

## ADHD Week 3 - Completion Quiz

**Warning:** You have already made the maximum number of submissions. Additional submissions will not count for credit. You are welcome to try it as a learning exercise.

☐ In accordance with the Coursera Honor Code, I (Matthew Kramer) certify that the answers here are my own work.

### Question 1

The four lobes of the cerebrum (cortex) and basal ganglia are part of what?

- ☐ A. Hindbrain
- ☐ B. Midbrain
- ☐ C. Forebrain
- ☐ D. Brainstem
- ☐ E. Cerebellum

### Question 2

Neurotransmitters are released from a \_\_\_\_\_ into the \_\_\_\_\_ and bind to a \_\_\_\_\_.

- ☐ A. Impulse, neuron, receptor
- ☐ B. Myelin, axon, receptor
- ☐ C. Synapse, receptor, vesicle
- ☐ D. Vesicle, synapse, receptor
- ☐ E. Vesicle, neuron, synapse

### Question 3

Please select the correct combination of system, structures, neurotransmitter, and function of the dual attention system model.

- ☐ A. Anterior, superior parietal cortex, dopamine, orients and engages new stimuli
- ☐ B. Anterior, superior parietal cortex, norepinephrine, orients and engages new stimuli
- ☐ C. Anterior, prefrontal cortex and anterior cingulate, dopamine, suppresses extraneous stimuli (focus)
- ☐ D. Posterior, prefrontal cortex and anterior cingulate, dopamine, suppresses extraneous stimuli (focus)
- ☐ E. Posterior, superior parietal cortex, norepinephrine, suppresses extraneous stimuli (focus)
- ☐ F. Posterior, prefrontal cortex and anterior cingulate, dopamine, orients and engages new stimuli

### Question 4

A month after starting medications for 9 year old Diane, Dr. R. notices that Diane seems "stressed". Her parents say she occasionally fixates on some little thing and it is difficult to direct her attention to anything else. Her teachers claim she is "completely inflexible". Why might Dr. R. want to lower her ADHD medication dose?

- ☐ A. Diane's symptoms are consistent with excess norepinephrine and dopamine signaling
- ☐ B. Diane's symptoms are consistent with inadequate norepinephrine and dopamine signaling
- ☐ C. Diane is likely abusing her medications
- ☐ D. Diane's insurance doesn't cover her current dose
- ☐ E. Diane has a genetic predisposition to react badly to ADHD medication

### Question 5

Ventral tegmental area uses \_\_\_\_\_ as its neurotransmitter and is a key part of the \_\_\_\_\_ attention system.

- ☐ A. Norepinephrine, Anterior
- ☐ B. Norepinephrine, Posterior
- ☐ C. Dopamine, Anterior
- ☐ D. Dopamine, Posterior

## Question 6

Which brain regions have a 3-10% reduction in size in individuals with ADHD?

- ☐ A. Cerebellum
- ☐ B. Basal ganglia
- ☐ C. Amygdala
- ☐ D. Orbital prefrontal cortex
- ☐ E. Hippocampus
- ☐ F. Broca's area

## Question 7

8 year old Ronald is kindly told he needs to improve the legibility of his handwriting. Ronald proceeds to yell and bang the table while shouting angrily, "You are so unfair!" Ronald's \_\_\_\_\_ circuit is currently ineffective.

- ☐ A. Frontal-striatal
- ☐ B. Frontal-limbic
- ☐ C. Frontal-cerebellar

## Question 8

From your homework reading, which neural process is NOT related to learning?

- ☐ A. Neuronal plasticity
- ☐ B. Axonal myelination

- ☐ C. Neuronal critical periods
- ☐ D. Glial malignant transformation
- ☐ E. Paring back of dendrites

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