Skeletal System (2)

Axial Skeleton

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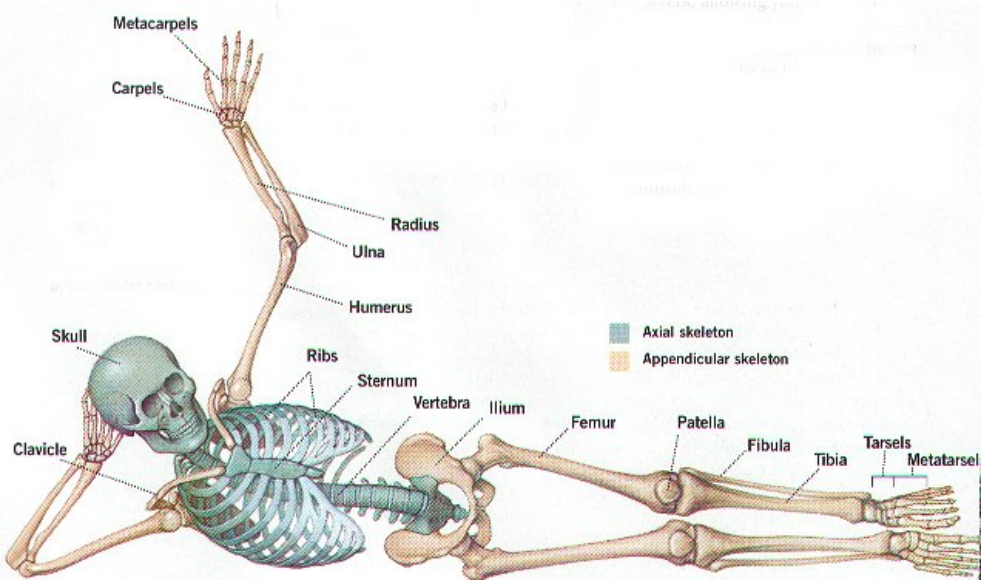
Objective

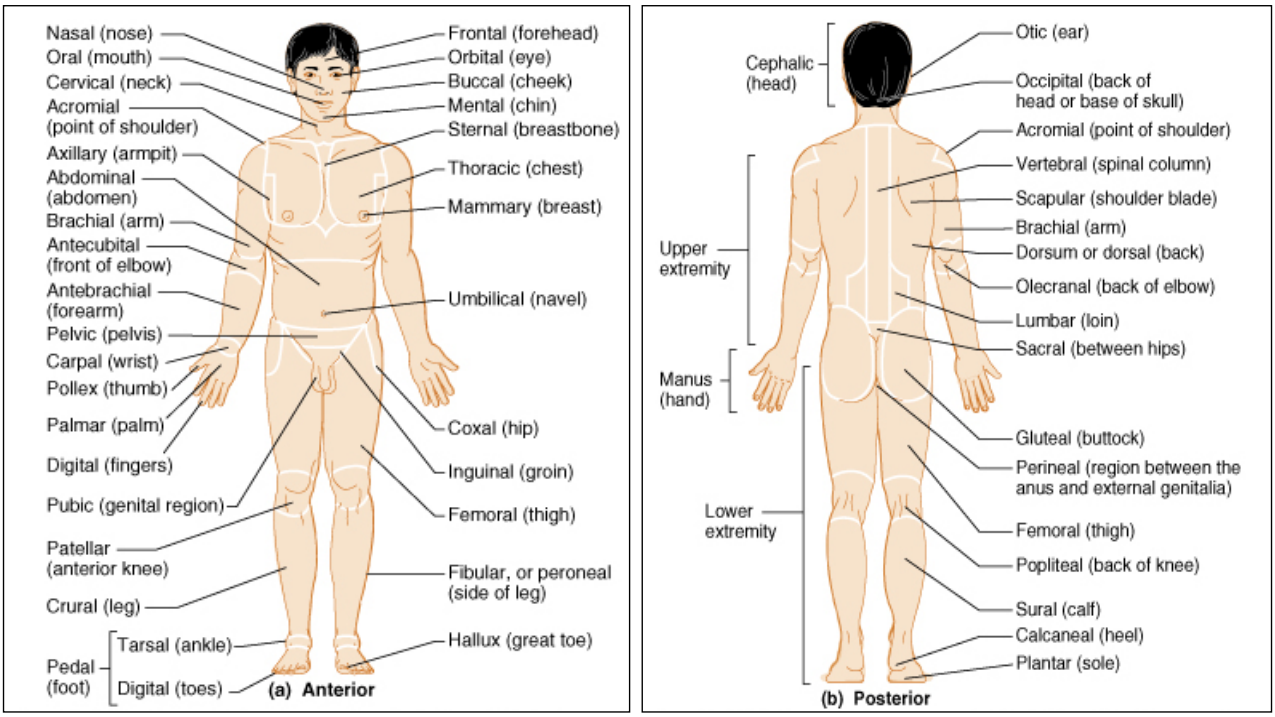
- Locate and identify the bones and the major features of the bones.
- Distinguish between the axial and appendicular skeletons and name the major parts of each.
- Explain how skeletal system produce movement at joints and identify several types of such movements.

Division of the Skeleton

- Consists of _____ bones
- Grouped as _____ skeleton and _____ skeleton



Human Body Regions



General Structure	Anatomical Term	Description
Articulating Surface	Condyle	Large, smooth, rounded articulating oval structure
	Facet	Small, flat, shallow articulating surface
	Head	Prominent, rounded epiphysis
	Trochlea	Smooth, grooved, pulley-like articular process
Depression	Alvelous	Deep pit or socket in maxillae or mandible
	Fossa	Flattened or shallow depression
	Sulcus	Narrow groove
Projection for tendon & ligament attachment	Crest	Narrow, prominent, ridgelike projection
	Epicondyle	Projection adjacent to a condyle
	Line	Low ridge
	Process	Any marked bony prominence
	Ramus	Angular extension of bone relative to the rest of the structure
	Spine	Pointed, slender process
	Trochanter	Massive, rough projection found only on the femur
	Tubercle	Small round projection
	Tuberosity	Large round projection
Opening and spaces	Canal (meatus)	Passageway through a bone
	Fissure	Narrow, slitlike opening through a bone
	Foramen	Rounded passageway through a bone
	Sinus	Cavity or hollow space in a bone

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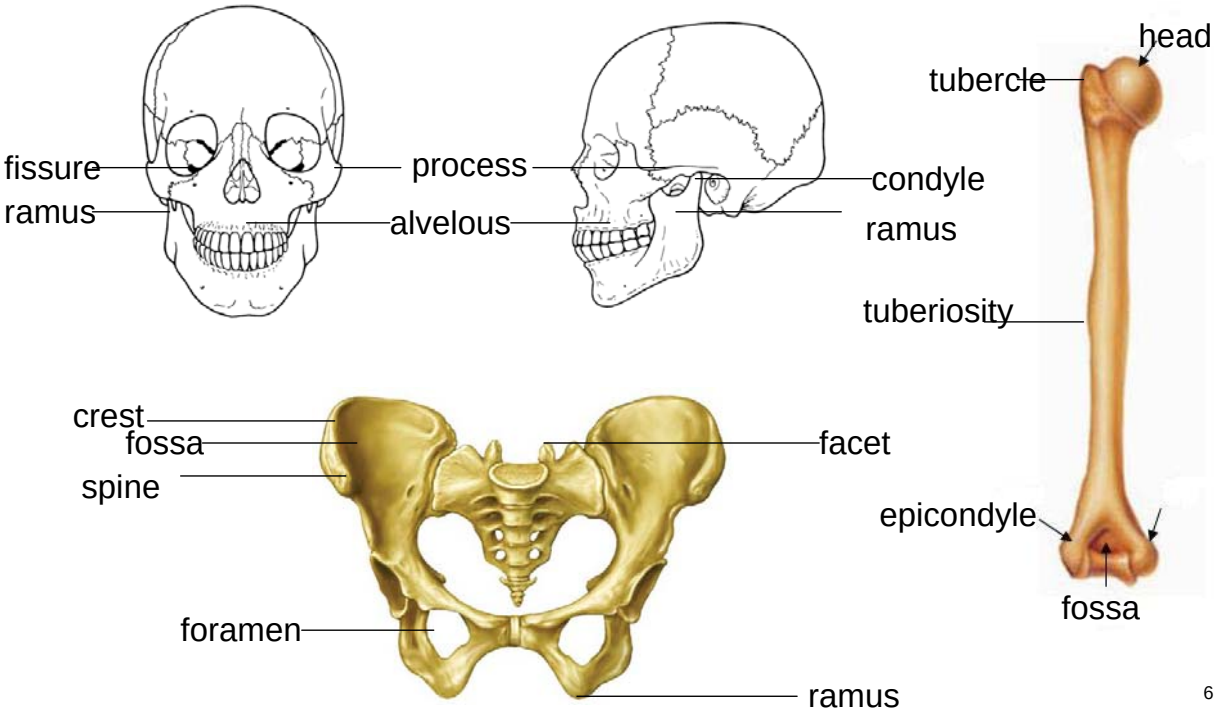
General Structure



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Axial Skeleton

- Bones of axial skeleton (80)

<table>
<tr><td rowspan="4">Skull & associated Bone (29)</td><td>Cranial bone (8)
frontal (1), parietal (1), temporal (2,) occipital (1), spenoid (1), ethmoid (1)</td><td rowspan="3">Vertebral Column (26)</td><td>Vertebrae (24)
Cervical (7),thoracic (12), lumbar (5)</td></tr>
<tr><td rowspan="2">Facial bone (14)
Zygomatic (2), lacrimal (2), nasal (2), vomer (1), inferioer nasal concae (2), palatine (2), maxillae (2), mandile (2)</td><td>Sacrum (1)</td></tr>
<tr><td>Coccyx 91)</td></tr>
<tr><td>Auditory ossicles (6)
Malleus (2), incus (2), stapes (2)
Hyoid (1)</td><td rowspan="2">Thoracic Cage (25)</td><td>Sternum (1)</td></tr>
<tr><td>Ribs (1)</td></tr>
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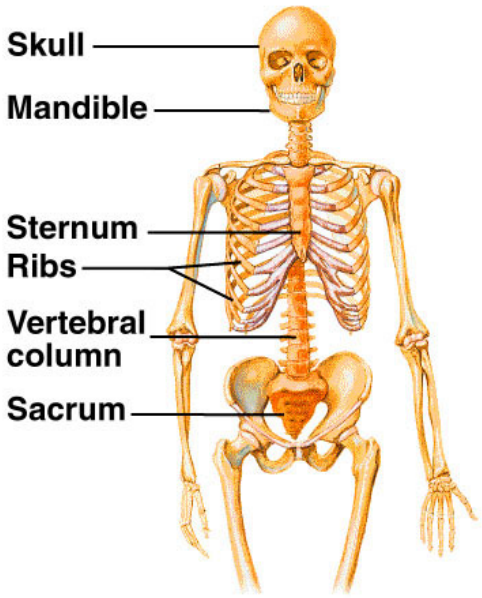
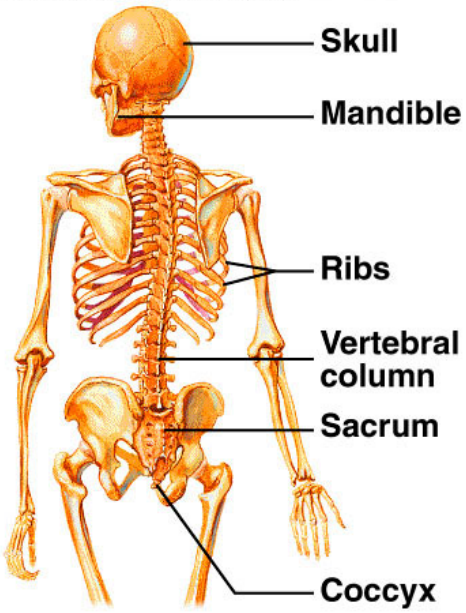
Axial Skeleton





Axial Skeleton (Skull)

- 29 bones (cranium - 8, facial – 14, auditory - 6)
- Cranium
  - encloses and protects the brain, provides attachments for muscles, and contains air filled sinus that reduce its weight.
- Facial
  - 13 immovable facial bones and mandible (shape of face)
  - provide attachments for muscles of mastication and expression
- Infantile skull
  - incompletely developed and features fontanels, or soft spots to aid passage through the birth canal.

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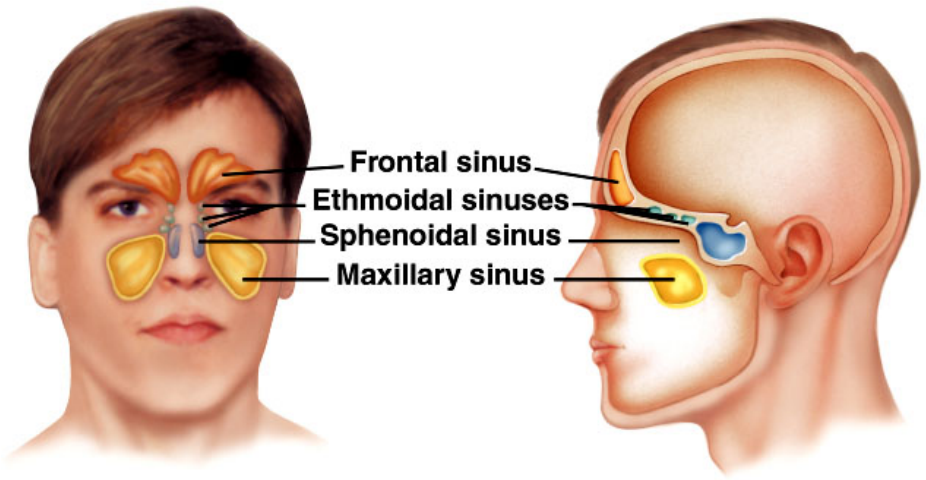
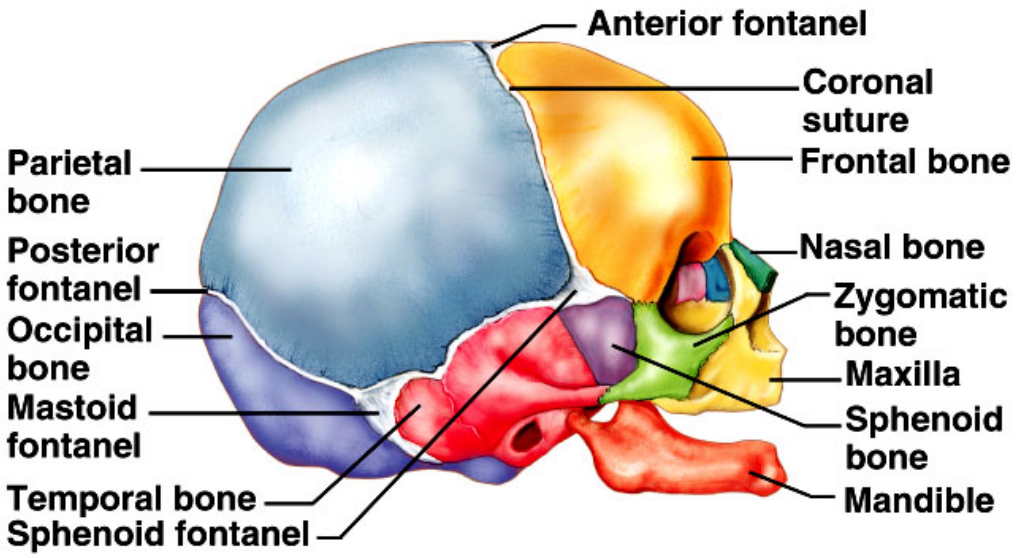
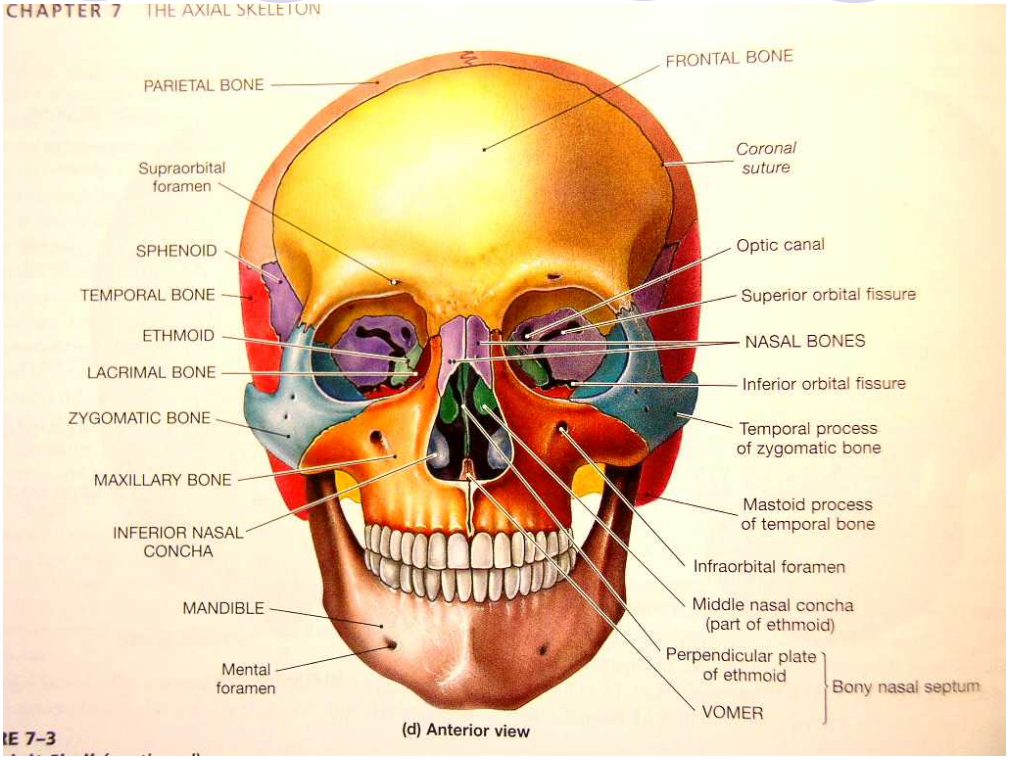
Sinus



Infantile Skull



Axial Skeleton (Skull)



Axial Skeleton (Skull)

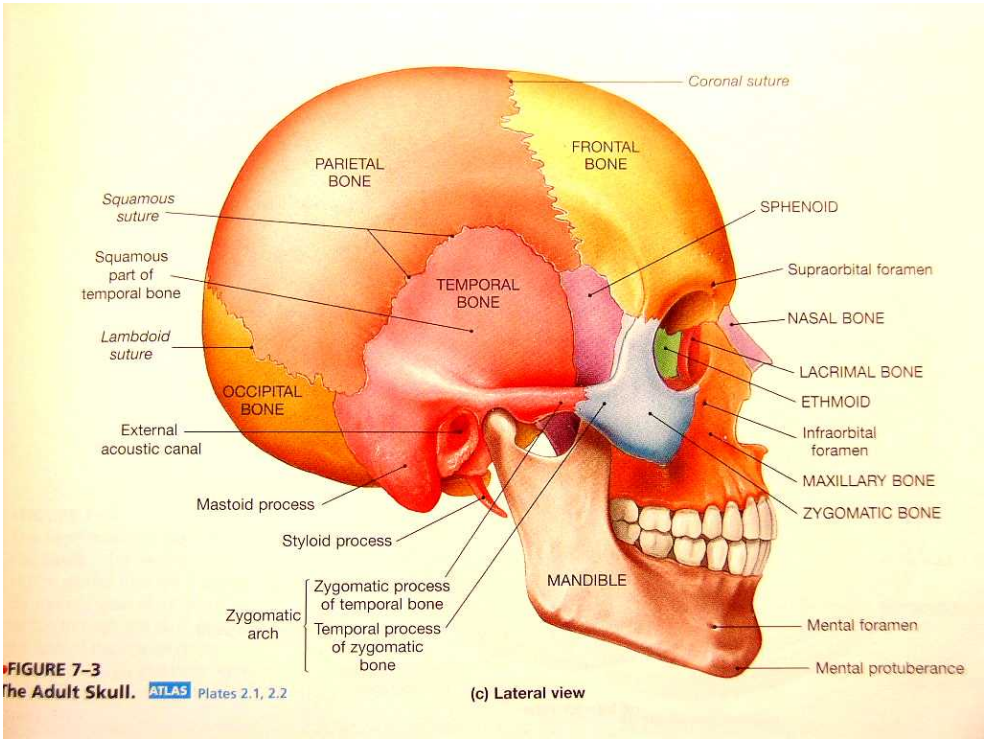


FIGURE 7–3 The Adult Skull. ATLAS Plates 2.1, 2.2

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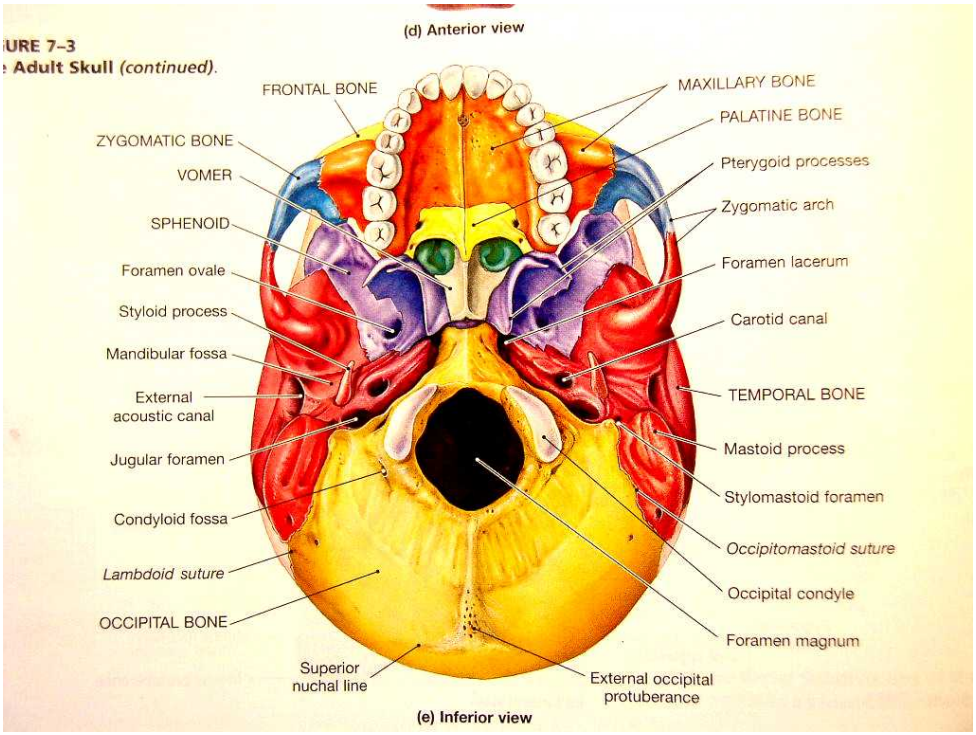
Axial Skeleton (Skull)



Axial Skeleton (Vertebral Column)

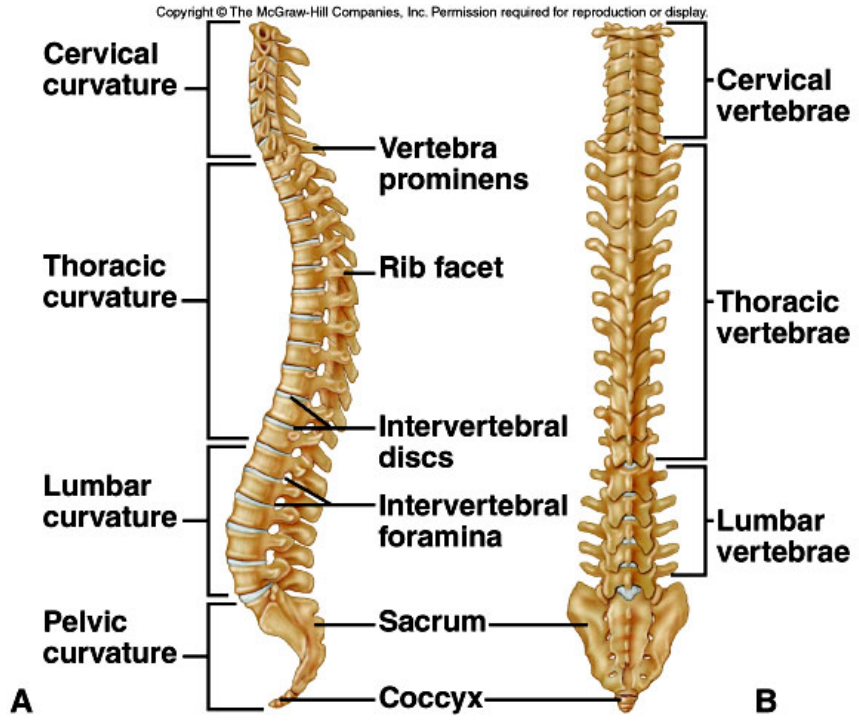
Consists of many vertebrae.

It separated by cartilaginous intervebrebral disks.

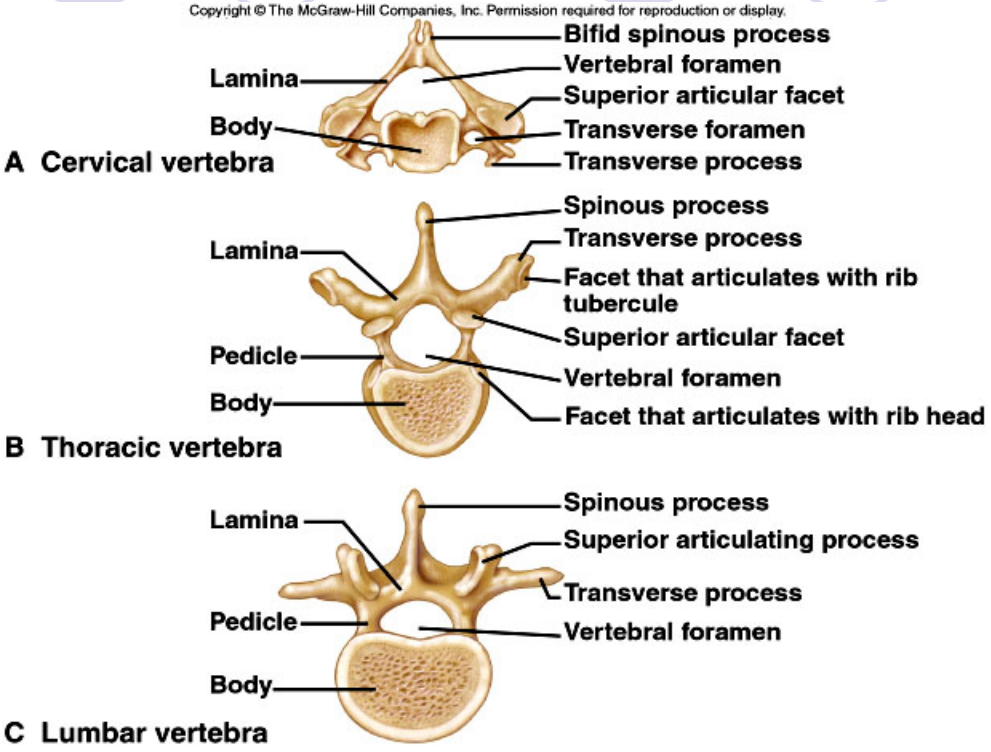
- Typical vertebra

  - drum-shaped body that supports the weight of the head and trunk.
  - extending from the body are pedicels, laminae, a spinous process, and vertebral arch that surrounds the vertebral foramen.
  - articulating surfaces include the superior articulating processes and inferior articulating processes; transverse processes provide points of attachment for muscles.
  - intervertebral foramina provide passageways for spinal nerves.

Axial Skeleton (Vertebral Column)



Vertebra



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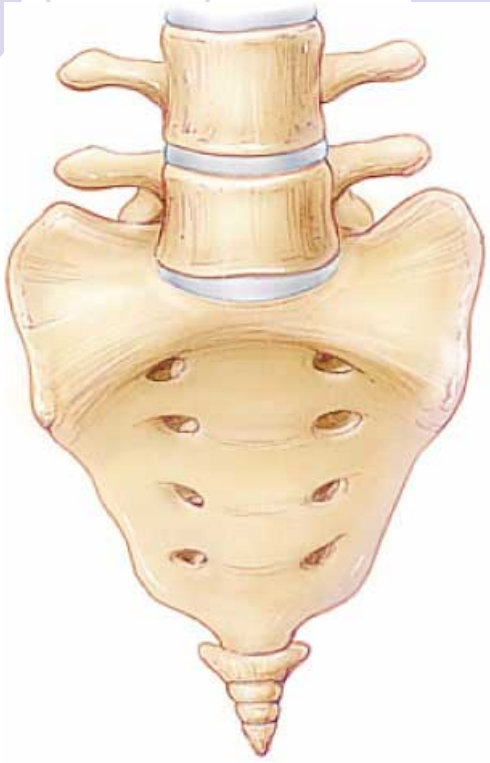
Sacrum & Coccyx

- **The sacrum is a triangular bone located just below the lumbar vertebrae. It consists of four or five sacral vertebrae in a child, which become fused into a single bone after age 26. The sacrum forms the back wall of the pelvic girdle and moves with it.**
- **The bottom of the spinal column is called the coccyx or tailbone. It consists of 3-5 bones that are fused together in an adult. Many muscles connect to the coccyx.**



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Axial Skeleton
Thoracic Cage

- Consists of sternum and ribs
- Sternum composed of:
  ~ manubrium
  ~ the body
  ~ xiphoid process
- Ribs (12 pairs) composed of:
  ~ true ribs (1-7)
    - connect individually to sternum by separate cartilaginous
  ~ false ribs (8-12)
    - didn't attach to sternum directly
    - rib 11-12 are called floating ribs (do not connect to sternum)

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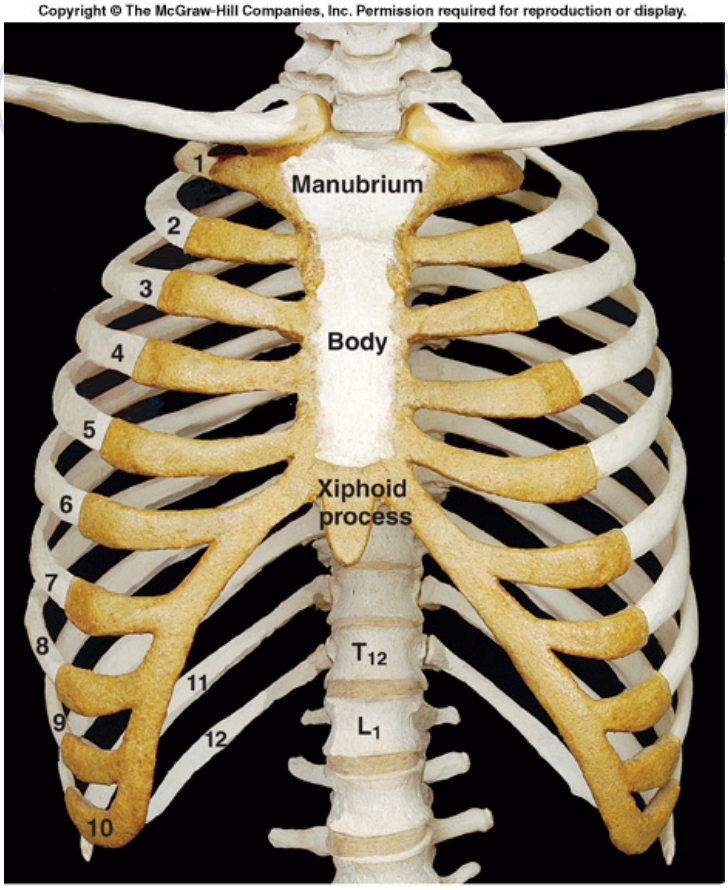

Anterior view

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