

Amygdaloid body) is commonly referred to as the *amygdala* system, the cerebrum, and various sensory systems. It plays a role in regulating heart rate, in responding to fear and anxiety and controlling the “fight or flight” response by the sympathetic division of the ANS, and linking emotions with specific memories.

Limbic lobe) consists of superficial folds, or *gyri*, and underlying structures adjacent to the diencephalon. There are 3 gyri in the limbic lobe. The **dentate gyrus** and the **parahippocampus** form the posterior and inferior portions of the limbic lobe.

Cingulate gyrus) sits superior to the corpus callosum.

The **dentate gyrus** and the **parahippocampus** form the posterior and inferior portions of the limbic lobe. These gyri conceal the....

Hippocampus) a nucleus inferior to the floor of the lateral ventricle. This nucleus is important in learning, especially in the storage and retrieval of new long-term memories.

Fornix) (arch). Is a tract of white matter that connects the hippocampus with the hypothalamus.

The cerebrum, the largest region of the brain, contains motor, sensory, and association areas

Conscious thought and all intellectual functions originate in the cerebral hemispheres. Much of it is involved in processing sensory and motor information.

Grey matter in the cerebrum is located in the *cerebral cortex* and in deeper *basal nuclei*.

The white matter of the cerebrum lies deep to the cerebral cortex and around the basal nuclei.

The Cerebral Cortex

A layer of cerebral cortex ranging from 1-4.5mm thick covers the paired cerebral hemispheres, which dominate the superior and lateral surfaces of the cerebrum.

Longitudinal fissure) almost completely separates the 2 cerebral hemispheres.

Central sulcus) is a deep groove on each hemisphere that divides the anterior **frontal lobe** from the more posterior **parietal lobe**.

Lateral sulcus) is horizontal and it separates the frontal lobe from the **temporal lobe**.

Anatomy of the Basal Nuclei

Basal nuclei) are masses of gray matter that lie within each hemisphere deep to the floor of the lateral ventricle. They are embedded in the white matter of the cerebrum.

Caudate nucleus) have a massive head and a slender, curving tail that follows the curve of the lateral ventricle. The head of this nucleus lies anterior to the.....

Lentiform nucleus) the nucleus consists of a medial **globus pallidus** and a lateral **putamen**.

Functions of the Basal Nuclei

The basal nuclei are involved in the subconscious control of skeletal muscle tone and the coordination of learned movement patterns. They do not initiate the movement but provide the rhythm

Examples:

- when you walk, the basal nuclei control the cycle of arm and thigh movements that occur between the time you decide to “start” walking and the time you give the “stop” order.
- As you begin voluntary movement, the basal nuclei control and adjust muscle tone, particularly in the appendicular muscles, to set your body position.

Motor and Sensory Areas of the Cortex

The central sulcus separates the motor and sensory areas of the cortex.

Precentral gyrus) of the frontal lobe forms the anterior border of the central sulcus. The surface of this gyrus is the **primary motor cortex**.

Neurons of the primary motor cortex direct voluntary movements by controlling somatic motor neurons in the brain and spinal cord

These cortical neurons are called **pyramidal cells** because their cell bodies resemble little pyramids.

Postcentral gyrus) of the parietal lobe forms the posterior border of the central sulcus, and its surface contains the **primary sensory cortex**.

Sensations of sight, sound, smell, and taste arrive at other portions of the cerebral cortex.

Visual cortex) of the occipital lobe receives visual info.

Auditory cortex and the Olfactory cortex) of the temporal lobe receive info about hearing and smell, respectively.

Gustatory cortex) receives info from taste receptors of the tongue and pharynx, and lies in the anterior portion of the insula and adjacent portions of the frontal lobe.

Glossopharyngeal nerves (IX)	Primary function: Mixed (sensory and motor) to head and neck Origin: <i>Sensory:</i> posterior 1/3 of the tongue, part of the pharynx and palate, carotid arteries of the neck. <i>Motor:</i> motor nuclei of medulla oblongata Pass through: Jugular foramina between the occipital bone and the temporal bones Destination: <i>Sensory:</i> sensory nuclei of medulla oblongata. <i>Somatic motor:</i> pharyngeal muscles involved in swallowing. <i>Visceral motor:</i> parotid salivary gland by way of the otic ganglion
Vagus nerves (X)	Primary function: Mixed (sensory and motor), widely distributed in the thorax and abdomen Origin: Pass through: Destination:
Accessory nerves (XI)	Primary function: Origin: Pass through: Destination:
Hypoglossal nerves (XII)	Primary function: Origin: Pass through: Destination:

preview from Notesale.co.uk page 21 of 21 14-19 **Cranial reflexes involve sensory and motor fibers of cranial nerves**

Cranial reflexes are autonomic responses to stimuli that involve the sensory and motor fibers of cranial nerves. They include both monosynaptic and polysynaptic reflex arcs.

These reflexes are used to check for damage to the cranial nerves.

Related Clinical Terms

migraine: type of headache by severe debilitating head pain lasting several hours or longer

myoclonus: a quick, involuntary muscle jerk or contraction; persistent myoclonus usually indicates a nervous system disorder

pallidectomy: the destruction of all or part of the globus pallidus by chemicals or freezing

prosopagnosia: the inability to recognize other humans by their faces

psychosis: severe mental disorder in which thought and emotions are so impaired that contact with reality is lost

stupor: a state of near-unconsciousness or insensibility

(TIA) transient ischemic attack: an episode in which a person has stroke-like symptoms that last less than 24hrs and result in no permanent injury to the brain, but may be a warning sign of the potential for a major stroke