

Concepts/Topics

- Anatomy of a neuron: dendrites, cell body, axon hillock, axon, Schwann cells, myelin sheath, nodes of Ranvier, axon terminal, various neurotransmitters, synaptic cleft; variations (bipolar, etc.)
- Resting potential - K^+ leakage, Na^+/K^+ ATPase pump, up to 2/3 energy used in neurons
- Depolarization (EPSPs), hyperpolarization (IPSPs), summation
- Action potential - threshold, parts/phases (associated gates), unidirectional, uniform size, positive feedback
- Nervous system - central vs. peripheral, autonomic vs. voluntary, sympathetic vs. parasympathetic
- Cells - afferent fibers, efferent fibers, interneurons, receptor cells, target cells, glial cells
- Reflexes - spinal reflexes,
- Nervous system vs. endocrine system (vs. exocrine system)
- Pituitary gland - connections to nervous system, master gland, feedback loops
- Endocrine glands (& functions) - thyroid, parathyroid, adrenal, pancreas, testes/ovaries

Readings

Principles of Life (2013), Chpt. 34, Chpt. 35

Homework/Activities

No homework at this time

Helpful Web Links

No web links at this time

Videos/Tutorials

The Neuron (NeuroTransmissions)
Resting Potential (NeuroTransmissions)
Action Potential (NeuroTransmissions)
Action Potential (Khan)
The Synapse (NeuroTransmissions)
Neurons (Brightstorm)
Nervous System I (Crash Course)
Nervous System II (Crash Course)
Nervous System III (Crash Course)
Knee-Jerk Reflex (2 Minute Neuroscience)

www.youtube.com/watch?v=UDpydfpEads
www.youtube.com/watch?v=8TG8QCkKpHI
www.youtube.com/watch?v=HzrJWtw8VM
www.youtube.com/watch?v=h2H6POZowiU
www.youtube.com/watch?v=fdhzNYJH7eA
www.youtube.com/watch?v=9ysC4FO_Jq4
www.youtube.com/watch?v=qPix_X-9t7E
www.youtube.com/watch?v=OZG8M_IdA1M
www.youtube.com/watch?v=VitFvNvRIIY
www.youtube.com/watch?v=c-dD0N53QRg