

Watch these videos to supplement your understanding:  
<https://neuroscience5e.sinauer.com/>

← → C i https://neuroscience5e.sinauer.com/animations02.html

Apps The Wall Street Jour... Find e-Journals Capture Reference general ICOGS 1 SL... AJ-chinese Style Guide

# NEUROSCIENCE

FIFTH EDITION

Purves • Augustine • Fitzpatrick • Hall • LoMonte • Martin

**CHAPTER2**

Summary

**Animations**

Animation 2.1

Animation 2.2

Animation 2.3

Flashcards and Key Terms

**HOME**

2. Electrical Signals of Nerve Cells Animations Go

[Home: Chapter 2 :: Animations](#)

## Chapter 2 Animations

- [Animation 2.1 - The Resting Membrane Potential](#)
- [Animation 2.2 - Electrochemical Equilibrium](#)
- [Animation 2.2 - The Action Potential](#)

# NEURONS VS GLIA

↑  
 SIGNAL  
 ↑  
 Electro-chemical  
 - physics  
 - chemistry

↑ support cell  
 - immune  
 - electrical (insulation) conductivity  
 - feeding/cleaning  
 - Astrocytes

## neuron

- all of the processes

INFO GOES IN

soma

dendrite

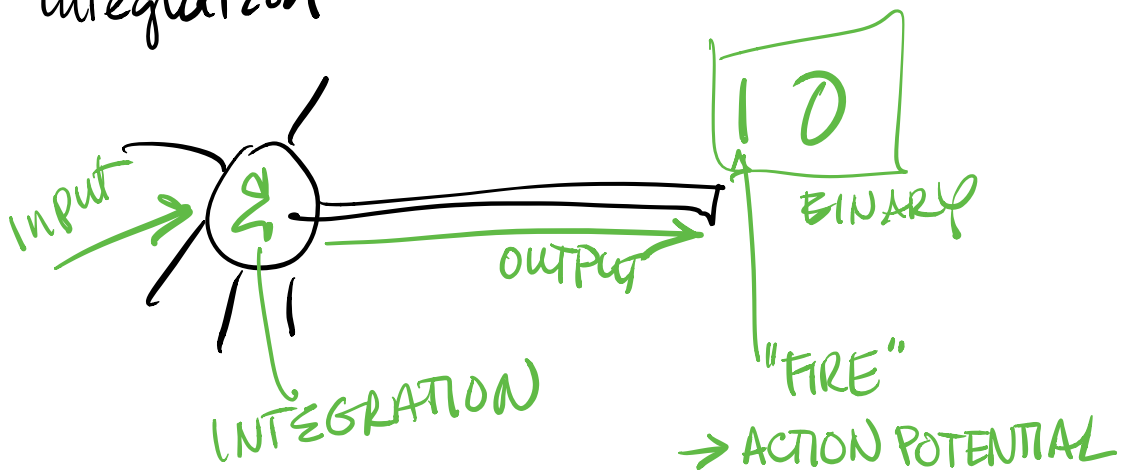
integration

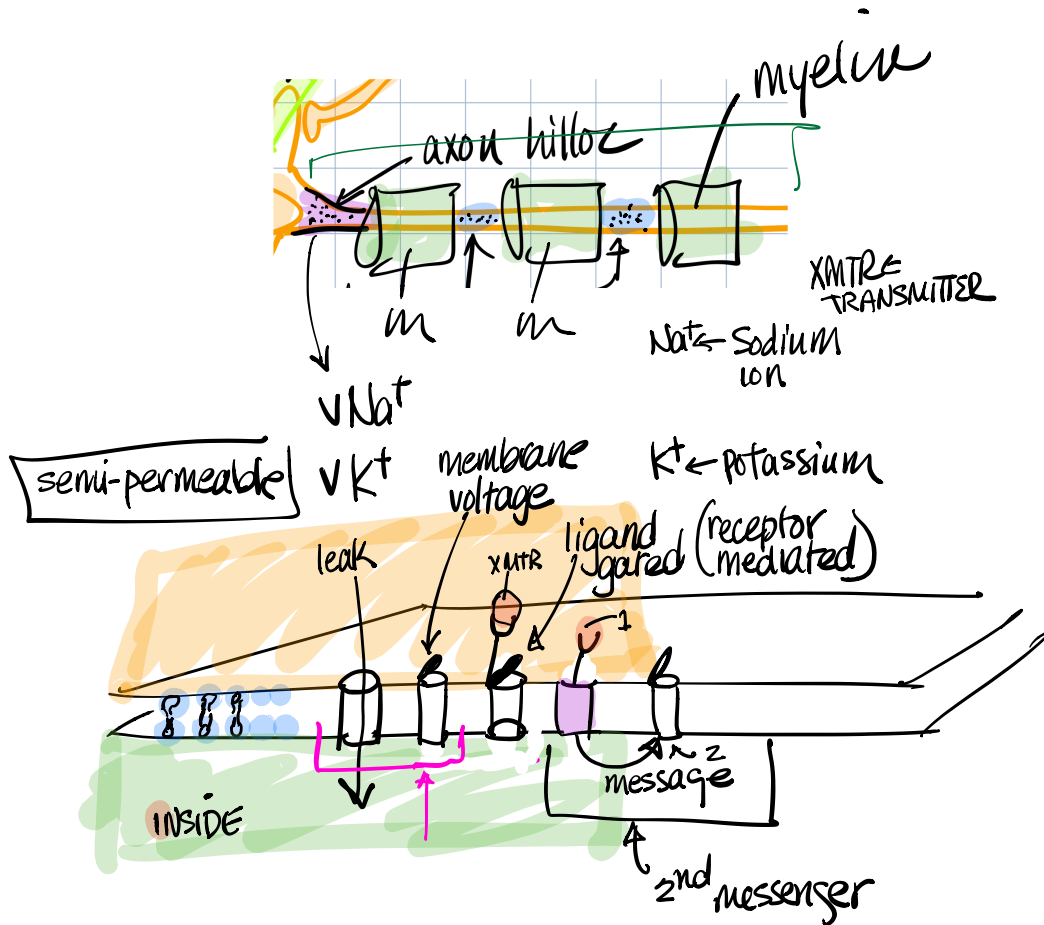
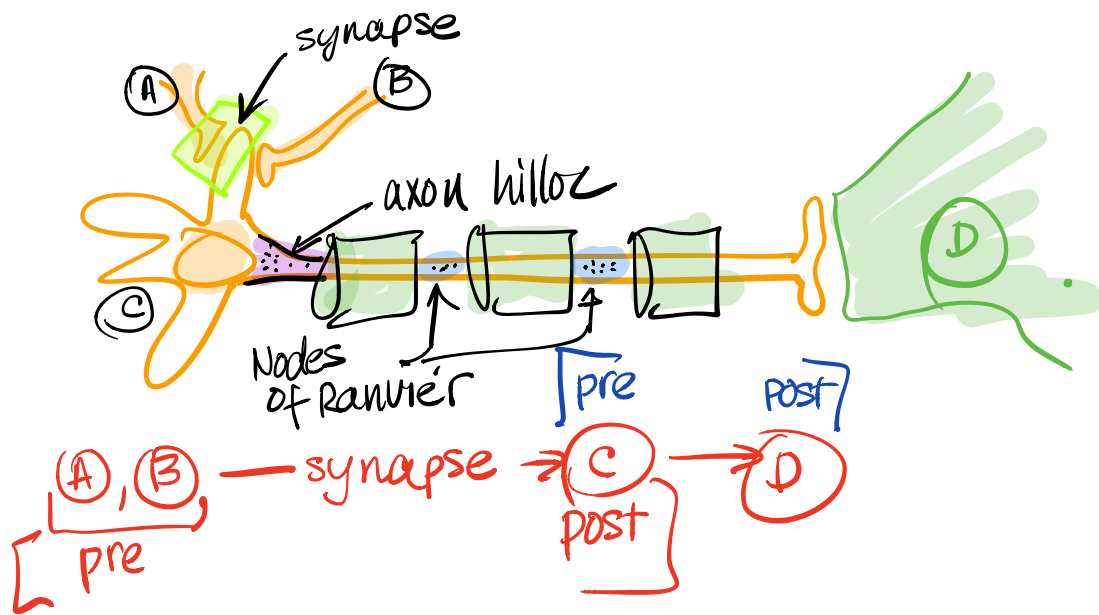
10,000

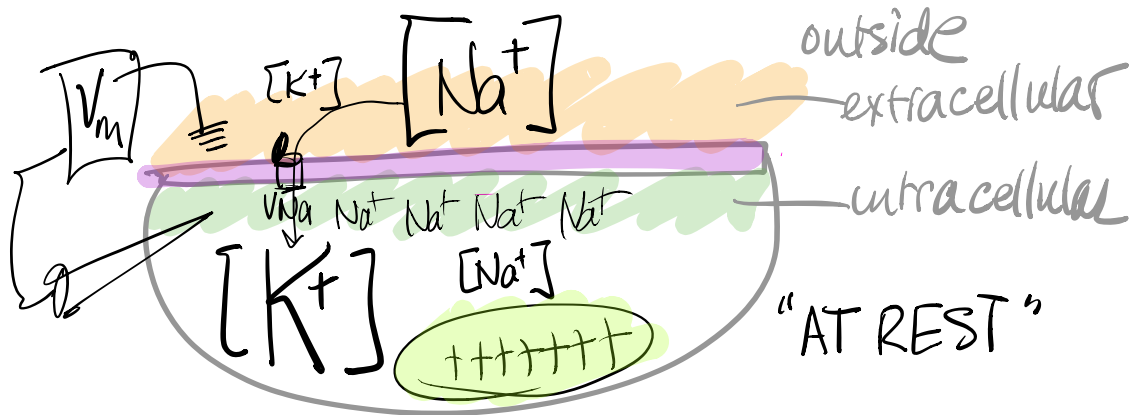
Multipolar

axon

output



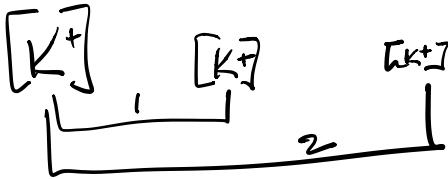




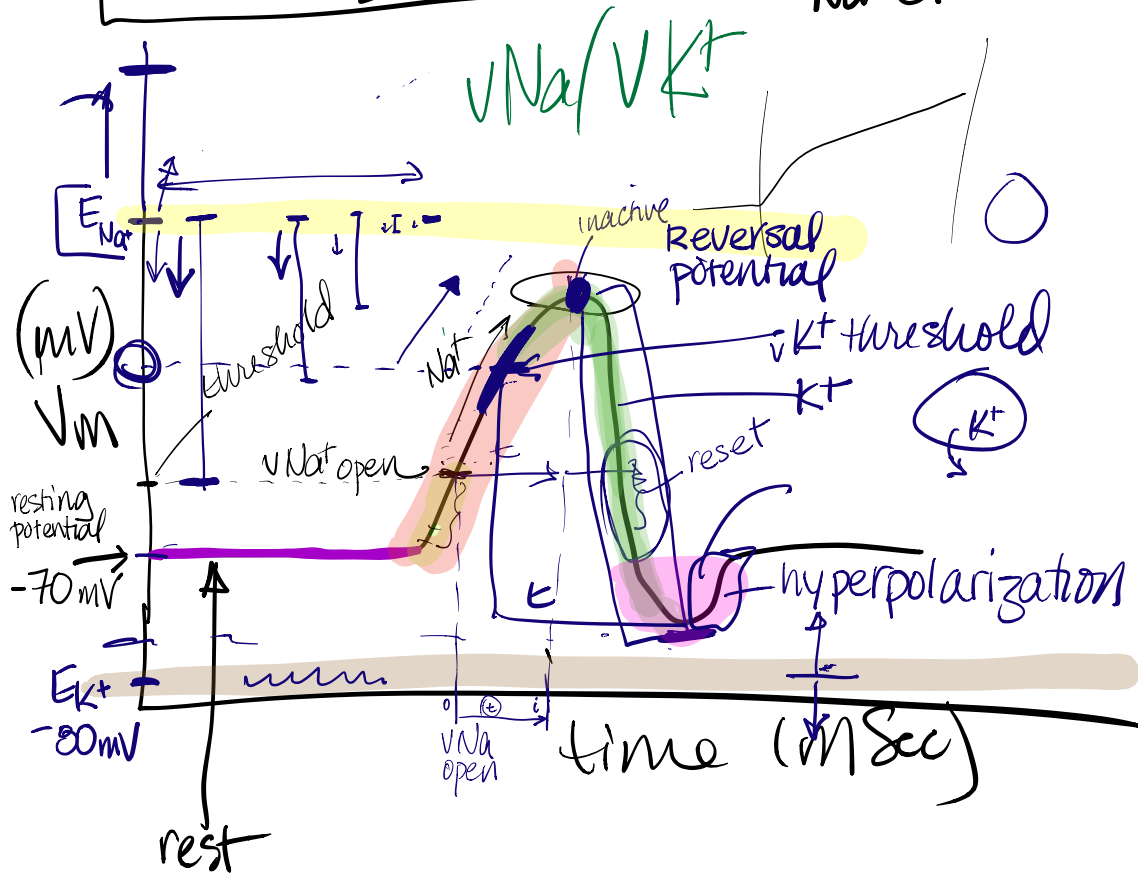
① DIFFERENCE

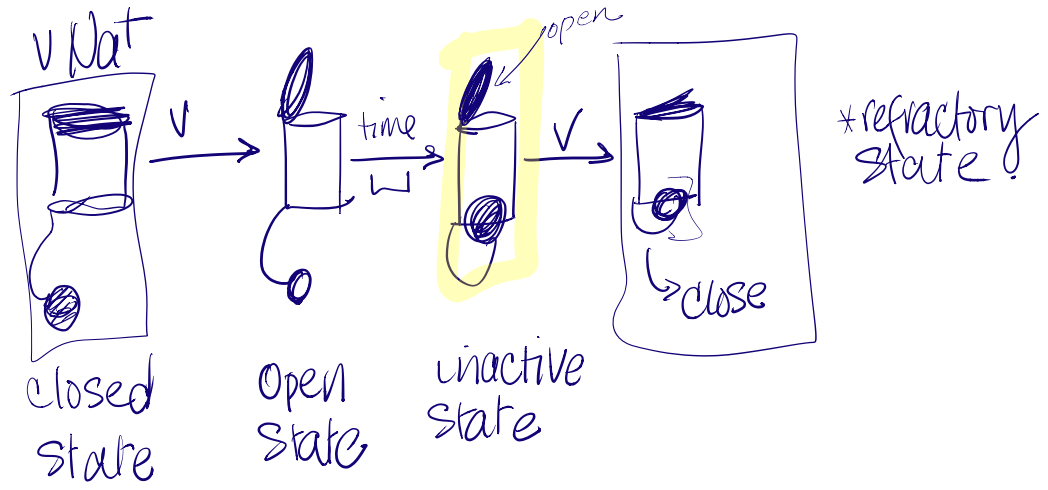


$K^+$  -  
 $Na^+$  -  
 $Cl^-$  chloride

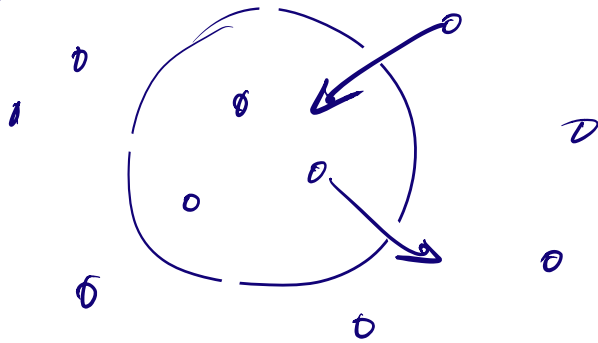


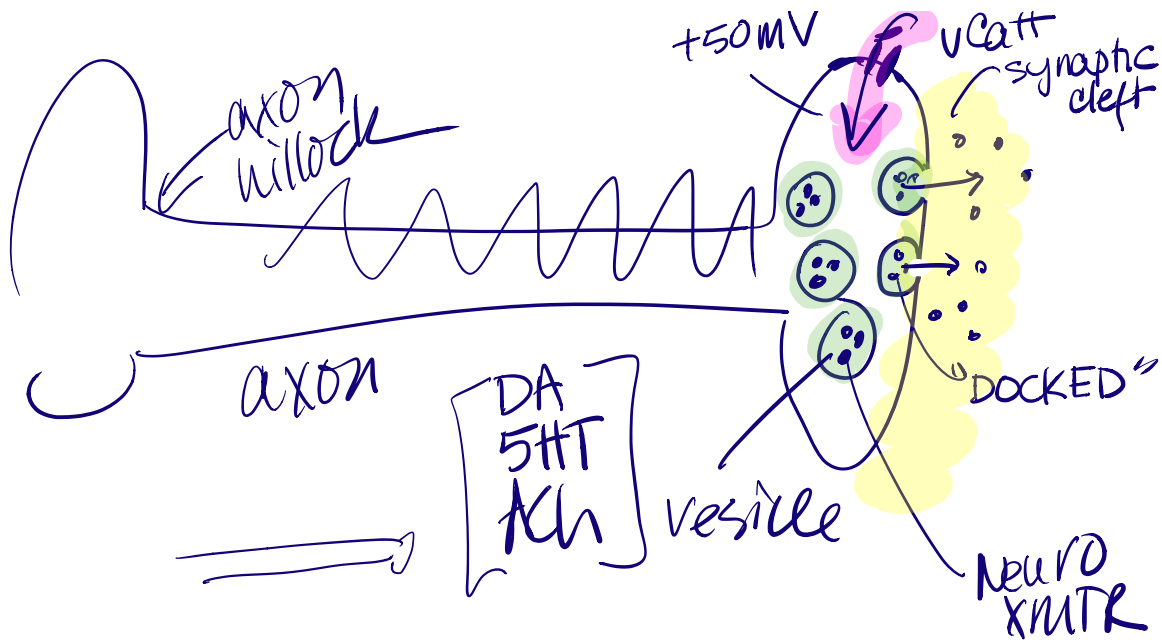
$Na^+ Cl^-$



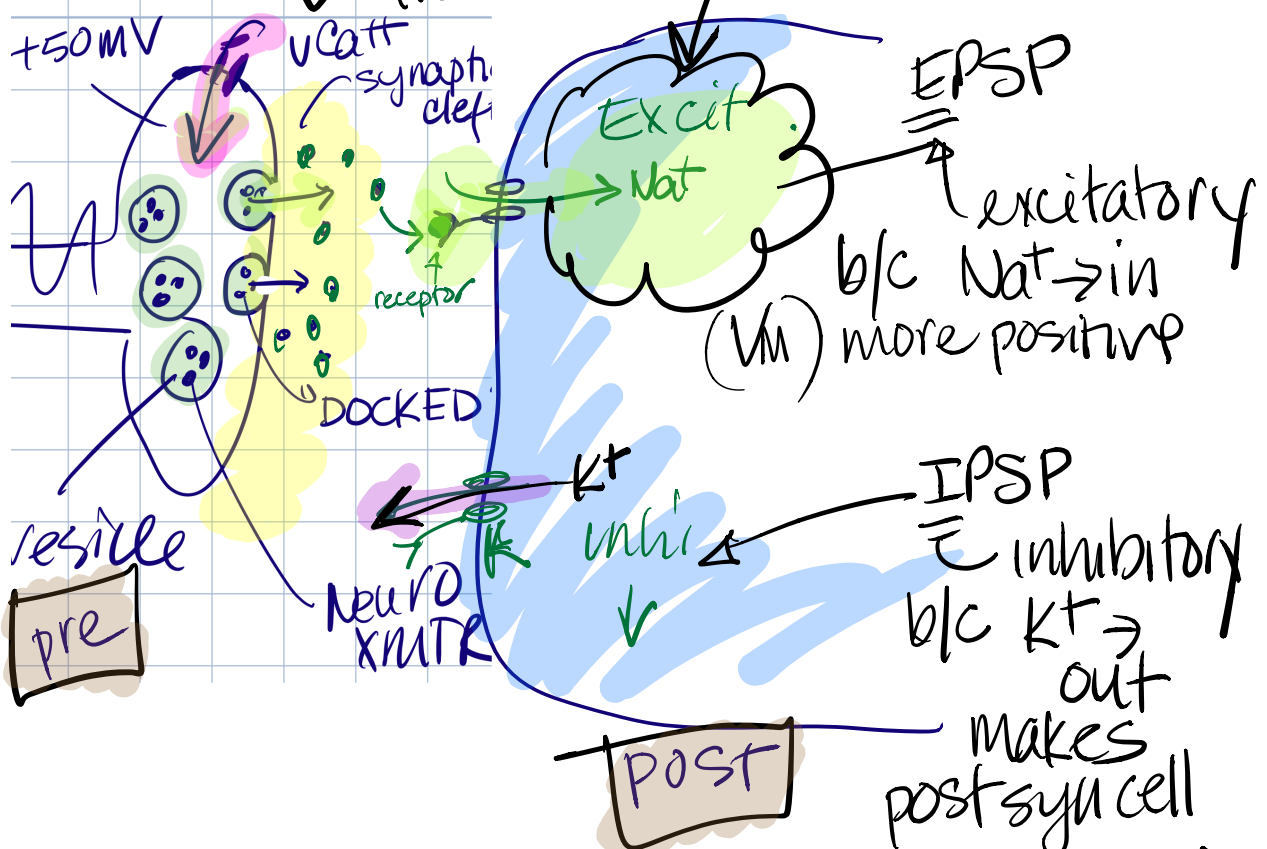


EQUILIBRIUM





**EXOCYTOSIS** when NMTR is released from terminal. **POSTSYNAPTIC POTENTIAL (PSP)**



→ inhibitory  
An IPSP makes the post synaptic neuron's membrane potential more negative

( $V_m$ ) more negative  
← excitatory  
An EPSP makes the post synaptic neuron's membrane potential more positive.

Remember-

what determines if a neuron is inhibited or excited - it is dependent on what the ions are doing -

in general:

- $\text{Na}^+ \rightarrow$  into cell: excitatory
- $\text{K}^+ \rightarrow$  out of cell: inhibitory
- $\text{Cl}^- \rightarrow$  into cell: inhibitory
- $\text{Cl}^- \rightarrow$  out of cell: excitatory