



Western
UNIVERSITY • CANADA

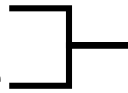
Tutorial 10

Sections 009/010

TA: Greydon Gilmore
Physiology 2130
Nov 19th, 2019

Your TA reminding you...

- **2nd Peerwise assignment (1.5%)**
 - **Post 2 MC questions:** due Nov 27th @ midnight
 - **Answer 5 MC questions:** due Nov 29th @ midnight
- **2nd Quiz (1%)**
 - **Opens:** Dec 2nd @ 4pm
 - **Closes:** Dec 3rd @ 4pm
- **2nd Midterm (15%)**
 - **When:** Dec 19th @ 9am-10am
 - **Room Assignments:**
 - **ABBA-GANE:** Alumni Hall 15
 - **GHAB-POSA:** Alumni Hall 201
 - **PRIM-WOOD:** Alumni Hall Stage
 - **WU-ZIA:** Somerville House 2316



Same place!

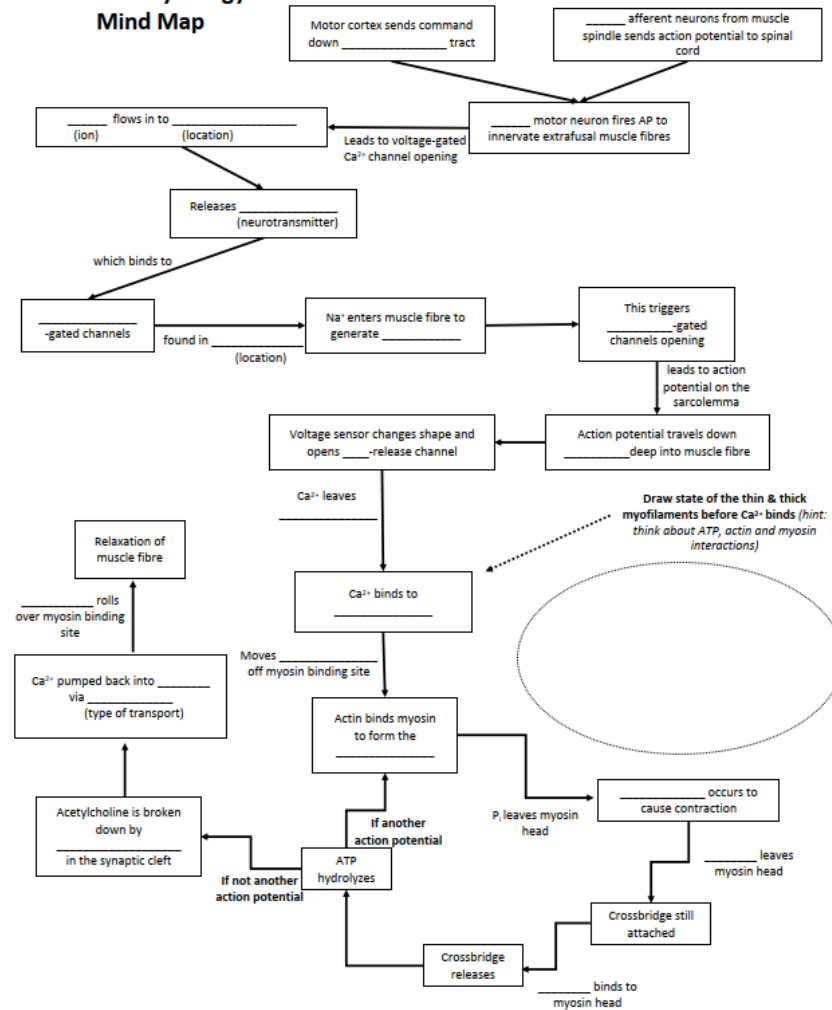
Today

- Group work activity
- Learning Catalytics Question
- Finish muscle anatomy

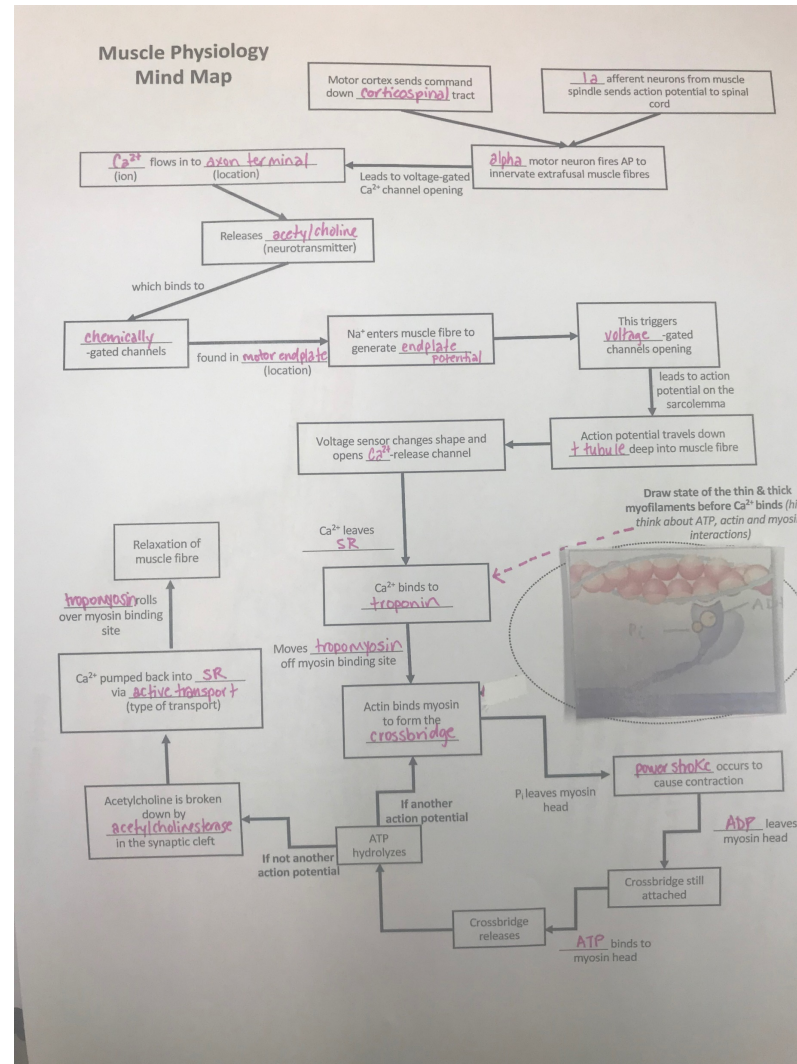
Group Work

Mind Map!

Muscle Physiology Mind Map



Mind Map!



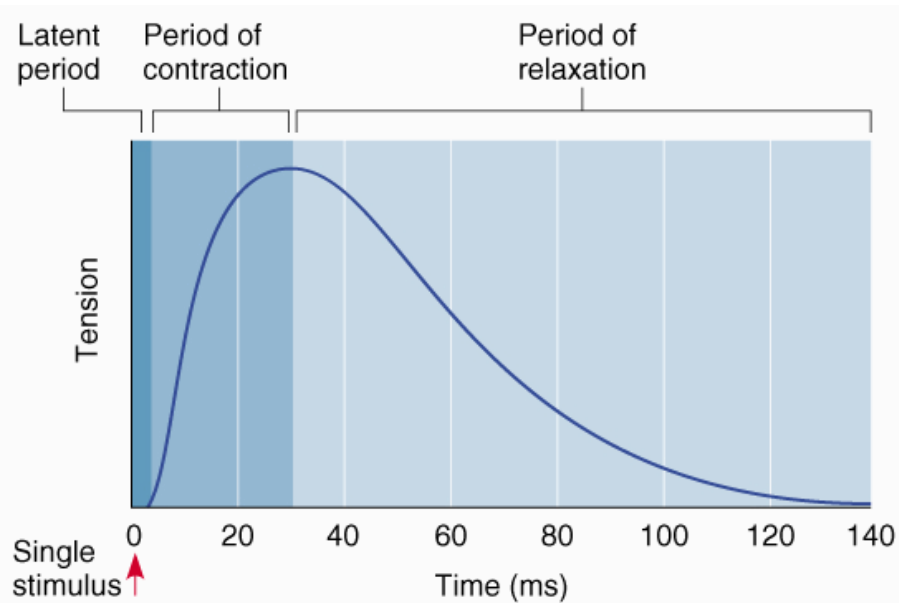
Learning Catalytic Question

Muscle Anatomy

Chapter 6: Professor Stavraky

Muscle twitch

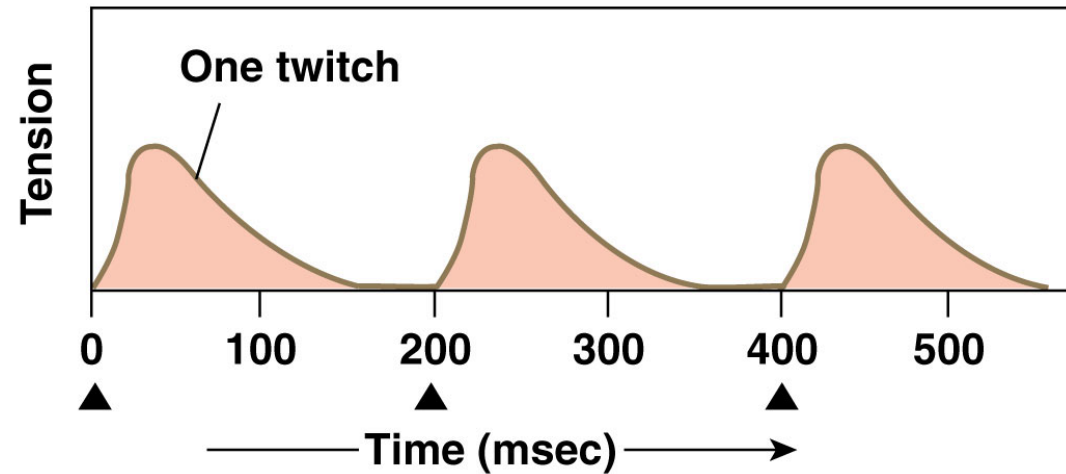
- Result of one AP from the motor neuron
- Difference in AP duration vs. twitch duration = allows summation



(a)

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(a) Single Twitches: Muscle relaxes completely between stimuli (▲).

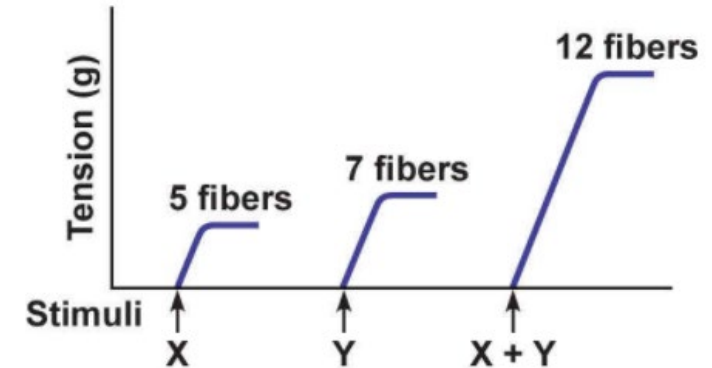
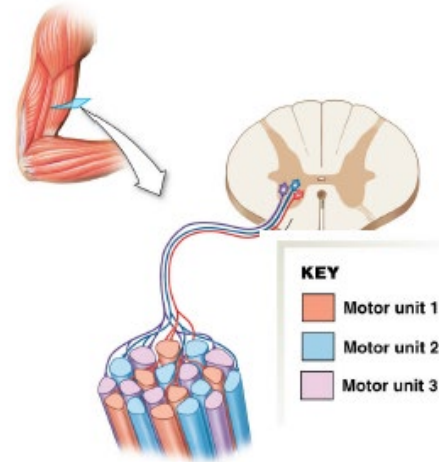


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Grading of muscle contraction

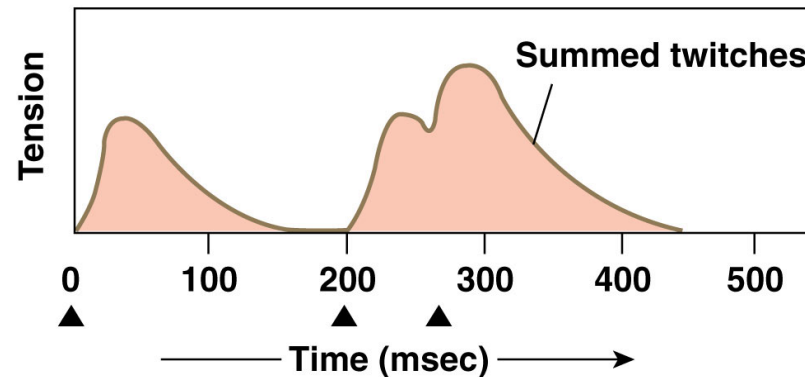
1. Recruitment

- Recruiting additional motor units
- e.g. motor unit 1 innervates 6 fibers



2. Summation

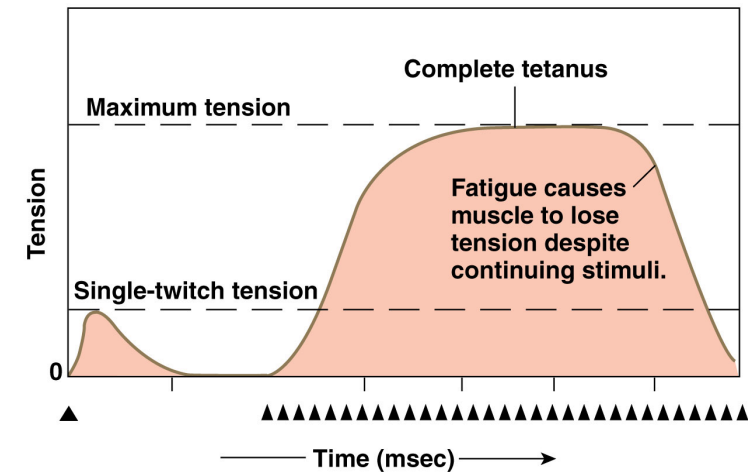
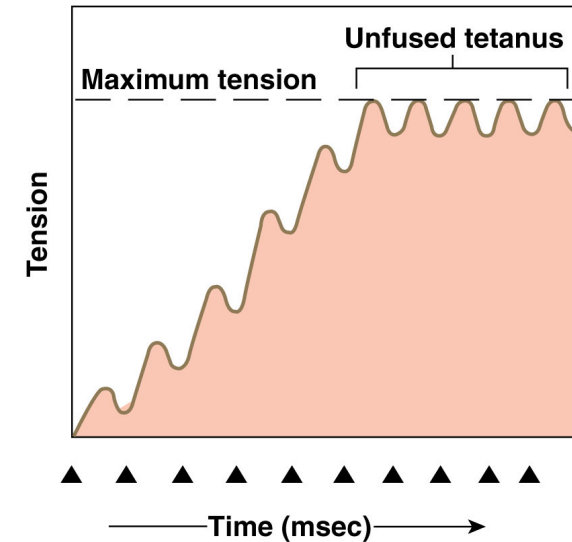
- Increase the twitch frequency in the same motor unit (summation)



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Tetanus

- **Unfused tetanic contraction (or unfused tetanus)**
 - Medium to high frequency APs will cause twitches to summate
 - Still has time to relax before next twitch
- **Complete tetanus**
 - At very high frequencies there is no relaxation between twitches
 - Twitches will summate to form smooth, sustained contraction



Next Tutorial (Nov 26th)

- Cardio physiology!

What Questions Do You Have?

You can ask in the **Owl forums** as well!

Also anonymously ask questions in the **online dropbox!!**