

# Definition of Skeletal System

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The skeletal system consists of the bones in the body, along with tendons, cartilage and ligaments that connect the bones. The skeleton supports the body, providing its shape, and protects internal organs and other fragile tissues. The skeleton also produces red blood cells and stores important minerals.

There are two types of skeletons: exoskeletons and endoskeletons. Exoskeletons are external, and provide outer structural support for [animals](#) such as crabs, lobsters and tortoises. Endoskeletons lie inside the body and can be found in humans and other vertebrates (mammals, birds, reptiles, amphibians, and fishes). The endoskeleton of the human body is divided into two major areas: the axial skeleton and the appendicular skeleton.

## The Axial Skeleton

The axial skeleton is made up of bones that support the body and protect the brain, neck and torso. Like the skeletons of other vertebrates, such as the dog or cat, the human skeleton is made up of bone, collagen and cartilage. The axial skeleton includes the bones of the skull, ear, the vertebral column and the rib cage.

## Bones of the Skull

While often thought to be one solid encasement, the skull actually consists of many small, separate bones. In the human, it includes eight bones of the brain case, or cranium, and 13 facial bones. The human skull also includes three small bones of the ear: the malleus, incus and stapes.

In many species, the skull contains openings that are padded by capsules to allow important nerve tracts, such as the spinal column, to leave the skull and service other parts of the body.

## The Vertebral Column

The vertebral column, also called the backbone or spine, is one of the most significant features of the endoskeleton and serves a variety of functions. It supports the body, encapsulates the spinal cord and acts as a site for muscle attachments.

The human skeleton consists of seven cervical, 12 thoracic, five lumbar, five fused sacral and four coccygeal vertebrae that are typically separated by tough, fibrous discs. Attached to the vertebral column are the sternum and ribs, which help to maintain body rigidity and enclose a number of vital organs.

## The Appendicular Skeleton

The appendicular skeleton in many types of vertebrates is made up of the pectoral girdle and the pelvic girdle. In humans, the appendicular skeleton includes the clavicles, the scapula and the sternum---the bony structure that runs down the center of the chest. It also includes all of the bones of the upper appendages: the upper and lower arms and hands.

The human pelvic girdle serves as an attachment for the vertebral column and the bones of the upper and lower legs. It is an important site of attachment for the muscles of locomotion and the core of the body that helps to turn and rotate the upper body.

Other animals, like the horse or cow, have similar appendicular skeletons but they differ according to the animals' unique needs.

## The Limbs

As in many other vertebrates, the bones of the human body often come in pairs: two arms and two legs. The pectoral limbs are composed of the humerus, radius, ulna, carpal, metacarpal and phalanges. The pelvic limbs are composed of the femur, tibia, fibula, tarsal, metatarsal and phalanges. Other types of animals, including birds and frogs, have similar skeletal designs characterized by opposing upper and lower limbs.