Error Flow Chart

Cross Bridge Cycle

1. What would happen if a person has almost no Ca2+ in his body?
2. Why does the Ca2+ need to bind to the troponin?
3. What is ATP used for?
4. Do all of the myosin heads bind to the actin at the same time and let go at the same time? Why or why not?

Myosin from thick filament binds to actin using energy from ATP

As Ca2+ is stripped from troponin, tropomysosin returns to its position blocking actin’s binding sites

Thick filament pulls thin filament toward center causing a contraction

Impulse is over so Ca2+ goes back to sacs in SR

Ca2+ binds to troponin on thin filaments

Nerve impulse releases acetylcholine onto muscle

So thin and thick filaments cannot bind and thus muscle is relaxed

Ca2+ is released from SR into sacroplasm

Causes impulse to travel through T-tubules to sacs of sacroplasmic reticulum

Causes tropomyosin molecules to shift exposing actin’s binding site

Acetylcholine binds to receptors on muscle