

Histology- Study Guide- Muscles of the Body

Muscle Overview

- 1) The three types of muscle tissue are skeletal, cardiac, and smooth
- 2) These types differ in structure, location, function, and means of activation

Muscle Similarities

- 1) Skeletal and smooth muscle cells are elongated and are called muscle fibers
- 2) Muscle contraction depends on two kinds of myofilaments - actin and myosin
- 3) Muscle terminology is similar
 - 1) Sarcolemma - muscle plasma membrane
 - 2) Sarcolemma - cytoplasm of a muscle cell
 - 3) Poofins - myo, myo, and sarco-all refer to muscle

Skeletal Muscle Tissues

- 1) Pkgd in skeletal muscles that attach to and cover the long skeleton
- 2) Has obvious stripes-called striations
- 3) Is controlled voluntarily (i.e., by conscious control)
- 4) Contracts rapidly but tires easily
 - 1) Is responsible for overall body mobility
 - 2) Is extremely adaptable and can exert forces over a range from a fraction of an ounce to over 70 pounds

Cardiac Muscle Tissue

- 1) Occurs only in the heart
- 2) Is striated like skeletal muscle but is not voluntary
- 3) Contracts at a fairly steady rate set by the heart's pacemaker
- 4) Neural controls allow the heart to respond to changes in bodily needs

Smooth Muscle Tissue

- 1) Found in the walls of hollow internal organs, such as the stomach, urinary bladder, and respiratory passages
- 2) Forces food and other substances through internal body channels
- 3) Is not striated and is involuntary

Muscle Functions

- 1) Skeletal muscles are responsible for all locomotion
- 2) Cardiac muscle is responsible for moving the blood through the body
- 3) Smooth muscle helps maintain blood pressure, and expels or propels substances (i.e., food, feces) through organs
- 4) Muscles also maintain posture, stabilize joints, and generate heat