Class Preparation: Mental Health #1

Directions: Fill in the charts below. Identify what mental health disorders can occur when each neurotransmitter is increased or decreased.

	Functions	**Increase**	**Decrease**
Dopamine	• Is involved in cognition, motivation, and movement. • It controls emotional responses and the brains reward/pleasure center. • It is also responsible for fine muscle movement, decision making, and stimulates hypothalamus to produce hormones (sex, thyroid, and adrenal)	• Psychosis • Mania	• Parkinson's disease • depression
Norepinephrine	• Is responsible for mood, attention/arousal • it stimulates the sympathetic branch of ANS for fight or flight response to stress	• Mania • Anxiety • psychosis	• depression
Serotonin	• Like Norepinephrine, it is also responsible for regulating mood. • Serotonin is also very important for sleep regulation, hunger, pain preceptors, aggression/libido, hormonal activity.	• Anxiety states	• Depression
GABA	• Reduces anxiety, excitation, aggression. • May play a role in pain perception, has anticonvulsant and muscle relaxing properties, and may impair cognition and psychomotor functioning	• Reduction of anxiety	• Mania • Anxiety • psychosis
Acetylcholine	• Plays a role in learning and memory. • Regulates mood, mania, and sexual aggression • Stimulates parasympathetic nervous system	• Alzheimer's disease • Huntington's disease • Parkinson's disease	• depression

Structures of the Brain

Brain Structure	Function
The limbic System	The limbic system is comprised of the hippocampus, amygdala, the thalamus, and hypothalamus. • The hippocampus interacts with the PFC in making memories. • The amygdala is responsible for processing fear and anxiety. • The thalamus filters sensory information before it reaches the cerebral cortex. • The hypothalamus maintains our body's homeostasis. It controls temperature, BP, perspirations, libido, hunger, thirst, and circadian rhythm
Frontal Lobe	• Formulates or select goals. Initiate, plan, and terminate actions • Decision making • Insight • Motivations • Social judgement • Voluntary motor ability (starts in frontal lobe)
Parietal Lobe	• Receives and identifies sensory information • Concept formation and abstraction • Proprioception and body awareness • Reading and mathematics • Right and left orientation
Temporal Lobe	• Language comprehension • Stores sounds into memory (language, speech) • Connects with limbic system to allow expressions of emotion (sexual, aggressive, fear, etc.)
Occipital Lobe	• Interprets visual images • Visual association • Visual memories • Involved with language formation