

- * meta-analysis → a statistical technique that uses the results of existing studies to integrate + draw conclusions about said studies
 - ↳ used to summarize replications of research.
 - ↳ provides a relatively objective method of reviewing research findings:
 - ① specifies inclusion criteria that indicate which studies will or will not be in the analysis.
 - ② systematically searches for all studies that meet inclusion criteria
 - ③ provides an objective measure of the strength of the observed relationships.

Chapter 3: Brains, Bodies + Behavior

- (1.1) * neuron → a nervous system cell that receives/transmits information.
- made up of a soma - (contains the cell's nucleus).
 - ↳ a dendrite - collects info from other cells + sends to soma
 - ↳ an axon - transmits info away from cell towards muscles and other glands; often surrounded by a myelin sheath.

* See diagram of a neuron on pg 63.

* The nervous system uses an electrochemical process for communication between neurons:

- an electrical charge signals a neuron to release neurotransmitters.
- neurotransmitters → chemicals that transfer info between cells spaces called synapses.

In short: * Electrical charge → received by dendrites → sent to soma → passed on to axon → terminal buttons → neurotransmitters are released

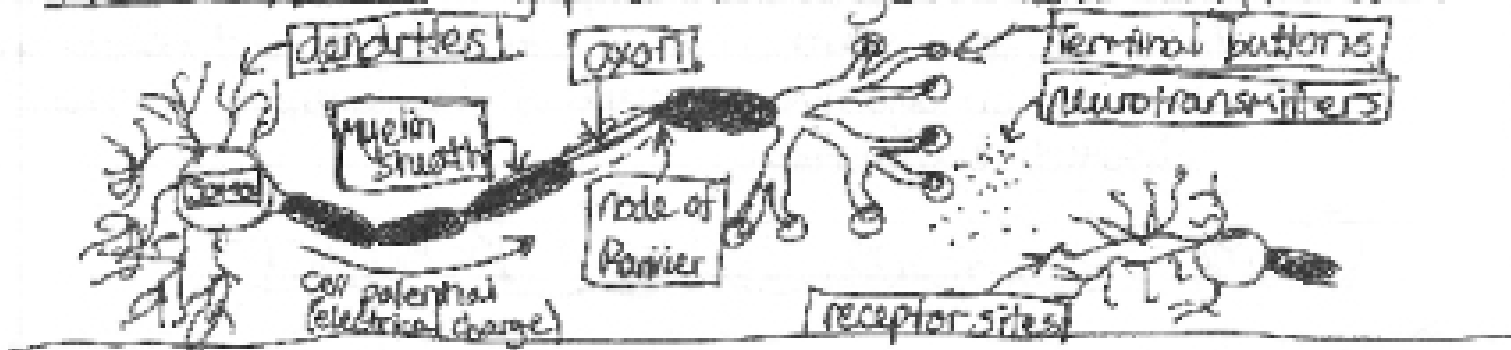
* The axon normally remains in the resting potential:

- ↳ more (-) charged ions inside the neuron than outside



- * Action potential → the change in electrical charge in a neuron when a nerve impulse is transmitted; positive ions enter the neuron.
 - ↳ electrical signal must be strong enough to cross the threshold
 - ↳ positive ions > negative ions → segment becomes (+) charged temporarily

- * Nodes of Ranvier → gaps in the myelin sheath along the axon



- 1.2
- * Receptor sites + neurotransmitters are like a lock + key.
 - dendrites will admit only the neurotransmitters that are shaped fit in the receptor sites of the receiving neuron.

- * Neurotransmitters have either an excitatory effect (i.e. makes the cell more likely to fire) or an inhibitory effect (i.e. makes the cell less likely to fire).

- * If the excitatory effects of the neurotransmitters are greater, the neuron moves closer to its firing threshold / may reach its threshold.
 - ↳ reached threshold = info transfer begins

- * If neurotransmitters are not accepted:
 - broken down by enzymes
 - reabsorbed into their original terminal buttons via reuptake

- * agonist → a drug that mimics the effects of neurotransmitters

- * antagonist → a drug that inhibits the effects of neurotransmitters

2.1 * The Brain stem → oldest + innermost part of the brain; "the old brain"
→ controls basic functions (i.e. breathing, attention, motor responses etc.)

* Within the brain stem:

→ the medulla: controls heart rate + breathing

→ the pons: helps control bodily movement; especially important role in balance and walking.

→ reticular formation: a long + narrow network of neurons that runs through the medulla + the pons.

↳ filters stimuli to certain parts of the brain.

↳ plays an important role in walking, eating, sexual activity, and sleeping.

→ thalamus: egg-shaped structure above the brain stem that further filters stimuli from the spinal cord to higher brain levels.

* Also important to sleep → shuts off incoming stimuli from senses.

* Cerebellum → two wrinkled ovals behind the brainstem

→ coordinates voluntary movement

* The limbic system → between the brain stem + cerebral hemispheres
→ governs emotion + memory

* The limbic system consists of:

→ the amygdala: regulates responses/perception of aggression + fear

→ the hypothalamus: regulates body temp, hunger, thirst, and sex; also links the nervous system to the endocrine system via the Pituitary gland.
↳ responds to the satisfaction of needs by creating feelings of pleasure

→ the hippocampus: important for storing info in long-term memory
↳ damaged hippocampus = no new memory capacity