

# TELENCEPHALON

1/7/82, 6 Jan 00, 6 Jan 03, 7 Jan 04, 5 Jan 05, 14Jan09, 26Jan09, 25Jan10, 12Jan11  
 S&M: 299-321, Martini's 5<sup>th</sup>: 436-439, 445-454, 6<sup>th</sup>: 483-492, 7<sup>th</sup> 452-471, 8<sup>th</sup>: 480-487, 9<sup>th</sup>: 463-475

## TELENCEPHALON: (p 469)

3D brain: <http://www.g2conline.org/2022>

largest portion of brain, consists of

- R and L hemispheres of cerebrum**
- corpus callosum**
- lateral ventricles** within each

**Fissures and sulci** divide brain into lobes, named for overlying cranial bones:  
**frontal, parietal, temporal occipital**

**Lobes:** 1) connected to opposite side of body  
 2) hemispheres have different func'ns  
 3) plasticity of function. Diffuse

(P. 470):

- longitudinal fissure** down middle, two hemispheres connected by **corpus callosum**
- central sulcus** (fissure of Rolando) **precentral gyrus** (motor) and **postcentral gyrus** (sensory) on either side
- lateral fissure** (fissure of Sylvius) between temporal and frontal lobes
- parieto-occipital sulcus** less distinct, clearer medially

**Insula**, "fifth lobe," deep in lateral fissure (**gustatory center**).

**Basal Nuclei (Ganglia) (p. 471):** Unconscious motor commands, adjust muscle tone coordination of learned movement patterns (inhibits opposing muscles)  
 masses of grey matter deep within cerebral hemisphere, below ventricles

- caudate nucleus** head & "tail" arch links amygdala to globus pallidus
- amygdala** part of limbic system, links memories to emotions
- claustrum** (barrier) just inside grey matter of insula
- lentiform nucleus:**
  - a) putamen and communicates to thalamus
  - b) globus pallidus: to cerebrum

the **extrapyramidal system** coordinates, refines motor function by inhibition:  
 basal nuclei inhibited by **dopamine** which is released from substantia nigra

**Parkinson PT** lack dopamine: difficult to initiate movement because opposing muscles not inhibited, jerky motion.

## FUNCTIONS OF REGIONS OF THE CEREBRUM:

**PRIMARY MOTOR CORTEX: precentral gyrus.** Arrangement: toe deep in longitudinal fissure, mouth most lateral

**Pyramidal tracts:** cell bodies of motor neurons pyramid shaped, located in **precentral gyrus**

**Broca's area:** ability to speak, frontal lobe along lateral fissure, just behind prefrontal cortex.

## PRIMARY SENSORY CORTEX:

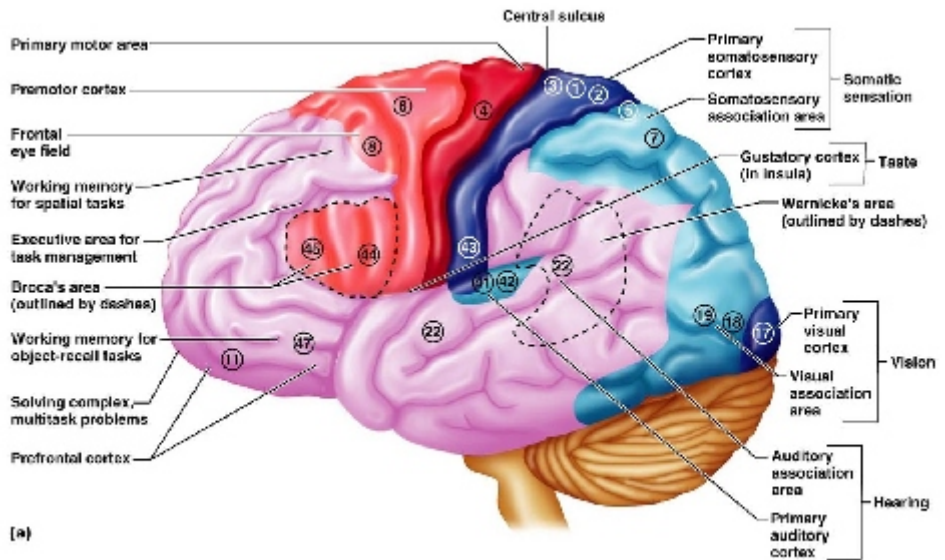
**postcentral gyrus:** termination of **somatic** sensory pathways (touch, pressure, pain, vibration, taste, temperature)

**Other cortical sensory areas:** (page 473)

- occipital lobe** posterior portion visual area
- temporal lobe** upper margin auditory area
- temporal lobe** medial surface olfactory
- parietal lobe** deep near insula taste

Each surrounded by association areas which assign meaning to sensory patterns received.

**Gyri:** rounded ridges on cerebrum, divided by **fissures**, or **sulcus** if shallow  
 Unique like fingerprints.  
 Increases surface area of brain to 2.5 sq feet, makes room for more neurons.



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