

Muscular system

Muscles are soft tissues composed of tubular cells called myocytes

Half of the body weight is muscle tissue. Male – 40% & female – 32%




Properties of muscles

1. Contractibility: muscle pulls & shorten with force
2. Excitability: from polarized to depolarized
3. Elasticity: return to original length during relaxation
4. Extensibility: can stretch or extend

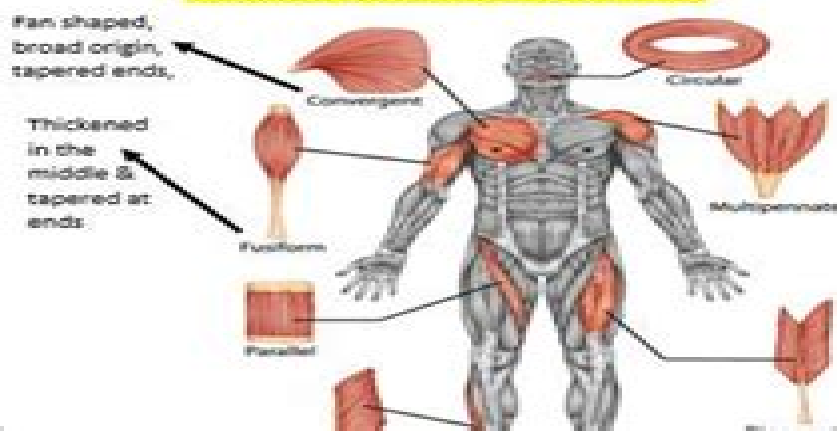
Functions of Muscles

- 1) Produce movement
- 2) Maintain posture
- 3) Stabilize joints
- 4) Produce heat

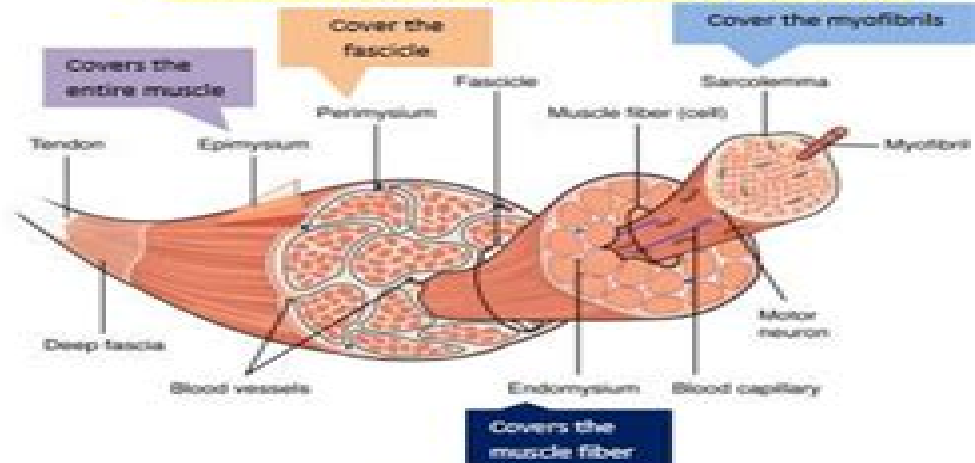
Types of muscles

	Main features	Histology
Skeletal muscle	<ul style="list-style-type: none"> Fibers: striated, tubular and multi nucleated Voluntary Usually attached to skeleton 	
Smooth muscle	<ul style="list-style-type: none"> Fibers: non-striated, spindle-shaped, and uninucleated Involuntary Usually covering wall of internal organs 	
Cardiac muscle	<ul style="list-style-type: none"> Fibers: striated, branched and uninucleated Involuntary Only covering walls of the heart 	

Classification of muscles



Connective Tissue Layers of Muscle

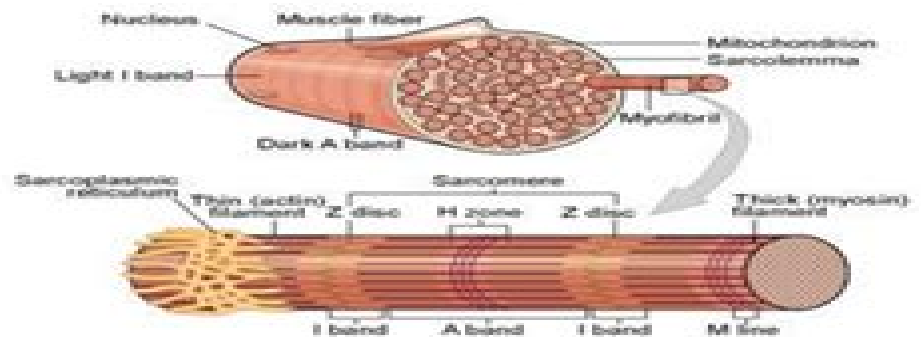


Muscle Fiber

Muscle Fiber: a single cylindrical muscle cell

Myofibril: a basic rod-like organelle of a muscle cell.

Sarcomere: the basic contractile unit of muscle fiber exists from Z-line to Z-line. It is responsible for striation.



A band: dark band (overlapping thick & thin filaments)

I band: light band (Thin filaments only)

Z disc: the lateral borders of sarcomeres and are the smallest functional units in striated muscle.

H zone: is in the center of the A band where there is no overlap between the thick and the thin filaments.

M line: attachment site for the thick filaments

Muscular Skeletal Systems Study Guide

Sylvia S. Mader



Muscular Skeletal Systems Study Guide:

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