MUSCULAR SYSTEM

GROUP 6

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(1) FUNCTIONS OF A MUSCLE
(2) PROPERTIES OF A MUSCLE

- a) Origin And Insertion
- b) Muscle Action.

(3) TYPES OF MUSCLES
(4) TYPES OF MUSCLE MOVEMENT
(5) MUSCLE STRUCTURE
(6) NERVE SUPPLY

FUNCTIONS OF A MUSCLE

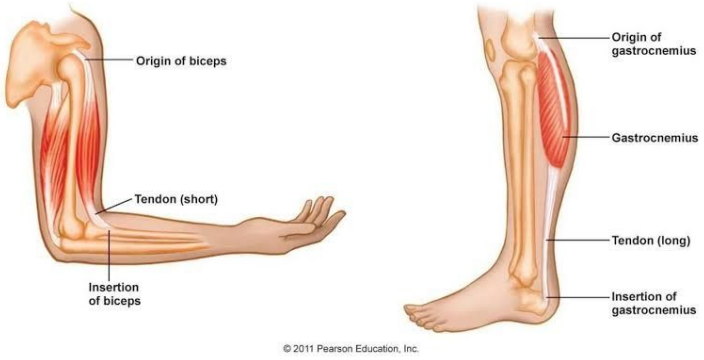
- Provide movement
- Support soft tissues
- Maintain posture
- Encircle openings of the digestive, urinary and other tracts
- Maintain body temperature

PROPERTIES OF A MUSCLE

(a) Origin and Insertion

(I) **Origin** refers to a muscles proximal attachment, for example: the bicep muscle's origin is located at the shoulder.

(II) **Insertion** refers to the muscles distal attachment, for example: the bicep's muscle origin is located at the elbow.



(b)Muscle Action

The action of the muscle describes what happens when the more mobile bone is brought toward the more stable bone during a **muscular contraction.**

There are three types of muscle contraction we have:

Concentric contraction- which causes muscles to shorten, thereby generating force.

Eccentric contractions- which cause muscles to elongate in response to a greater opposing force.

Isometric contractions- which generate force without changing the length of the muscle.

TYPES OF MUSCLE

There are three main types of muscles, namely: Cardiac Muscles, Smooth Muscles And Skeletal Muscles.

These Muscles can further be classified into two types According to their action, this can be either

- Voluntary or,
- Involuntary.

Muscles that are under your **conscious control** are called **voluntary muscles,** while muscles that are not under your conscious control are called **involuntary muscles**

Example of involuntary muscle is the cardiac muscle while Skeletal muscle is a voluntary muscle.

TYPES OF MUSCLE MOVEMENTS

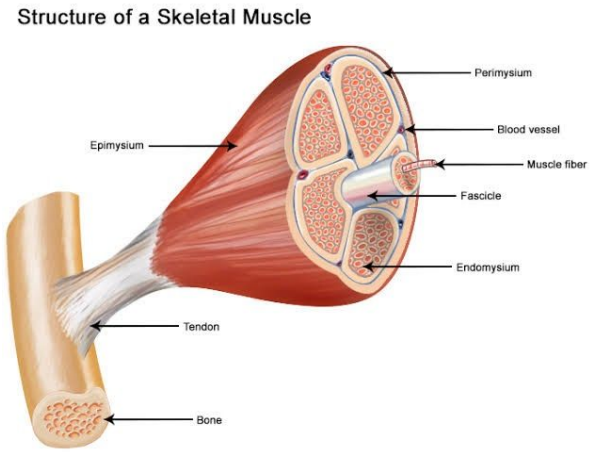
- **Adduction**, which is when a body part moves towards the midline of the body.
- **Abduction**, which is when a body part moves away from the midline.
- **Flexion**, is the bending of a joint to decrease the angle between two bones or two body parts
- **Extension**, is the straightening and extending of the joint to increase the angle between two body parts.
- **Rotation**, which is moving a body part around an axis.

STRUCTURE OF A MUSCLE

Skeletal muscles are attached to bones by tendons, and they produce all the movements of body parts in relation to each other. Unlike smooth muscle and cardiac muscle, skeletal muscle is under voluntary control.

Skeletal muscle:

Is comprised of Epymisium, Perimysium, Blood vessels, Endomysium, Tendon, Bone, Muscle Fibre and fascicle as illustrated below:



NERVE SUPPLY

Skeletal muscles have an abundant supply of blood vessels and nerves. This is directly related to the primary function of skeletal muscle, which is **contraction.**

Movements of the body are brought about by the harmonious contraction and relaxation of selected muscles. Contraction occurs when nerve impulses are transmitted across neuromuscular junctions to the membrane covering each muscle fibre.

Before a skeletal muscle fiber can contract, it has to receive an impulse from a nerve cell. Generally, an artery and at least one vein accompany each nerve that penetrates the epimysium of a skeletal muscle.

END.