

Body region (Axial Skeleton)

Lies in the midline of the body and contains the bones of **the skull, vertebral column and the thoracic cage.**

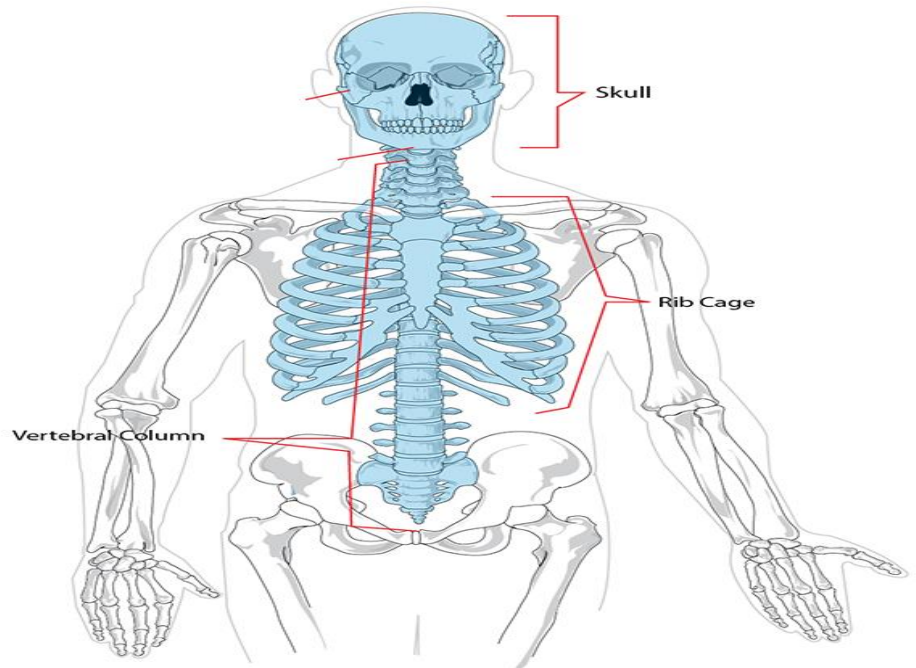


Fig1: Axial Skeleton

The skull: is the top most part of the bony skeleton of the body, is made up of **three main areas.**

1. **Cranium:** it protects the brain and is composed of eight bones:
 - **Frontal** : 1 bone
 - **Parietal** : 2 bones
 - **Temporal** : 2 bones
 - **Occipital** : 1 bone
 - **Sphenoid** : 1 bone
 - **Ethmoid bone** : 1 bone

2. **Face:** is composed of 14 bones at front part of the skull, containing the **orbital cavities** of the eyes and the **nasal cavity** of the nose.
 - **Nasal bone** : 2 bones
 - **Zygomatic bones** : 2 bones

3. **Jaws:** the upper and lower jaws of the **oral cavity.**
 - **Maxilla:** two bone form the **upper jaw.**
 - **Mandible:** one bone form the **lower jaw**, is the only movable portion of the skull articulating with the cranium at the temporomandibular joint (**TMJ**).

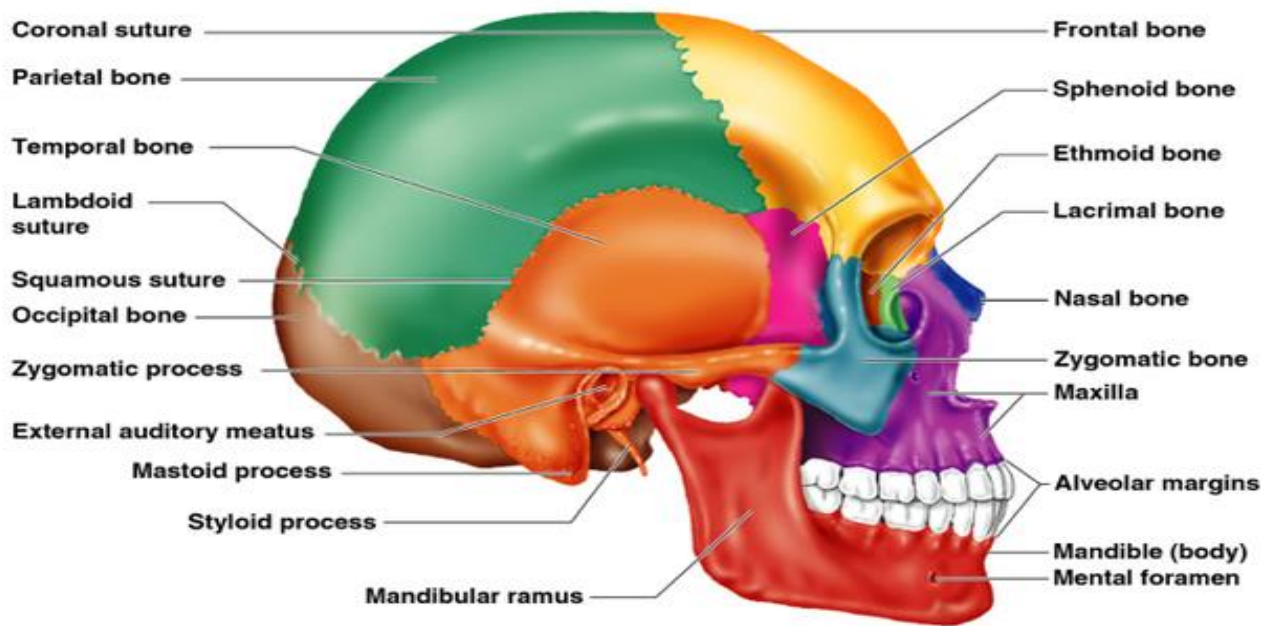


Fig2: skull bones

Vertebral Column (Spinal curves): is extending from the skull to the pelvis. Is made of 33 individual bones called the **vertebrae**. It is separated by pads called the **intervertebral disks**. The vertebral column also protects the **spinal cord**, which passes through a **vertebral canal**.

The vertebrae are named according to their location:

1-Cervical (neck) - The **seven cervical vertebrae** are numbered **C1 to C7**.

2-Thoracic (mid back) -The **twelve thoracic vertebrae** are numbered **T1 to T12**.

3-Lumbar (low back) - The **five lumbar vertebrae** are numbered **L1 to L5**.

4-Sacrum - There are **five sacral vertebrae**, which are fused together.

5-Coccyx region - the **four fused bones** of the coccyx.

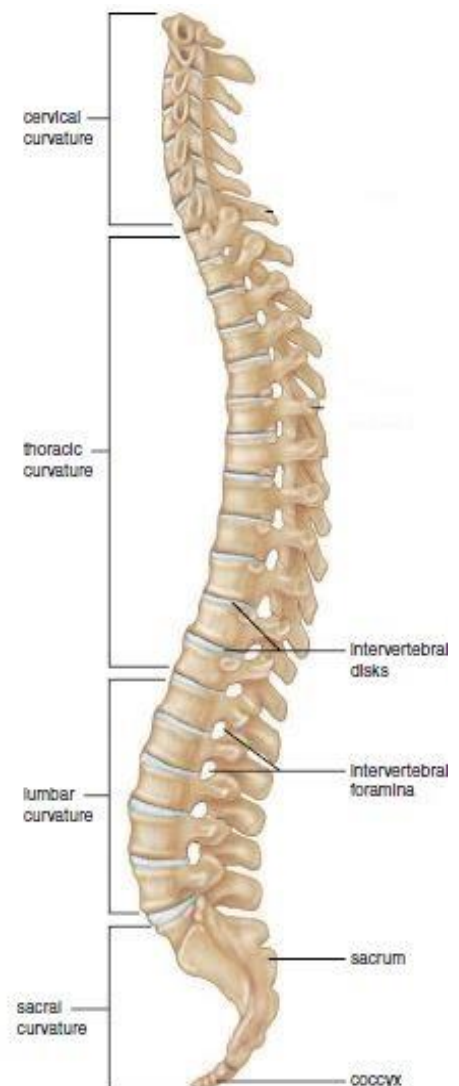
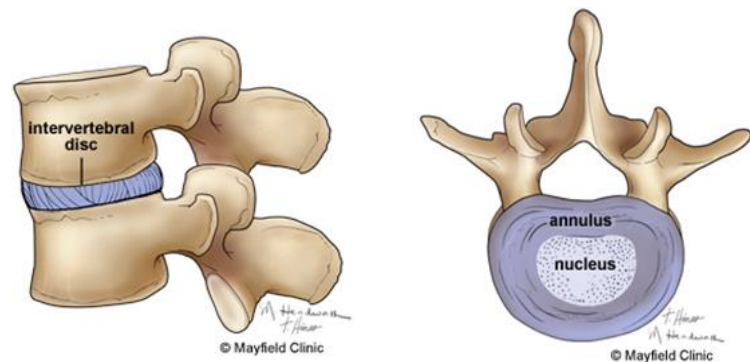


Fig3: Vertebral Column

Intervertebral Discs: it is located between the vertebrae. They prevent the vertebrae from grinding against one another and absorb shock caused by movements.

Fig 4: Intervertebral Discs



Thoracic Cage : (Rib Cage) is formed by the **Sternum** and **12 pairs of ribs** .The rib cage provides support for the bones of the **pectoral girdle**.

Sternum: or (breastbone) is a flat bone that has **the shape of a blade**. The sternum with the ribs **helps protect** the heart and lungs. The sternum is composed of **three bones**:

1. The **manubrium**,
2. The **body**,
3. The **xiphoid process**.

Ribs: each rib is **articulate posteriorly** with the T1–T12 thoracic vertebrae and **anteriorly** via their **costal cartilages** to the sternum.

Rib Classifications: are classified into three groups based on their relationship to the sternum.

1. True ribs (1–7): The costal cartilage from each of these ribs **attaches directly** to the sternum. Called (**Vertebrosteral ribs**)

2. False ribs (8–10): The costal cartilages from these ribs **do not attach directly** to the sternum. Called (**Vertebrochondral ribs**)

3. Floating ribs (11–12): These are short ribs that **do not attach** to the sternum.

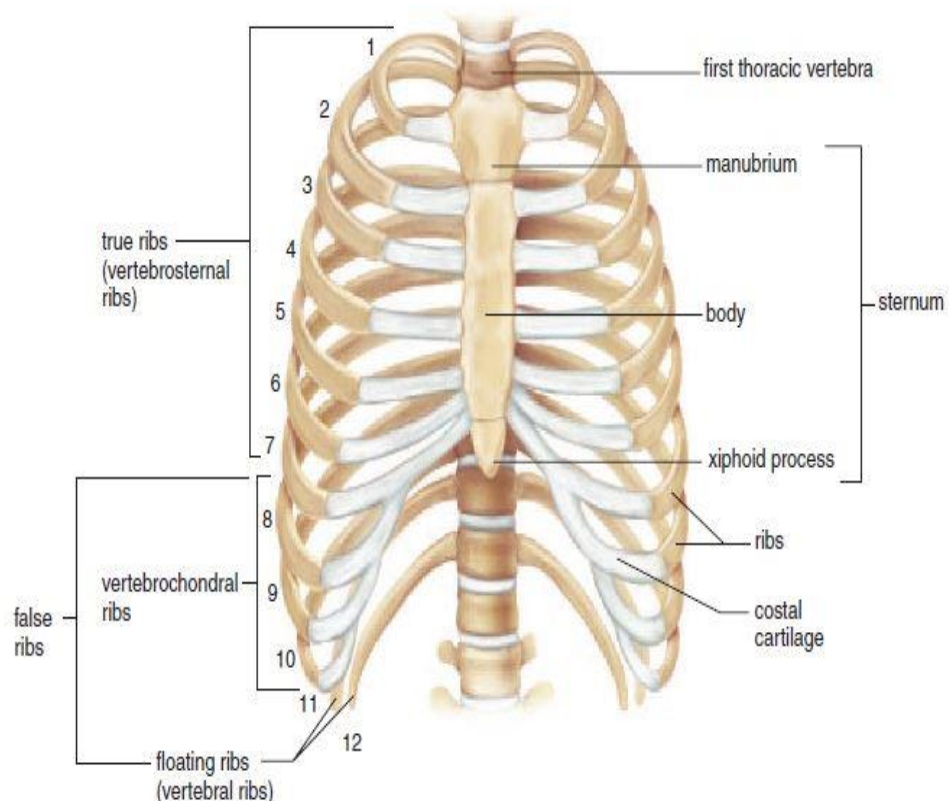


Fig5: Thoracic Cage