MOVEMENTS IN HUMAN BODY

INTRODUCTION

Humans can move some parts of their body in different directions; however some body parts can be moved only in one direction. Our body is made up of a frame work of bones calledskeleton which helps in the movement of the body.

MOVEMENTS IN BODY PARTS OF HUMAN

- ✓ Movement of eyelids.
- ✓ Movement of the heart muscles.
- ✓ Movement of teeth and jaw.

TYPES OF MOVEMENTS

- When we talk about locomotion and movement, there are three types of movements.

AMOEBOID MOVEMENT

- It is brought about by pseudopodia which are appendages which move with movementof protoplasm within a cell.

CILIARY MOVEMENT

- This movement is brought about by appendages called as cilia which are the hair like extensions of the epithelium.
- Both these kinds of movements are seen with cells of the lymphatic system.

MUSCULAR MOVEMENT

- It is a more complex movement which is brought about by the musculoskeletal system.
- This type of movement is seen in the higher vertebrates.
- To understand more about the movements brought about by the musculoskeletalsystem, we need to understand the joints, skeleton and types of muscles.

JOINT

- The point at which two separate bones meet is called a joint.
- Depending on the type of movement they allow, joints can be of three types:
  - Fixed, Slightly movable and Freely movable

FIXED OR IMMOVABLE JOINTS

- In this type of joint no movement is possible between the two bones.
- The structures between the bones of the skull box are examples of immoveable joints.

SLIGHTLY MOVABLE JOINTS

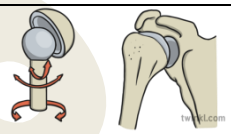
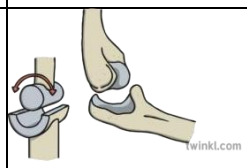
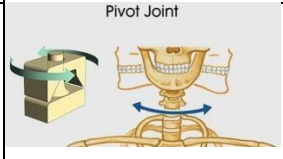
- Here, only very little (partial) movement occurs between the two bones.

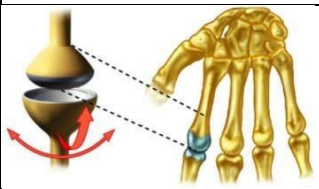
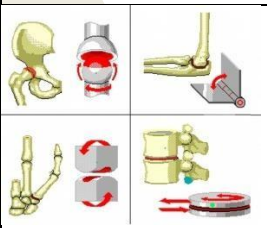
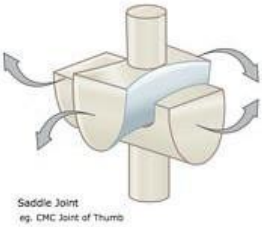
- The joint between a rib and the breast bone or between the vertebrae is the example forslightly movable joint.

FREELY MOVABLE JOINTS

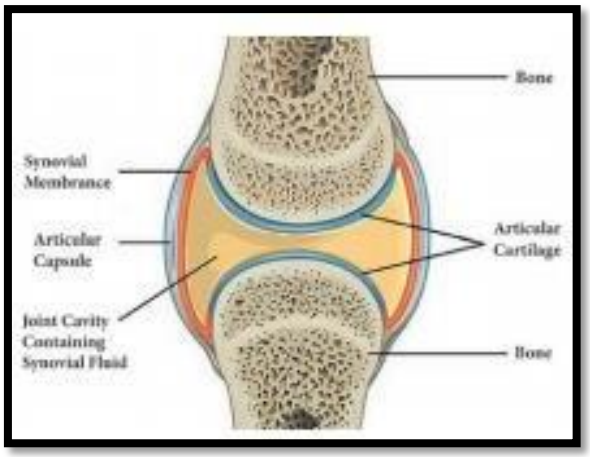
- In this type, varying degree of movements is possible between the two bones formingthe joint.
- There are six major types of movable joints.
- They are given below in Table

TYPES OF MOVABLE JOINTS

Joint	Examples	Description	Mobility	Picture of joints
Ball and socket	Shoulder, Hip	A ball shaped head of one bone articulates with a cup like socket of an adjacent bone.	Movement can occur in three planes. This joint allows the greatest range of movement	
Hinge	Elbow, Knee, Ankle	A cylindrical protrusion of one bone articulates with a trough-shaped depression of an adjacent bone	Movement is restricted to one plane. This joint allows bending and straightening only	
Pivot	Spine (Atlas / Axis joint at the top)	A rounded or pointed structure of one bone articulates with a Ring shaped structure of	Movement is restricted to one plane. This joint allows rotation about its	

		Radius	longitudinal	
		Ulnaan adjacent bone	axis only.	
Condyloid	Wrist	Similar to a ball and socket joint but with much flatter articulating surfaces forming a muchshallower joint.	Movement can occur intwo planes. This joint allows the second greatest range of movement	
Gliding	Spine (between the bony processes of the vertebrae)	Articulating surfaces are almost flat and of a similar size.	Gliding allows movement in three planes, but it is severely limited.	
Saddle	Thumb, shoulder and inner ear.	One part is concave (turned inward) at one end and looks like a saddle. The other end is convex (turned outward), and looks like a rider in a saddle.	Flexion-extension and abduction-adduction movements are seen	

STRUCTURE OF SYNOVIAL JOINT



A synovial joint is a joint which makes connection between two bones consisting of acartilage lined cavity filled with fluid, which is known as a diarthrosis joint.

- These are the most flexible type of joint between bones, because the bones are notphysically connected and can move more freely in relation to each other.
- Synovial joints have four main distinguishing features.
- They are shown in Table,

Feature	Structure	Function
Ligament	A band of strong fibrous tissue.	To connect bone to bone.
Synovial fluid	A slippery fluid with the consistency of egg-whites that is contained within the joint cavity.	To reduce friction between the articular cartilage in the joint.
Articular cartilage	Glassy-smooth cartilage that is spongy and covers the ends of the bones in the joint.	To absorb shock and to prevent friction between the ends of the bones in the joint.
Joint Capsule	A tough fibrous tissue that has two layers, with the fibrous capsule lying outside the synovial membrane.	The fibrous capsule helps to strengthen the joint, while the synovial membrane lines the joint and secretes synovial fluid.