

## Introduction

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The 206 bones of the human skeleton comprise strong, light tubes, rods, and plates. Between them, these support the body, guard vital organs, act as levers for locomotion, store certain minerals, and (in bone marrow) make blood. Bones are linked by joints - some fixed and fibrous, others mobile, with ligaments uniting bone ends buffered by shock-absorbent cartilage. The skeletal system has two great subdivisions: a (vital) axial skeleton of skull, vertebrae, and ribs; and an appendicular skeleton of limb bones.

**Skull** Its 22 bones feature eight in the cranium (a rigid shell guarding the brain) and fourteen facial bones, including a movable mandible (lower jaw) and a maxilla (upper jaw), with sockets for teeth.

**Vertebrae** the backbone's 33 vertebrae form a curved, weight-bearing column sheathing the spinal cord. There are seven cervical (neck), twelve thoracic (chest), and five lumbar (lower back) vertebrae. Below these movable bones lie the sacrum (five fused load-bearing vertebrae) and coccyx (four fused vertebrae forming a vestigial tail).

**Rib cage** The rib cage or chest has twelve pairs of flat bones curving forward from the thoracic vertebrae. true ribs (the top seven pairs) join the sternum (breastbone) at the front of the chest. False ribs (pairs 8-10) join the seventh pair, Floating ribs (pairs 11-12) end short, Ribs and breastbone shield vital organs and aid breathing by moving up and down.

**Shoulder girdles** These anchor arms to the axial skeleton. There are two scapulae (shoulder blades) hung at the back of the chest and two clavicles (collarbones) holding shoulders clear of it.

**Arms** each has a humerus (upper arm bone), radius and ulna (forearm bones), and 27 bones of the hand: carpals, metacarpals, and phalanges.

**Lower limbs** These transmit weight from the trunk to the ground. two hip bones (each of three fused bones) flank the sacrum, and all form a bony basin - the pelvis. This is joined by each femur (thigh bone) which leads to the tibia (shin bone) and fibula of the leg proper. Below this come the talus (ankle bone), and the tarsal, metatarsal, and phalangeal bones of the foot.