Muscle Contractions • NMJ • Skeletal Muscles Cheat Sheet

by scpuerner via cheatography.com/212518/cs/46182/

NMJ Activation

Muscle contraction begins when a motor neuron releases acetylcholine (ACh) at the neuromuscular junction (NMJ). This causes depolarization of the sarcolemma and triggers an action potential that travels along the T-tubules.

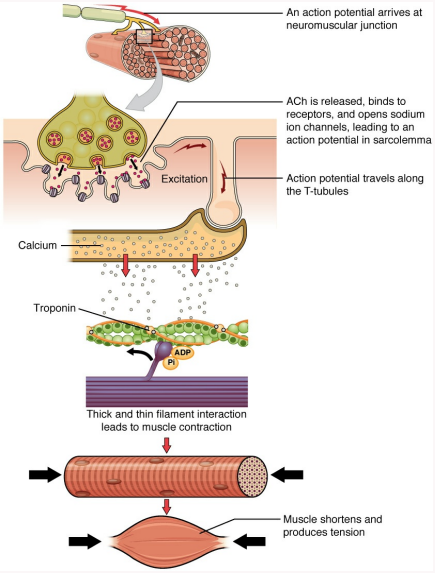
Calcium Release

The action potential stimulates the sarcoplasmic reticulum (SR) to release calcium ions (Ca^{2+}). These ions bind to troponin, causing tropomyosin to move and expose myosin-binding sites on actin.

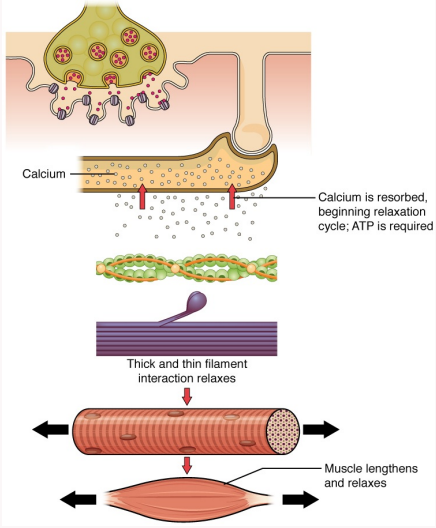
Cross-Bridge & Relaxation

Myosin heads bind to actin, perform the power stroke, and shorten the sarcomere. ATP allows detachment and re-cocking. When the signal stops, Ca^{2+} is reabsorbed and the muscle fiber relaxes.

Muscle Contraction Overview



Muscle Relaxation Overview



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