

muscle physiology lecture 3

macrostructure

- skeletal muscle > 400 (book) prob. > 640
- purpose - move bones around, movement
- function based on orientation / where it is in the body
 - long muscle - ↑ speed of shortening & ↑ amt of shortening
 - thick muscle - ↑ force development

shapes of muscles

- fusiform
- parallel
- convergent
- uni/bi/multi pennate - more powerful, slower
- circular

all skeletal muscles have similar macro/micro anatomy

- covered by epimysium
 - contains contractile proteins & connective tissue
- epimysium - outer layer
- perimysium - surrounds each fascicle
- endomysium - surrounds individual fibers
- bundle of cells = fascicle, bundle of fascicles = muscle

muscle anatomy

- muscle
- fascicles
- muscle fiber
- myofibril
- sarcomere
- myofilaments - actin, myosin

shortening of sarcomeres - sliding filament theory

- each sarcomeres 2.2 - 2.3 micrometers

regulatory proteins

- tropomyosin - stiffens thin filament, cover myosin binding sites
- troponin - 3 polypeptides - troponin T, I, C