

Musculoskeletal System (Division of Skeleton System)

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Skeletal System



Axial Skeleton

- skull,
- vertebral column,
- ribs and sternum
- They form central bony core of the body

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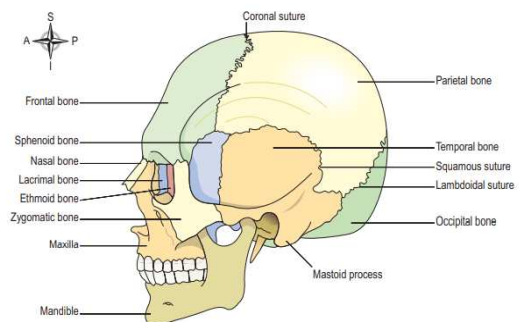
Skeletal System

1. Axial Skeleton

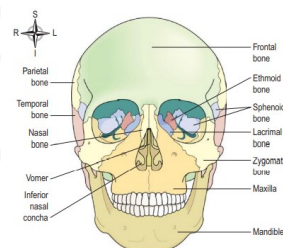
A. Skull

- It is the large bony structure consisting of the cranium and facial bone attached to the cranium.

| Cranium | | Facial | |
|-------------|---|--------------------|---|
| Frontal- | 1 | Maxilla- | 2 |
| Parietal- | 2 | Zygomatic (Cheek)- | 2 |
| Temporal – | 2 | Palatine – | 2 |
| Occipital – | 1 | Nasal – | 2 |
| Sphenoid – | 1 | Lachrymal – | 1 |
| Ethmoid – | 1 | Vomer – | 1 |
| | | Mandible- | 1 |
| | | Inferior turbinate | 1 |



The bones of the skull and their sutures (joints).



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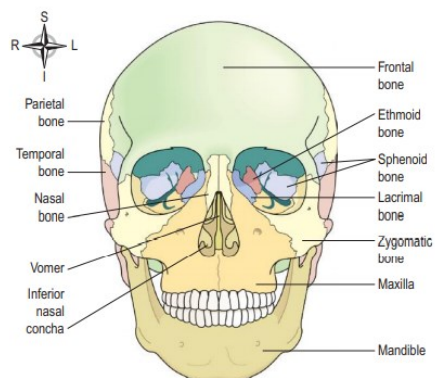
Skeletal System

1. Axial Skeleton

A. Skull

Functions

- the cranium protects the brain
- the bony eye sockets protect the eyes and give attachment to the muscles that move them
- the temporal bone protects the delicate structures of the inner ear
- the sinuses in some face and skull bones give resonance to the voice
- the bones of the face form the walls of the posterior part of the nasal cavities and form the upper part of the air passages
- The maxilla and the mandible provide alveolar ridges in which the teeth are embedded
- the mandible, controlled by muscles of the lower face, allows chewing



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Skeletal System

1. Axial Skeleton

B. Vertebral Column

- Series of vertebrae and forms the axis to which other bones of the skeleton are connected.

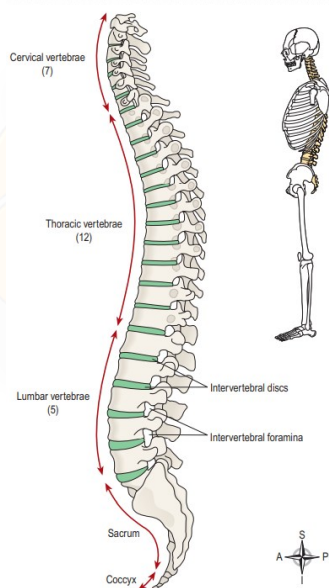
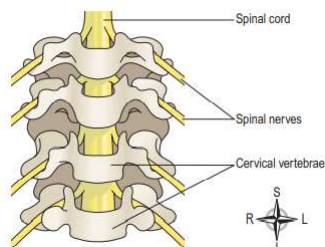


Figure 16.19 The vertebral column. Lateral view.



| Cranium | |
|-----------|----|
| Cervical- | 7 |
| Thoracic- | 12 |
| Lumber - | 5 |
| Sacral - | 5 |
| Coccyx - | 4 |

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Skeletal System

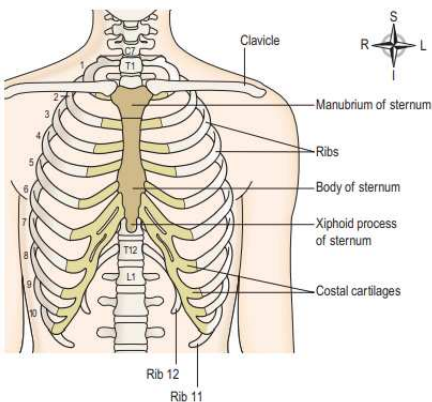
1. Axial Skeleton

B. Vertebral Column

- Protection of spinal cord.
- Intervertebral foramina provides access to the spinal cord for spinal nerves, blood vessels and lymph vessels
- the numerous individual bones with their intervertebral discs allow movement of the whole column
- Support of the skull
- The intervertebral discs act as shock absorbers, protecting the brain
- Formation of the axis of the trunk, giving attachment to the ribs, shoulder girdle and upper limbs, and the pelvic girdle and lower limbs.

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Skeletal System



1. Axial Skeleton

C. Thoracic Cage

- Provide support of the organs like heart, lungs

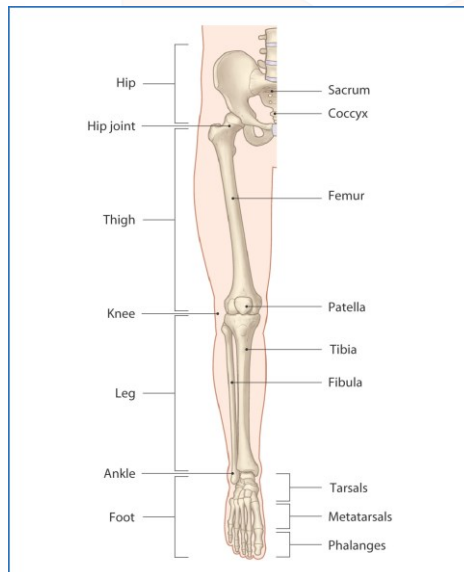
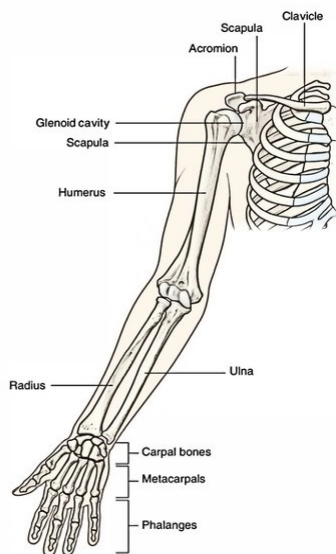
Thorax

| | |
|----------------------|---------|
| Sternum- | 1 |
| Ribs- | 12 pair |
| True Costage – | 7 pair |
| False Cartilage– | 5 pair |
| Thoracic Vertebrae - | 12 |

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Skeletal System

2. Appendicular Skeleton



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Skeletal System

Appendicular Skeleton

- Upper Limbs- handling the objects and perform different types of work and movement
- Lower limbs- perform locomotion, maintain posture, and give the stability.

| Upper Limb (Each side) | Lower Limbs (Each side) |
|------------------------|-------------------------|
| Clavicle- 1 | Hip bone- 1 |
| Scapula- 1 | Femur - 1 |
| Humerus- 1 | Patella- 1 |
| Ulna- 1 | Tibia - 1 |
| Radius- 1 | Fibula- 1 |
| Carpals - 8 | Tarsals- 7 |
| Meta carpals- 5 | Meta Tarsals- 5 |
| Phalanges- 14 | Phalanges- 14 |

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