

HUMAN ANATOMY AND PHYSIOLOGY- 1(BP101T)

UNIT: 1 TISSUE LEVEL OF ORGANIZATION

CLASS: 8

TOPIC: CLASSIFICATION OF TISSUES, STRUCTURE, LOCATION AND FUNCTIONS OF MUSCULAR TISSUE

Muscular tissue is composed of cells specialized for contraction and generation of force. In the process, muscular tissue generates heat that warms the body.

Muscular tissue consists of elongated cells called muscle fibers or myocytes that can use ATP to generate force. As a result, muscular tissue produces body movements, maintains posture, and generates heat. It also provides protection.

Based on the structural and functional features, muscular tissue is classified into three:

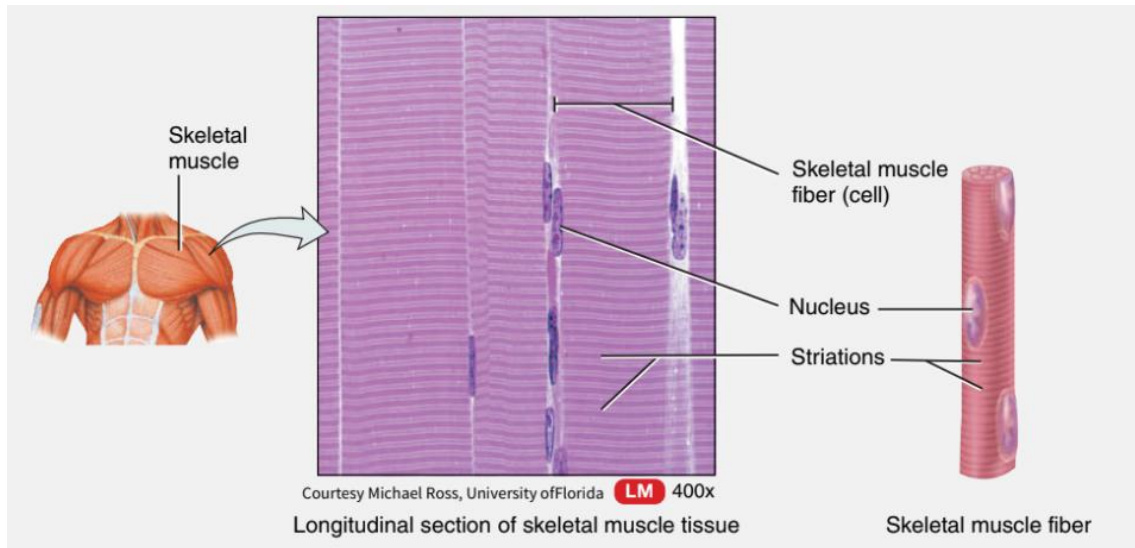
- SKELETAL MUSCLE TISSUE
- CARDIAC MUSCLE TISSUE
- SMOOTH MUSCLE TISSUE

A. SKELETAL MUSCLE TISSUE: It consists of long, cylindrical, striated fibers (striations are alternating light and dark bands within fibers that are visible under a light microscope). Length 30–40 cm (about 12–16 in.).

A muscle fiber is a roughly cylindrical, multinucleated.

Skeletal muscle is considered voluntary because it can be made to contract or relax by conscious control.

LOCATION: Attached to bones by tendons.

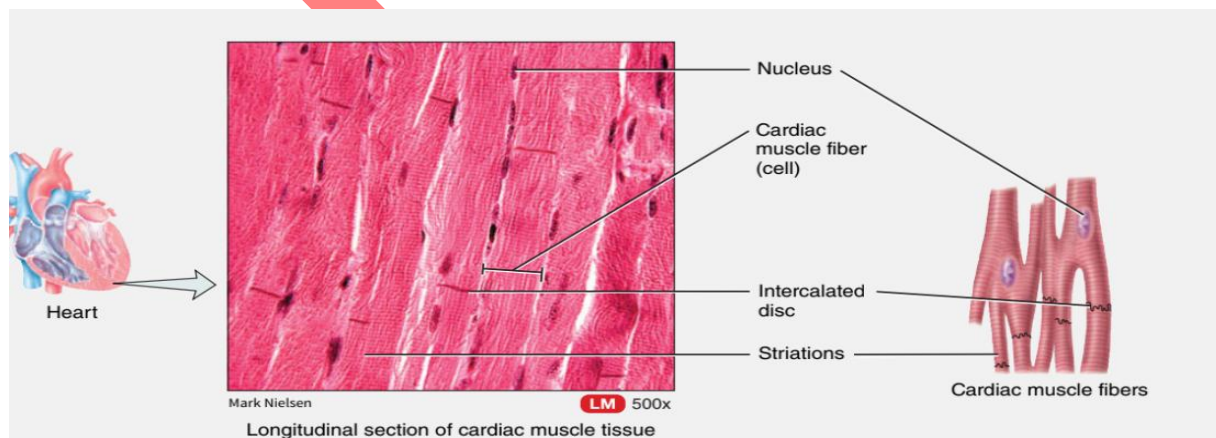


FUNCTION: Motion, posture, heat production, protection.

B. CARDIAC MUSCLE TISSUE:

Cardiac muscle tissue consists of branched, striated fibers with usually only one centrally located nucleus (occasionally two). Attach end to end by transverse thickenings of plasma membrane called intercalated discs. which contain desmosomes and gap junctions.

LOCATION: Heart wall.



FUNCTION: Pumps blood to all parts of body.

C. SMOOTH MUSCLE TISSUE: Smooth muscle tissue consists of nonstriated fibers (lack striations, hence the term smooth). Smooth muscle fiber is a small spindle-shaped cell thickest in middle, nucleus present at the center.

Gap junctions connect many individual fibers in some smooth muscle tissue.

LOCATION: Iris of eyes; walls of hollow internal structures such as blood vessels, airways to lungs, stomach, intestines, gallbladder, urinary bladder, and uterus.

FUNCTION: Motion (constriction of blood vessels), contraction of urinary bladder.

