**Chap 8 Muscle System Wrap-up**

**Review a Neuromuscular Junction**

**Review of the Steps of Muscle contraction Table 8.1 pg. 184**

1. \_\_\_\_\_\_\_\_\_\_\_ binds to protein receoptors
2. Increases permeability to \_\_\_\_\_\_\_\_ which creates a muscle impulse
3. Increases permeability \_\_\_\_\_\_\_\_ ions causing \_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_to expose \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. ACH-esterase(\_\_\_\_\_\_\_\_\_\_\_\_\_ ) decomposes the ACH to prevent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ goes back into sarcoplasmic reticulum breaking the \_\_\_\_\_\_\_\_\_\_in actin and myosin

**Pg. 183 How is botulism related to botox?** Creates \_\_\_\_\_\_\_\_\_\_\_\_ of facial muscles …Clostridium botulism makes toxins that prevent the release of ACH \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Why do body builders use Creatine?** Creatine phosphate enables \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from ADT and phosphate (stores excess energy released from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

\_\_\_\_\_\_\_\_\_\_\_\_\_—can temporarily store Oxygen which decreases muscle requirement for continuous blood supply during muscle contraction

\_\_\_\_\_\_\_\_\_\_\_\_\_= muscle exercised strenuously for a prolonged period of time 🡪 loses its ability to contract due to increase in lactic acid from anaerobic respiration

\_\_\_\_\_\_\_\_\_\_\_\_\_\_= muscle undergoes a \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_🡪 occurs when change in extracellular fluid surrounding the muscle fiber and motor neuron somehow triggered uncontrolled stimulation of muscle

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = after death, partial contraction, increase in Ca+2 and decrease in ATP, prevents relaxation, actin and myosin remain linked until muscles decompose.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_🡪 of muscle helps maintain body temperature.

Frog experiment in College---- Ca+2 to quadriceps of frog

Muscular responses—\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ vs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fibers

Olympic sprinter = \_\_\_\_\_ fast Marathoner = \_\_\_\_ slow twitch

Average person = \_\_\_\_ fast / \_\_\_\_\_ slow

Contractions🡪 holding cup of coffee without crushing it?? It all has to do with…….

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of muscle stimulation b) how many \_\_\_\_\_\_\_\_\_\_ take part

Muscular \_\_\_\_\_\_\_\_\_\_\_\_ y (big) vs. \_\_\_\_\_\_\_\_\_\_\_ (decrease in size and strength)

\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -> swimming and running require more mitochondria and more blood flow to resist fatigue

Forceful exercise 🡪 wt. lifting uses more\_\_\_\_\_\_\_\_\_\_\_ , creates actin and myosin which increases the size of the muscle

**Strength of muscle contraction is directly proportional to** … the \_\_\_\_\_\_\_\_\_\_\_\_ of the activated muscle fiber

When you stop exercising… process reverses and \_\_\_\_\_\_\_\_\_ ….can shrink to half the size in a few months)

\_\_\_\_\_\_\_\_\_\_\_\_\_= individual twitches together

\_\_\_\_\_\_\_\_\_\_\_\_\_= sustained contraction (lacks partial relaxation)

\_\_\_\_\_\_\_\_\_\_\_\_\_= increase in # of motor units being activated

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = summation + recruitment

\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= sustained contraction, helps with posture, collapses with loss of consciousness

\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_= irises of eyes and blood vessels … only respond to hormones and motor nerve impulses

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = one stimulation triggers the one next to it\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 wavelike motion

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = intercalated discs , network of cells contract as \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Genetic Connection---Muscular diseases pg. 191**

**Muscular dystrophy—missing proteins** ( **vary in \_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_)**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= holds skeletal muscle together ( linking actin in the cell)…muscle weakens and degenerates and is replaced by \_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Duchenned MD—only \_\_\_\_\_\_\_\_\_\_…. About the age \_\_\_\_\_\_\_\_\_ -- die from failure of \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

Charcot Marie Tooth Disease -- decrease in mov’t. of hands and feet and tendon reflexes… extra \_\_\_\_\_\_\_\_\_ impairs the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_🡪 can’t \_\_\_\_\_\_\_\_\_\_\_\_ muscle

\_\_\_\_\_\_\_\_\_= expanding gene through generations … delays muscle relaxation… gets worse from F1 to F4

\_\_\_\_\_\_\_\_\_\_\_\_\_= a tiny glitch, change in DNA 🡪 actin can’t anchor to \_\_\_\_\_\_\_\_in \_\_\_\_\_\_\_\_\_\_ muscle, heart chamber enlarge and eventually fail

Face = 60 muscles \_\_\_\_\_\_\_\_ to frown and \_\_\_\_\_ to smile

Muslcular diseases = post polio syndrome –

Acute paralytic poliomyelitis ( polio) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can spread to the spinal cord that controls muscle contractions –\_\_\_\_\_\_\_\_\_\_\_\_

Now a problem in Africa ( \_\_\_\_\_\_\_\_\_\_\_\_\_).. was once almost eradicated.