

# THE SKELETAL SYSTEM

The human body's bones can be divided into two broad groups,

- 1) **Axial skeleton**
- 2) **Appendicular skeleton.**

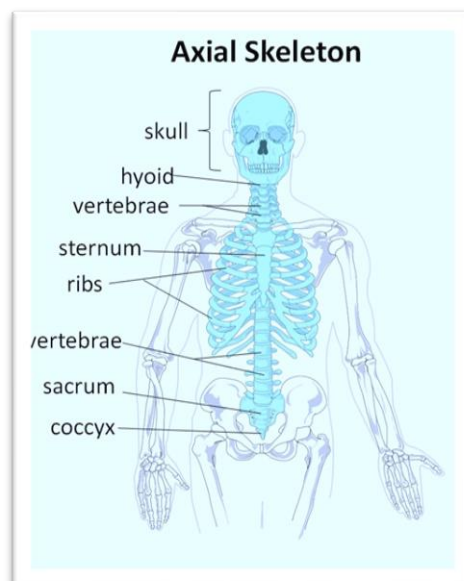
The axial skeleton comprises the bones found along the central axis traveling down the body's center. The appendicular skeleton comprises the bones appended to the central axis.

The axial skeleton consists of the bones of the **skull**, the bones of the **inner ear** (known as ossicles), the **hyoid bone** in the throat, and the bones of the **vertebral column**, including the **sacrum and coccyx** bones in the center of the pelvic girdle.

The appendicular skeleton is made up by the bones attached or appended to the axial skeleton. These are the bones of the limbs, hands, and feet, the bones of the pectoral (shoulder) girdles, and the coxal (hip) bones of the pelvic girdle.

## 1) **Axial skeleton**

The axial skeleton consists of the bones of the **skull**, the bones of the **inner ear** (known as ossicles), the **hyoid bone** in the throat, and the bones of the **vertebral column**, including the **sacrum and coccyx** bones in the center of the pelvic girdle, and the **thoracic cage** (commonly known as the rib cage).



The bones of the skull are divided into two main categories: the **cranial bones** (which protect the brain) and the **facial bones** (which structure the face). Here's a breakdown:

### **Cranial Bones (8 total)**

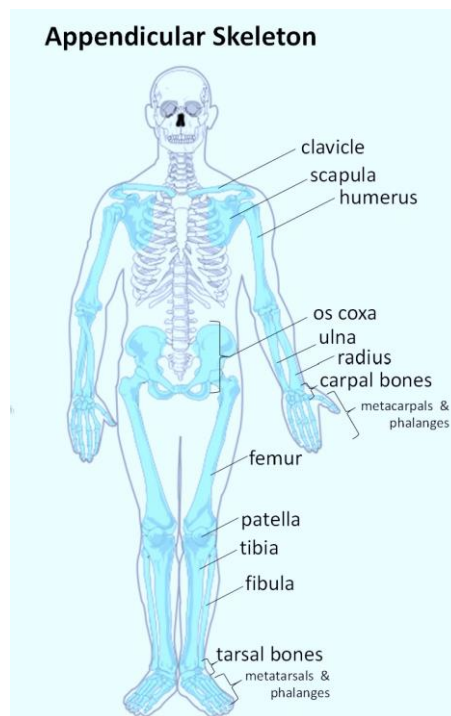
1. **Frontal Bone** - forms the forehead and the roof of the eye sockets.
2. **Parietal Bones** (2) - form the sides and roof of the cranial cavity.
3. **Temporal Bones** (2) - located at the lower sides of the skull and house structures of the ears.
4. **Occipital Bone** - forms the back and base of the skull.
5. **Sphenoid Bone** - forms part of the floor of the cranium and sides of the eye sockets; has a central "butterfly" shape.
6. **Ethmoid Bone** - located between the eyes, contributing to the medial wall of the orbits, the nasal cavity, and part of the cranial floor.

### **Facial Bones (14 total)**

1. **Nasal Bones** (2) - form the bridge of the nose.
2. **Maxillae** (2) - upper jawbones, which contain the upper teeth and form part of the nose and eye orbits.
3. **Zygomatic Bones** (2) - also known as cheekbones, contribute to the lateral walls of the orbits.
4. **Mandible** - the lower jawbone, which holds the lower teeth and is the only movable skull bone.
5. **Lacrimal Bones** (2) - smallest facial bones, located in the inner corners of the eye sockets, house tear ducts.
6. **Palatine Bones** (2) - form part of the hard palate and the floor of the nasal cavity.
7. **Inferior Nasal Conchae** (2) - thin, curved bones projecting from the lateral walls of the nasal cavity, aiding in air filtration.
8. **Vomer** - forms the lower part of the nasal septum, dividing the nasal cavity into left and right sides.

## 2) appendicular skeleton.

The **appendicular skeleton** includes the bones of the limbs and girdles that attach them to the axial skeleton. It consists of Pectoral (Shoulder) Girdle, Upper Limbs, Pelvic (Hip) Girdle, Lower Limbs



### **Pectoral (Shoulder) Girdle - Attaches the upper limbs to the axial skeleton**

- **Clavicle** (collarbone) - 2 bones
- **Scapula** (shoulder blade) - 2 bones

### **2. Upper Limbs - 30 bones in each arm (60 bones total)**

- **Humerus** - 1 bone per arm (upper arm)
- **Radius** - 1 bone per arm (lateral side of the forearm)
- **Ulna** - 1 bone per arm (medial side of the forearm)
- **Carpal Bones** (wrist) - 8 bones per wrist
- **Metacarpal Bones** (palm) - 5 bones per hand
- **Phalanges** (fingers) - 14 bones per hand

### **3. Pelvic (Hip) Girdle - Attaches the lower limbs to the axial skeleton**

- **Coxal (Hip) Bones** - 2 bones (each hip bone is made up of three fused bones: the ilium, ischium, and pubis)

#### **4. Lower Limbs - 30 bones in each leg (60 bones total)**

- **Femur** - 1 bone per leg (thigh bone)
- **Patella** (kneecap) - 1 bone per leg
- **Tibia** - 1 bone per leg (medial side of the lower leg)
- **Fibula** - 1 bone per leg (lateral side of the lower leg)
- **Tarsal Bones** (ankle) - 7 bones per ankle
- **Metatarsal Bones** (foot) - 5 bones per foot
- **Phalanges** (toes) - 14 bones per foot