

Organisms

1. Movement

CONCEPT 2

UNDERSTANDING THE ROLE OF JOINTS AND MUSCLES

NOTES

The skeletal and muscular systems of the body work together to provide movement. Both of these systems also have more specific roles within the body; which need to be understood in order to explain movement.

Bones meet at joints; some joints allow a large range of movement whereas other joints only allow a very small amount of movement. Muscles cause the bones to move by **pulling** the bones. Muscles connect to bones via **tendons** and bones attach to bone via **ligaments**. Both ligaments and tendons are made of fibres called collagen.

There are three types of muscles in the body; cardiac (heart), smooth muscle (involuntary) and skeletal (voluntary) muscle. There are 600 skeletal muscles involved with movement of the body parts.

There are also three types of moveable joint; ball and socket (hip), hinge joints (elbow/knee) and pivot joints (neck). There are also fixed joints, such as the skull, that do not allow any movement. At the end of bones there is smooth, tough tissue called **cartilage**. Cartilage reduces friction between bones and allows them to move more easily.

Muscles in the body work in pairs; when one muscle contracts the other relaxes and vice versa. Muscles can only pull, they cannot push. These muscles work in antagonistic muscles pairs, for example, the bicep and tricep muscles work to create movement at the elbow.

Muscles can be trained and strengthened by exercising regularly. Strength tests such as the hand-grip dynamometer.