

***AP Psychology – Learning Goals
Myers’ Psychology for AP: Unit III
Biological Bases of Behavior***

Explain why psychologists are concerned with human biology.
Describe the parts of a neuron and explain how action potentials are generated
Describe how nerve cells communicate with other nerve cells.
Describe how neurotransmitters (specifically: serotonin, dopamine, acetylcholine, GABA, glutamate, endorphins, epinephrine, and norepinephrine) influence behavior, and explain how drugs and other chemicals affect neurotransmission. Be prepared to identify whether a drug is an antagonist or an agonist for a particular neurotransmitter.
Describe the functions of the nervous system’s main divisions (e.g., peripheral v. central, autonomic v. somatic, and sympathetic v. parasympathetic) and identify the three main types of neurons.
Describe the nature and functions of the endocrine system and its interaction with the nervous system, noting the role of the pituitary gland.
Describe several techniques for studying the brain’s connections to behavior and mind (e.g., EEG, CT, PET scan, MRI, fMRI).
Describe the components of the brainstem, and summarize the functions of the reticular formation, medulla, pons, thalamus, and cerebellum .
Describe the limbic system’s structures and functions, including: the amygdala, hypothalamus, & hippocampus .
Identify the various regions of the cerebral cortex, and describe their functions.
Identify the brain areas involved in language processing and speech (e.g., Broca’s area, Wernicke’s area).
Discuss the brain’s ability to reorganize itself (neuroplasticity), and define neurogenesis .
Explain how split-brain research helps us understand the functions of our two brain hemispheres.
Explain what is meant by “dual processing,” as revealed by today’s cognitive neuroscience .
Define genes , and describe how behavior geneticists explain our individual differences. Particularly, be able explain how twins studies and adoption studies can be used to address the nature-nurture issue.
Identify the potential uses of molecular genetics research.
Explain what is meant by heritability , and discuss how it relates to individuals and groups.

Discuss the interaction of heredity and the environment, noting the recent interest in epigenetics .
Describe evolutionary psychologists' use of natural selection to explain behavior tendencies.
Discuss evolutionary explanations for gender differences in sexuality and mating preferences.
Summarize the key <i>criticisms</i> of evolutionary psychology, and describe <i>how evolutionary psychologists respond</i> .

Key People (be able to describe their contributions):

- Franz Gall
- Phineas Gage
- Paul Broca
- Carl Wernicke
- Roger Sperry & Michael Gazzaniga
- Thomas Bouchard
- Charles Darwin
- Dmitri Belyaev