

STRUCTURE (denotes unit it is from)	FUNCTION	DOES ANYTHING HAPPEN WHEN DAMAGED?	UNIT CROSSOVER	ADDITIONAL NOTES
Central Nervous System (Brain Anatomy)	-Integrate neural and body signals			-composed of brain and spinal cord
Peripheral Nervous System (Brain Anatomy)	-connects nerves of CNS to the muscles/organs/skin			-composed of extremities/everything other than brain and spinal cord -divided into somatic and autonomic
Somatic PNS (Brain Anatomy)	-control of cranial and spinal nerves			
Autonomic PNS (Brain Anatomy)	-controls sympathetic and parasympathetic responses (fight or flight, rest/digest)			-composed of glands and organs
Afferent Neuron (Brain Anatomy)	-bring sensory info from receptors to the CNS			
Efferent Neuron (Brain Anatomy)	-bring signals from CNS to muscles and organs			
Skull (Brain Anatomy)	-protects the brain	- brain could be compromised		- hard layer of bone
Meninges (Brain Anatomy)	-protects the brain	-meningitis → inflammation of the meninges, swelling in subarachnoid space, increased intracranial pressure -brain injuries: epidural/subdural hematoma, subarachnoid hemorrhage (blood collects between layers)		-contains blood vessels -dura mater → arachnoid → pia mater (in order from superior-inferior)
Cerebral Cortex (Brain Anatomy)	-covers entire brain -contains neurons/conduction -form borders between brain regions			-forms gyri and sulci → gyri are upward folds, sulci inward folds -6 layers thick, builds from the inside out (most superficial cells are oldest)
Frontal Lobe (Brain Anatomy)	-planning, organizing, decision making			-most recent in evolution → means "first to die"
Prefrontal Cortex	-important in executive functions(planning, decision making, introspection, organize thoughts/carry out goals, social control, morality, personality)	-damage could cause loss of any/all of the functions listed		-contains superior and inferior frontal gyri
Superior Frontal Gyrus (Brain Anatomy)	-responsible for introspection -plans movement			-located on superior aspect of frontal lobe -part of prefrontal cortex
Inferior Frontal Gyrus (Brain Anatomy)	-risk aversion (right side) -Broca's/aphasia (left side) -controls impulsivity	-non functioning in Autism -disrupted in Alzheimer's		-bottom most part of frontal lobe
Middle Frontal Gyrus (Brain Anatomy)	-complex behaviors like lying and attention			-located at middle area of the frontal lobe, inferior to superior FG

Broca's Area (Brain Anatomy)	-controls production of speech	-Loss of function means person can't speak, but can understand words		-located in inferior frontal gyrus
Wernicke's Area (Brain Anatomy)	- controls understanding/processing of language and speech	-Loss of function means patient can not understand -language has normal rhythm but doesn't make any sense		
Pre-Central Gyrus (Brain Anatomy)	-primary motor cortex -facilitates muscle movement			-narrow strip just posterior to frontal lobe -amount of cortex devoted to a function is related to complexity of function (more cortex, higher complexity)
Pre-Motor Cortex (Brain Anatomy)	-site of mirror neurons → implications for understanding intentions, learning, and empathy			-activate when you do action and when you watch someone else do same action
Post-Central Gyrus (Brain Anatomy)	-processes ALL sensory info/primary sensory cortex			-areas with finer sensory discrimination have more cortex
Occipital Lobe (Brain Anatomy)	-primary visual cortex	-damage causes "blindsight" → no perception of sight, but person can navigate mazes&perform other visual tasks		-receives input from eyes via limbic area
Temporal Lobe (Brain Anatomy)	-hearing, memories, object recognition, language, emotion			
Superior Temporal Gyrus (Brain Anatomy)	-primary auditory cortex		-damage removes awareness of sound	-contains Wernicke's (language comprehension)
Middle Temporal Gyrus (Brain Anatomy)	-language and semantic memory -integrates memory with sound/sensory		-verbal hallucinations in schizophrenia	
Inferior Temporal Gyrus (Brain Anatomy)	-important for visual processing		- "fusiform gyrus" → recognizing what you know is normal/complex object recognition, dysfunctional in Alzheimer's	-"grandmother cells" → used to recognize faces you know
Parietal Lobe (Brain Anatomy)	-integrates sensory systems into single world view		-loss of sensory perception	
Brodman Areas (Brain Anatomy)	-distinctly organizes neurons for each area -makes area functionally distinct			
Cingulate Gyrus	-separates cerebral hemispheres -responsible for telling you "don't do that" -cortex of the limbic system			-strip of limbic cortex just above corpus callosum
Nucleus Accumbens	-involved in moving you forward -linked to impulsivity&eating disorders			-located in the frontal lobe
Central Sulcus	-separates primary motor			-forms first, degenerates

	and sensory cortices			last
Hippocampus	-memory -converts STM into LTM		-anterograde amnesia (can't remember new memories) -retrograde amnesia (can't remember old memories)	-most often shows seizures -in temporal lobe
Hypothalamus	-controls Autonomic Nervous System (parasympathetic, sympathetic) -emotional response, food and water intake, regulation of sleep cycle -homeostasis		-hypothermia and hyperthermia → dilation of blood vessels inhibits shivering; constriction of BVs increases shivering & secretion of certain hormones	-attached to pituitary gland -under thalamus
Amygdala	-control of emotions, fear response -makes association b/w different stimuli			-next to hippocampus, which is why scary events are so vividly remembered -projections to all lobes of brain -in temporal lobe
Thalamus	-ALL sensory input (except for smell) goes through here, gets processed -gets info and sends to hippocampus&amygdala to make sure it's ok/familiar			-sits on top of brain stem
Cerebellum	-organizes "smooth" movements -balance -motor learning, motor error correction		-loss of balance -trouble walking -tremors when moving (not resting)	-located at back of occipital lobe
Ventricles	-make the brain buoyant -fluid coming out is responsible for filtering of blood and CSF			-filled with fluid
Cingulate Cortex	-processes physical and social pain -reward circuitry component		-gray matter of the corpus callosum reduced in Bipolar patients/Major Depressive Disorder, showing more social pain	-basically just the whole cingulate gyrus
Olfactory Bulb	-sense of smell -emotional Rx to scents			
Limbic System	-processing of emotions, feelings, memories, motivation, and smell			-contains cingulate gyrus, hippocampus, amygdala
Arcuate Fasciculus	-connects Broca's and Wernicke's areas -important for certain aspects of language (i.e. repeating words)		-w/o arcuate fasciculus, you could hear and complete instructions, but wouldn't be able to verbally repeat	-on both hemispheres
Posterior Cerebral Artery	-facial recognition, vision			-carotid origin -branch to occipital lobe, back of parietal, bottom of temporal