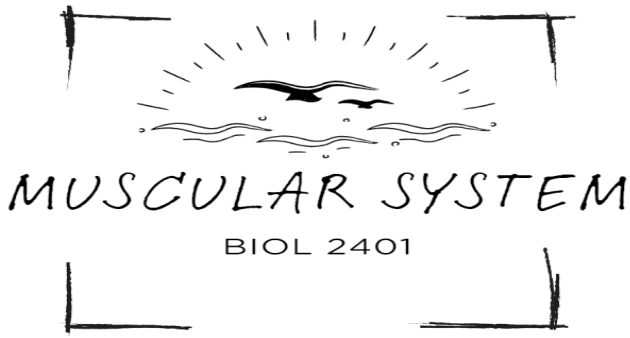


Note from SI:

We are starting the muscular system! I highly suggest utilizing a lot of your lab visuals to make connections in this chapter.

Reminders (Skeletal system):

- Osteoclasts: remove bone on endosteal surface
- **Growth hormone:** most important hormone, stimulates epiphyseal plate, infancy and childhood
- **Thyroid hormone:** watches activity of growth hormone
- **Testosterone:** a hormone that is produced used for maintaining and gaining bone mass in men

  *Excess hormones cause abnormal growth
- **Parathyroid hormone:** (PTH) a hormone that regulates calcium levels in the blood and bones
- Osteoblasts: deposit of new bone matrix

Vocab:

- Muscle tissue (3 types): skeletal, cardiac, smooth
- Skeletal muscle (voluntary): attached to bones of skin, longest of all muscles and have striations (stripes), contract rapidly, tire easily, very powerful
- Skeletal muscle fibers: contract to help move bones and keep body shape
- Voluntary muscles: can be consciously controlled
- Cardiac muscle (involuntary): only in heart, makes up heart walls, striated
- Involuntary: cannot be controlled
- Smooth muscle (involuntary): not striated, found in walls of hollow organs, examples are stomach, urinary bladder, and airways
- Muscle tissue characteristics: excitability, contractility, elasticity, extensibility
- Muscle functions: produce movement, maintain posture and body position, to stabilize joints, and to generate heat as they contract
- Skeletal muscle anatomy: each muscle receives a nerve, artery, and vein
- Actin filaments: thin filaments
- Myosin filaments: thick filaments
- Thick filaments: composed of protein myosin
- Thin filaments: composed of fibrous protein actin
- Tropin: regulatory protein bound to actin

Questions:

1) What muscle is the longest of all muscles due to its vast contractibility?
    a) Smooth muscle
    b) Cardiac muscle
    c) Skeletal muscle
    d) Involuntary muscle
2) What form of muscle cannot be controlled due to its connections with the nervous system?
    a) Voluntary muscle
    b) Controlled muscle
    c) Myofibril muscle
    d) Involuntary muscle
3) What are examples of muscle tissue characteristics?
    a) Excitability, contractility, flexibility, transitional properties
    b) Excitability, contractility, elasticity, extensibility
    c) Excitability, shrinking, stability, extensibility
    d) Contractility, elasticity, stability, transitional properties
4) What is the plasma membrane of a muscle cell called?
    a) Endomysium
    b) Sarcoplasm
    c) Sarcolemma
    d) Myofibril

5) The perimysium surrounds which of the following structures?

   a) Whole muscle

   b) Myofibril

   c) Muscle fiber

   d) Fascicle

6) The attachment of a muscle to a movable bone is known as the:

   a) Origin

   b) Insertion

   c) Joint

   d) Ligament

7) The connective tissue covering surrounding an entire muscle is called the:

   a) Endomysium

   b) Sarcolemma

   c) Perimysium

   d) Epimysium

8) What molecule stores oxygen in muscle cells?

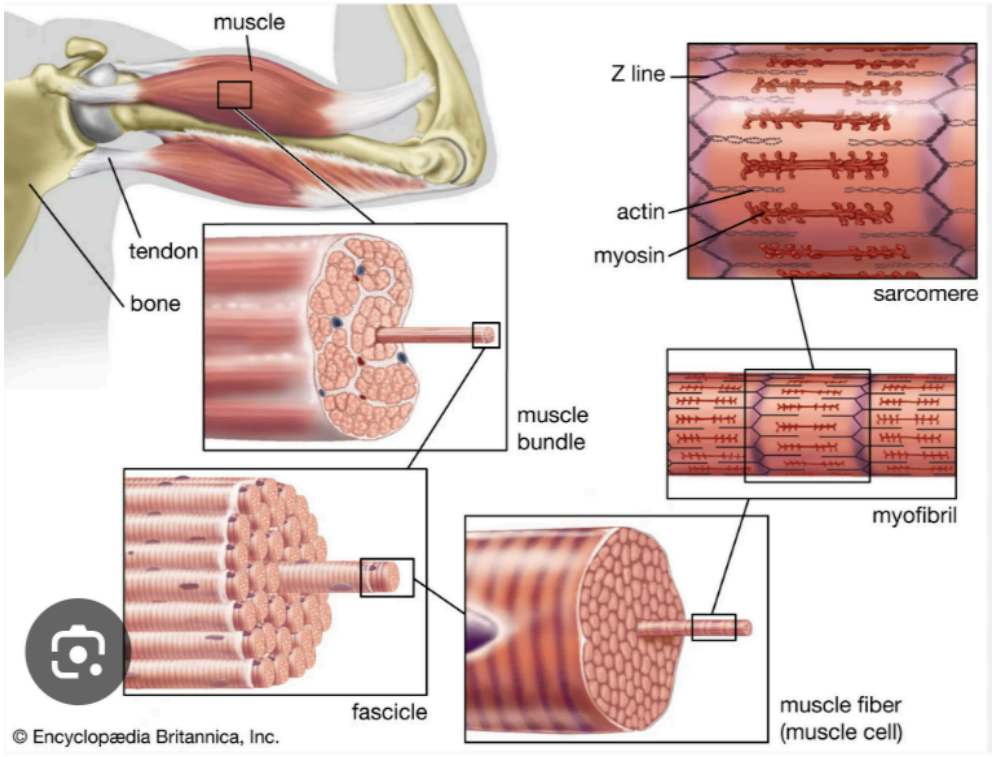
   a) Hemoglobin

   b) Myosin

   c) Myoglobin

   d) Glycogen

Visuals:


muscle
tendon
bone
muscle bundle
fascicle
muscle fiber (muscle cell)
myofibril
Z line
actin
myosin
sarcomere
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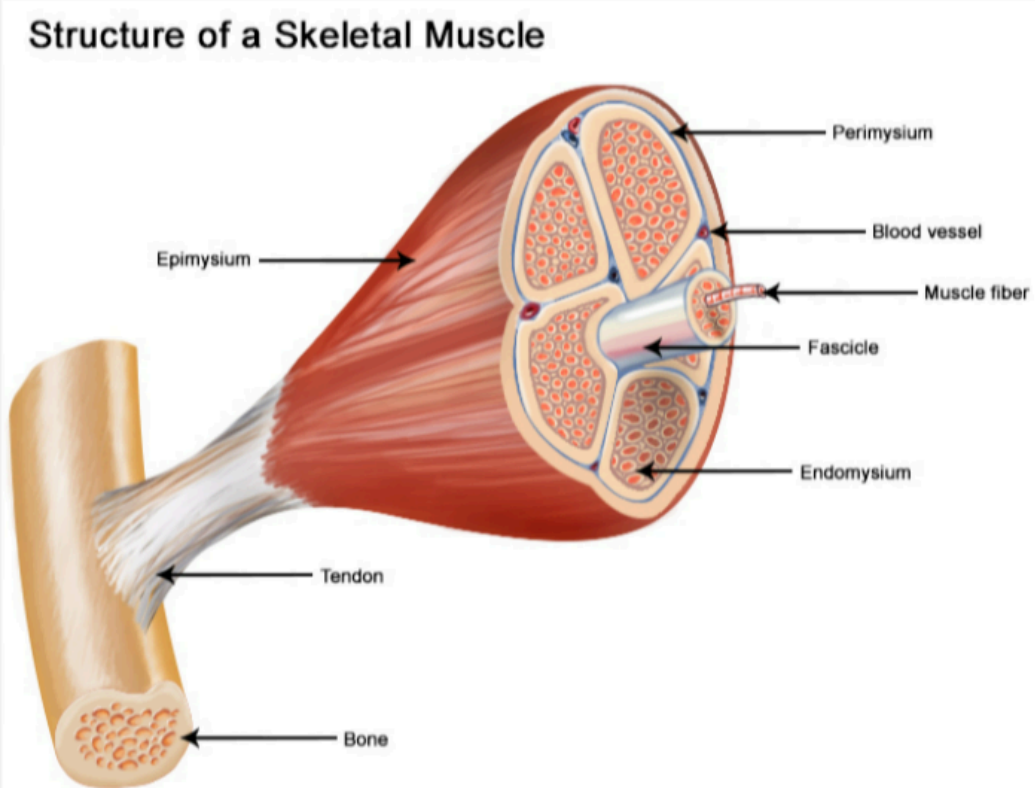
Structure of a Skeletal Muscle
Perimysium
Blood vessel
Epimysium
Muscle fiber
Fascicle
Endomysium
Tendon
Bone