

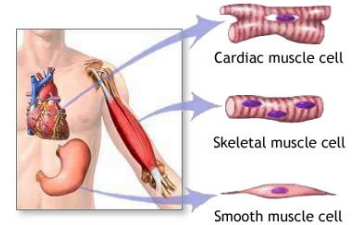
Muscular System Notes Part 1: Muscle Anatomy

Questions	Notes
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What are the 3 basic types of muscle found in the body?

I. The Muscular System

- Muscles are responsible for all types of _____
- they contract or shorten and are the machine of the body
- Three basic muscle types are found in the body
 - Skeletal muscle
 - Cardiac muscle
 - Smooth muscle



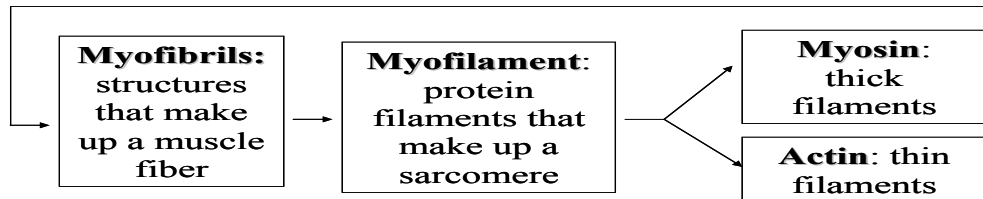
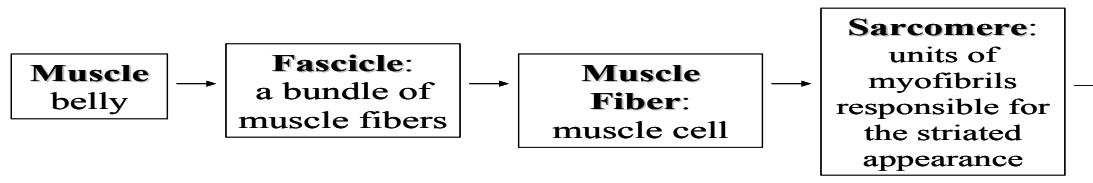
List the functions of the muscular system.

II. Function of Muscles

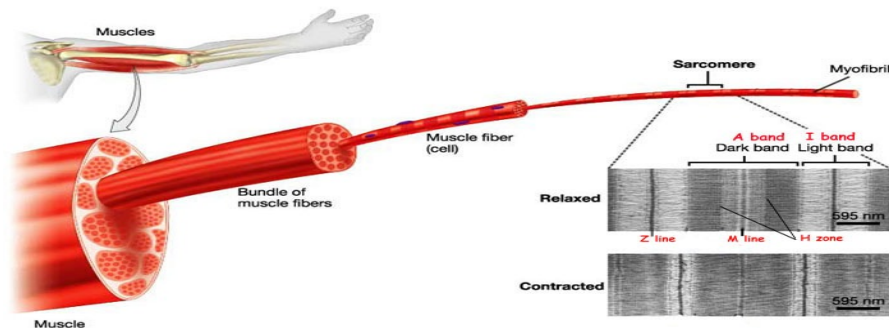
1. _____ the body
2. Allow for _____ by making bones and other body parts move
3. Maintain constant _____
4. Assist in movement of _____ and _____
5. _____ internal organs and _____ joints

III. Anatomy of a Skeletal Muscle

A. Organization of Skeletal Muscle



List & describe the tissues surrounding skeletal muscle.



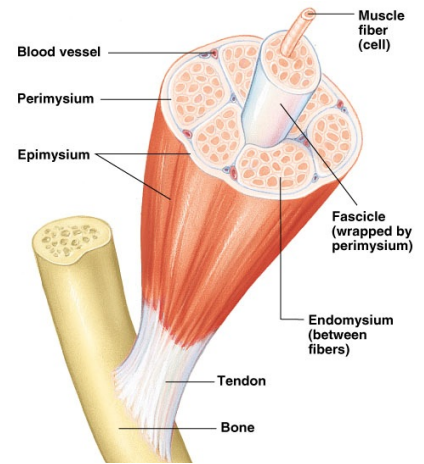
Describe the structures that make up the skeletal muscle.

B. Coverings of Skeletal Muscle

- Skeletal muscles are organs
 - They contain muscle fibers, nerves and blood vessels
 - Connective tissue membranes separate each muscle structure
- _____ - layer of fibrous tissue that separates muscles from each other and from the skin

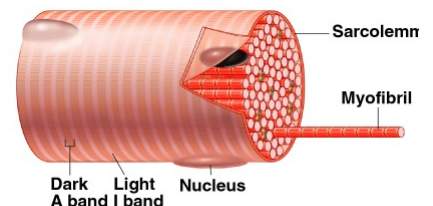
What and where are muscle attached?

- Coverings from largest to smallest:
 - _____ - covers the entire skeletal muscle
 - _____ - surrounds a bundle of muscle fibers (fascicle)
 - _____ - surrounds a single muscle fiber



C. Skeletal Muscle Attachments

- Epimysium blends into a connective tissue attachment, the tendon
 - Tendon - _____
- Sites of muscle attachment
 - Bones, Cartilages, and Connective tissue coverings

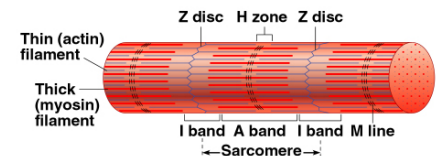


(a) Segment of a muscle fiber (cell)

What is a sarolemma?

A. Microscopic Anatomy of Muscle _____ (muscle cell)

- Cells are multinucleate
 - Nuclei are just beneath the membrane
- _____ - specialized plasma membrane
- _____ - specialized smooth endoplasmic reticulum involved with muscle contraction

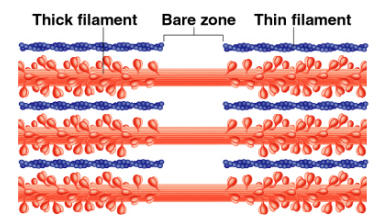


(b) Myofibril or fibril (complex organelle composed of bundles of myofilamen)

What is a sarcoplasmic reticulum?

What are myofibrils?

- _____
 - Bundles of myofilaments
 - Myofibrils are aligned to give distinct bands
 - _____ band = I band
 - _____ band = A band
- _____
 - Contractile unit of a muscle fiber



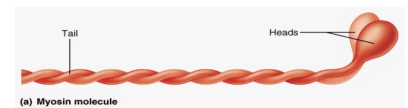
(d) Myofilament structure (within one sarco)

What is responsible for the striated appearance of skeletal muscle?

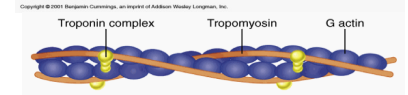
What are sarcomeres?

What are the names of the filaments that make up a sarcomere?

- Organization of the sarcomere:
 - _____ filaments = _____ protein
 - _____ filaments = _____ protein
 - Myosin and actin overlap somewhat in the sarcomere
- Myosin filaments have heads (extensions) that can 'grab' onto actin forming a _____



(a) Myosin molecule



(c) Portion of a thin filament

Learning Goals

- 1) List the 5 functions of the muscular system.
- 2) Describe the organization of a skeletal muscle from largest structure to smallest.
- 3) Describe the sarcomere, including the structure of the two myofilaments.

Muscular System
Chapter 7