

Muscle I

1. Functions
 1. movement
 2. maintaining posture
 3. stabilizing joints
 4. generating heat
2. Functional Characteristics
 1. excitability
 2. contractility
 3. extensibility
 4. elasticity
3. Types
 1. skeletal
 1. voluntary- nervous
 2. striated
 3. slow to fast
 2. cardiac
 1. involuntary
 1. pacemaker
 2. nervous
 3. hormonal
 2. striated, w/intercalated disks
 3. slow
 3. smooth
 1. involuntary
 1. nervous
 2. hormonal
 3. stretch
 2. unstriated
 3. very slow
4. Structure Overview
 1. fibers enclosed in endomysium
 2. fascicle enclosed in perimysium
 3. muscle enclosed in epimysium
 4. attachments
 1. epimysia into perichondrium or periosteum (direct)
 2. epimysia into tendons & aponeuroses (indirect)
 5. figures
 1. Muscle
 2. fascicle
 3. fiber
5. Fiber Structure
 1. large! (10 times diameter of typical cells, & up to 30 cm long)
 2. multiple nuclei
 3. sarcolemma- plasma membrane
 4. sarcoplasm- cytoplasm
 1. glycogen
 2. myoglobin
 3. specialized organelles
 1. myofibrils
 2. sarcoplasmic reticulum (specialized SER)
 1. t-tubules
 2. Ca⁺⁺ storage & release
6. Myofibril Structure
 1. banding
 1. sarcomere- contractile units
 1. myofilaments
 1. myosin-thick filaments
 1. create dark A band
 2. don't reach to Z-line, creating light I band
 2. actin- thin filaments
 1. anchored to Z-line, (a disklike membrane)
 2. don't extend to center of sarcomere, creating lighter H zone