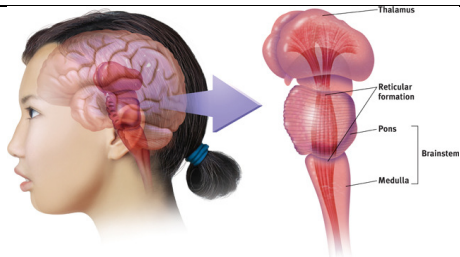
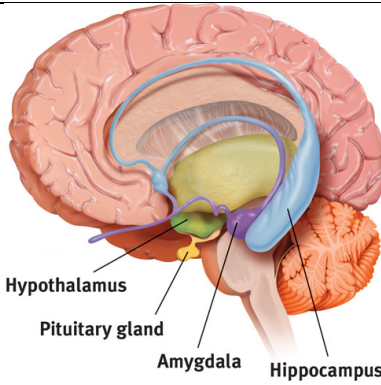
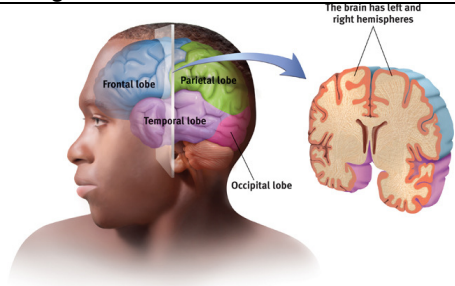
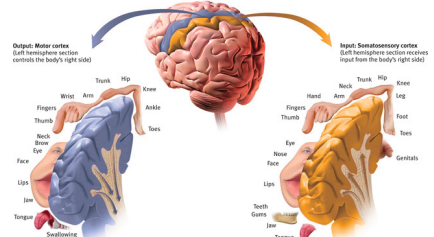
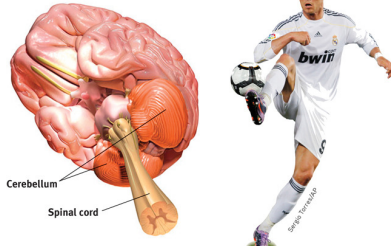
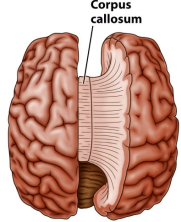


Summary of the Major Brain Structures

Brain Stem	Limbic System	The Cerebral Cortex
<p>The oldest part of the central core of the brain, beginning where the spinal cord swells as it enters the skull; the brainstem is responsible for automatic survival functions.</p>	<p>Neural system located below the cerebral hemispheres; associated with emotions and drives.</p>	<p>The intricate fabric of the interconnected neural cells covering the cerebral hemispheres; the body's ultimate control and information-processing center.</p>
		
<p>Figure 2.15, page 69</p>	<p>Figure 2.18, page 71</p>	<p>Figure 2.23, page 75</p>
		
		<p>Figure 2.24, page 76</p>
		
<p>Figure 2.17, page 70</p>		<p>(not from your textbook)</p>

Brain stem	Limbic System	Cerebral Cortex
<ul style="list-style-type: none"> • <u>Medulla</u> The base of the brainstem; controls heartbeat and breathing. • <u>Pons</u> Helps coordinate movements and controls sleep. • <u>Thalamus</u> The brain's sensory control center, located on top of the brainstem; it directs messages to the sensory receiving areas in the cortex and transmits replies to the cerebellum and medulla. • <u>Reticular Formation</u> A nerve network that travels through the brainstem into the thalamus and plays an important role in controlling arousal. • <u>Cerebellum</u> The "little brain" at the rear of the brainstem; functions include processing sensory input, coordinating movement output and balance, and enabling nonverbal learning and memory. 	<ul style="list-style-type: none"> • <u>Amygdala:</u> Two lima-bean-sized neural clusters in the limbic system; linked to emotion. • <u>Hypothalamus (under thalamus)</u> A neural structure lying below the thalamus; it directs several maintenance activities (eating, drinking, body temperature), helps govern the endocrine system via the pituitary gland, and is link to emotion and reward. • <u>Hippocampus:</u> A neural center located in the limbic system; helps process explicit memories for storage. 	<ul style="list-style-type: none"> • <u>Frontal Lobes:</u> Portion of the cerebral cortex lying just behind the forehead; involved in speaking and muscle movements and in making plans and judgments. <ul style="list-style-type: none"> ○ Broca's area • <u>Parietal Lobes:</u> Portion of the cerebral cortex lying at the top of the head and toward the rear; receives sensory input for touch and body position. • <u>Occipital Lobes:</u> Portion of the cerebral cortex lying at the back of the head; includes areas that receive information from the visual fields. • <u>Temporal Lobes:</u> Portions of the cerebral cortex lying roughly above the ears; includes the auditory areas, each receiving information primarily from the opposite ear. <ul style="list-style-type: none"> ○ Wernicke's areas • <u>Motor cortex:</u> An area at the rear of the frontal lobes that controls voluntary movements • <u>Somatosensory cortex:</u> Area at the front of the parietal lobes that registers and processes body touch and movement sensations. • <u>Association areas:</u> Areas of the cerebral cortex that are not involved in primary motor or sensory functions; rather, they are involved in higher mental functions such as learning, remembering, thinking, and speaking. • <u>Corpus callosum:</u> The large band of neural fibers connecting the two brain hemispheres and carrying messages between them.