

TELENCEPHALON

1/7/82, 6 Jan 00, 6 Jan 03, 7 Jan 04, 5 Jan 05, 14Jan09, 26Jan09, 25Jan10, 12Jan11, 01Dec15
 S&M: 299-321, Martini's 5th: 436-439, 445-454, 6th: 483-492, 7th 452-471, 8th: 480-487, 9th: 463-475, 10th: 482-491

TELENCEPHALON: (p 483) Excel'nt 3D brain: <http://www.g2conline.org/2022>

largest portion of brain, consists of

- R and L hemispheres of cerebrum**(?dif)
- corpus callosum**
- lateral ventricles** within each

Fissures and sulci divide brain into **lobes**,

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

Named for overlying cranial bones:

frontal, parietal, temporal occipital

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.

longitudinal fissure down middle, two hemispheres connected by **corpus callosum**

central sulcus (fissure of Rolando) **precentral gyrus** (primary motor) and **postcentral gyrus** (somatosensory) 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. 485): 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

its **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. (levodopa treatment)

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.

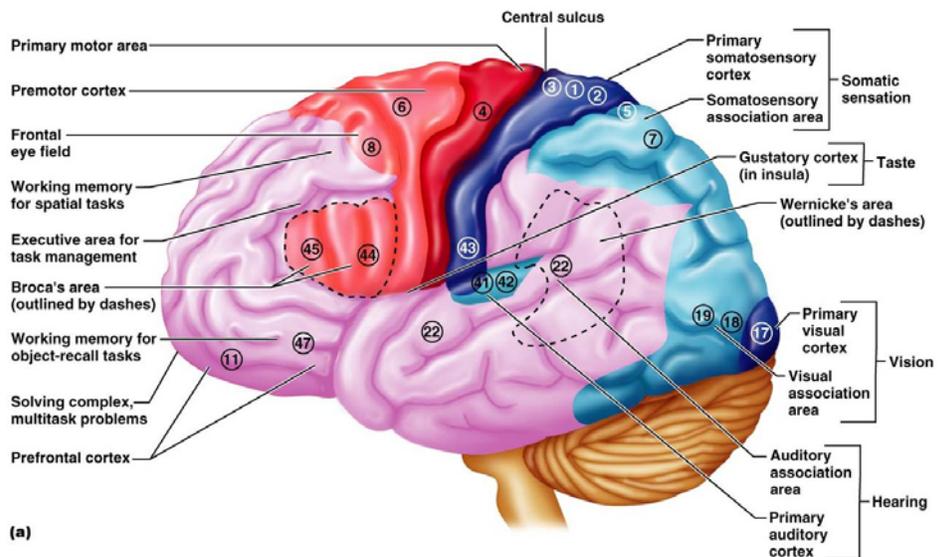
PRIMARY SENSORY CORTEX:

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

Other cortical sensory areas: (page 486) (remember plasticity: regions flexible)

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

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



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