

Structures of the Brain and their Function

Brain Structures	
Medulla Oblongata	<i>Regulates heart rhythm, blood flow, breathing, digestion, vomiting</i>
Pons	<i>Critical for arousal/sleep cycles part of reticular activating system. The pons also contains the sleep paralysis center of the brain as well as generating the dreams of REM sleep</i>
Reticular Activating system (reticular formation)	<i>an area of the <u>brain</u> (including the reticular formation and its connections) responsible for regulating <u>arousal</u> and <u>sleep-wake transition</u></i>
Cerebellum	<i>Contributes to <u>coordination</u>, <u>precision</u>, and <u>accurate timing</u>. It receives input from <u>sensory systems</u> such as the inner ear and muscles and from other parts of the <u>brain</u> and <u>spinal cord</u>, and integrates these inputs to fine tune motor activity. Helps maintain balance.</i>
Thalamus	<i>Switch board for senses except smell</i>
Basil ganglia	<i>Links the thalamus with the motor cortex and other motor areas; involved in reward/punishment learning and focus</i>
Hypothalamus	<i>Controls autonomic functions such as body temperature and heart rate via control of the sympathetic and parasympathetic nervous system in the medulla Sets appetitive drives (thirst, hunger, sexual desire) Helps determine biological rhythms, such as the menstrual cycle. Integrates with endocrine system by secretion of hormones that regulate hormones from pituitary gland</i>
Amygdala	<i>Influences aggression and fear/coordinates fight or flight response. Important in formation of sensory memory</i>
Hippocampus	<i>Enables formation of long term memory</i>
Cerebral cortex	<i>Receives and processes sensory information and directs movement Center for higher processes such as thinking, planning, judgment</i>
Pituitary Gland	<i>Master gland</i>