

# Ap psych chapter 2 : the brain



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Myelin Sheath covers certain neurons with a layer of fatty tissue that serves as a catalyst for neural transmission

Autonomic nervous system Governs the heartbeat, digestion, and other self-regulating bodily functions

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What can a strong stimulus increase? # of times the neuron fires

The pain of heroin withdrawal may be attributable to the fat that? Under the influence of heroin the brain ceases production of endorphins

PET scan Brain research technique that involves monitoring the brain's usage of glucose

Describe the axon when in a resting state

The axon is polarized, with mostly positively charged ions & negatively charged ions inside

What system's regulation is primarily attributed to brain region? The limbic system

Describe the sequence in the transmission of a simple reflex

Sensory Neuron > Interneuron > Motor Neuron

Damage to what area will cause a person to lose ability to comprehend language? Wernicke's area

What is typically controlled by the right hemisphere? Perceptual tasks

A doctor who studies neurotransmitter abnormalities in depressed patients is most likely a biological psychologist

What accompanies the increasing complexity of animals' behavior? The increase in the amount of association area

Which nervous system directs voluntary movement? ie: writing with a pencil

Somatic nervous system

When will a neuron generate action potentials more often? When it receives more excitatory than inhibitory inputs

Describe the transmission of a neural impulse

Dendrite > Cell body > Axon > Synapse

What are chemical messengers produced by endocrine glands called? Hormones

After a head injury, when a person has difficulty staying awake most likely the damage occurred to the Reticular formation

What are cortical areas that are not primarily concerned with sensory, motor, or

language functions called? Association areas  
 In the brain, learning occurs as experience strengthens certain connections in cell work groups called Neural networks  
 Hypothalamus Contains reward centers  
 Lesion Tissue destruction  
 EEG Amplified recording of brain waves  
 fMRI technique that uses radio waves and magnetic fields to show brain function  
 Reticular information helps control arousal  
 MRI technique that uses radio waves and magnetic fields to show brain function  
 Thalamus serves as sensory switchboard  
 Corpus callosum links the cerebral hemispheres  
 Cerebellum enables coordinated movement  
 Amygdala influences rage and fear  
 Medulla regulates breathing and heartbeat  
 The visual cortex is located in the occipital lobe  
 Which of the following is typically controlled by the left hemisphere? word recognition  
 When Sandy scalded her toe in a tub of hot water, the pain message was carried to her spinal cord by the \_\_\_\_\_ system  
 somatic  
 What is governed by the simplest neural pathways? reflexes  
 Melissa has just completed running a marathon. She is so elated that she feels little fatigue or discomfort. Her lack of pain is probably the result of the release of endorphins  
 Parkinson's disease involves the death of nerve cells that produce a vital neurotransmitter  
 The technique that uses magnetic fields and radio waves to produce computer images of structures within the brain is called MRI  
 The myelin sheath that is on some neurons ... increases the speed of neural transmission  
 During an action potential, the electrical state of the axon becomes: depolarized, as positively charged ions are admitted  
 The neurotransmitter ACh is most likely to be found at the junction between motor neurons and muscle fibers  
 The gland that regulates body growth is the pituitary gland  
 Epinephrine and norepinephrine are \_\_\_\_\_ that are released by the \_\_\_\_\_ gland  
 hormones; adrenal  
 Jessical experienced

difficulty keeping her balance after receiving a blow to the back of her head. It is likely that she injured her cerebellum. Moruzzi and Magoun caused a cat to lapse into a coma by severing neural connections between the cortex and the reticular formation. Research had found that the amount of representation in the motor cortex reflects the degree of precise control required by each of the parts. The effect of a drug that is an agonist is to mimic a particular neurotransmitter. The nerve fibers that enable communication between the right and left cerebral hemispheres and that have been severed in split-brain patients for a structure called the corpus callosum. Three year old Marco suffered damage to the speech area of the brain's left hemisphere when he fell from a swing. Research suggests that this right hemisphere may take over much of the language function. Right hemisphere specializes in spatial relations. Brainstem: oldest part of the brain. Glial cells: brain cells that provide nutrients and insulating myelin. limbic system: regulates emotion. Left hemisphere specializes in rationalizing reactions. Angular gyrus: translates writing into speech. A biological psychologist would be more likely to study the chemical changes that accompany emotions. The part of the human brain that is most like that of a fish is the brainstem. If Doctor Rogers wishes to conduct an experiment on the effects of stimulating the reward centers of a rat's brain, he should insert an electrode into the hypothalamus. Several shy neurons send an inhibitory message to neighboring neuron Joni. At the same time, a larger group of party-going neurons send Joni excitatory messages. What will Joni do? fire, assuming that her threshold has been reached. Dr. Johnson briefly flashed a picture of a key in the right visual field of a split-brain patient. The patient could probably: verbally report that a key was seen. limbic system is to emotion and memory. Which of the following was a

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major problem with phrenology? The brain is not neatly organized into structures that correspond to our categories of behavior. A bodybuilder friend suddenly seems to have grown several inches in height. You suspect that your friend's growth spurt has occurred because he has been using drugs that affect the pituitary gland. Raccoons have much more precise control of their paws than dogs. You would expect that raccoons have more cortical space dedicated to "paw control" in the \_\_\_\_\_ of their brains. Frontal lobes