

REVIEW OF NERVOUS SYSTEM

F95 v2

NEURON

dendrites

cell body

nucleus

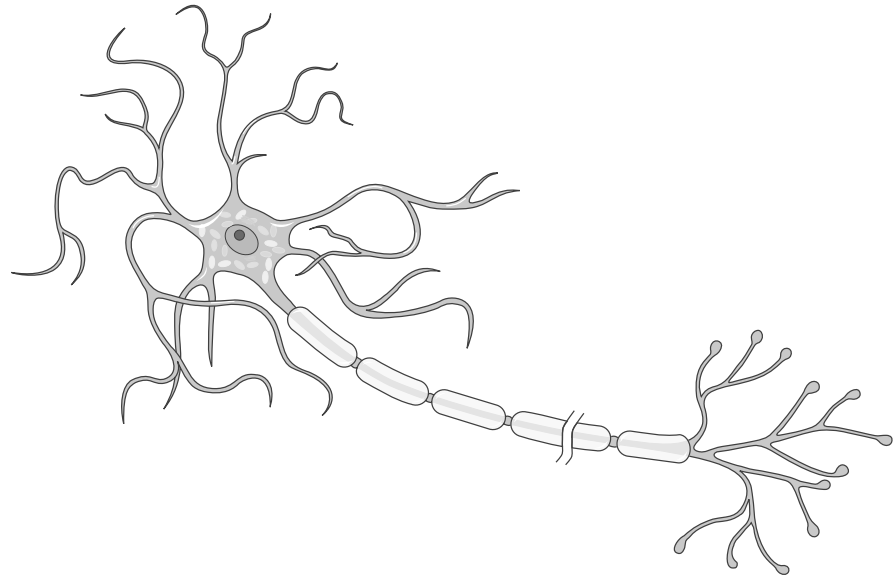
axon

myelin sheath

Schwann cell

node of Ranvier

synaptic knob



NERVE IMPULSE

(1) RESTING POTENTIAL - prepares the neuron for an incoming nerve impulse

sodium (Na^+) outside the neuron

Na^+

+ positive

potassium (K^+) inside the neuron

K^+

– negative

(2) DEPOLARIZATION - reverses the polarity (charges) to begin the nerve impulse

the nerve impulse travels through the neuron

0

– negative

sodium (Na^+) rushes inside the neuron

Na^+

K^+

+ positive

(3) REPOLARIZATION - restores the original polarity quickly after the nerve impulse

potassium (K^+) rushes out of the neuron

K^+

+ positive

(sodium remains on the inside)

Na^+

r

– negative

(4) SODIUM-POTASSIUM PUMP - restores both ions slowly to their original locations

sodium (Na^+) returns to the outside

Na^+

o

+ positive

potassium (K^+) returns to the inside

r

K^+

– negative

(5) SYNAPSE - the synaptic knob secretes neurotransmitter (to another neuron or cell)

BRAIN

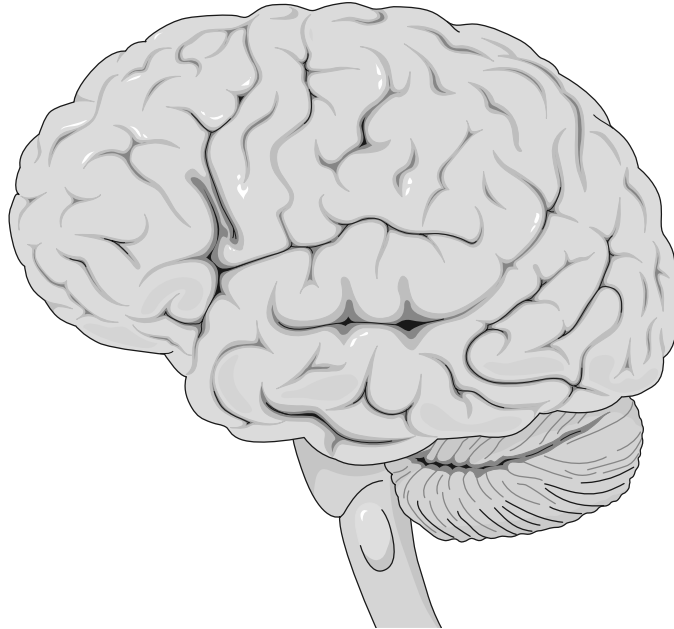
EXTERNAL VIEW

cerebrum
 hemisphere
 fissures
 lobes
 functional areas

cerebellum

brain stem

spinal cord



INTERNAL VIEW

cerebrum
 cortex
 inner layer
 corpus callosum

(midbrain)
 hypothalamus
 pituitary gland

cerebellum
 arbor vitae

brain stem

spinal cord

