Human Skeletons System

Types of Joints

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Gait of Animals

The Human Skeletal System

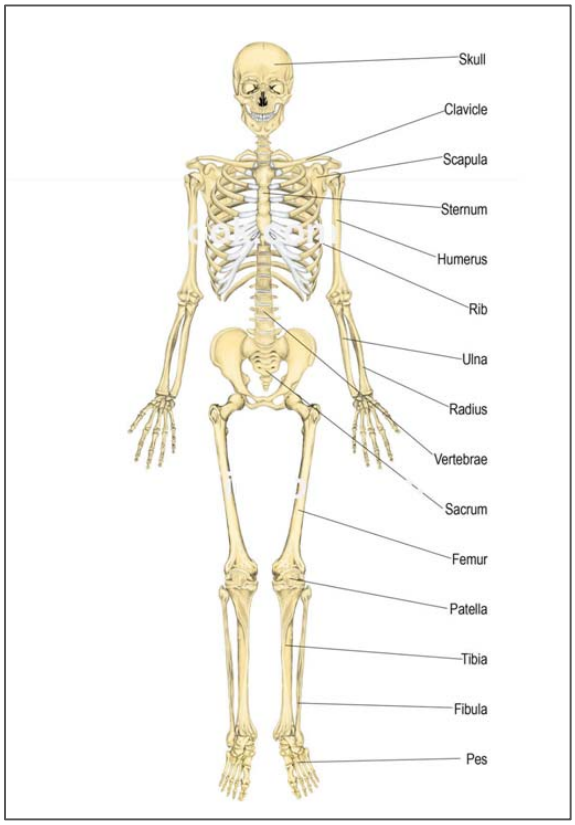
The human skeletal system is a framework of bones which gives shape to the body. It is made of bones and the cartilage. The main bones are the ribs, backbone, skull, shoulder bones and the pelvic bones.

The **rib cage** is a bony cage that protects the delicate organs like lungs and heart. It has many bones which are attached to the sternum.

The **backbone** starts from the neck at the back of your body. It is made of many smaller bones and is connected to the rib cage.

The **skull** is composed of many bones joined together and protects the most important organ of our body, the brain.

The bones at shoulder are the **shoulder bones** while the portion on which we sit is the **pelvic bone.**



The Skeletal System

Cartilage

A tough, elastic, fibrous connective tissue found in various parts of the body, such as the joints, outer ear, and larynx. It is not as hard as bone and also can bend.

Joints

It is a point of articulation between two or more bones, especially such a connection that allows motion. We can move our body only at places where bones meet or at joints.

Activity

Place a scale length-wise on your arm so that your elbow is in the centre. Ask your friend to tie the scale and your arm together. Now, try to bend your elbow. Are you able to do it? Now remove the scale and bend you hand. We are able to bend or rotate our body in places where two parts of our bones are joined.

Types of Joints

Ball and socket joint

In a ball and socket (spheroid) joint, the ball-shaped surface of one rounded bone fits into the cup-like depression of another bone. For e.g. the joint in shoulder allows movement in all directions.

Hinge joint

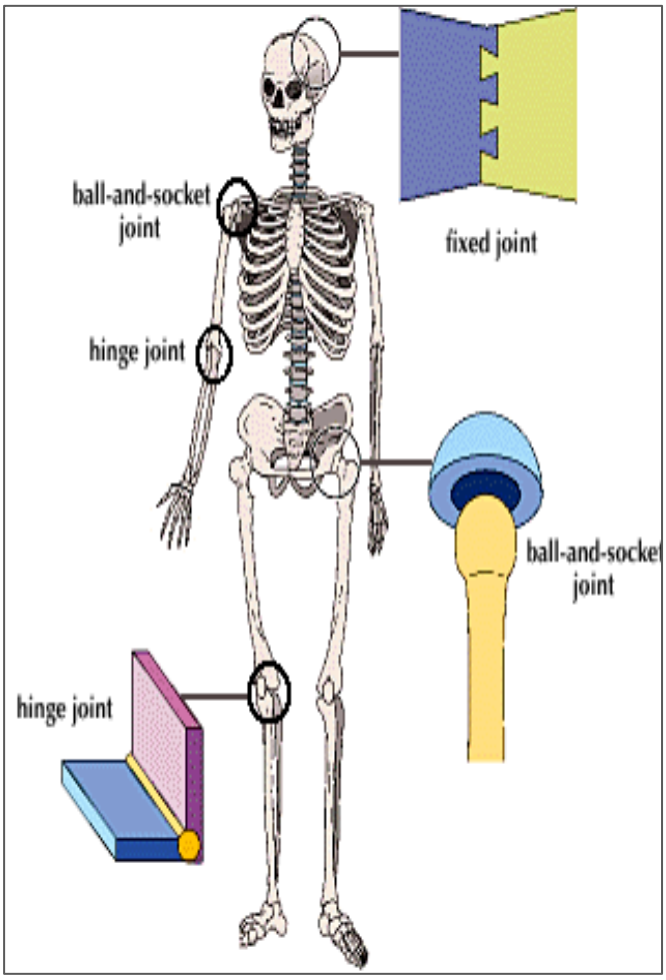
A hinge joint is a bone joint in which the articular surfaces are molded to each other in such a manner as to permit motion only in one plane. Joint in knee and elbow

Pivotal joint

This is the joint where our neck joins the head. It allows us to bend our head forward and backward and turn the head to our right or left.

Fixed joint

Bones in the skull also have joints that cannot move or remain fixed. These are the fixed joints.



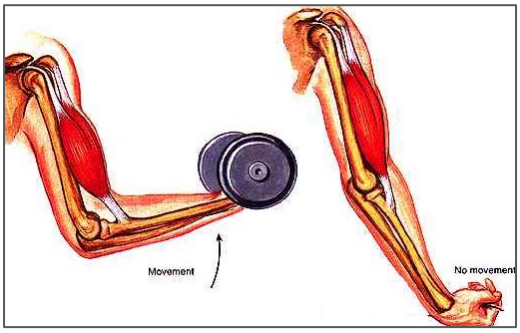
Muscles and Their Functions

Muscle

A band or bundle of fibrous tissue in a human or animal body that has the ability to contract, producing movement in or maintaining the position of parts of the body are known as muscles.

Movement

When one of them contracts, the bone is pulled in that direction. The other muscle of the pair relaxes. To move the bone in the opposite direction, the relaxed muscle contracts to pull the bone towards its original position, while the first relaxes. Thus, two muscles have to work together to move a bone.



Movement of muscles

Gait of Animals

Movement in other animals

Earthworm – The body is made of many rings and but do not posses bones. They have muscles which help in expansion and contraction of the body. Bristles are present that help in gripping the ground.

Snail – It has outer skeleton called shell and lacks bones. Movement in snails is with the help of muscular foot.

Cockroach – Its body is divided into three parts head, thorax and the abdomen. The breast muscles help in flying while the muscles of the leg help in walking.

Birds – The forelimbs are modified into wings for flight and hind limb help in walking and perching. Bones are hollow and light and the flight muscles are attached to the breastbones.

Fish – They have a streamlined body which allows easy movement in water. The muscles move making a curve. Fins and tail help in movement and maintaining balance.

Snake – It has a long backbone and thin muscles. It slithers and moves by curving its body forming loops.