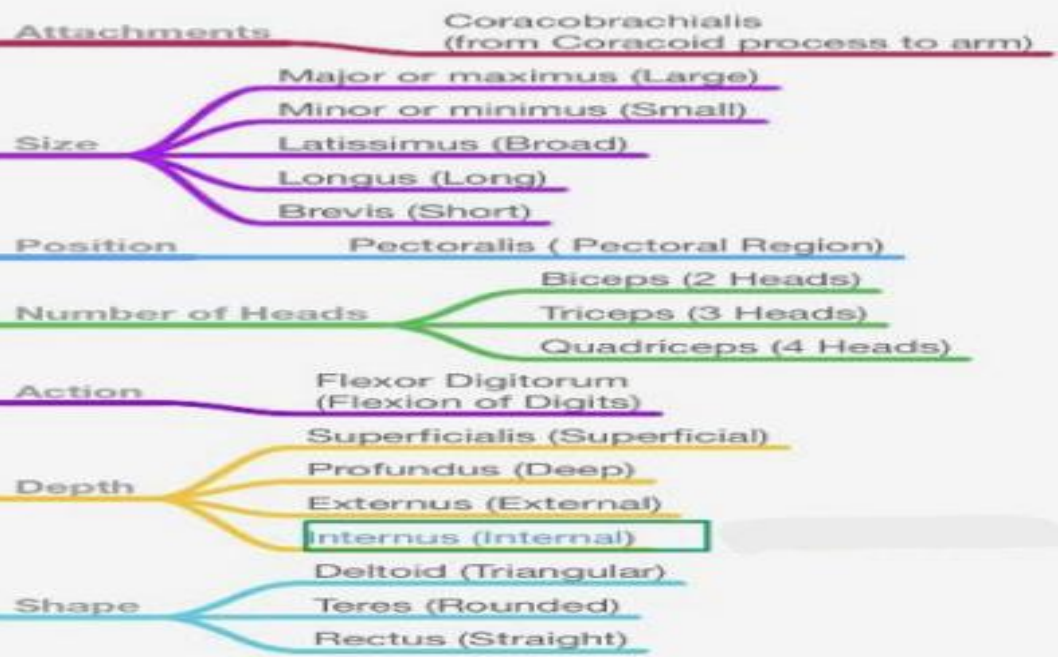
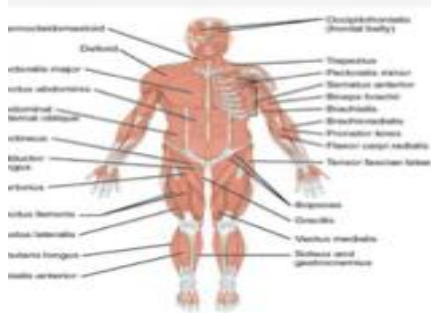
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DIRECTION OF MUSCLE FIBERS



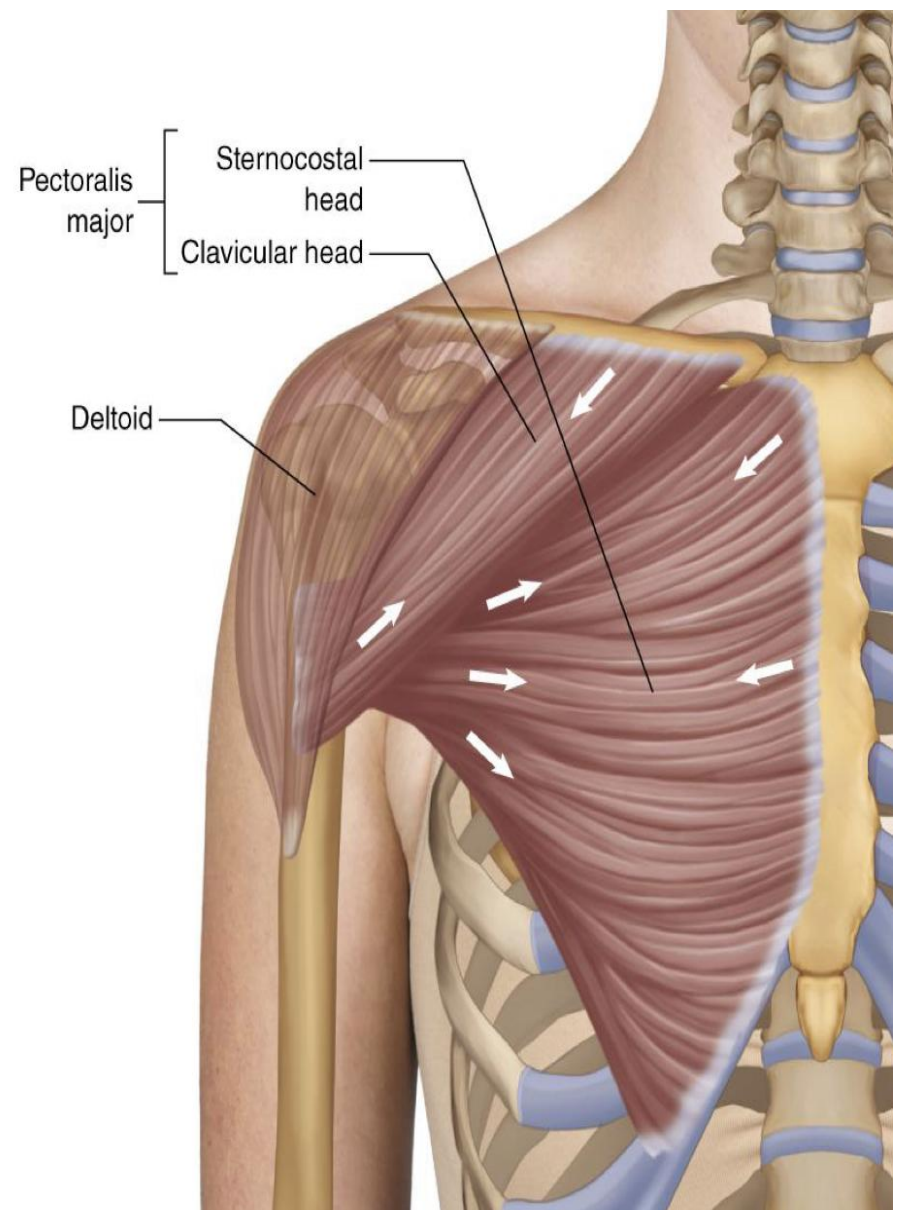
Naming of muscles



Skeletal Muscles of Chest

★ Pectoralis Major

- The **pectoralis major** muscle is a large muscle located in the upper chest
- Directions of muscle fibers (type):
Triangular - Convergent
 - Named based on: size and position



Skeletal Muscles of upper limb

★ Deltoid

- a muscle in the upper limb located on the uppermost part of the arm and the top of the shoulder
- Directions of muscle fibers (type):
Multipennate
- Named based on: **Shape**
(Deltoid = Triangular)



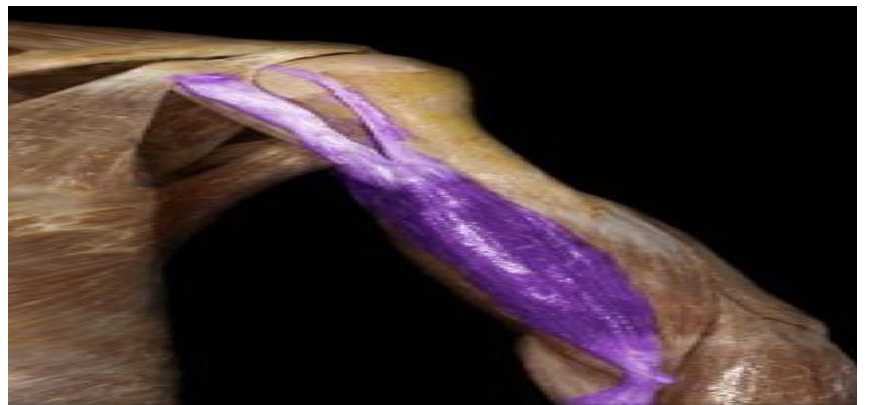
Skeletal muscles of upper limb

★ Biceps Brachii

- located in the upper arm
 - Named based on:
Number
of heads (biceps = two heads)

FUSIFORM

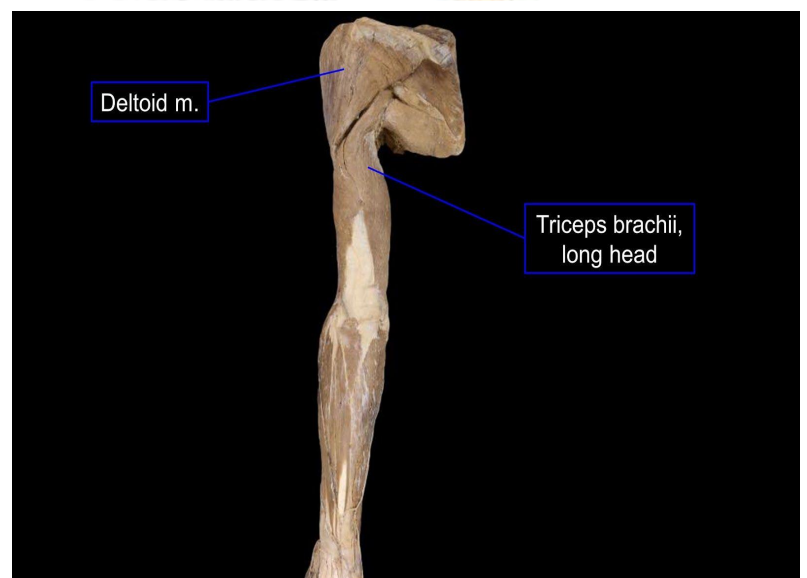
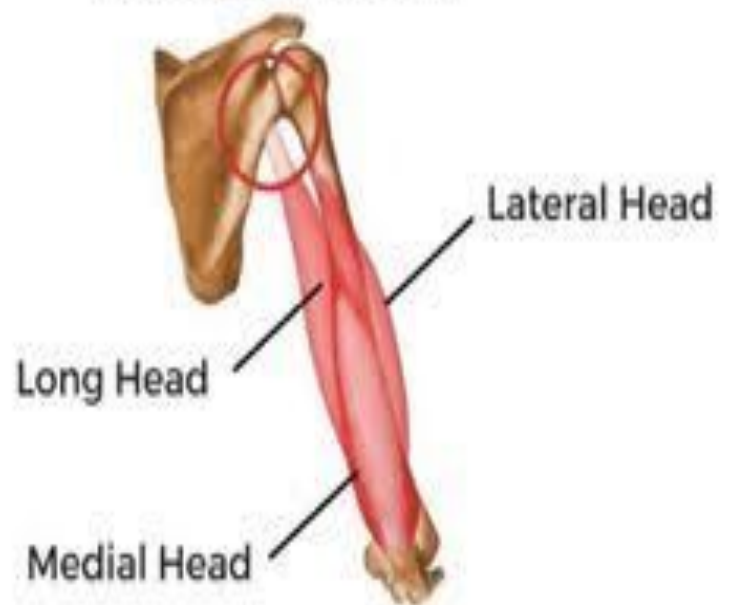
- Located along the humerus bone (from the front) between the shoulder and the elbow



Triceps brachii

- The **triceps brachii** is a muscle located in the upper arm.
- **Located** along the humerus bone (from the **back**) between the shoulder and the elbow.
- Named due to having **three muscle heads (tri means three)**.
 - Directions of muscle fibers **Fusiform**

Triceps Brachii

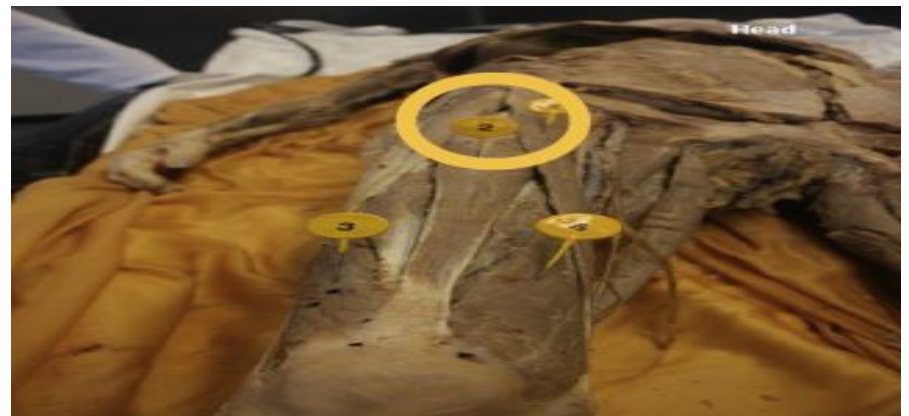
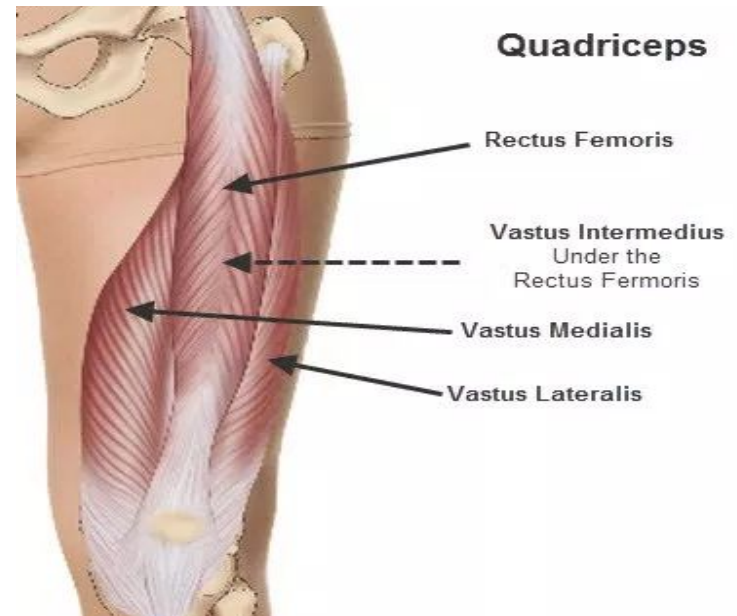


Skeletal muscles of upper limb

Quadriceps Femoris

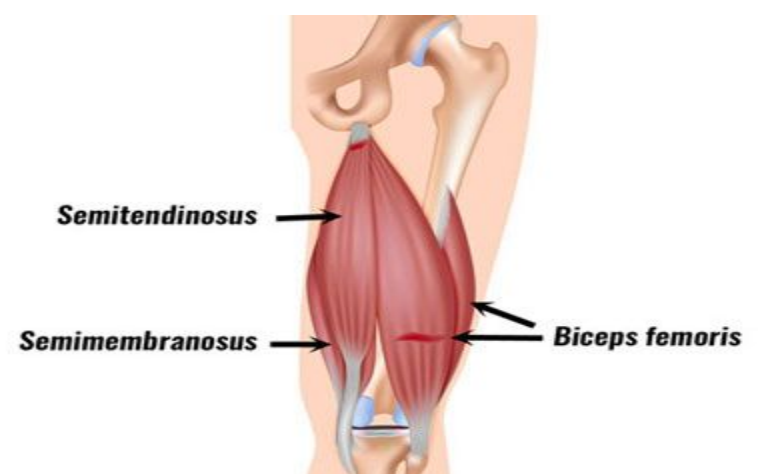
Rectus femoris

- **Quadriceps Femoris** is a large fleshy muscle group located in front of the thigh covering the front and sides of the thigh.
- Name is based on **number of heads (four)**.
- Directions of muscle fibers: **BIPENNATE**



Hamstring

- The Hamstring any of three muscles at the back of the thigh that function to flex and rotate the leg and extend the thigh.
- The three muscles are
A: Semimembranosus
B : Semitendinosus
C : Biceps femoris



Skeletal muscles of upper limb

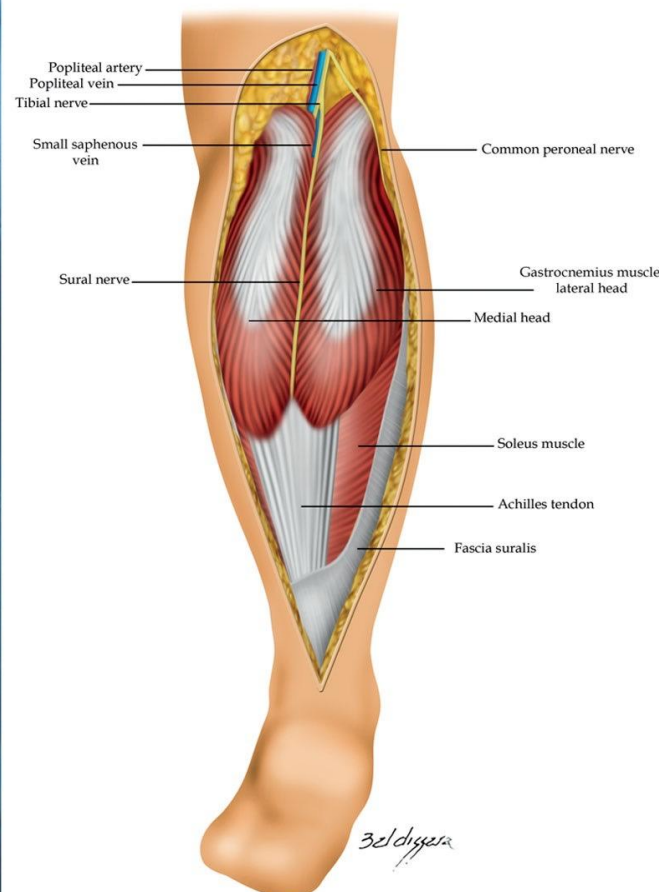
Sartorius

- **Sartorius** a muscle that crosses the front of the thigh obliquely, assists in rotating the leg to the cross-legged position.
- **Located** in the proximal (upper) anterior part of the thigh.
 - it's the **longest muscle** in the human body.
- Directions of muscle fibers:
Parallel



Calf muscle

- **Calf muscles** is 2 muscles in the posterior aspect of the leg
 - 1-gastrocnemius (Largest)
 - 2-soleus (smallest)
- Directions of muscle fibers:
Bipennate



Skeletal muscles of upper limb

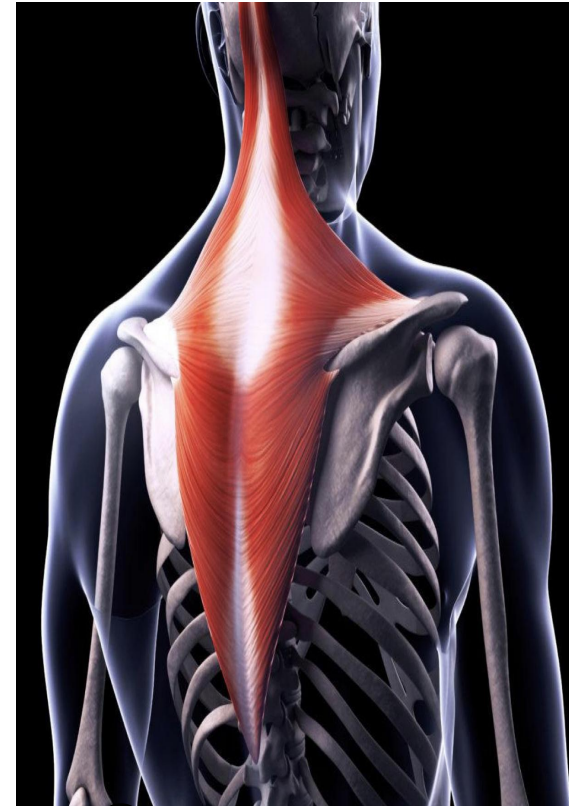
من جزئية الأولاد

Trapezius

- It is an **Upper back** muscle that extends from **occipital** bone to the lower **thoracic vertebrae** of the spine



1



2

Gluteus

- The gluteal muscles are a group of **three** muscles which make up the buttocks:

1- **Gluteus maximus**

2- **Gluteus medius**

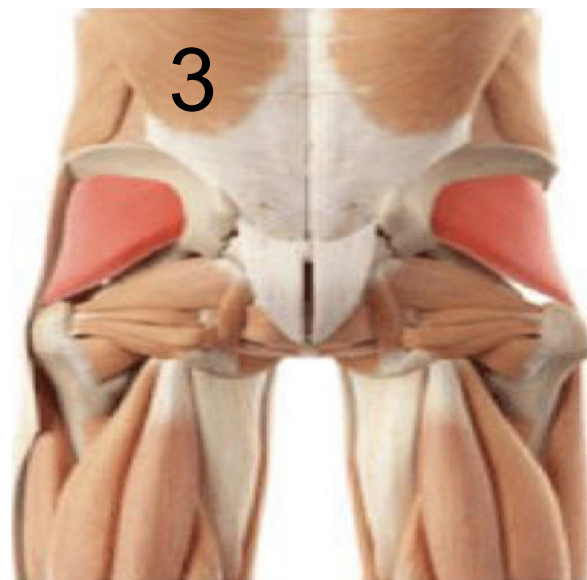
3- **Gluteus minimus**



Gluteus Maximus



Gluteus Medius



Gluteus Minimus

Nervous system

Organization of nervous tissue:

- Grey matter(G.M)
- White matter(W.M)



Brain

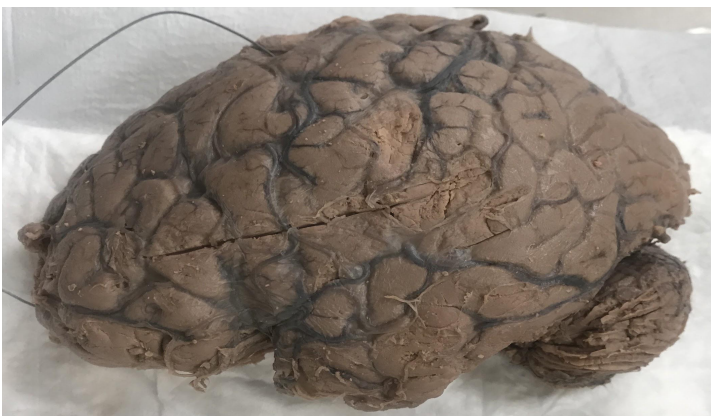
-located in the cranial cavity

- it has 4 lobes: ★

- frontal
- parietal
- temporal
- occipital

-these lobes are part of the cerebrum

Explanation: how to determine the front and the back of the brain?
The front of the brain has 2 poles(قطبين) while the back has only one



-Consist of 4 parts:

- Cerebrum (المخ)
- Cerebellum (المخيخ)
- Diencephalon (you need to know the thalamus and hypothalamus)
- Brain stem (its called stem(جذع) because it carries the whole brain)

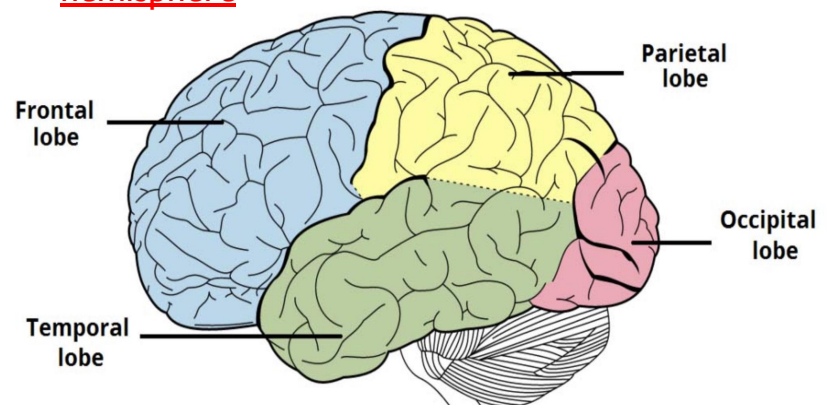
***The question will come as the following:

Identify the structure? (Ex:The pointer is on the frontal lobe)

The awnser

You will name the structure and the origin

Ex: The frontal lobe of the cerebral hemisphere



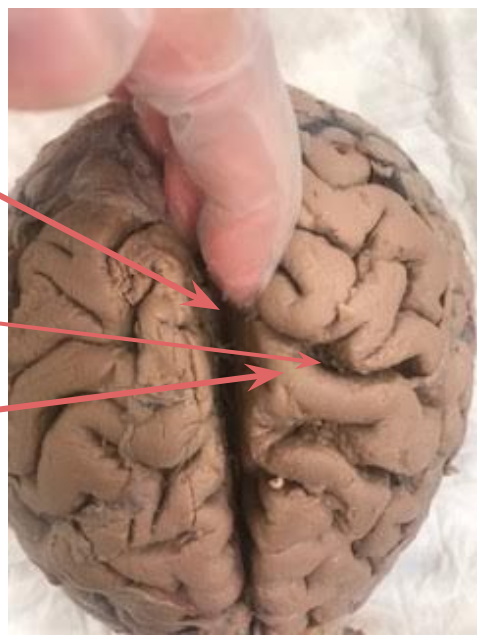
Cerebrum

- It has two hemispheres:
right and left
- Outer part is the **cortex**
(consist of **grey matter**)
- Inner core is the **White matter**
- It has 2 types of folds
Gyri: folds on the surface
Sulci: inner folds (deeper than than the gyri)

Corpus callosum

Sulci

Gyri



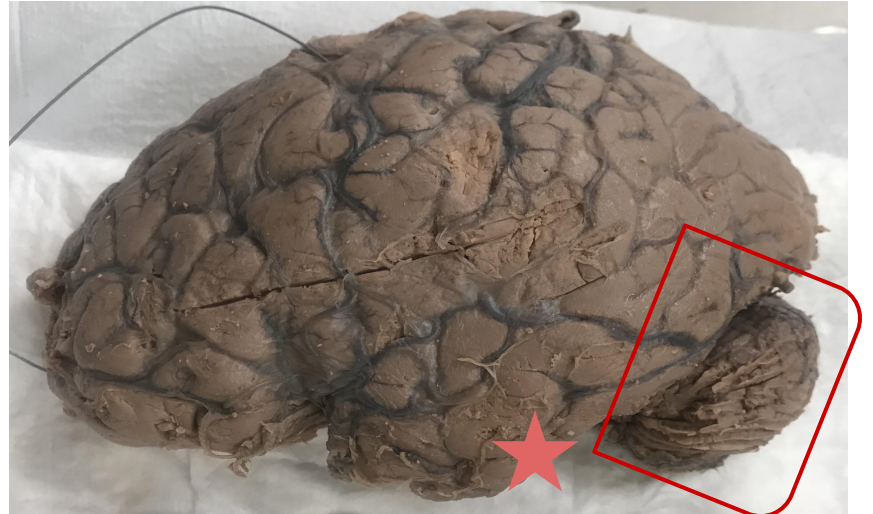
These are the two cerebral hemispheres that are connected by a thick bundle of fibers known as corpus callosum

Located Deep within the white matter masses of grey matter Called basal nuclei

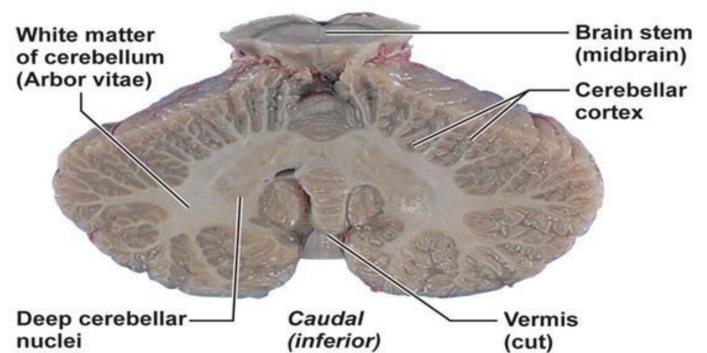


Cerebellum

- Posterior
- It has two hemisphere:
right and left
- outer cortex (القشرة) of **grey matter** and inner region of **white matter**



The Cerebellum – White and Gray Matter



(d) Coronal section, posterior view

All you need to see is the grey and white matter other info is NOT IMPORTANT

Diencephalon

- Thalamus
- Hypothalamus
- Subthalamus
- Epithalamus



-**Thalamus** is (the egg shape or ball shape structure)

-**Hypothalamus** (it is like a triangle in the upper part of the thalamus)

Brain stem

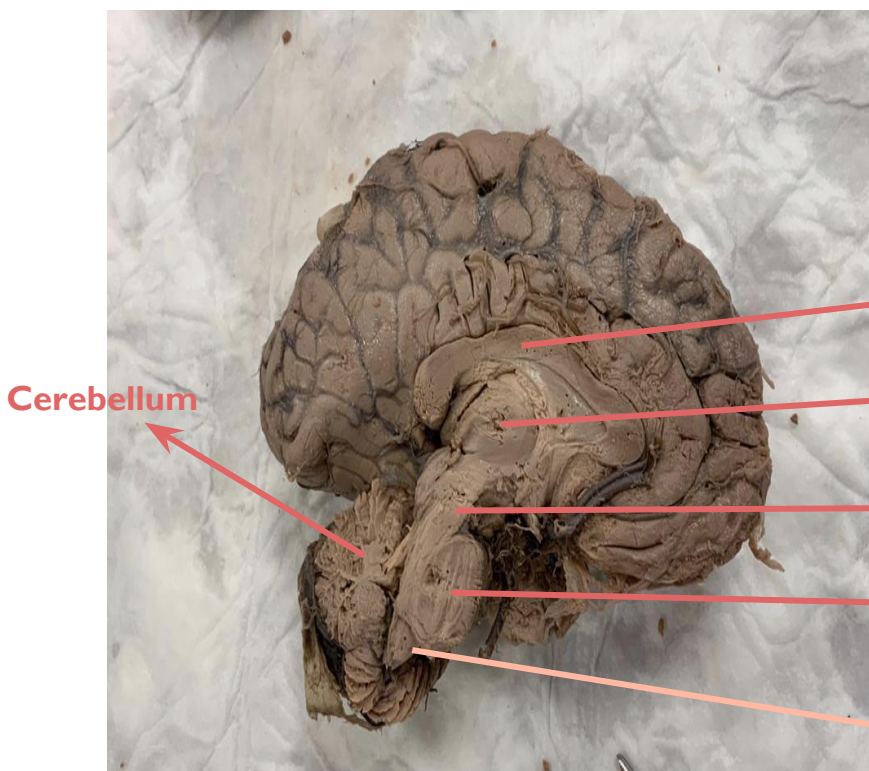
Consist of:

- **Midbrain**
- **Pons**
- **Medulla oblongata**



The part that will help you determine the brainstem is the **Pons**. Superior to the pons is the **midbrain**.

Inferior to the pons is the **medulla oblongata**.



The C shaped structure is the corpus callosum

Thalamus

Midbrain ★

Pons ★

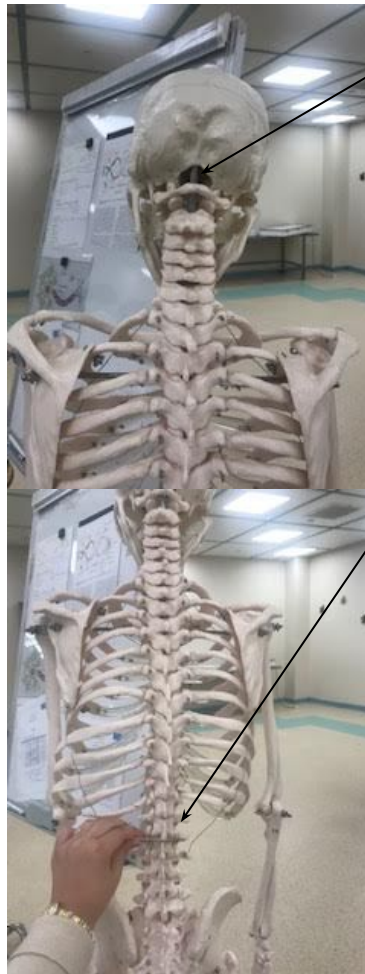
Medulla oblongata ★

Spinal cord

Cylindrical in shape lies within the vertebral canal

-Extends from foramen magnum to L2 vertebra

-Gives rise to 31 pairs of spinal nerves



Foramen magnum(large hole /opening)

Spinal cord



L2

Cauda equina: is a group of spinal nerves at the end of the spinal cord (مثل ذيل الحصان)

Cross section of the spinal cord *

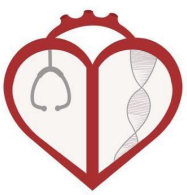
1	White matter of spinal cord		Dorsal root ganglion(DRG)	A
2	Dorsal horn of spinal cord		Dorsal root of spinal nerve	B
3	Lateral horn of spinal cord		Ventral root of spinal nerve	C
4	Ventral horn of spinal cord		Trunk of spinal nerve	D

It is important to mention if it's in the spinal cord or nerve

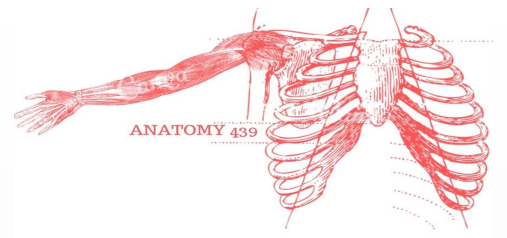
Anterior median fissure(ventral) فتحه واسعة

Posterior median septum (dorsal) فتحه ضيقة

اربطوها بشكل الفراشة دائم الأذرع الطويلة لها تكون في جهة (Dorsal) *ودائم تحتوي على العقدة



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Good luck,

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SPECIAL THANKS TO ANATOMY TEAM 438