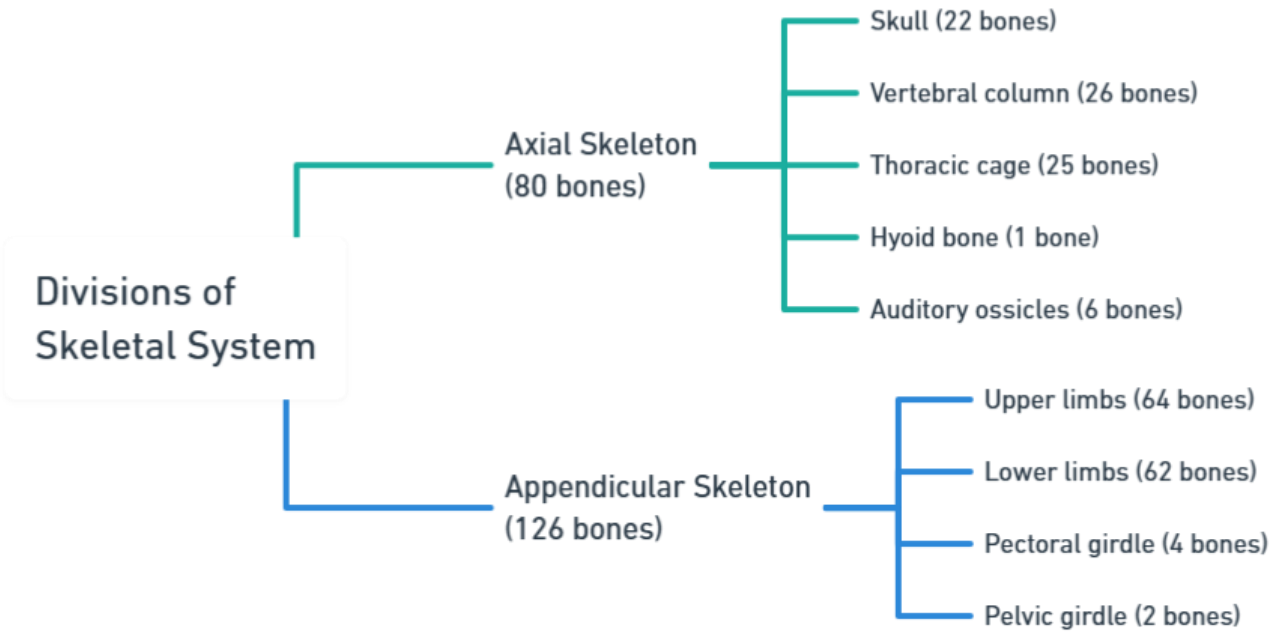
Osseous system

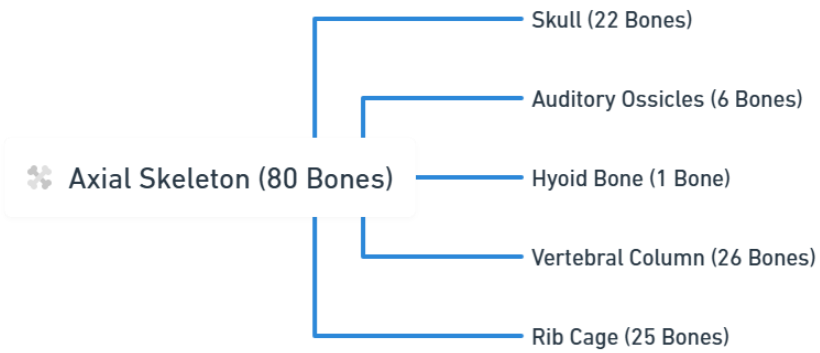
Structure and functions of bones

- The human skeletal system can be divided into two main divisions: the axial skeleton and the appendicular skeleton.
- The axial skeleton forms the central axis of the body, while the appendicular skeleton consists of the limbs and girdles.
- ***Here is the classification of the skeletal system, including the names of all bones:***



Axial Skeleton (80 Bones)

- The axial skeleton forms the central axis of the body and consists of 80 bones.
- Its primary functions are to protect vital organs in the head, neck, and trunk, and to support the body’s weight.

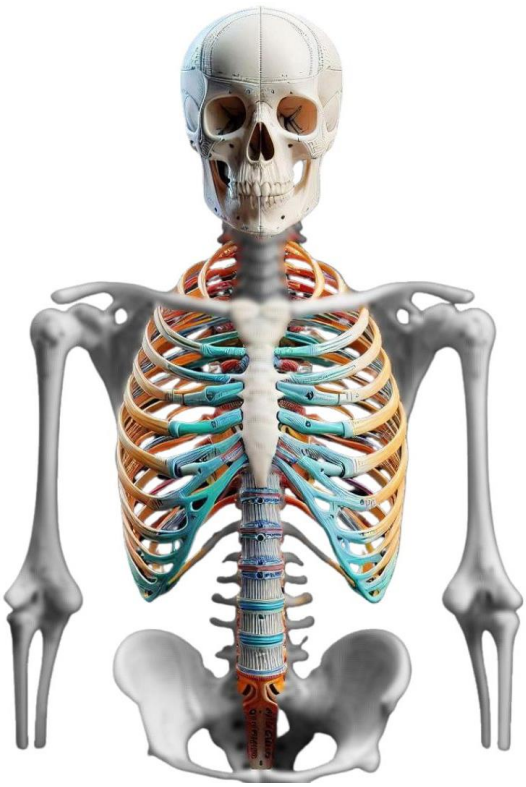


1. Skull (22 Bones)

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A. Cranial Bones (8 Bones):

- Frontal (1)
- Parietal (2)
- Occipital (1)
- Temporal (2)
- Sphenoid (1)
- Ethmoid (1)



B. Facial Bones (14 Bones):

- Maxillae (2)
- Zygomatic (2)
- Nasal (2)
- Lacrimal (2)
- Palatine (2)
- Inferior Nasal Conchae (2)
- Vomer (1)
- Mandible (1)

Features:

- The skull consists of 22 bones, including 8 cranial bones and 14 facial bones, joined by immovable joints called sutures.
- The mandible (lower jaw) is the only movable bone in the skull.

Functions:

- Protects the brain and forms the structure of the face.
- Provides attachment points for muscles involved in facial expressions and mastication (chewing).

2. Auditory Ossicles (6 Bones)

- Located in each ear:
  - Malleus (2)
  - Incus (2)
  - Stapes (2)

Function:

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- Transmit sound vibrations from the eardrum to the inner ear.

3. Hyoid Bone (1 Bone)

- A U-shaped bone in the neck that supports the tongue and is associated with swallowing.

4. Vertebral Column (26 Bones)

A. Cervical Vertebrae (7):

- C1 (Atlas), C2 (Axis), C3-C7

B. Thoracic Vertebrae (12):

- T1-T12

C. Lumbar Vertebrae (5):

- L1-L5

D. Sacrum (1):

- Composed of 5 fused sacral vertebrae

E. Coccyx (1):

- Composed of 3-5 fused coccygeal vertebrae

Features:

- The vertebral column is composed of 33 vertebrae, including cervical, thoracic, lumbar, sacral (fused), and coccygeal (fused) vertebrae.
- Separated by intervertebral discs.

Functions:

- Provides support for the body, protects the spinal cord, and serves as an attachment point for muscles and ligaments.
- Allows for flexibility and movement.

5. Rib Cage (25 Bones)

A. Ribs (24 Bones):

- 12 pairs:
  - **True Ribs (1-7):** Attach directly to the sternum via costal cartilage.
  - **False Ribs (8-10):** Attach to the cartilage of the rib above.
  - **Floating Ribs (11-12):** Do not attach to the sternum.

B. Sternum (1 Bone):

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- Composed of the manubrium, body, and xiphoid process.

Features:

- The rib cage consists of 12 pairs of ribs and the sternum.

Functions:

- Protects vital organs such as the heart and lungs.
- Supports the thoracic cavity and aids in respiration.

Appendicular Skeleton (126 Bones)

- The appendicular skeleton consists of 126 bones and is responsible for mobility.
- It includes the limbs, girdles, and attachment points for limb muscles.



1. Pectoral (Shoulder) Girdles (4 Bones)

A. Clavicles (2 Bones):

- Collar bones

B. Scapulae (2 Bones):

- Shoulder blades

Features:

- Each pectoral girdle consists of a clavicle and a scapula.

Functions:

- Connects the upper limbs to the axial skeleton.
- Provides a stable base for the attachment and movement of upper limb muscles.

2. Upper Limbs (60 Bones)

A. Humeri (2 Bones):

- Upper arm bones

B. Ulnae (2 Bones):

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- Medial forearm bones

C. Radii (2 Bones):

- Lateral forearm bones

D. Carpal Bones (16 Bones):

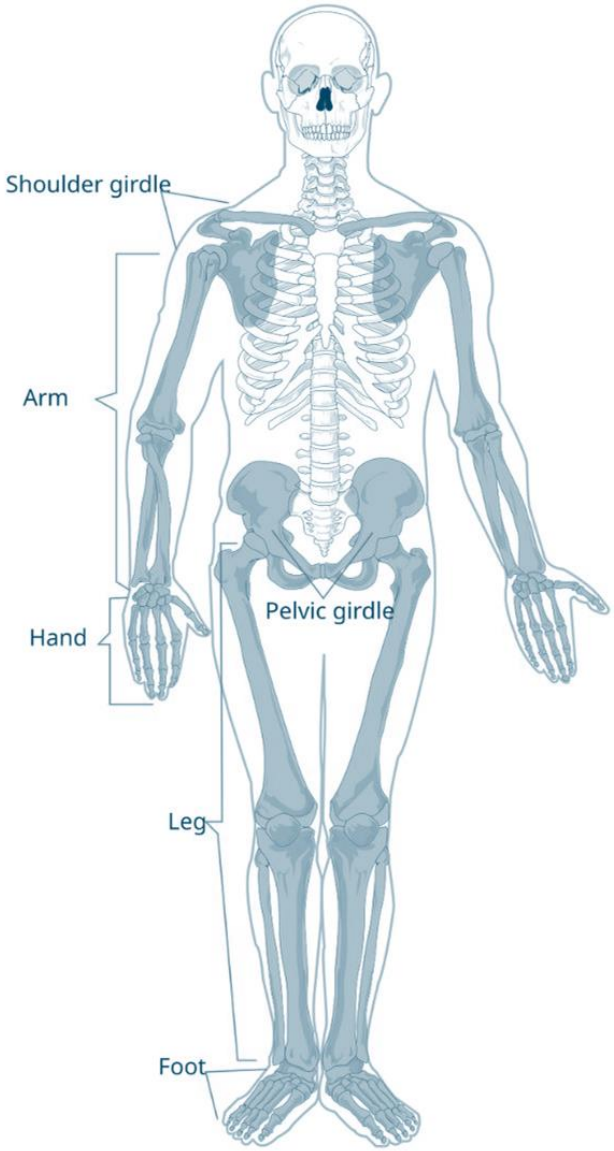
- Wrist bones, 8 in each wrist:
  - Scaphoid, Lunate, Triquetrum, Pisiform, Trapezium, Trapezoid, Capitate, Hamate

E. Metacarpal Bones (10 Bones):

- Palm bones, 5 in each hand

F. Phalanges (28 Bones):

- Finger bones, 14 in each hand:
  - 3 in each finger (Proximal, Middle, Distal), 2 in each thumb (Proximal, Distal)



Features:

- The upper limbs consist of the humerus, radius, ulna, carpal bones, metacarpals, and phalanges.

Functions:

- Allow for a wide range of movements and dexterity, enabling actions such as grasping, lifting, and manipulating objects.

3. Pelvic (Hip) Girdle (2 Bones)

A. Coxal Bones (2 Bones):

- Each formed by the fusion of the ilium, ischium, and pubis.

Features:

- The pelvic girdle consists of two coxal bones.

Functions:

- Supports the weight of the upper body when sitting and standing.
- Provides attachment points for the lower limbs and protects organs in the pelvic region.

4. Lower Limbs (60 Bones)

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