CLASSIFICATION OF BONES

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OUTLINE

- INTRODUCTION
- FUNCTIONS
- CLASSIFICATIONS

INTODUCTION

- Bone is a calcified living connective tissue that forms the majority of the body skeleton.
- It consists of an intercellular calcified matrix
- Which also contains collagen fibers
- And several types of cells within the matrix.

INTODUCTION CONTD

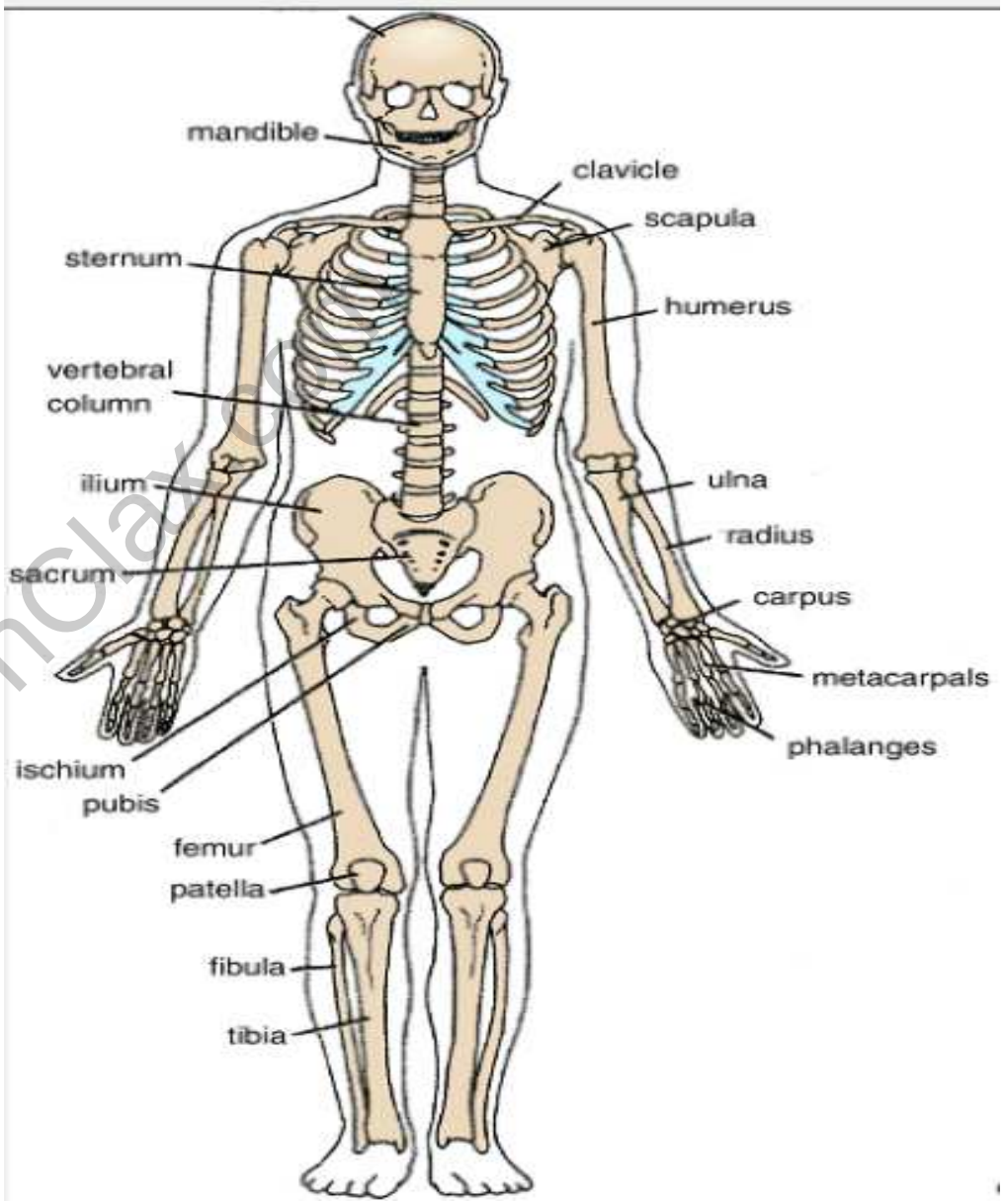
- It is hard due to calcification of its extracellular matrix
- And possesses a degree of elasticity due to presence of organic fibers.

BONE FUNCTIONS

- Bone has a protective function;
- The skull and vertebral column, for example, protect the brain and spinal cord from injury
- The sternum and ribs protect the thoracic and upper abdominal viscera .

BONE FUNCTIONS CONTD

- It serves as a lever, as seen in the long bones of the limbs
- And as an important storage area for calcium salts.
- It houses and protects within its cavities the delicate blood-forming bone marrow.

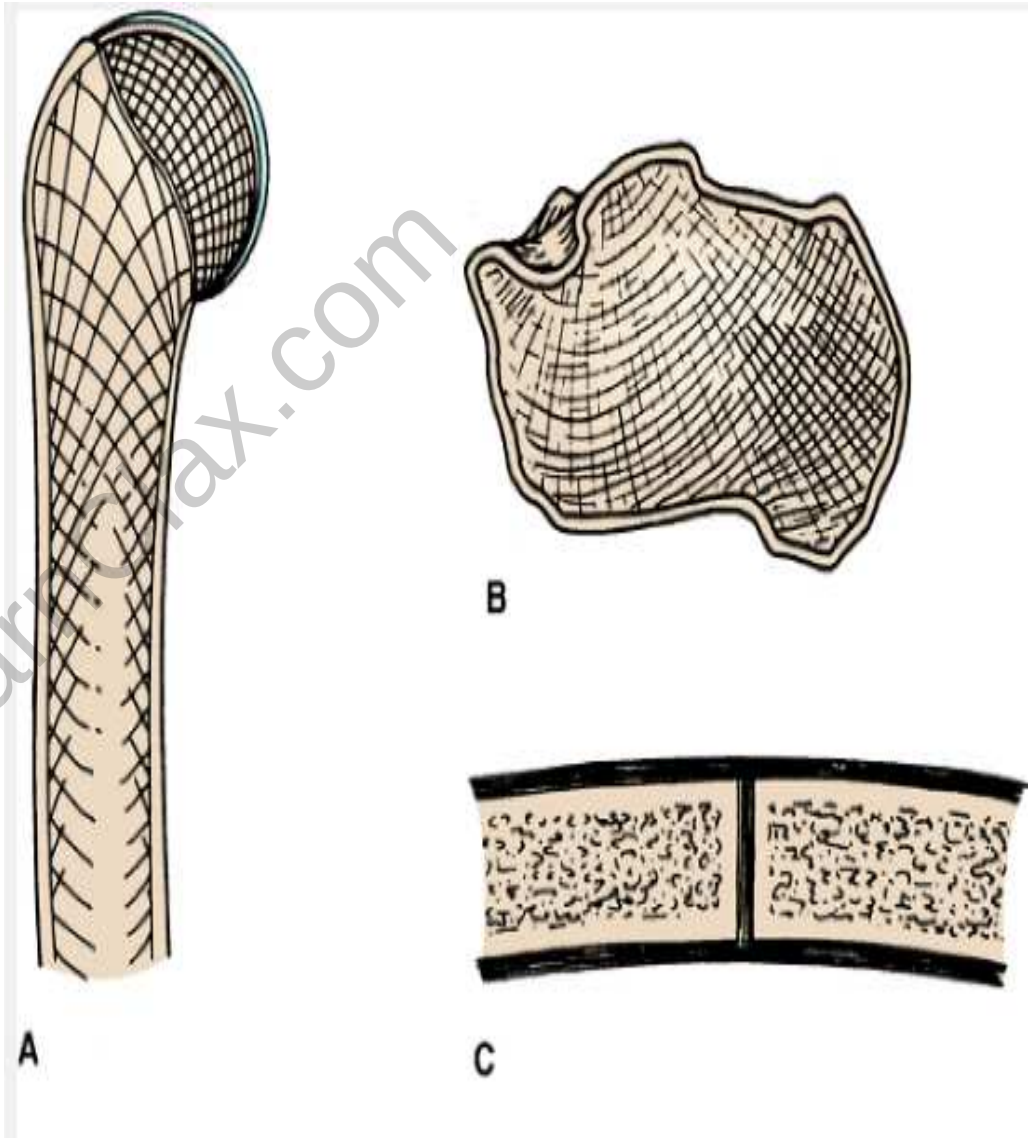


CLASSIFICATOINS OF BONES

- The total number of bones that forms the body skeleton are 206
- However, bones are classified under the following headings:
- 1. Source of formation
- Bones are divided into:
- a. Membraneous bones
- b. Cartilaginous bones
- 2. Regionally
- Bones are divided into:
- a. Axial bones
- b. Appendicular bones

CLASSIFICATOINS OF BONES CONTD

- Classification according to their shape
- They are divided into:
- a. Long bones
- b. Short bones
- c. Flat bones
- d. Irregular bones

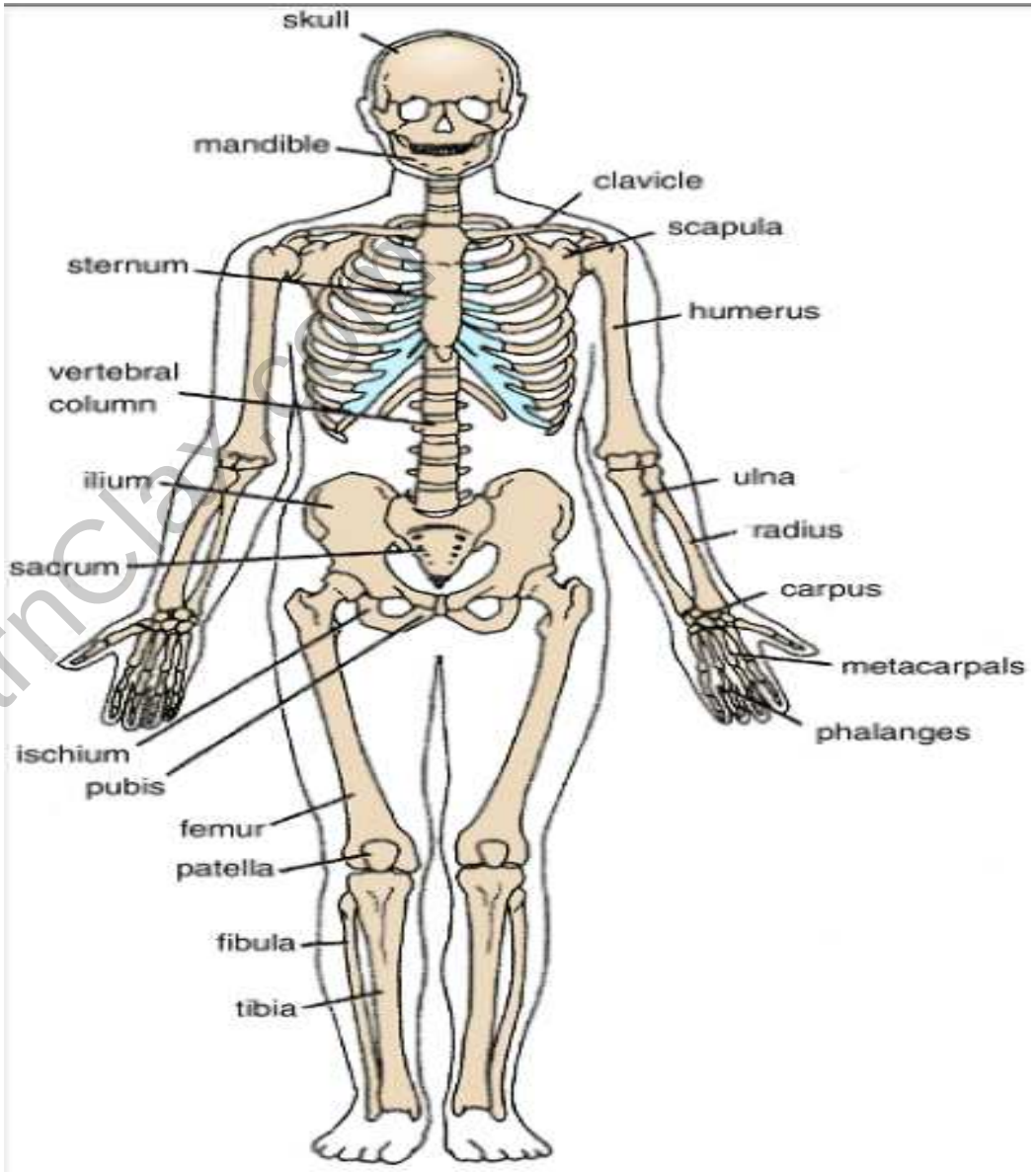


Regional Classification of Bones

- Bones are divided into:
- (a) Axial bones
- (b) Appendicular bones
- The AXIAL BONES
- 1. Skull :
- a. bones of the Cranium 8
- b. bones of the Face 14
- c. Auditory ossicles 6
- 2. Hyoid bone 1
- 3.Vertebrae 26
- 4. Sternum 1
- 5. Ribs 24

APPENDICULAR BONES

- 1.Upper limb bones:
- a. Clavicle 2
- b. Scapula 2
- c. Humerus 2
- d. Ulna 2
- e. Radius 2
- f. Carpal bones 16
- g. Metacarpal bones 10
- h. Phalanges 28

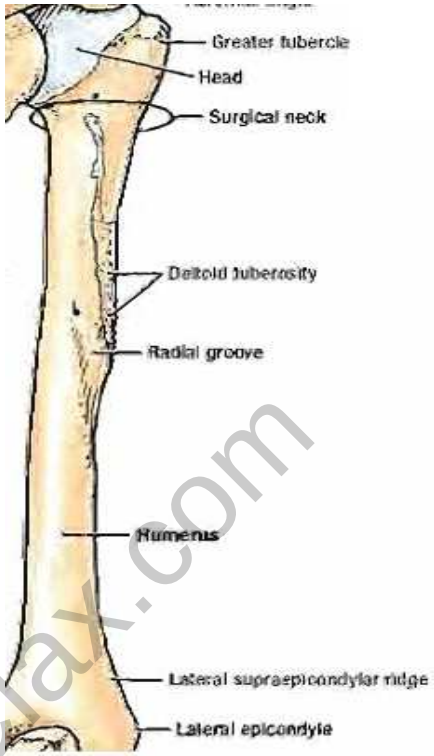


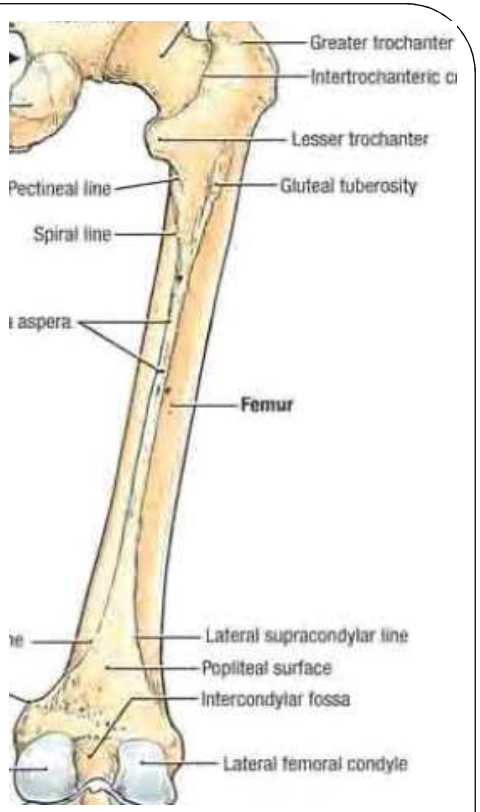
APPENDICULAR BONES CONTD

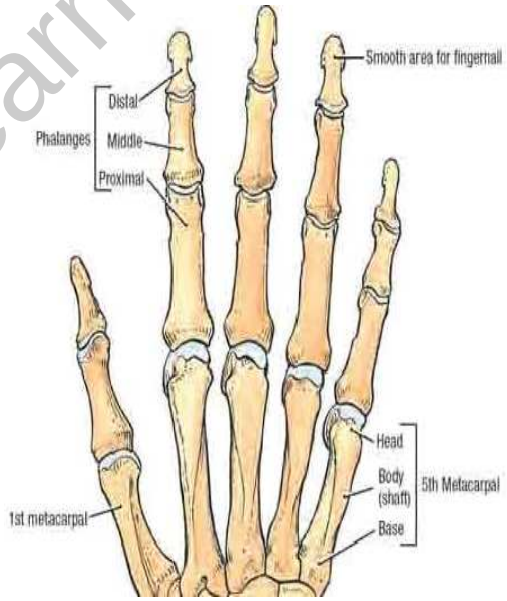
- 2. Pelvic girdle and Lower limb:
- a. Hip bones 2
- b. Femur 2
- c. Tibia 2
- d. Fibula 2
- e. Tarsal bones 14
- f. Metatarsal bones 10
- g. Phalanges 28

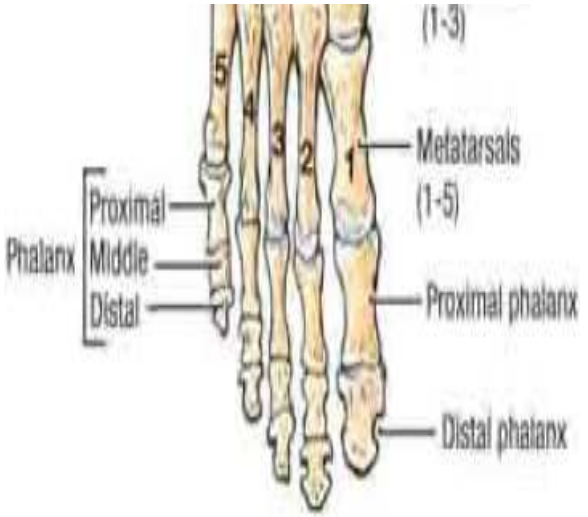
LONG BONES

- Long bones are found in the limbs :
- humerus,
- femur
- metacarpals
- metatarsals
- phalanges
- Their length is greater than their breadth.
- They have a tubular shaft
- called the diaphysis
- And an end called the epiphysis.









LONG BONES CONTD

- During the growing phase
- The diaphysis is separated from the epiphysis by an epiphyseal cartilage.
- The part of the diaphysis that lies adjacent to the epiphyseal cartilage is called the metaphysis
- The shaft has a central marrow cavity containing bone marrow

LONG BONES CONTD

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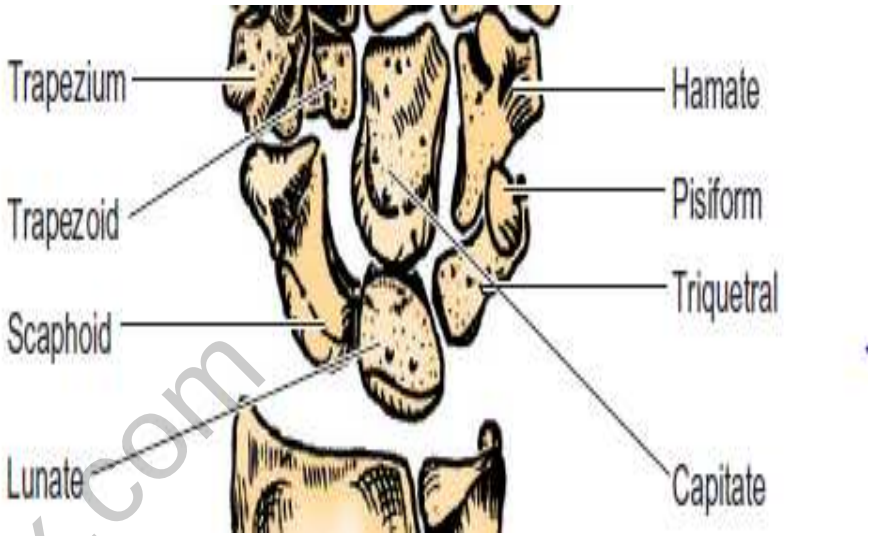
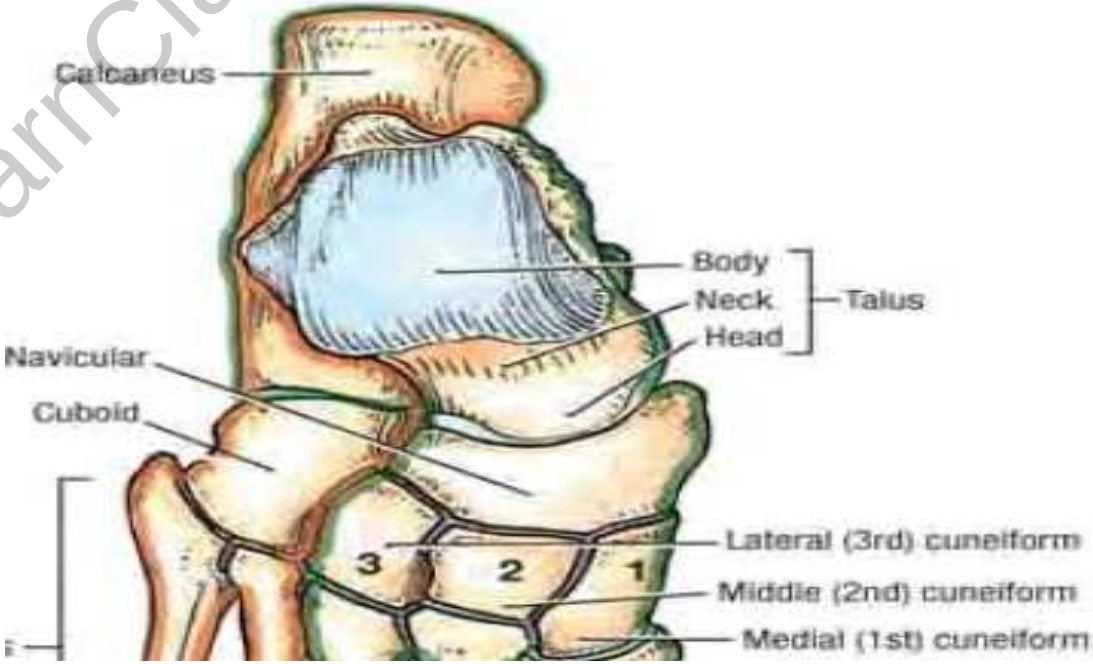
- The outer part of the shaft is composed of compact bone that is covered by a connective tissue sheath called the periosteum
- The ends of long bones are composed of cancellous bone
- The articular surfaces of the ends of the bones are covered by hyaline cartilage.

SHORT BONES

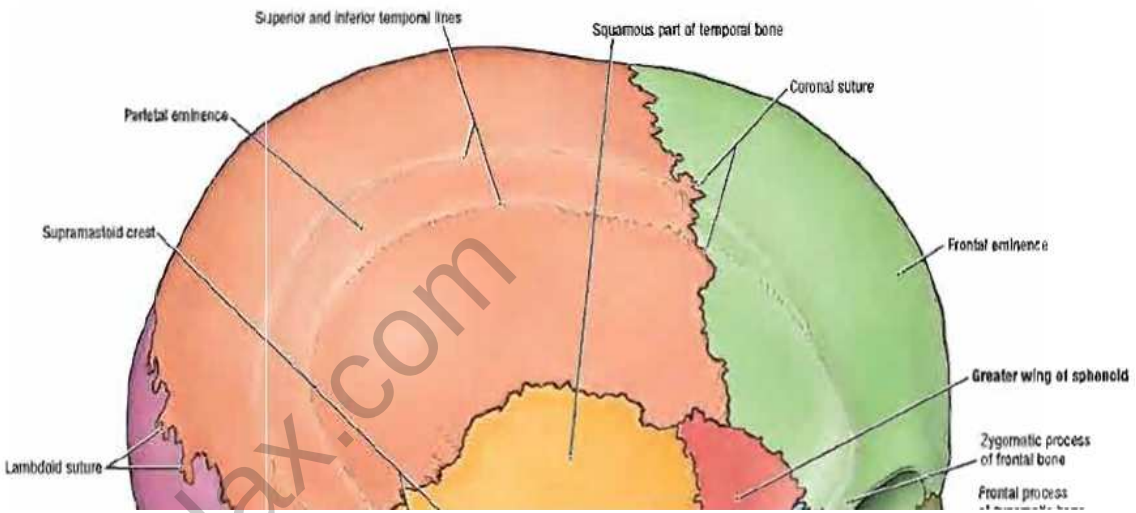
- Short bones are found in the hand and foot
- Scaphoid
- Lunate
- Talus
- Calcaneus.
- They are roughly cuboidal in shape
- And are composed of cancellous bone surrounded by a thin layer of compact bone
- Short bones are covered with periosteum,
- And the articular surfaces are covered by hyaline cartilage





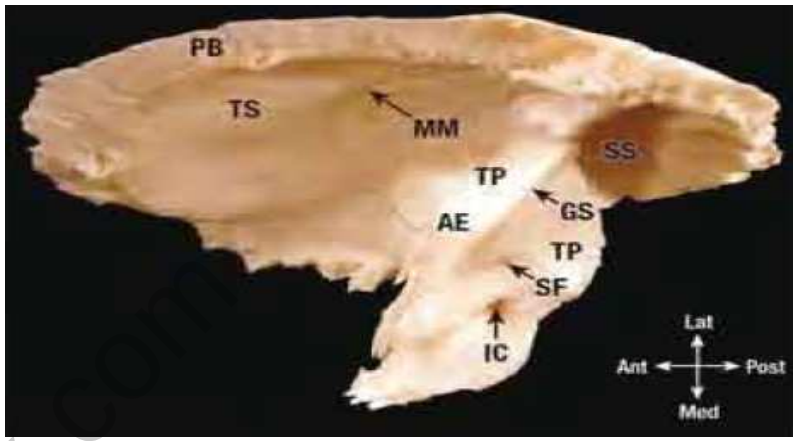
FLAT BONES

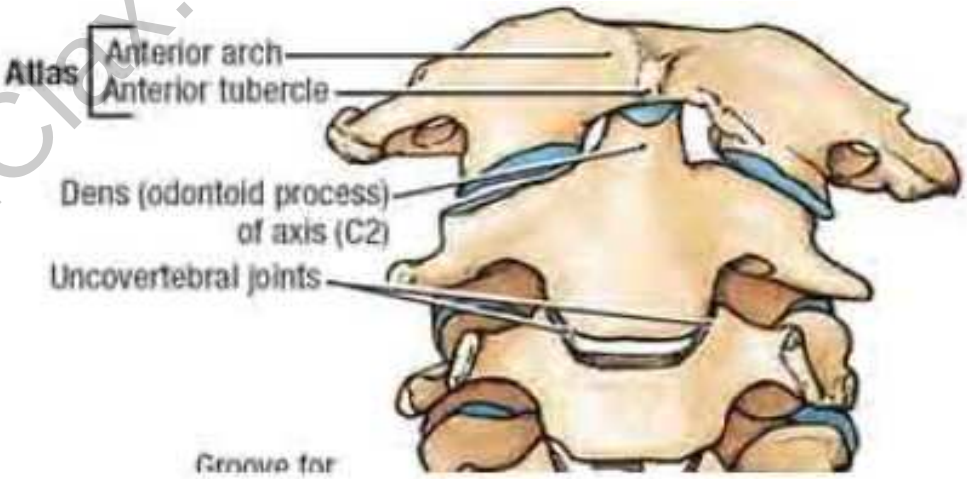
- Flat bones are found in the vault of the skull
- The frontal and parietal bones
- They are composed of thin inner and outer layers of compact bone
- With an intervening spongy layer called the Diploe.

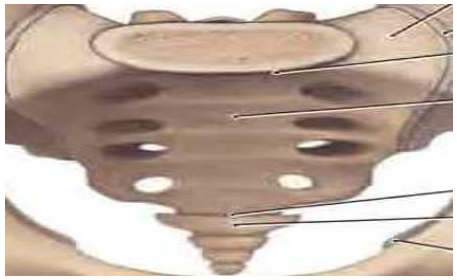


IRREGULAR BONES

- Irregular bones include those not assigned to the previous groups
- The bones of the skull
- Vertebrae
- Pelvic bones
- They are composed of a thin layer of compact bone with an interior made up of cancellous bone







SESAMOID BONES

- Sesamoid bones are small nodules of bone that are found in certain tendons where they rub over bony surfaces
- The greater part of a sesamoid bone is buried in the tendon
- And the free surface is covered with cartilage.

Sesamoid bones contd

- The largest sesamoid bone is the patella,
- which is located in the tendon of the quadriceps femoris.
- Other examples are found in the tendons of the flexor pollicis brevis and flexor hallucis brevis.

Sesamoid bone contd

- The function of a sesamoid bone is to reduce friction on the tendon
- It can also alter the direction of pull of a tendon

THANK YOU FOR LISTENING