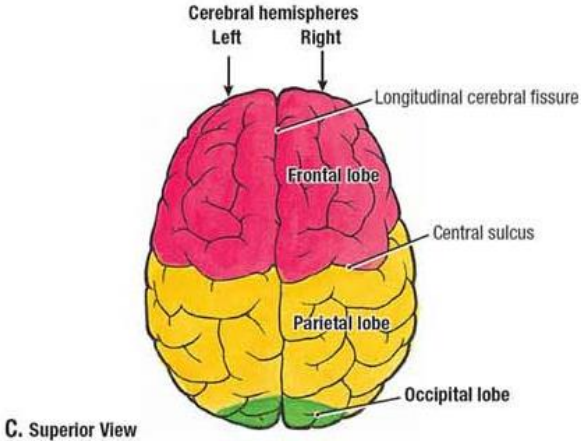
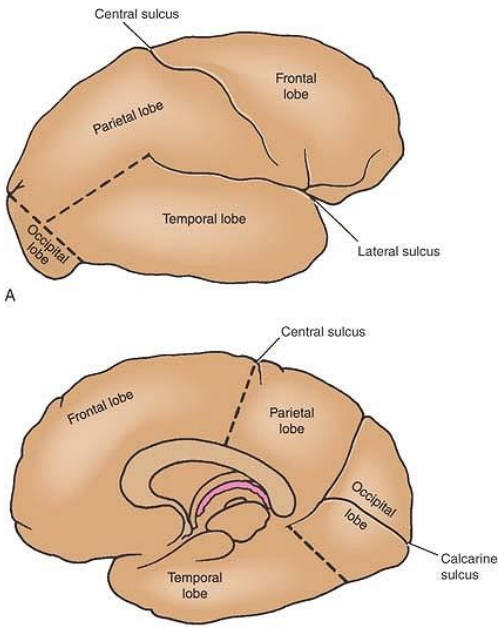
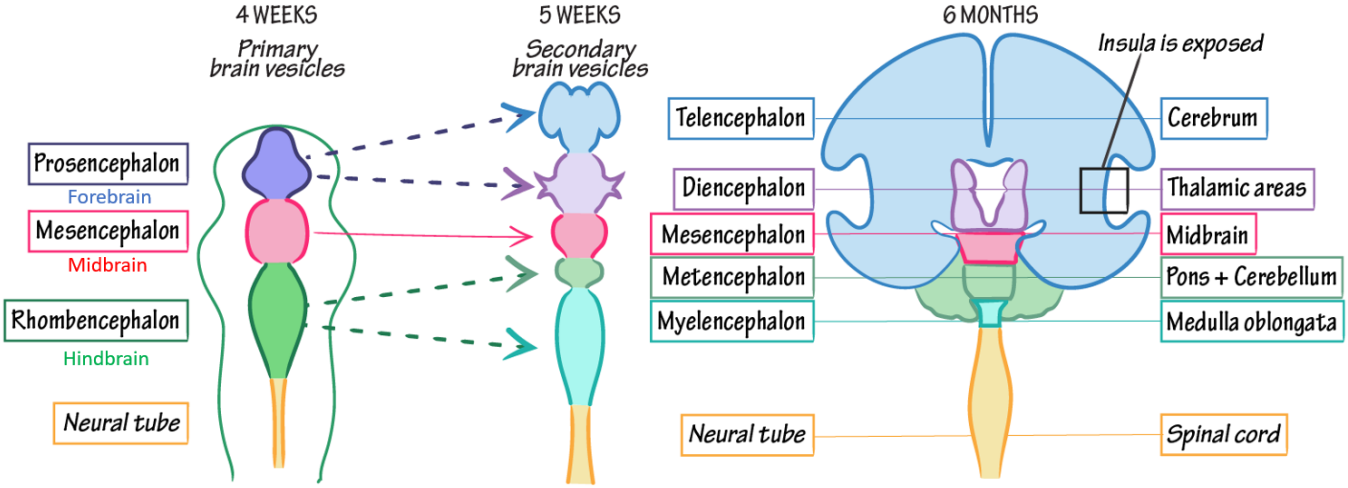
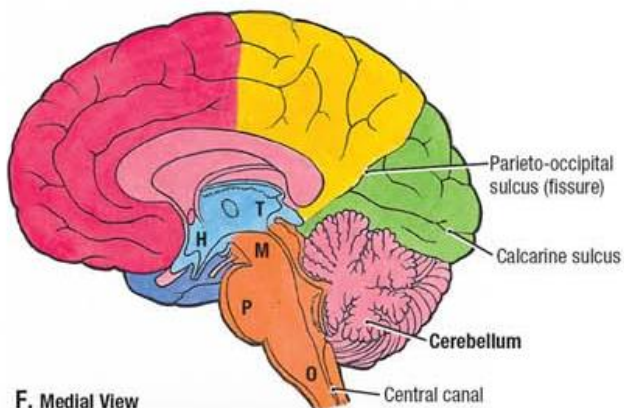
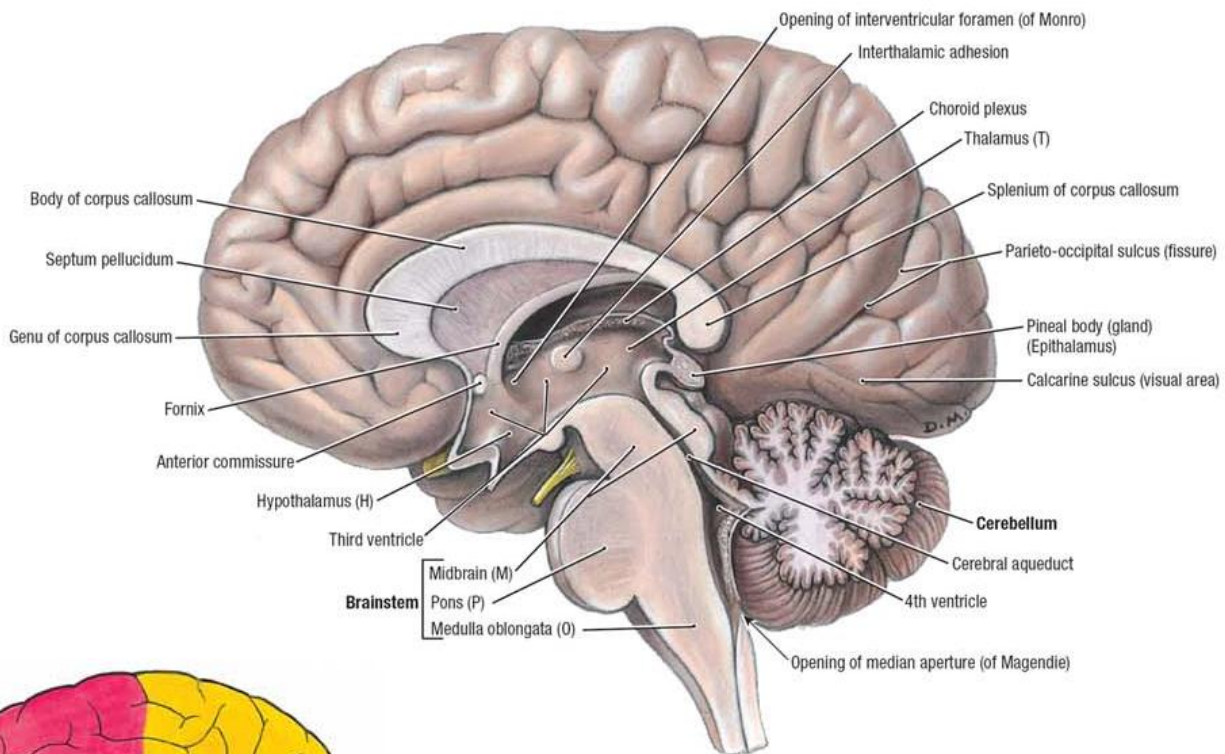
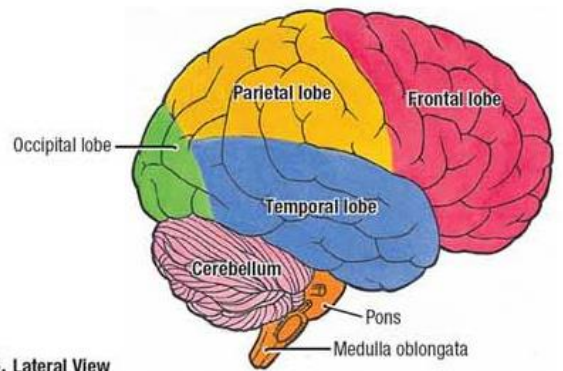
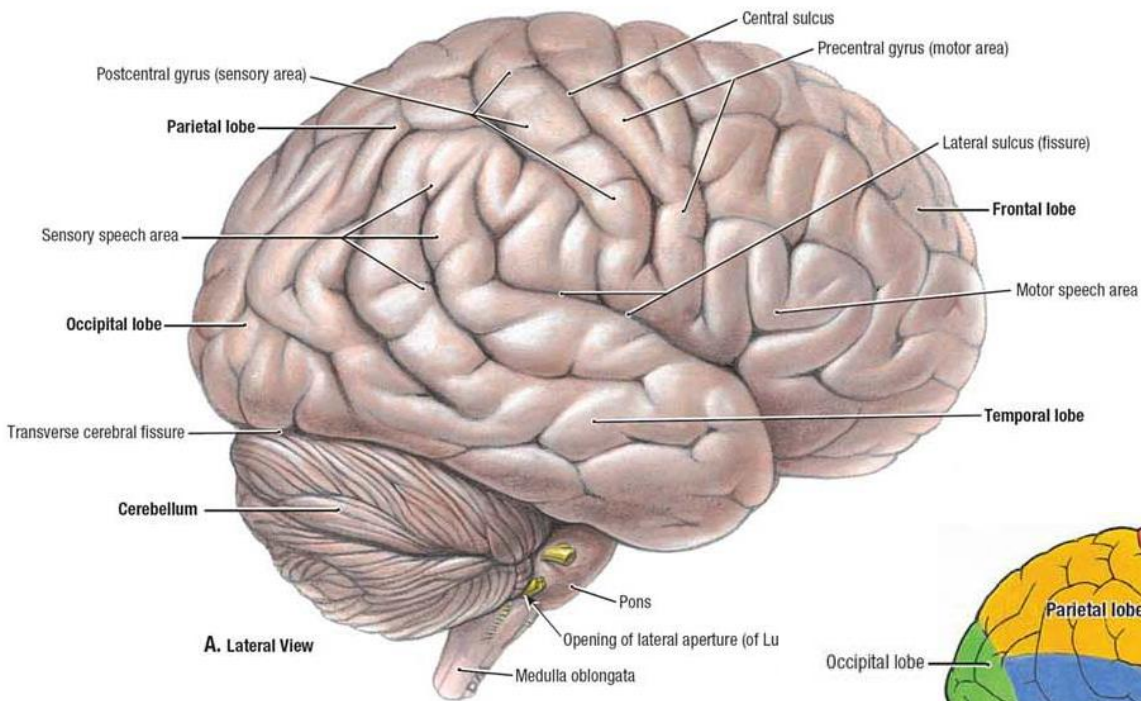
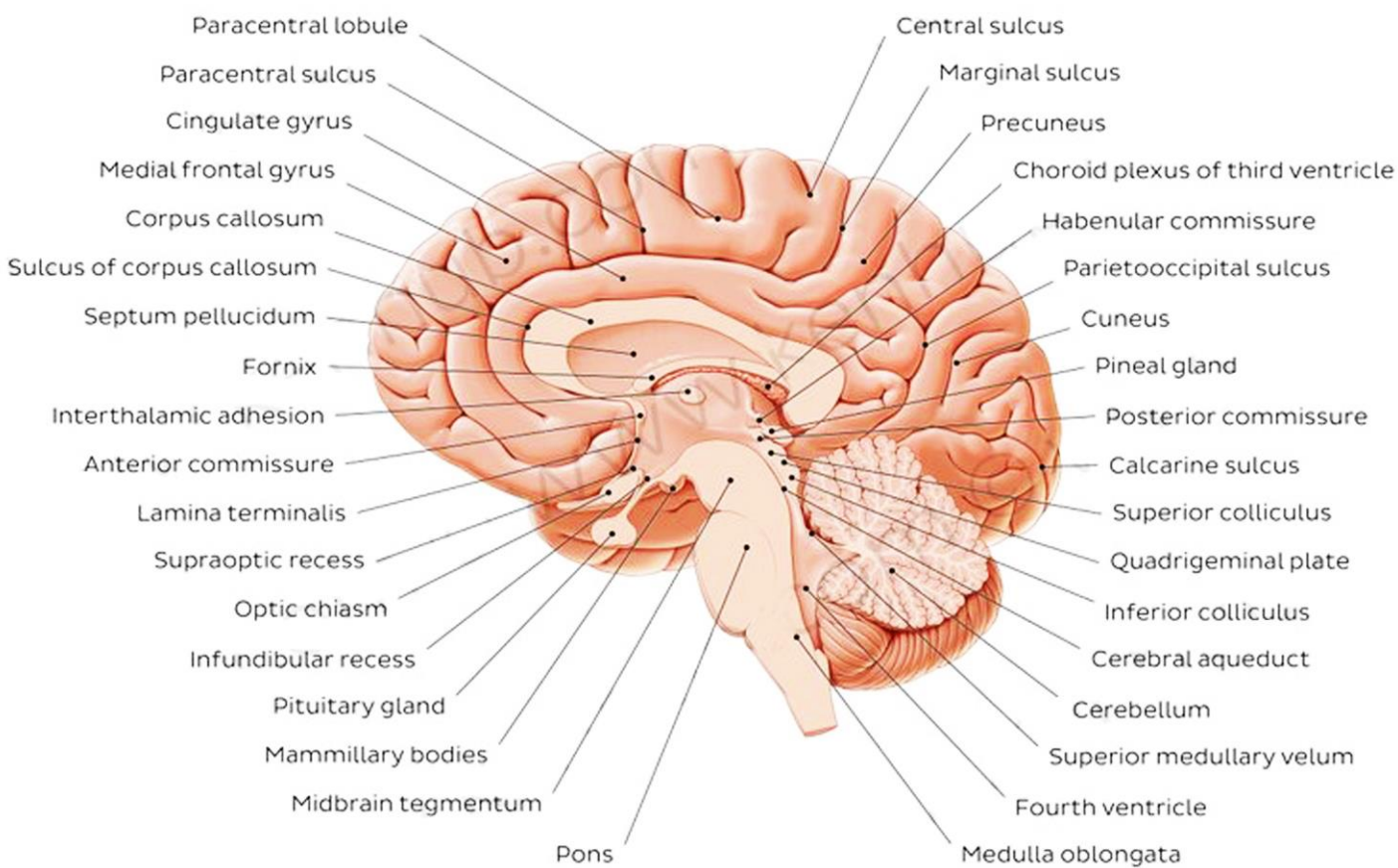
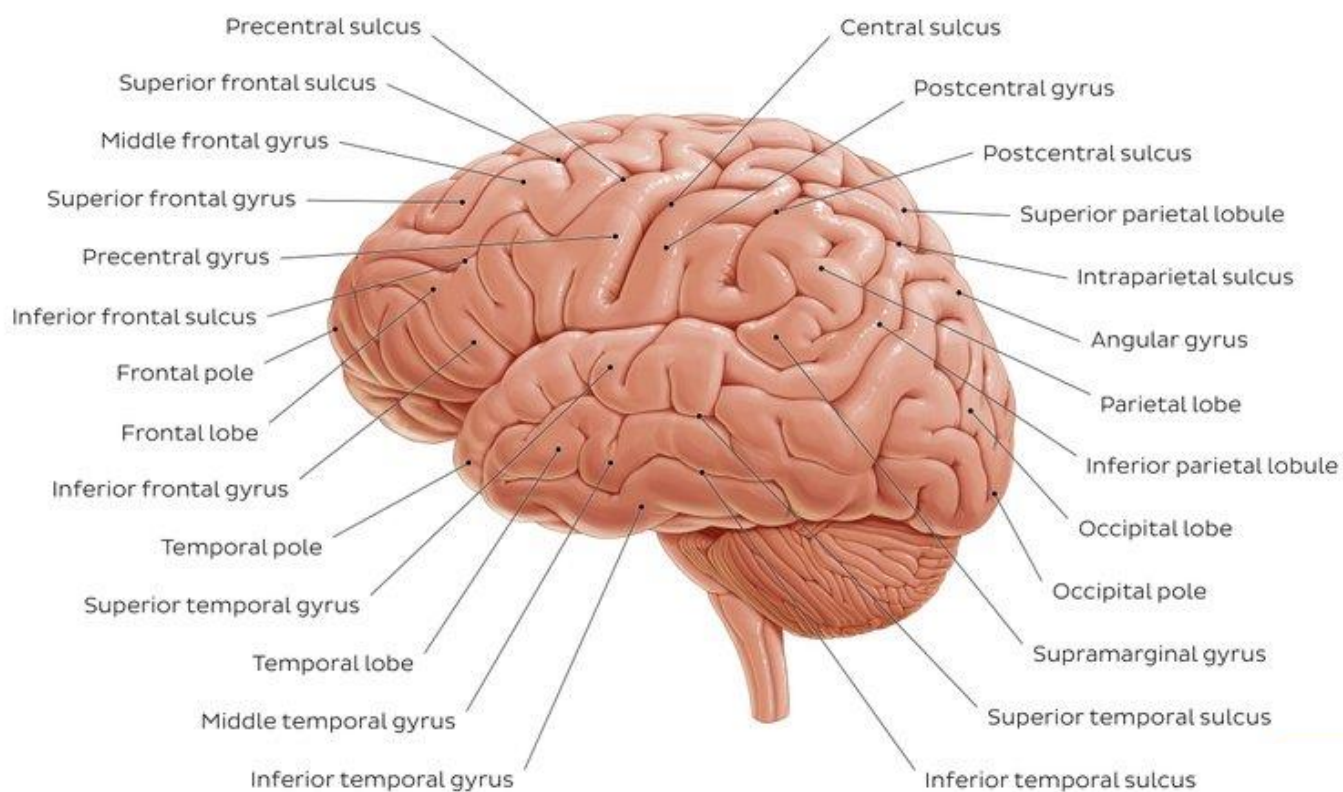


Cerebral Hemispheres

CORONAL VIEW







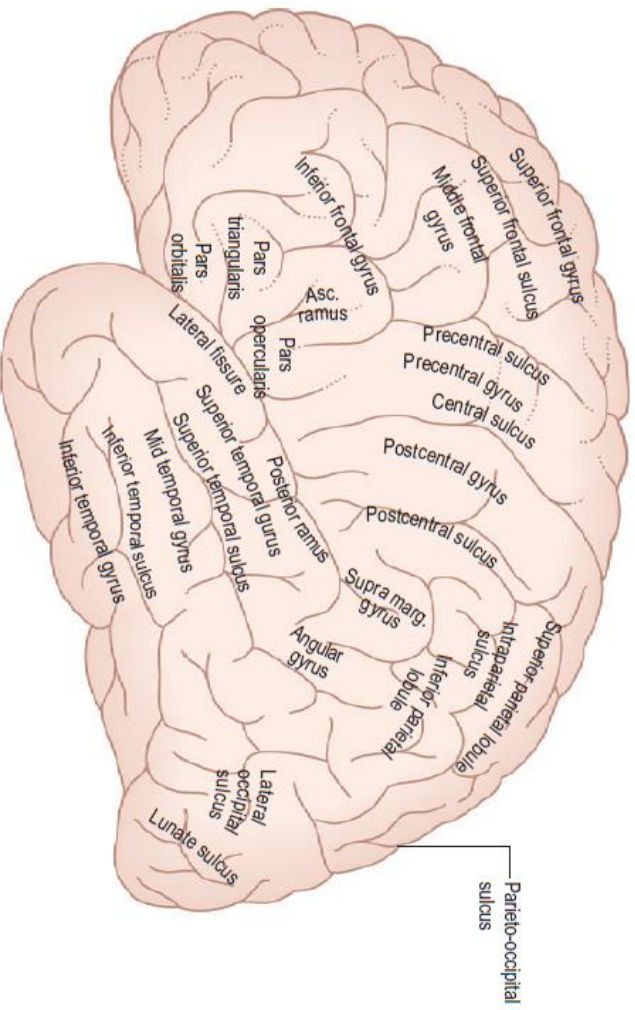


Fig. 16.1 Lateral aspect of the left cerebral hemisphere indicating the major gyri and sulci.

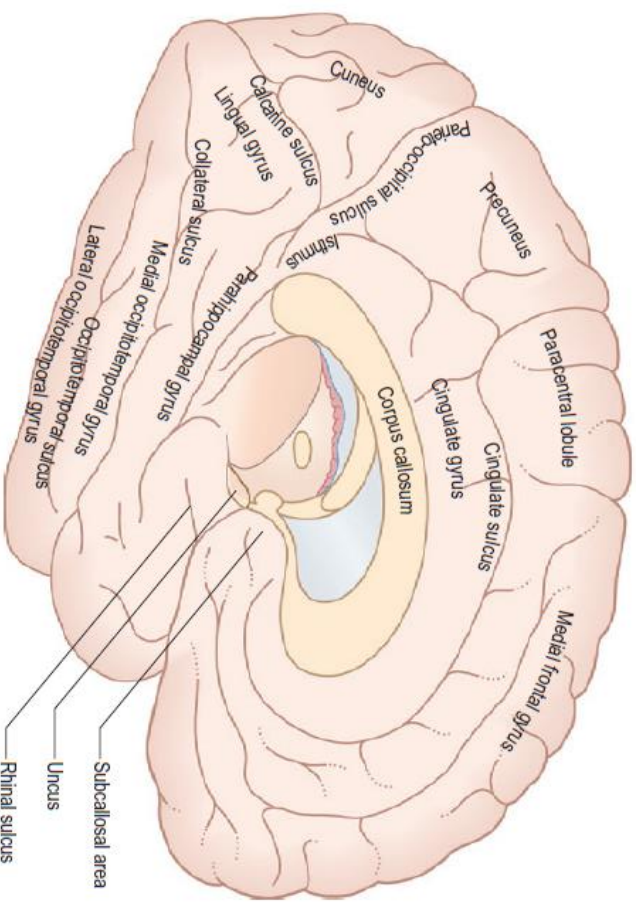


Fig. 16.2 Sagittal section of the brain, with the brain stem removed, showing the medial aspect of the left cerebral hemisphere.

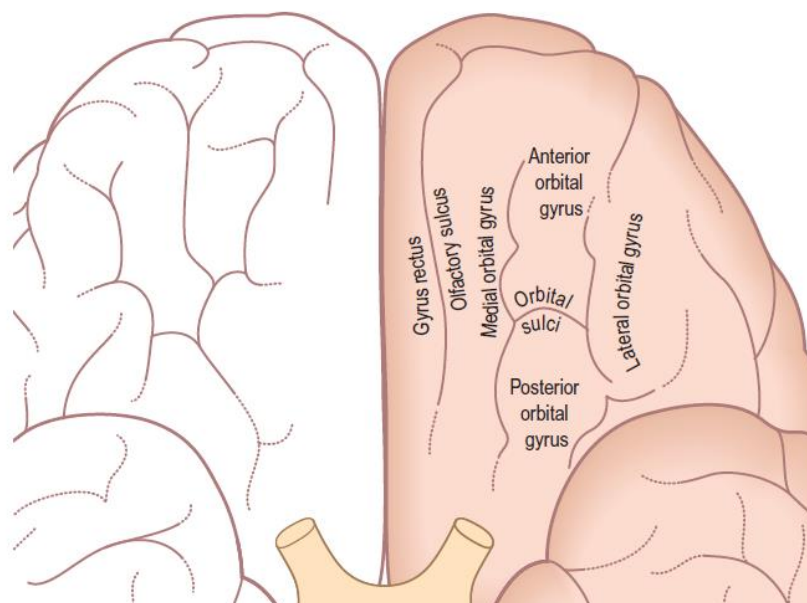
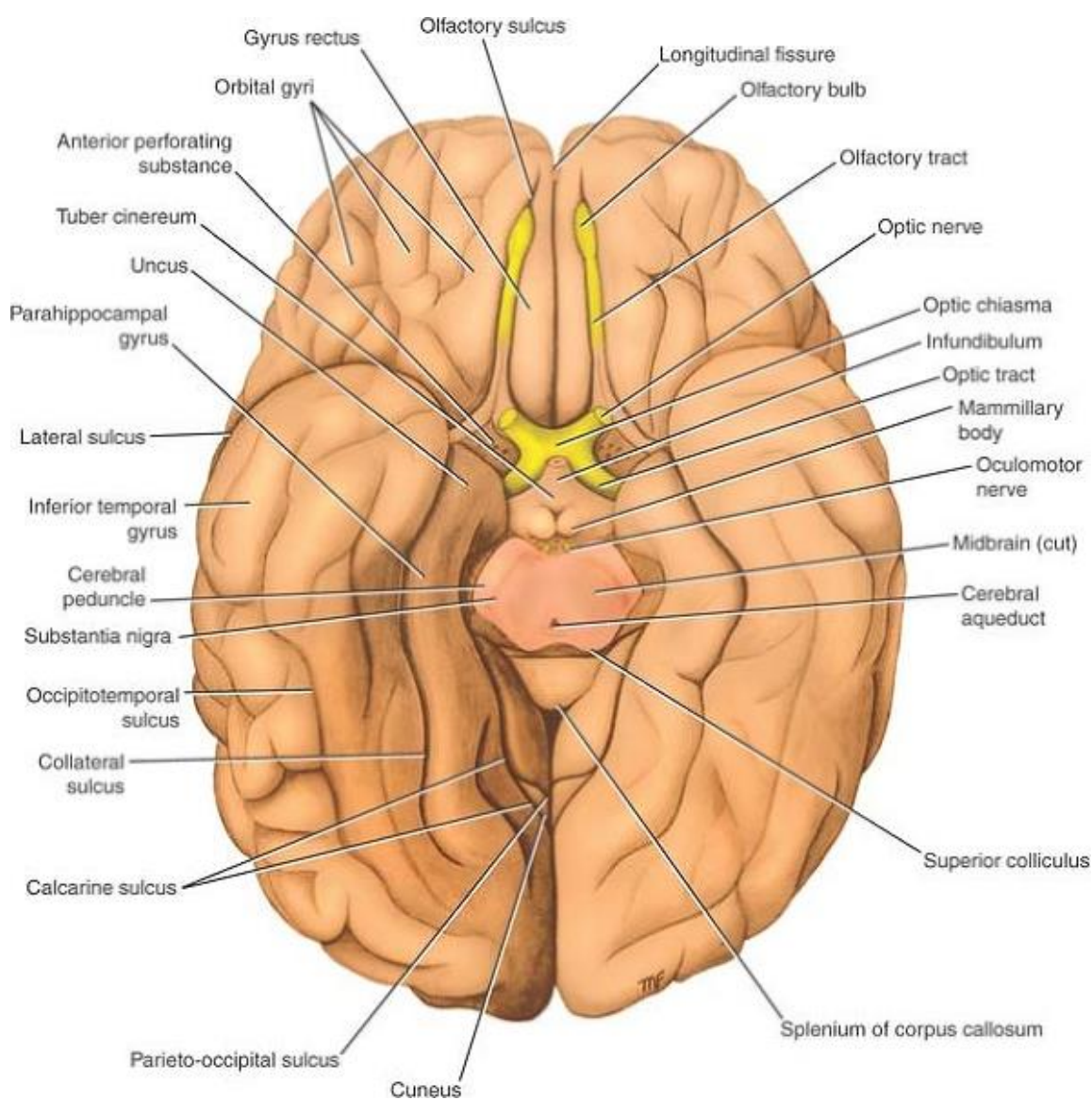
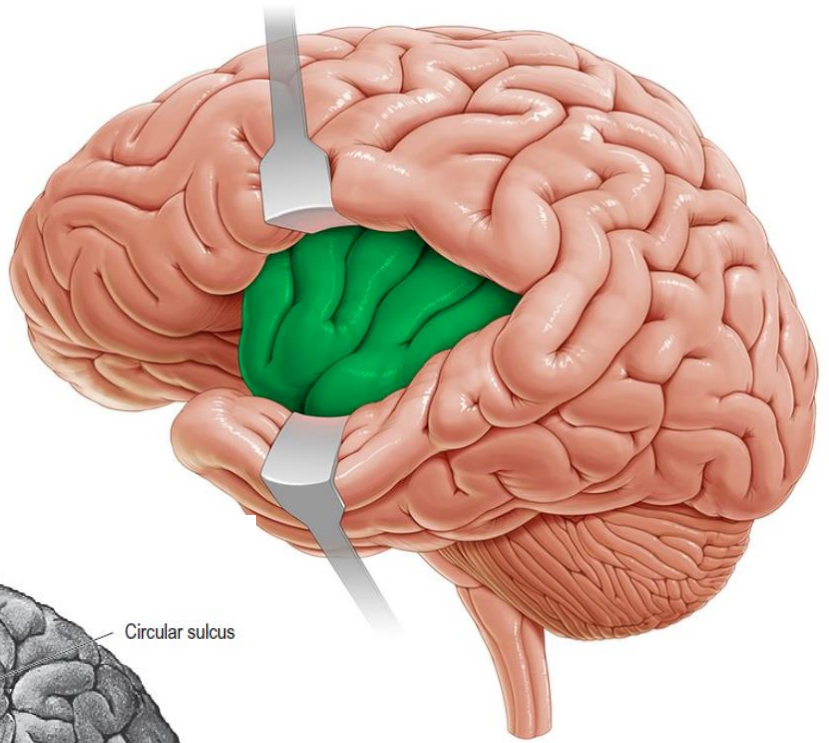
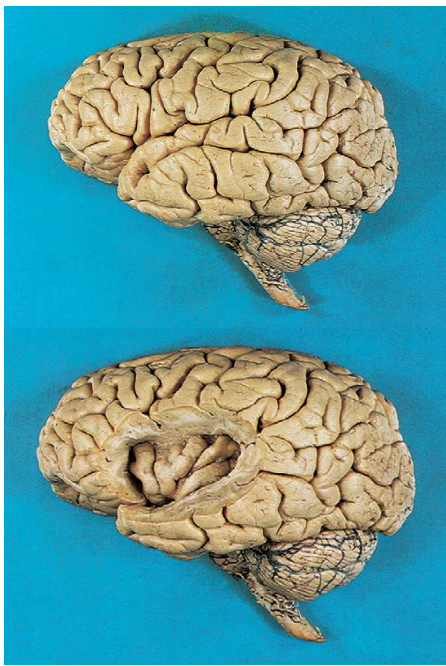


Fig. 16.6 Orbital surface of the left frontal lobe.





The insula

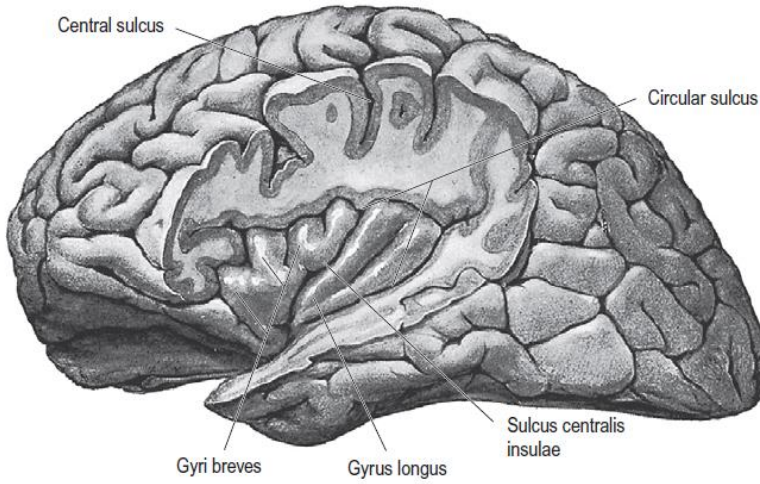


Fig. 16.19 The insula, exposed by removal of the opercula.

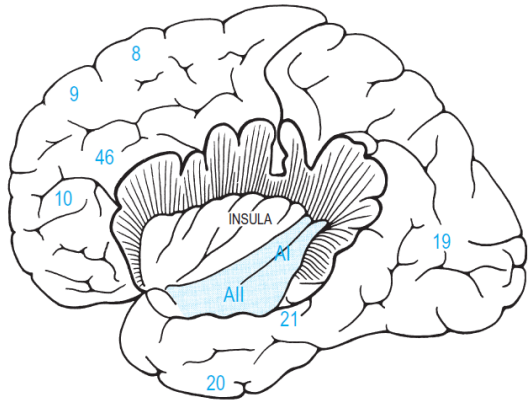


Fig. 16.18 Lateral aspect of the left cerebral hemisphere. The opercula have been cut away to expose the insula and the adjoining anterior and posterior transverse temporal gyri and their continuity with the superior temporal gyrus.

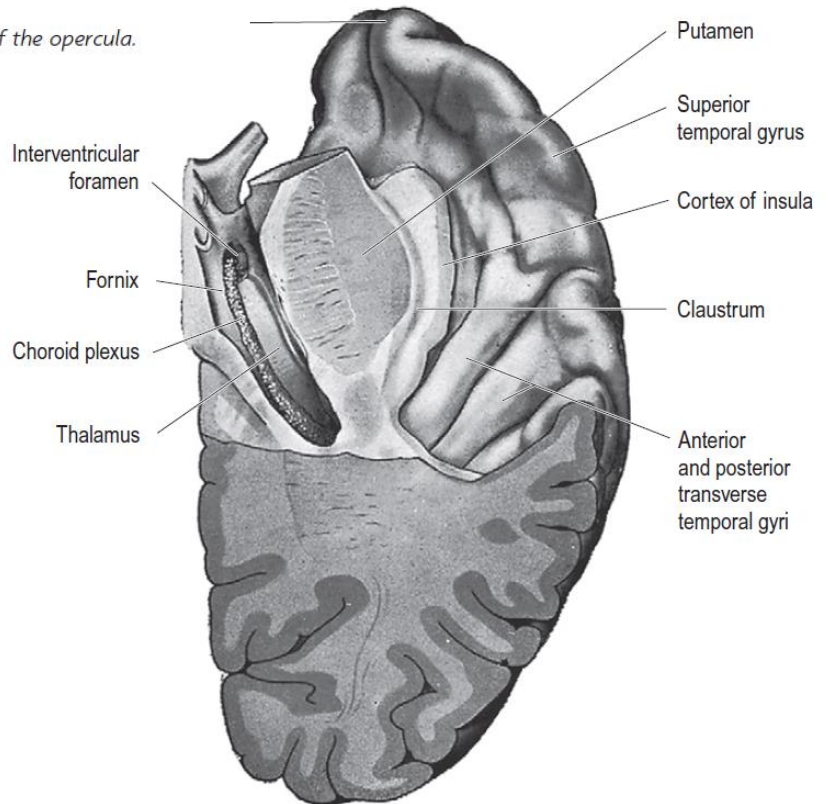
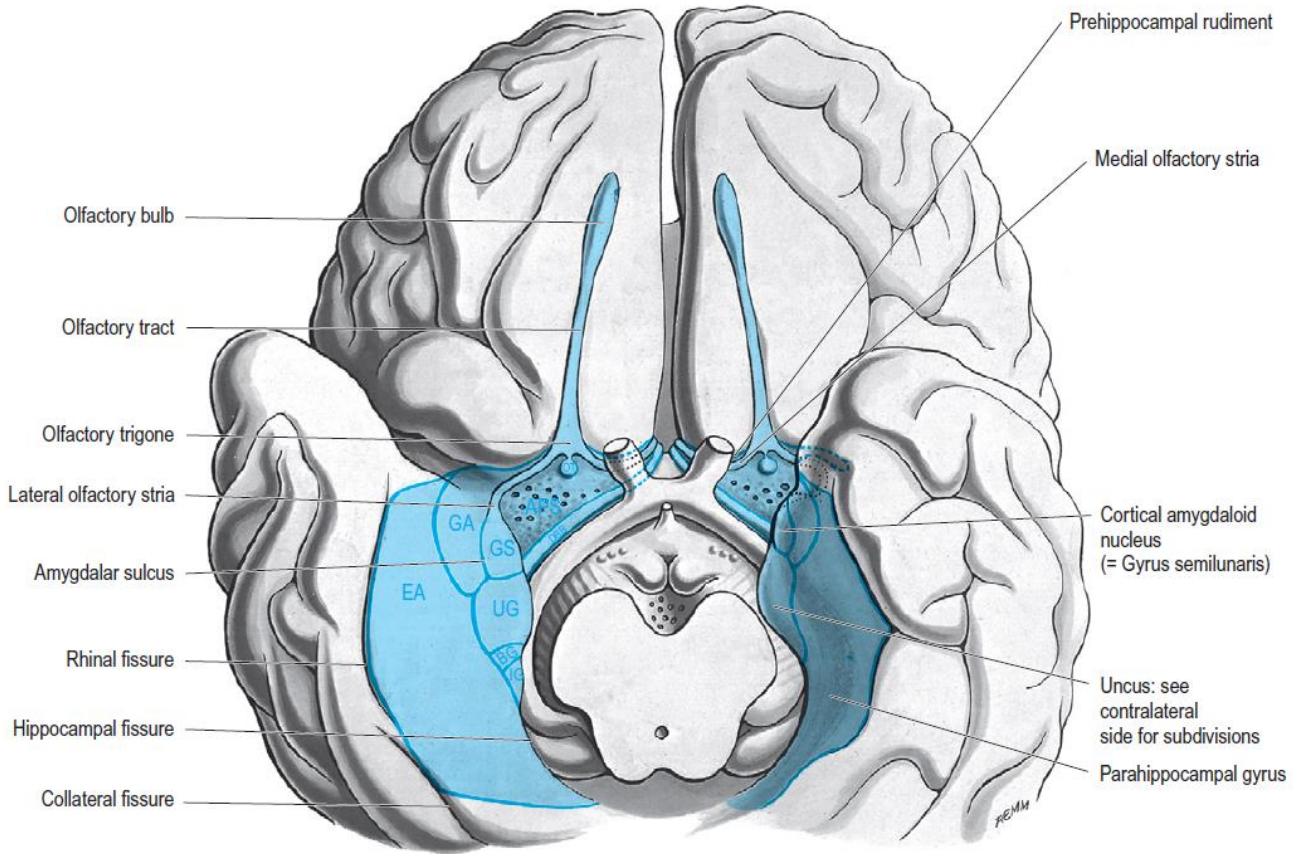
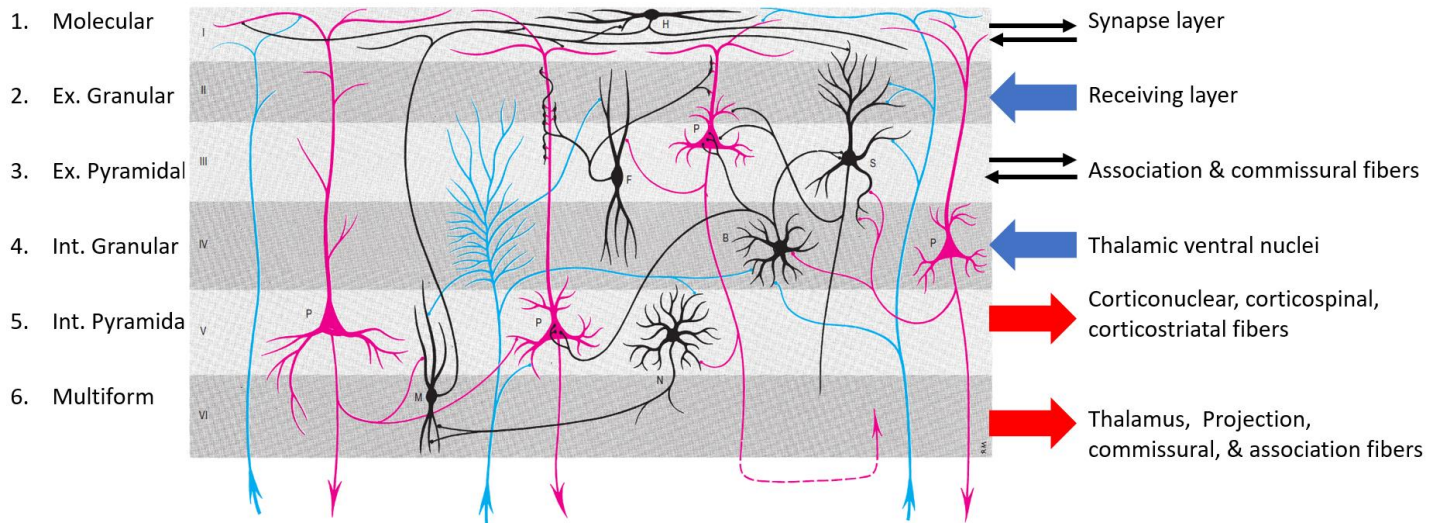
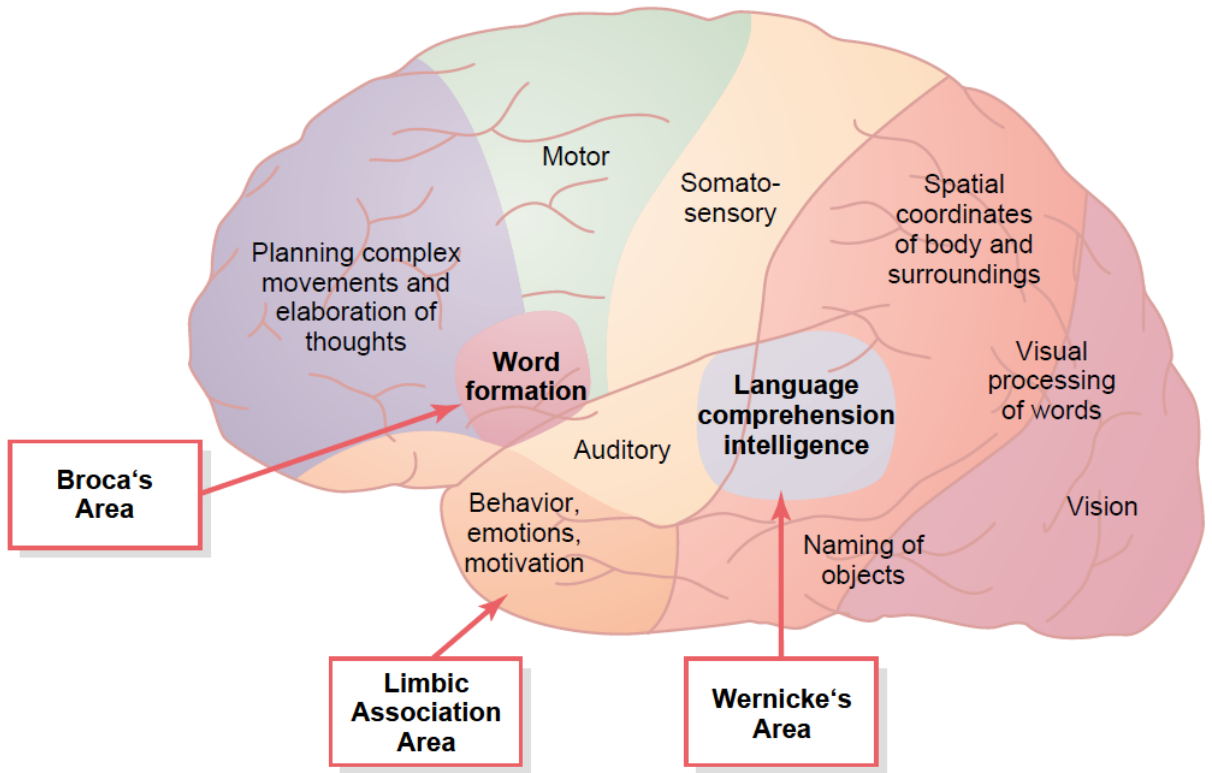


Fig. 16.17 Horizontal section showing the left temporal lobe, viewed from below.

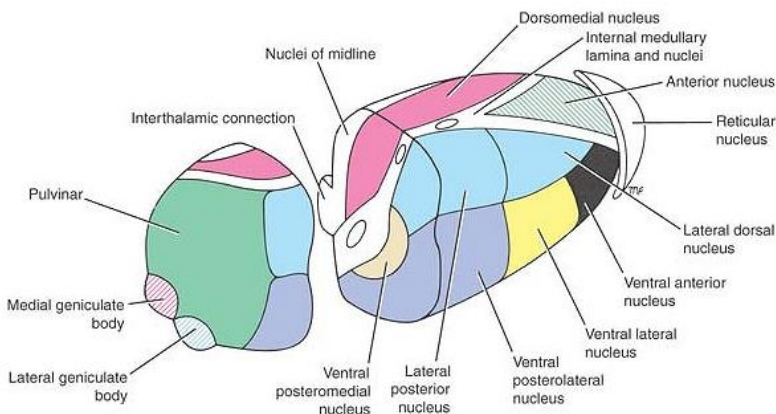
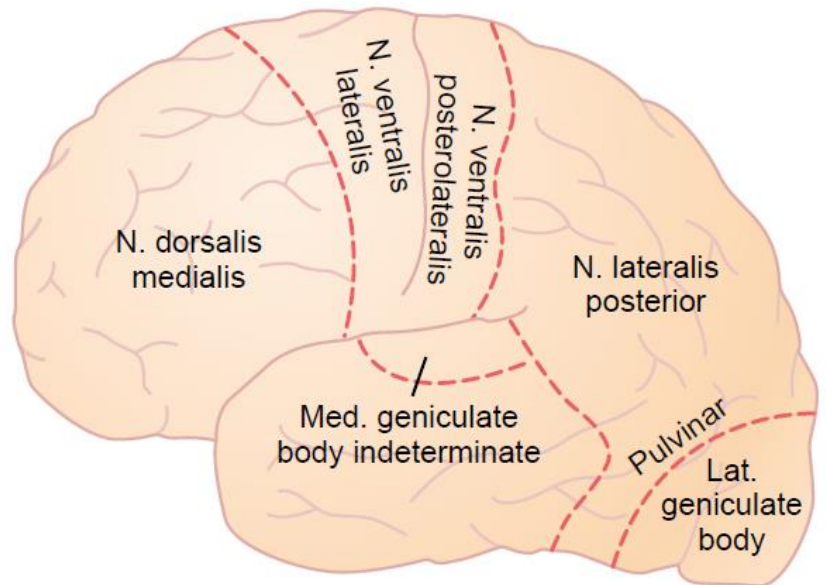


Cerebral Cortex Layers





Thalamic Connections



Brodmann's areas

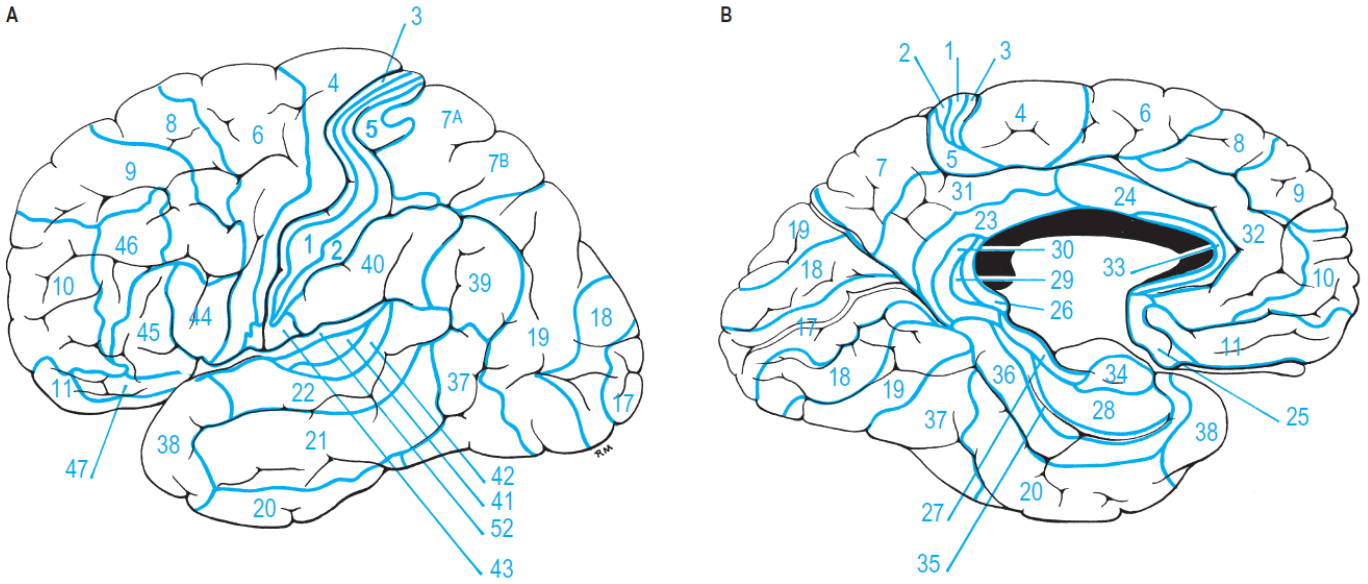
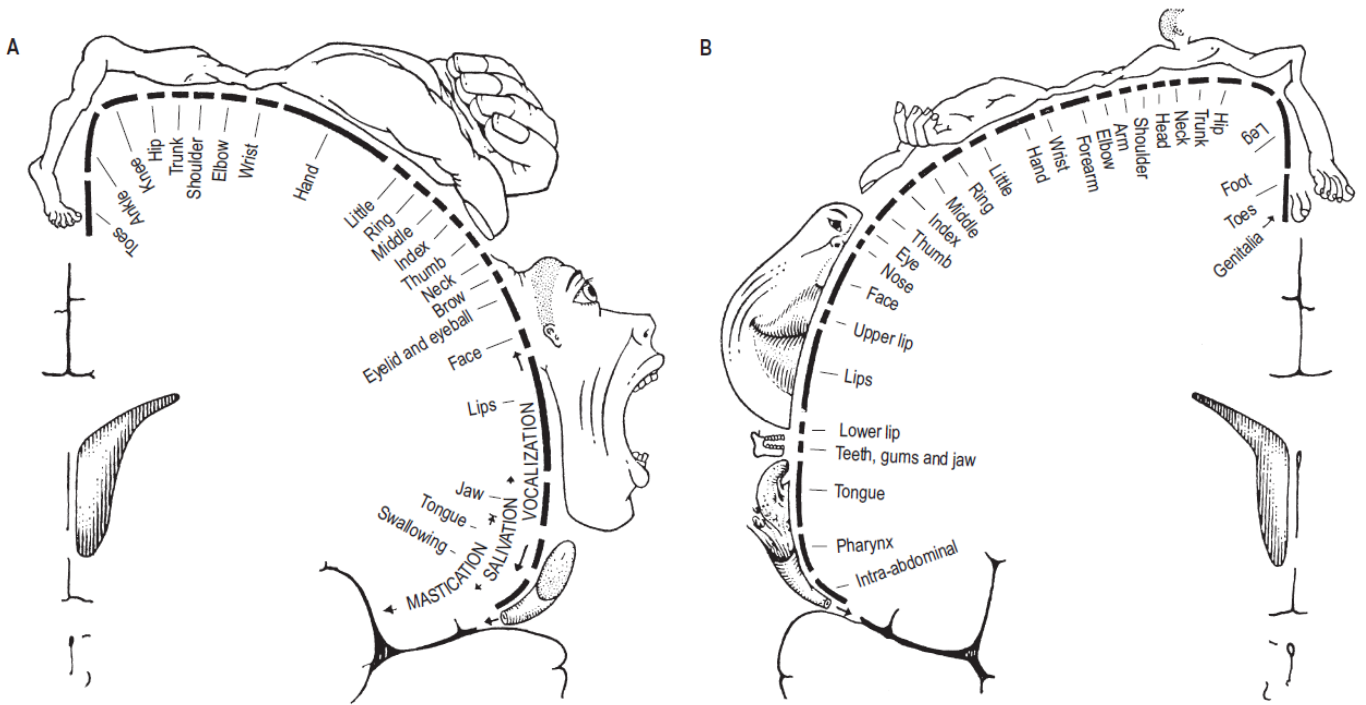


Fig. 16.12 Lateral (A) and medial (B) surfaces of the left cerebral hemisphere depicting Brodmann's areas.



Motor homunculus

Sensory homunculus

Motor Cortex, speech areas, & visual areas

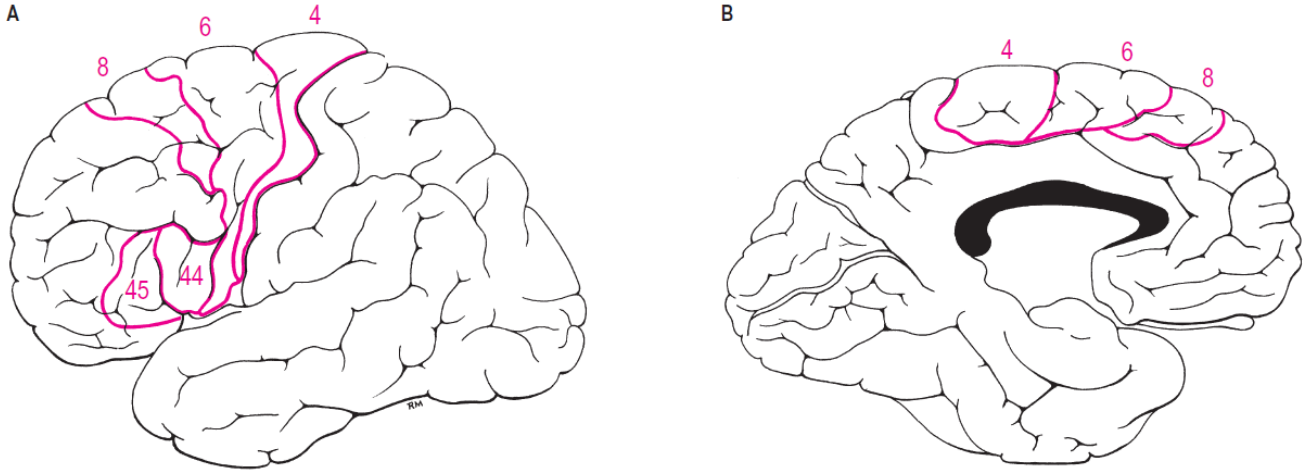


Fig. 16.14 Lateral (A) and medial (B) surfaces of the left cerebral hemisphere showing the approximate correspondence of Brodmann's areas to the primary motor cortex (area 4), premotor areas (areas 6 and 8) and motor speech areas (areas 44 and 45).

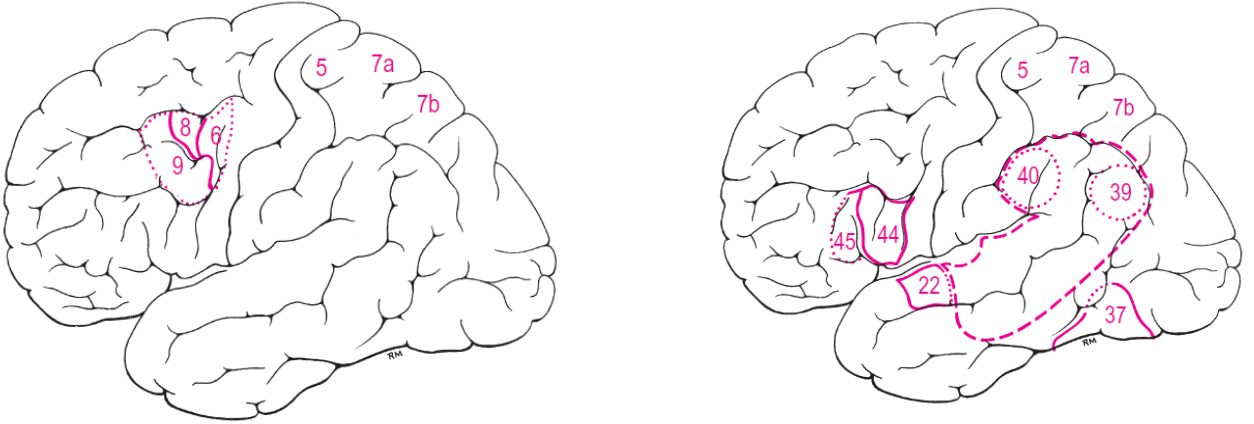


Fig. 16.15 Lateral surface of the left cerebral hemisphere showing the frontal eye field, corresponding to parts of Brodmann's areas 6, 8 and 9. The perimeter of this area is delineated by an interrupted line to indicate the uncertainty of its precise extent.

Fig. 16.16 Lateral surface of the left hemisphere showing the motor speech areas (44 and 45) and areas 5, 7a and 7b. Wernicke's area is variously depicted by different authorities and is tentatively indicated here by the large parietotemporal area enclosed by the dotted line and including areas 39 and 40. Some consider areas 22 and 37 to be auditory and visuo-auditory areas, respectively, associated with speech and language.

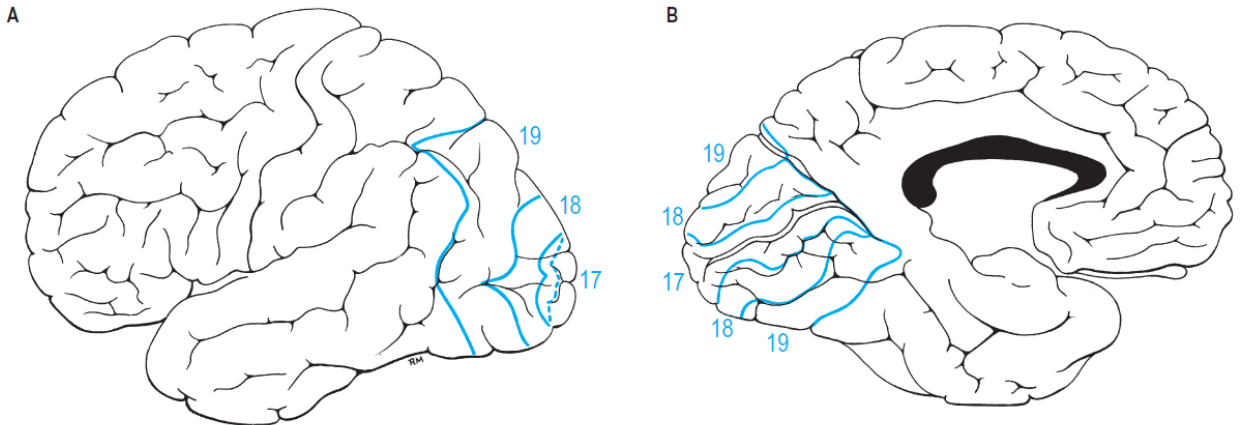
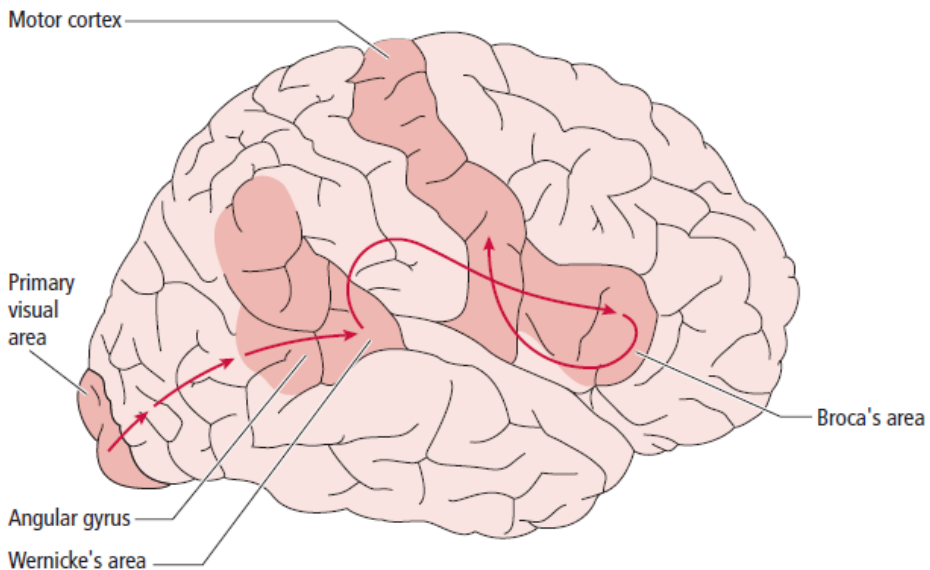
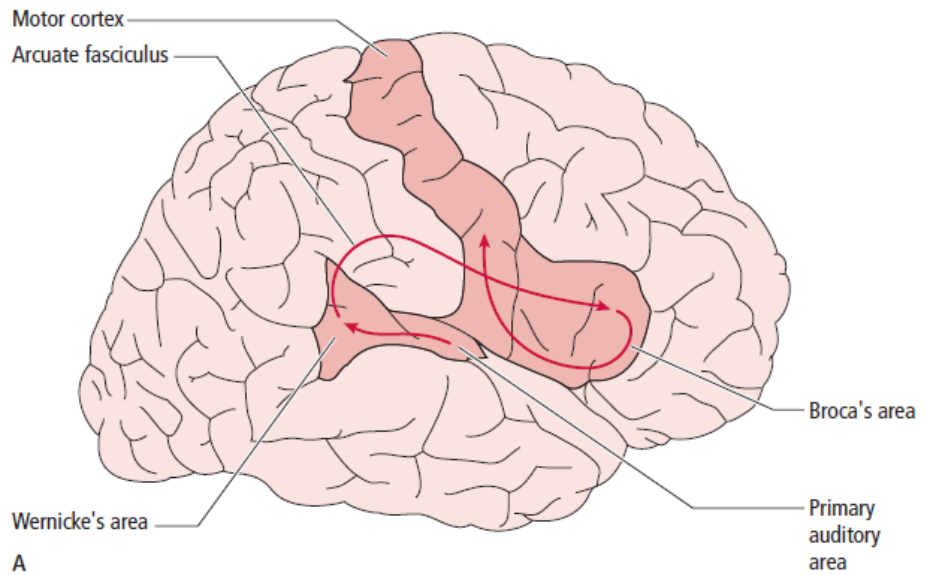
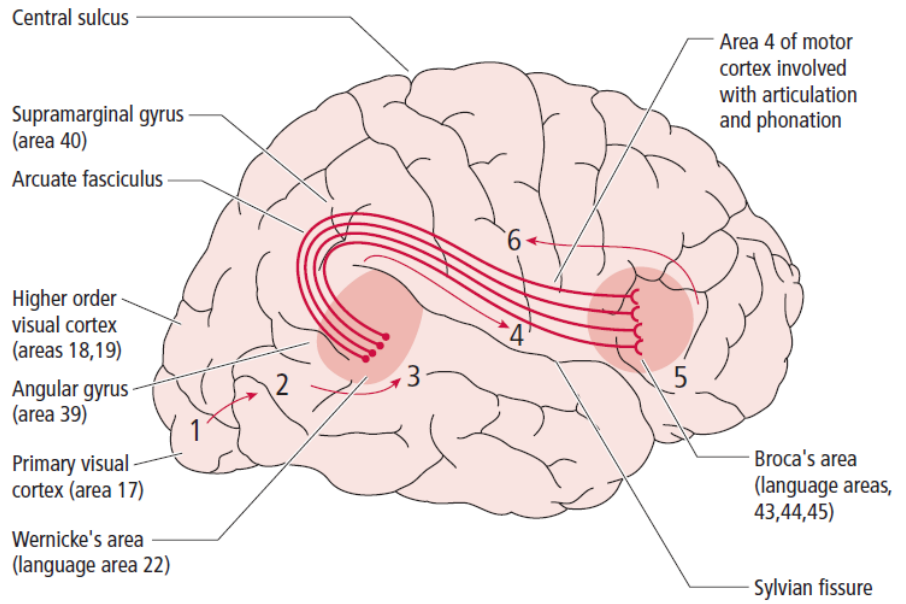


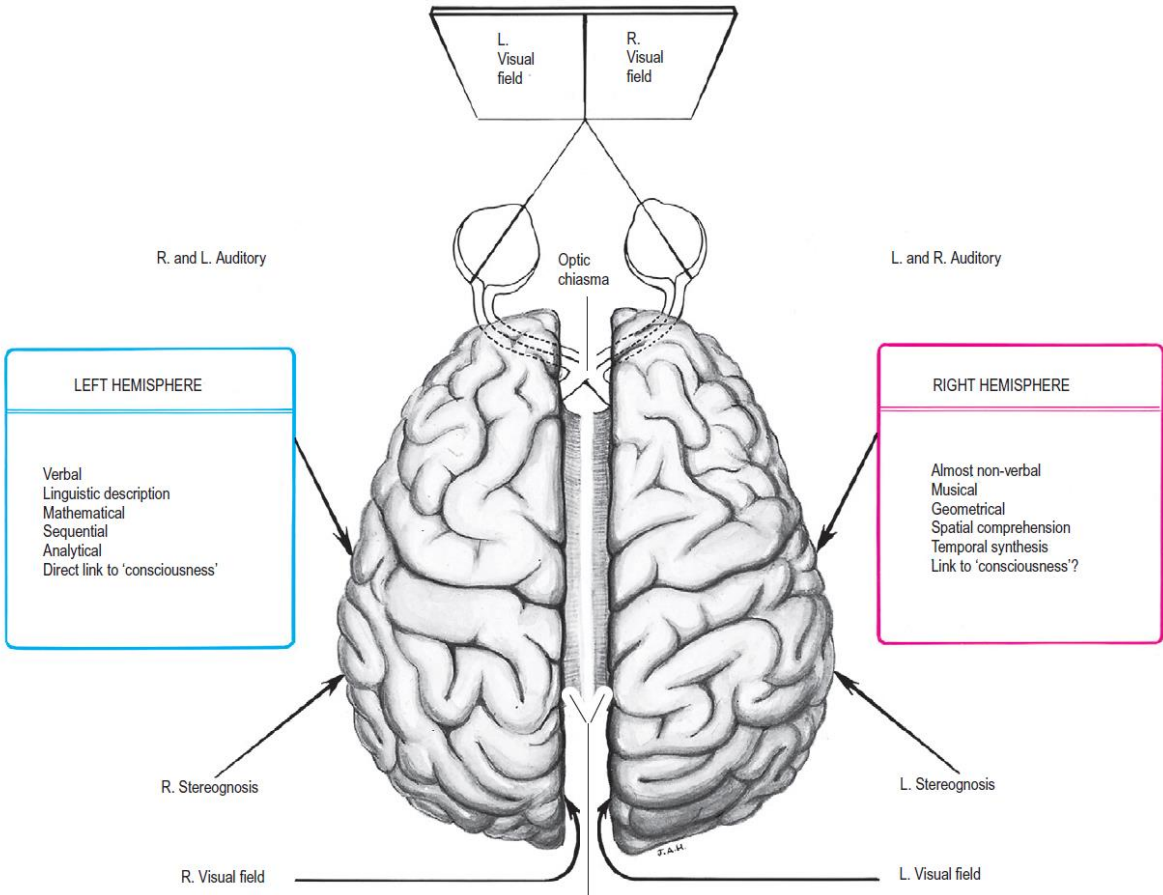
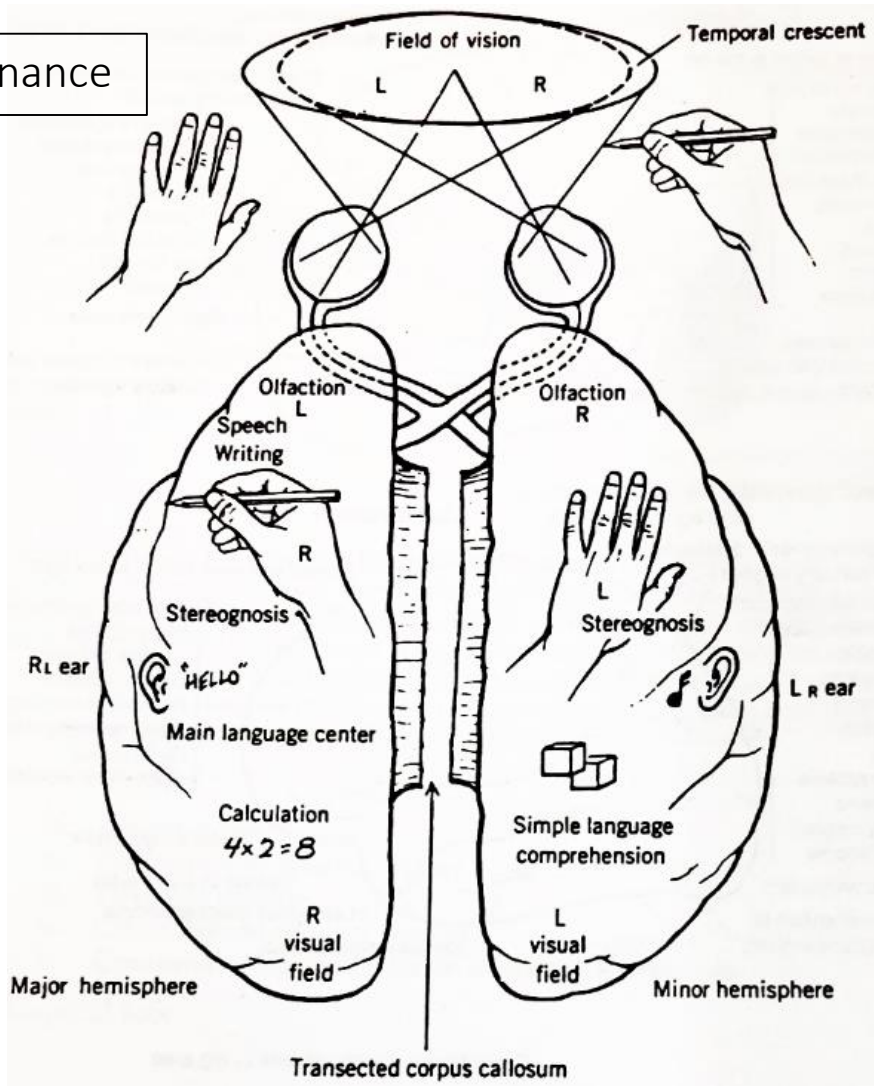
Fig. 16.21 Lateral (A) and medial (B) surfaces of the left cerebral hemispheres showing the visual areas in the occipital lobe. The striate, parastriate and peristriate areas correspond approximately to Brodmann's areas 17, 18 and 19, respectively, and to visual areas V1, V2 and V3.

Figure 23.11 • Diagram showing the possible progression of neural transmission from the visual cortex through the cortical areas associated with speech to the primary motor cortex in the production of speech. For example, when an individual sees an object and is asked to name it, information is relayed from (1) the visual cortex (Brodmann's areas 17, 18, and 19) to (2) the angular gyrus (Brodmann's area 39), to (3) Wernicke's area (Brodmann's area 22), by way of (4) the arcuate fasciculus, to (5) Broca's area of speech (Brodmann's areas 43, 44, and 45), and finally to (6) the primary motor cortex (Brodmann's area 4) which gives rise to the corticonuclear tract that terminates in the brainstem motor nuclei of the cranial nerves associated with vocalization. (Modified from Noback, CR et al. (1996) *The Human Nervous System*. Williams & Wilkins, Media; fig. 25.7.)

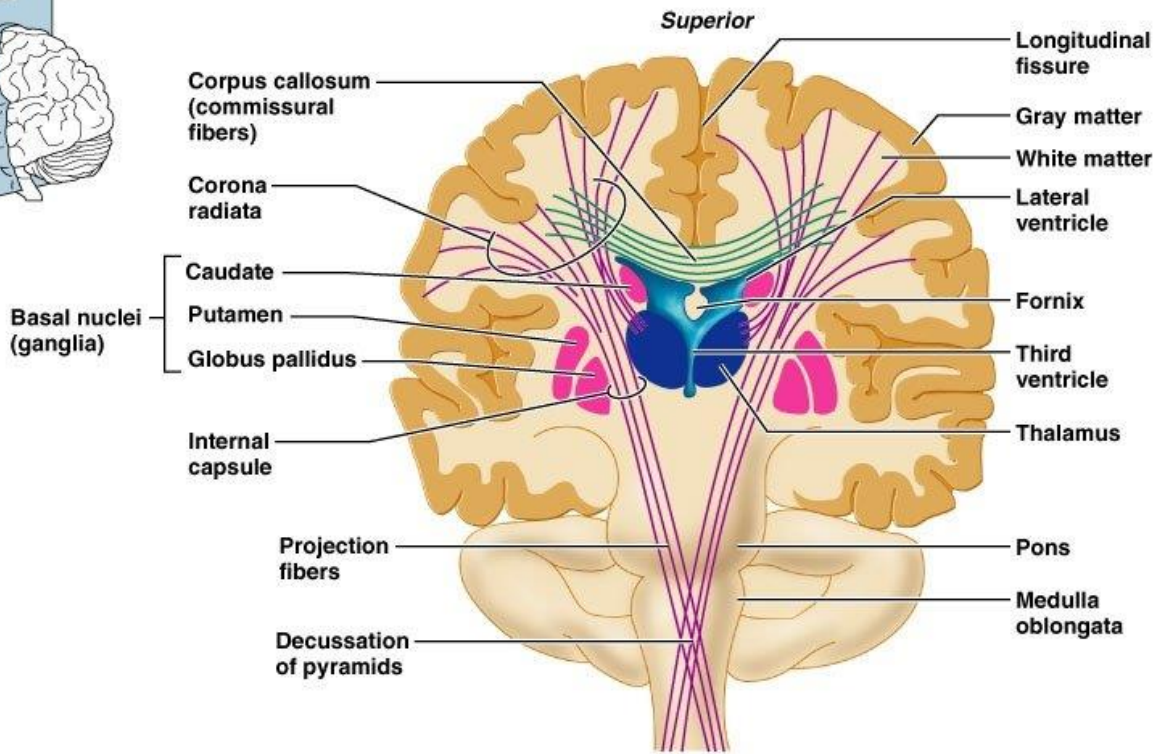
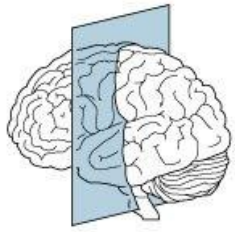


Neural pathways associated with: (A) hearing a word that is then spoken, and (B) reading a word that is then spoken.

Brain Dominance



Cerebral White Matter



(b)

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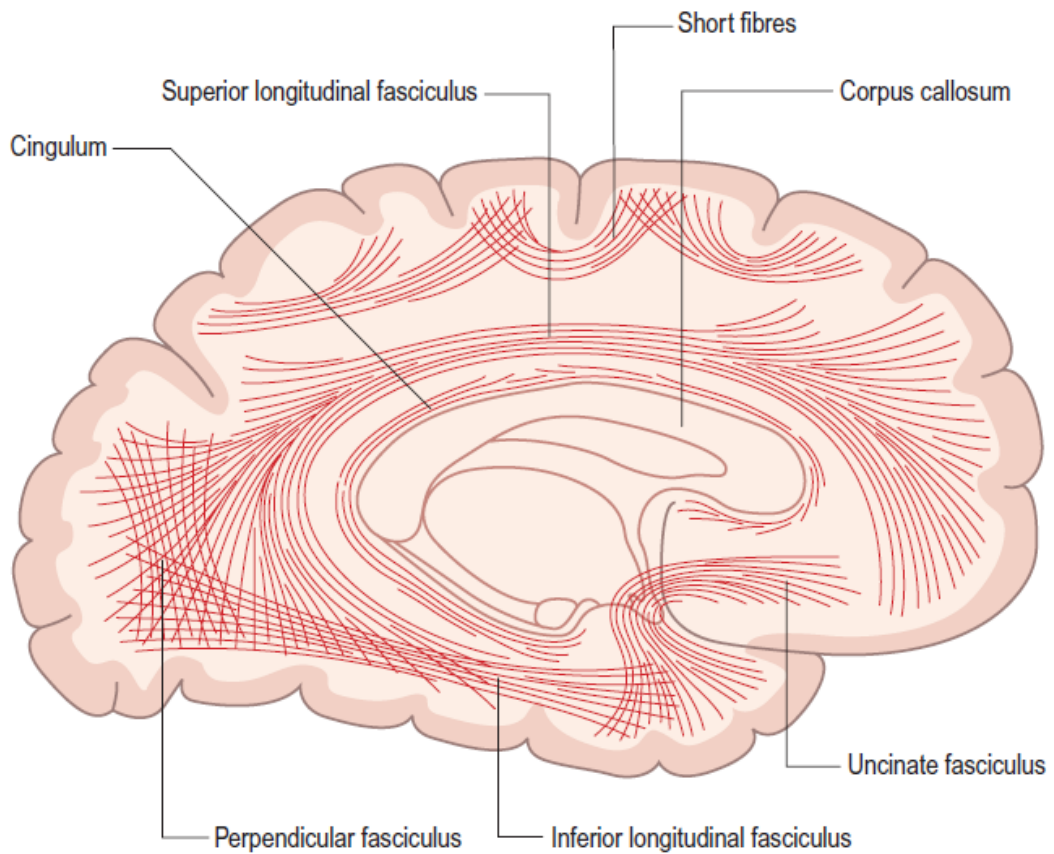
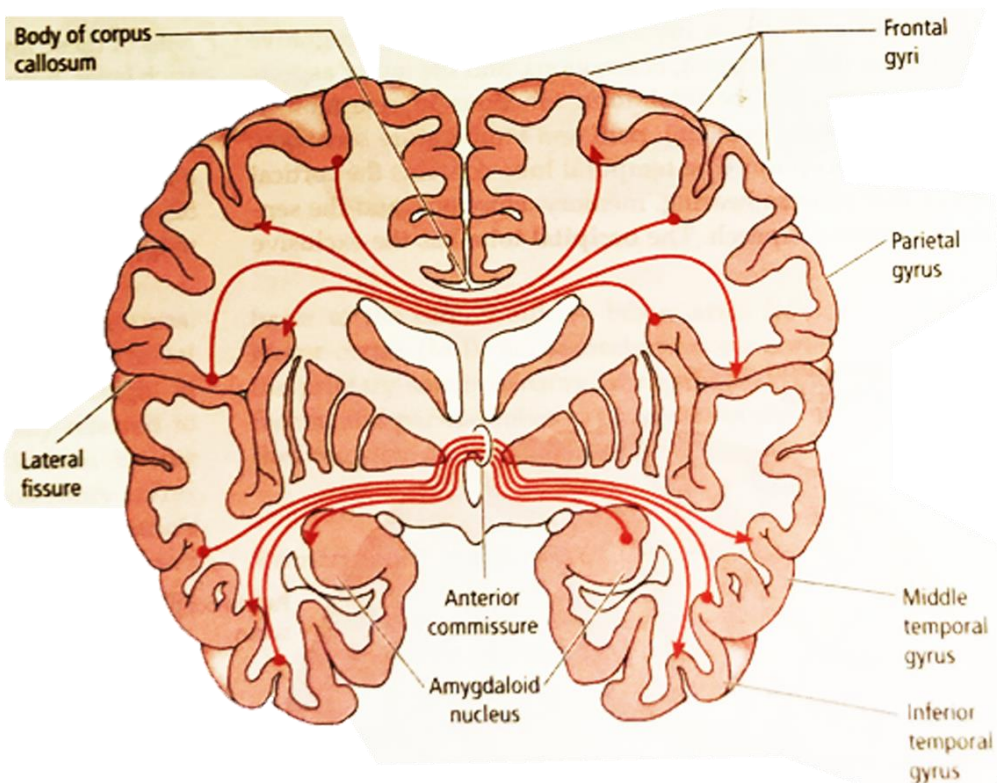
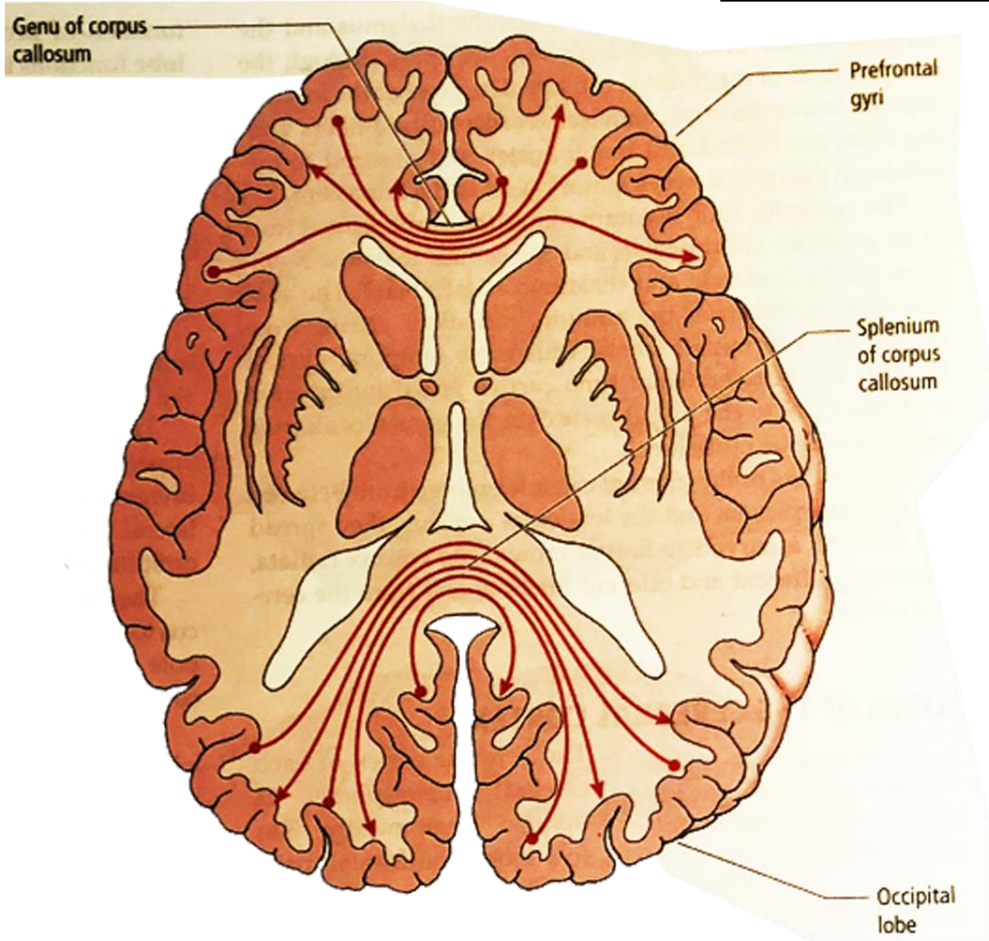
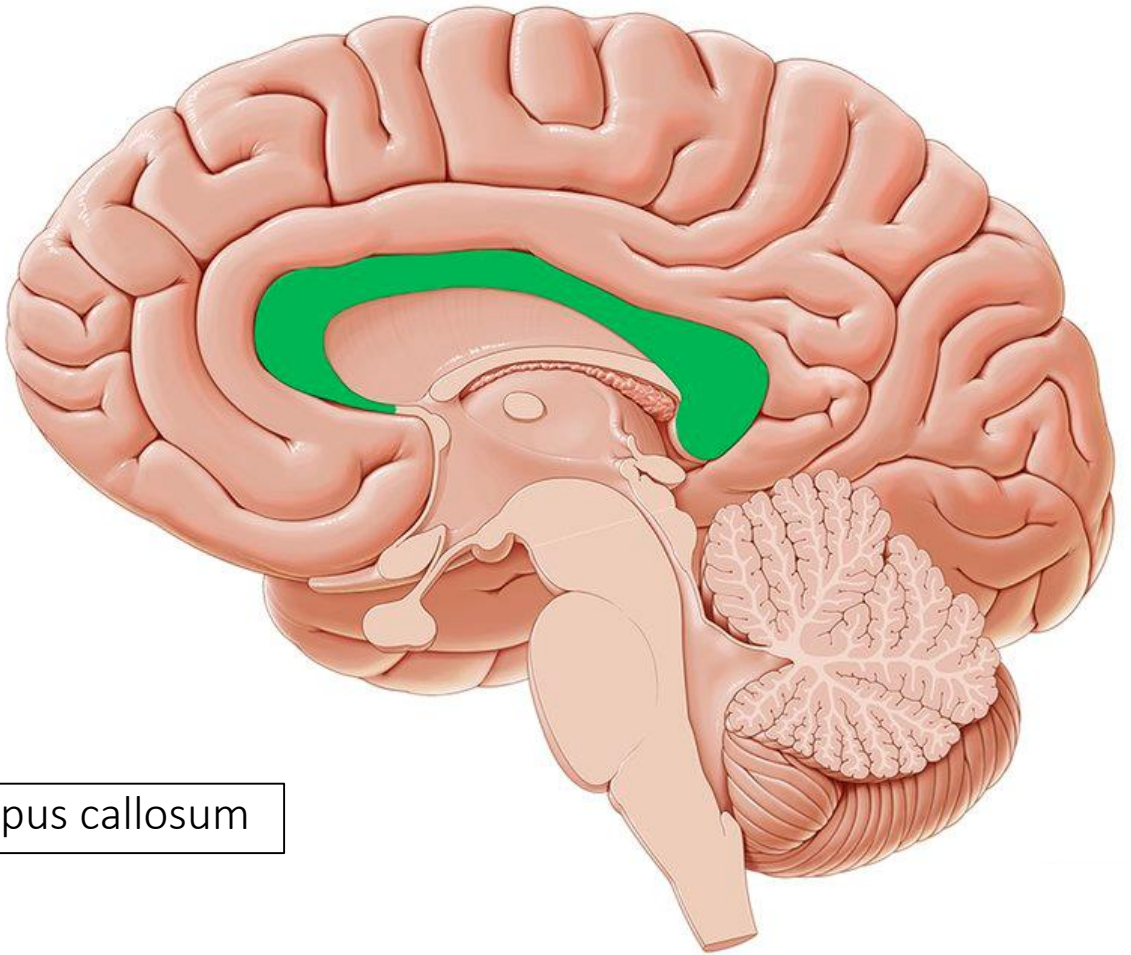


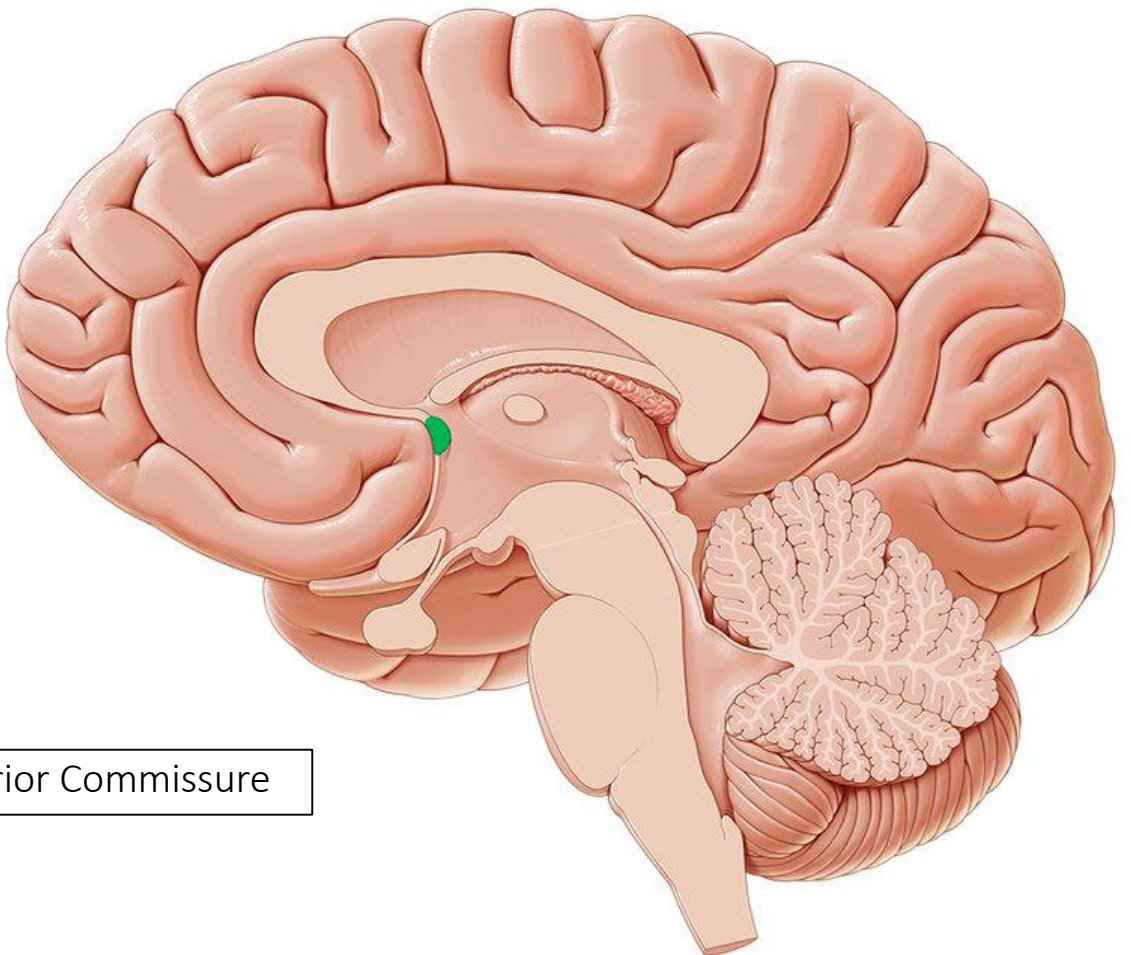
Fig. 16.33 *Principal association fibres of the cerebral hemisphere.*

Cerebral Commissures

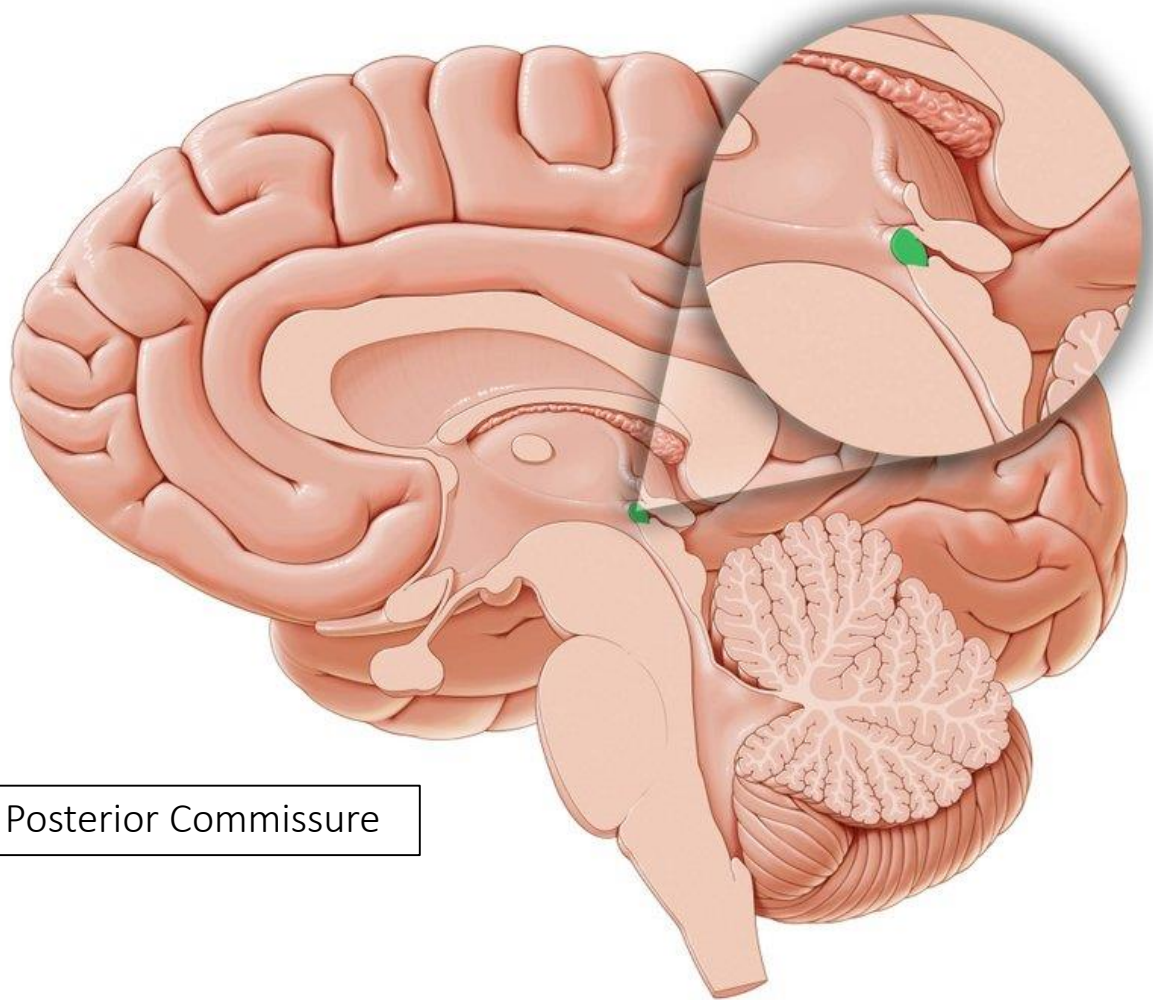




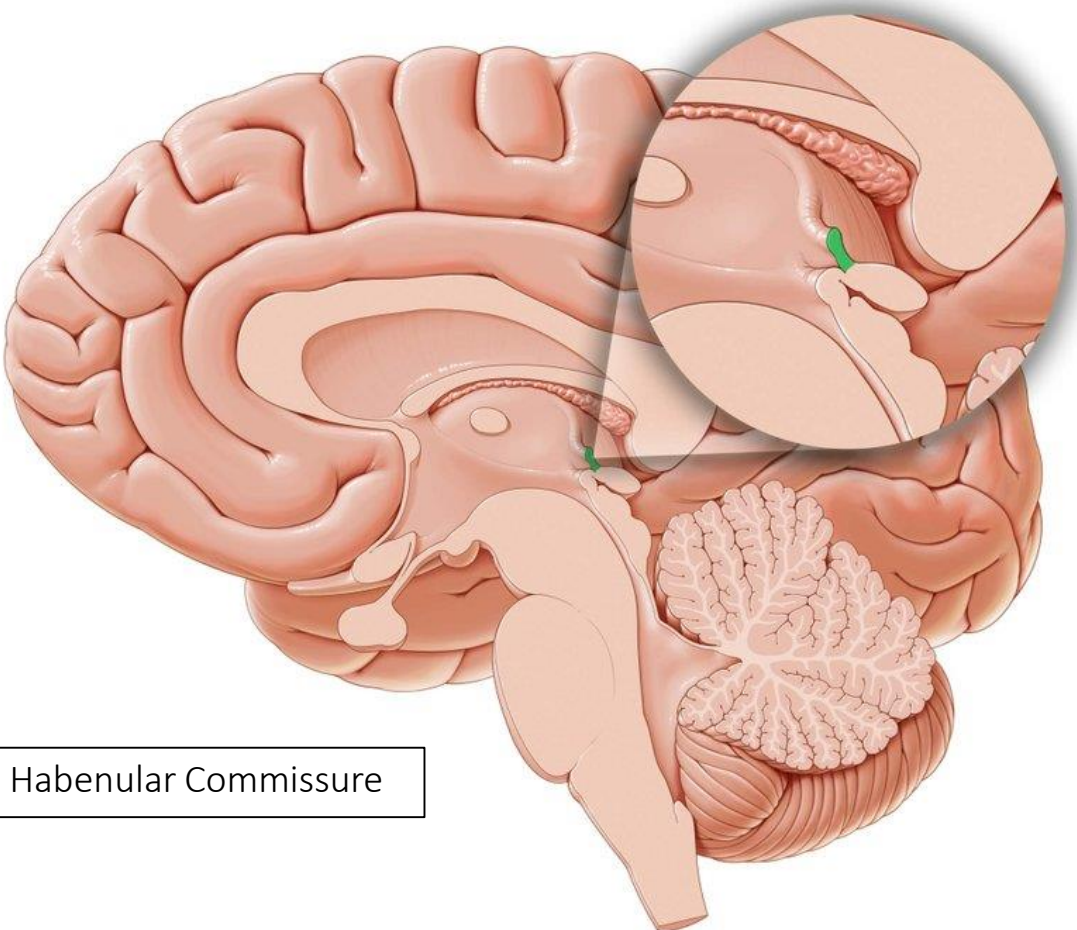
Corpus callosum



Anterior Commissure

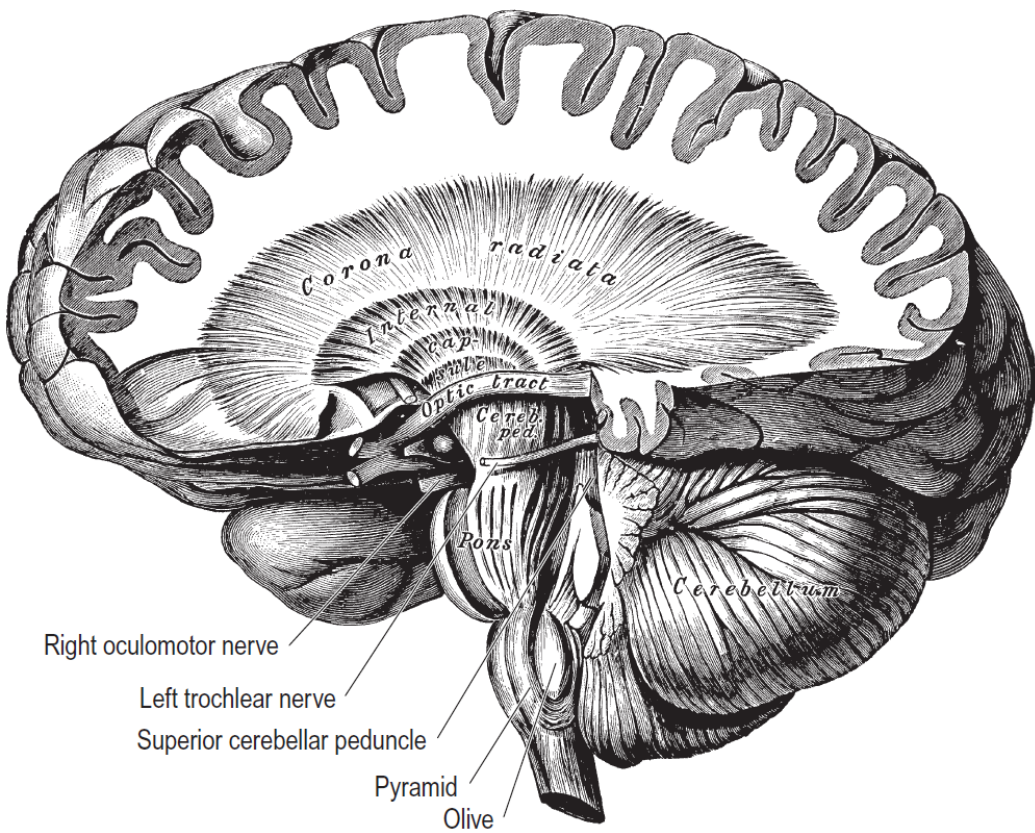
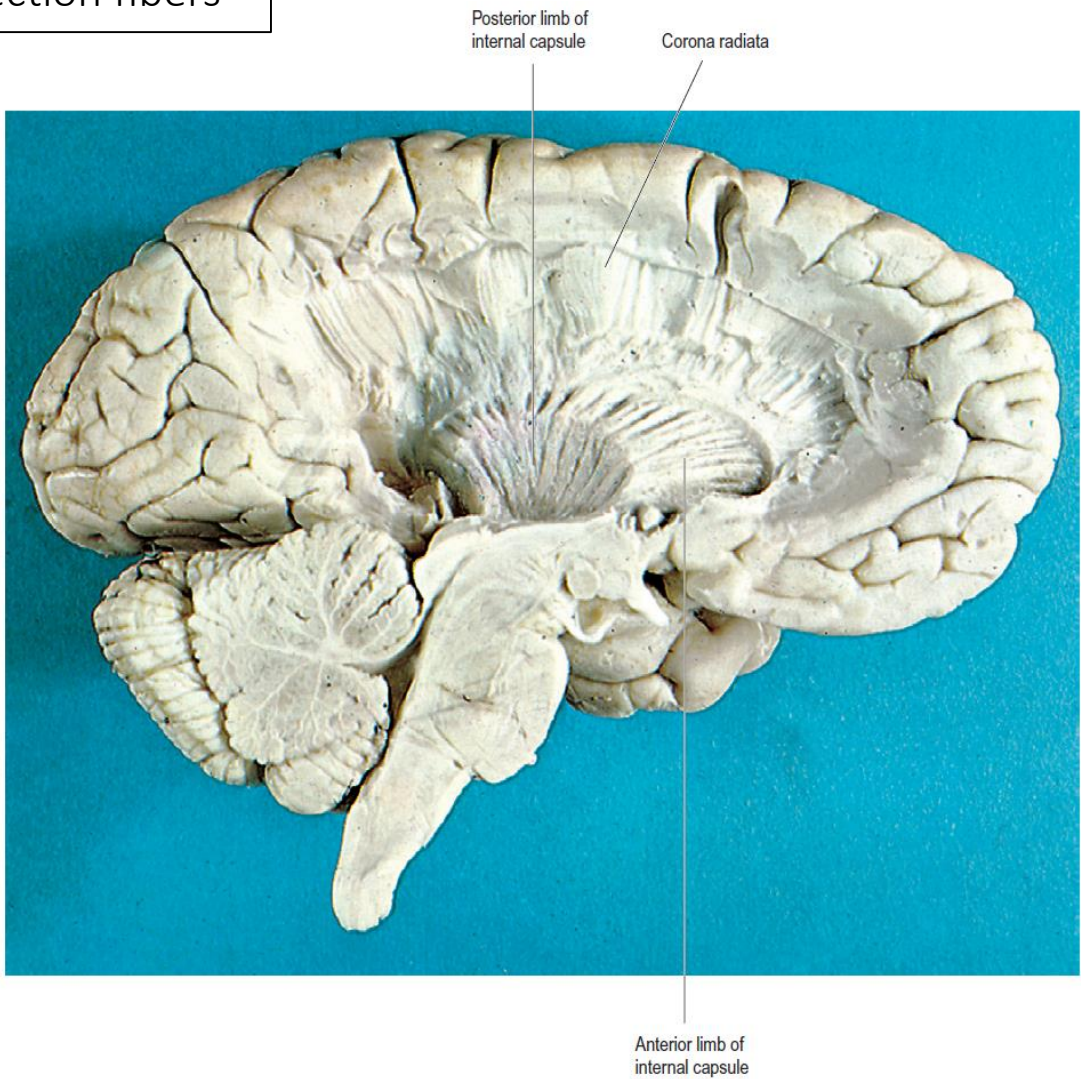


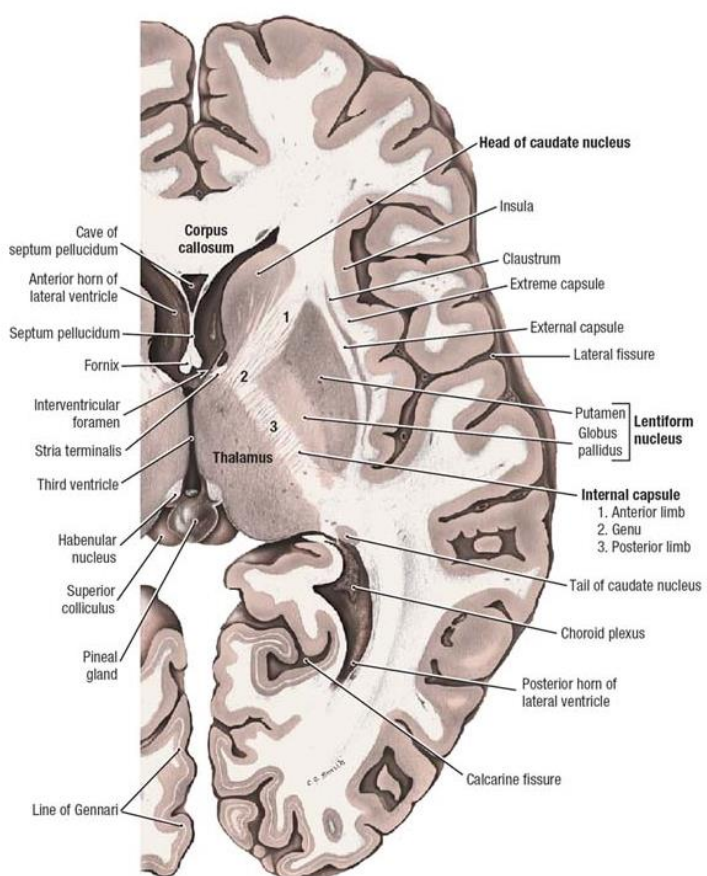
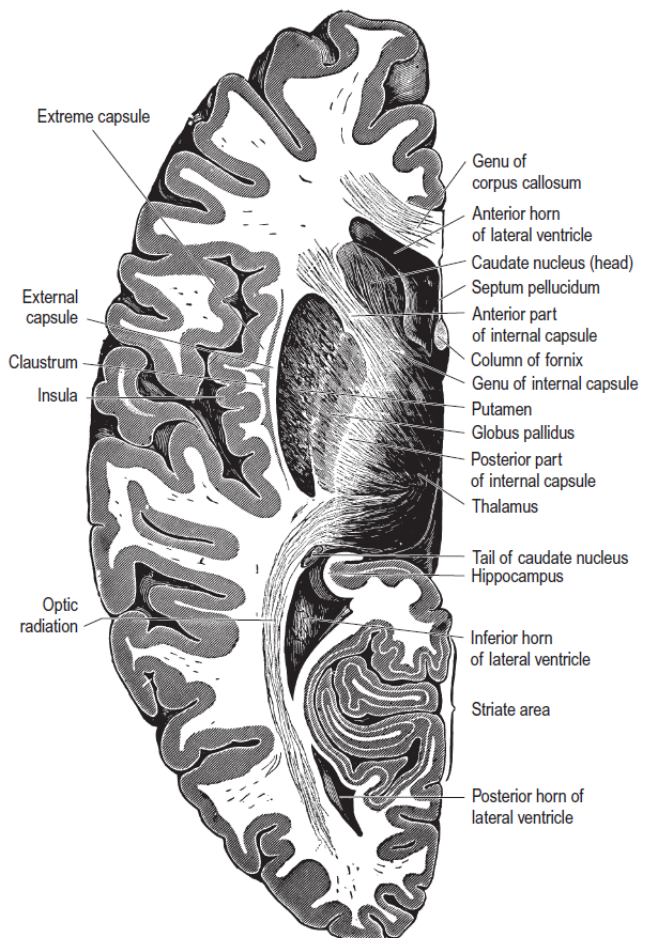
Posterior Commissure



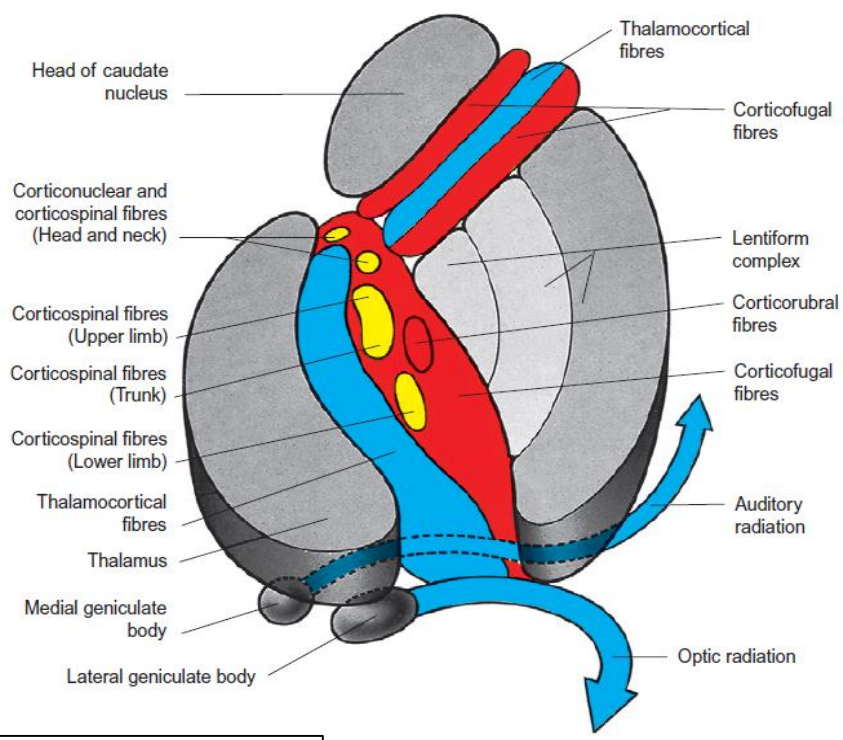
Habenular Commissure

Projection fibers

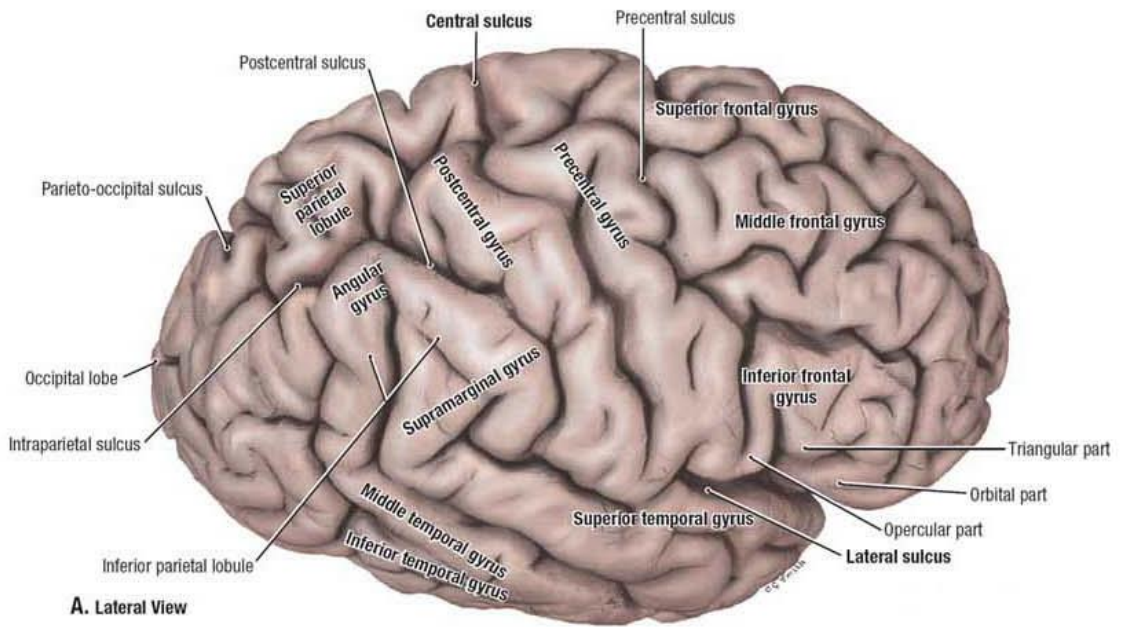




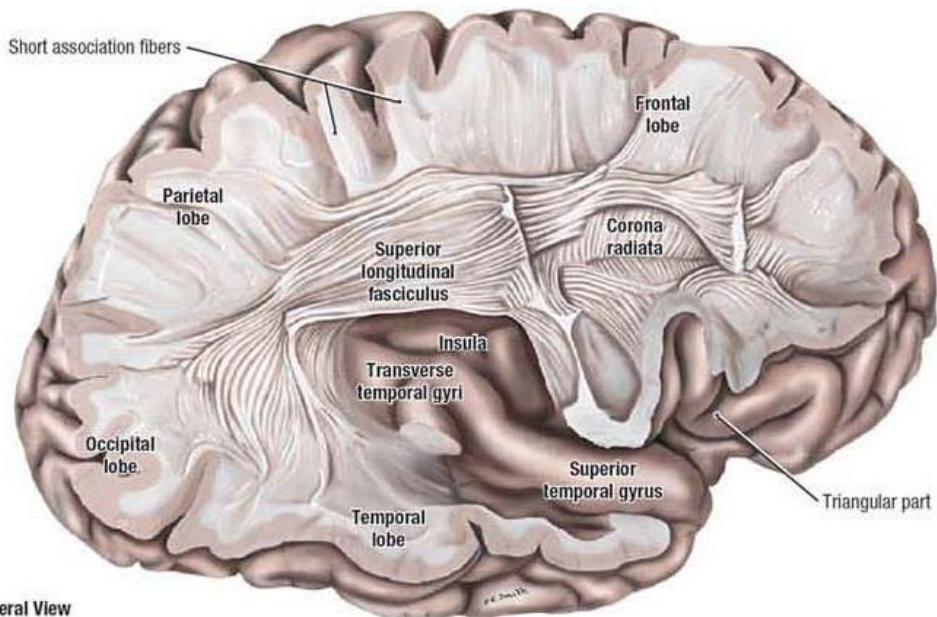
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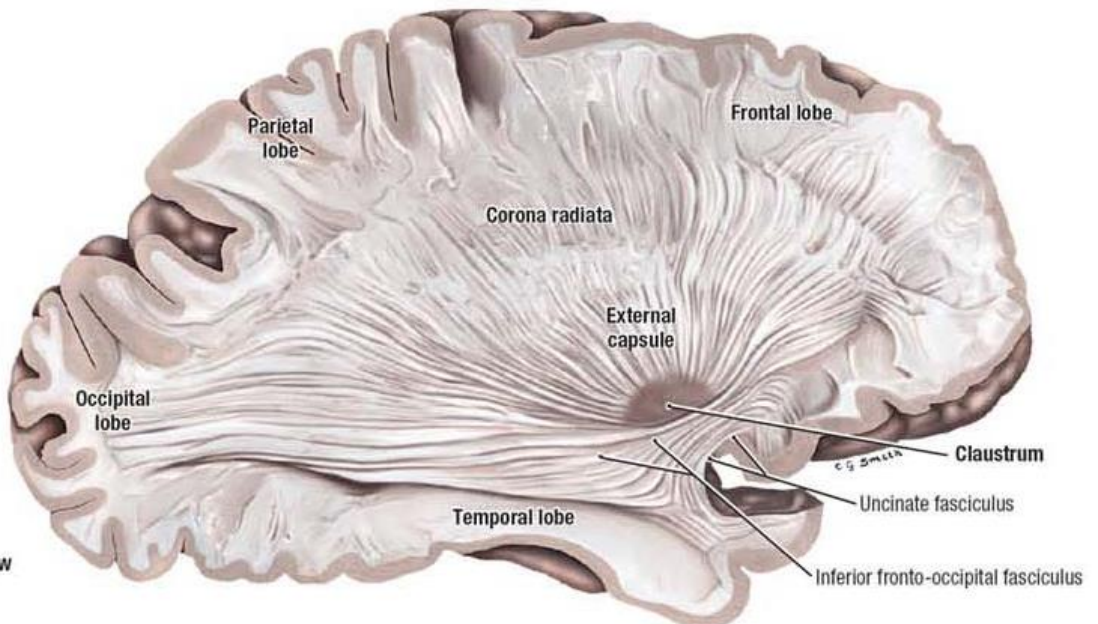
Internal Capsule



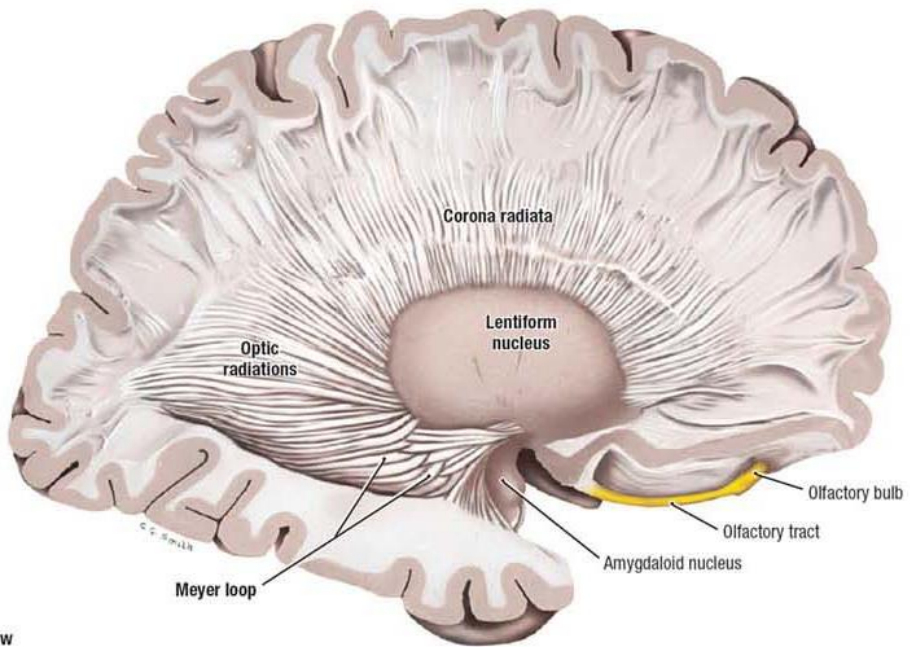
A. Lateral View



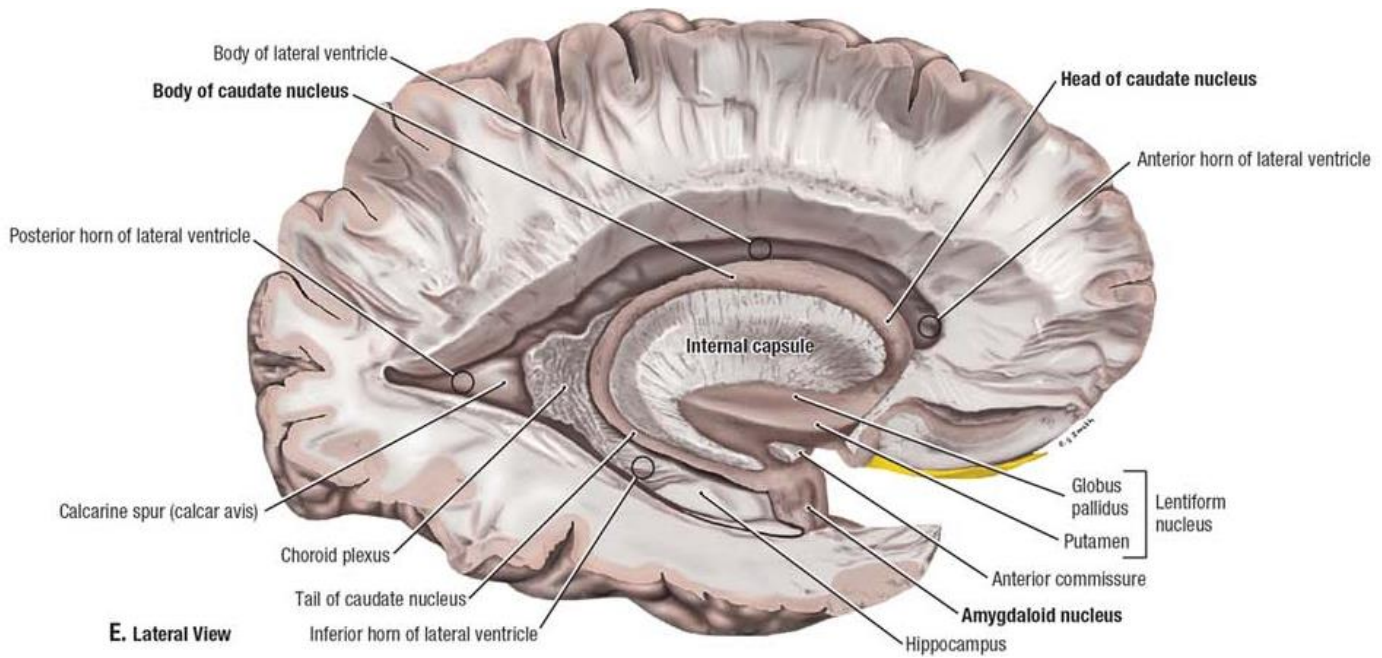
B. Lateral View



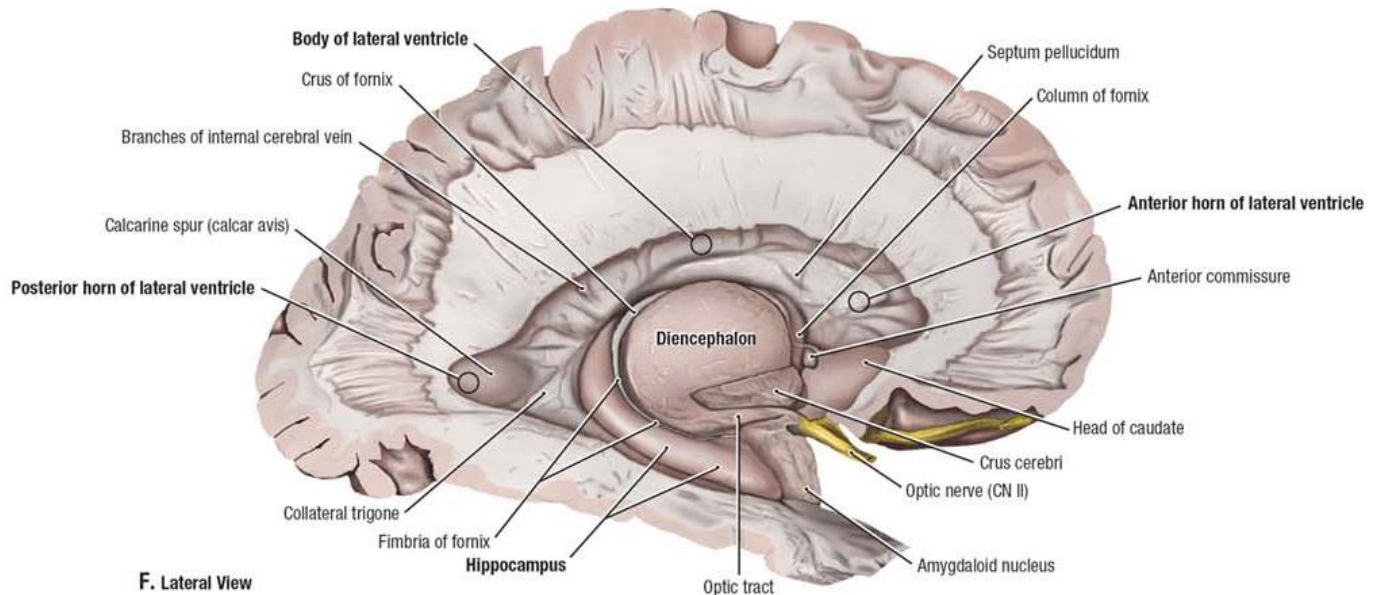
C. Lateral View



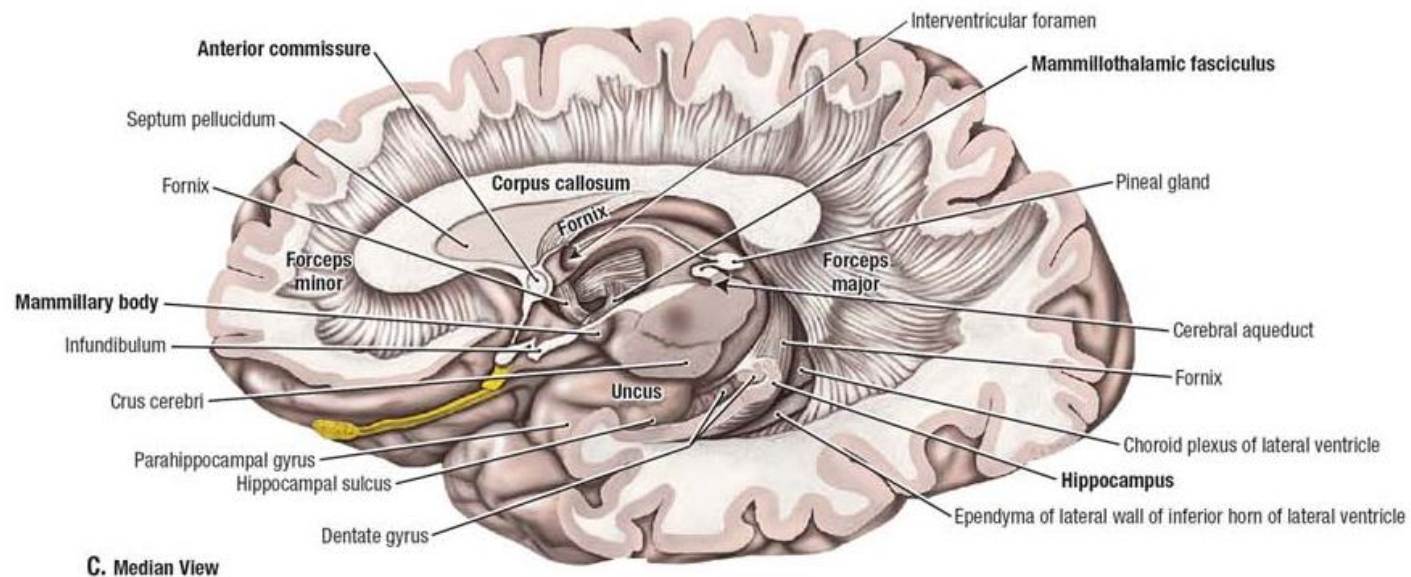
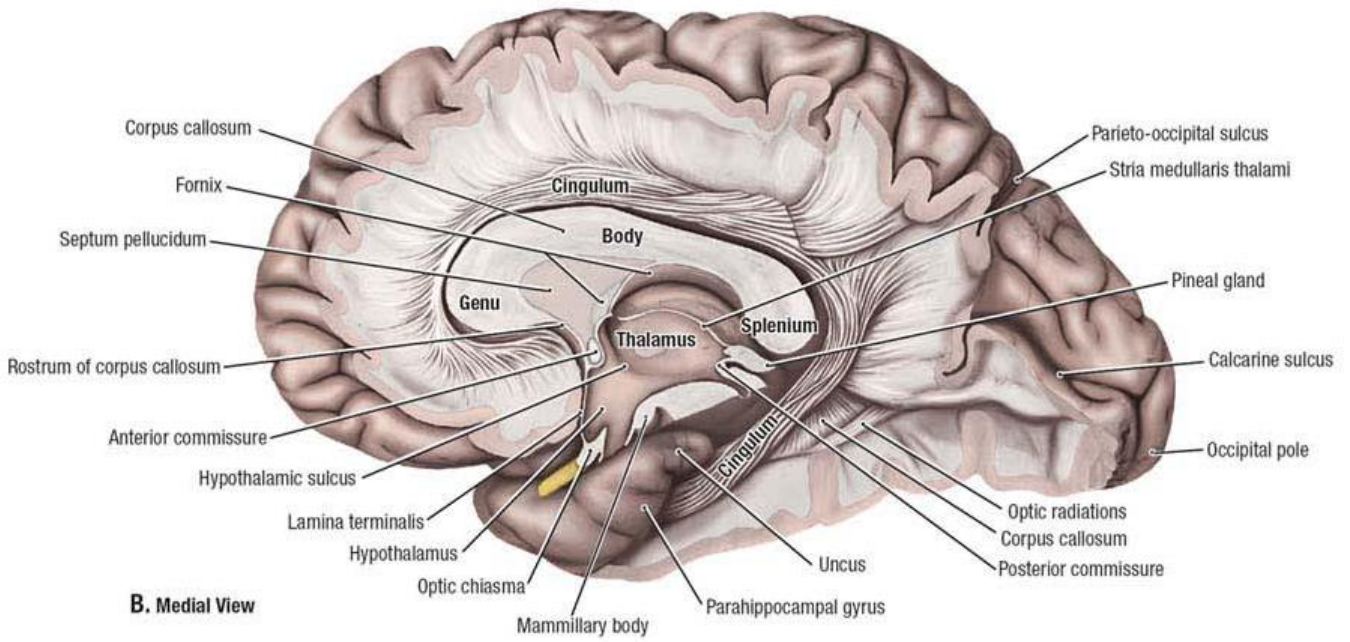
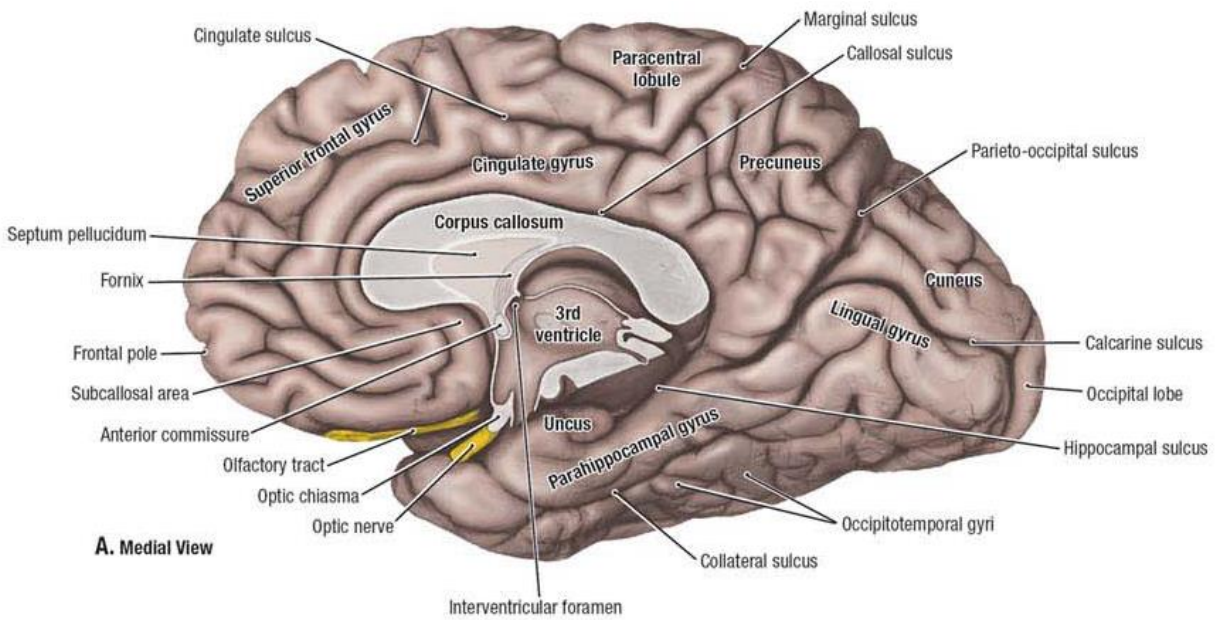
D. Lateral View

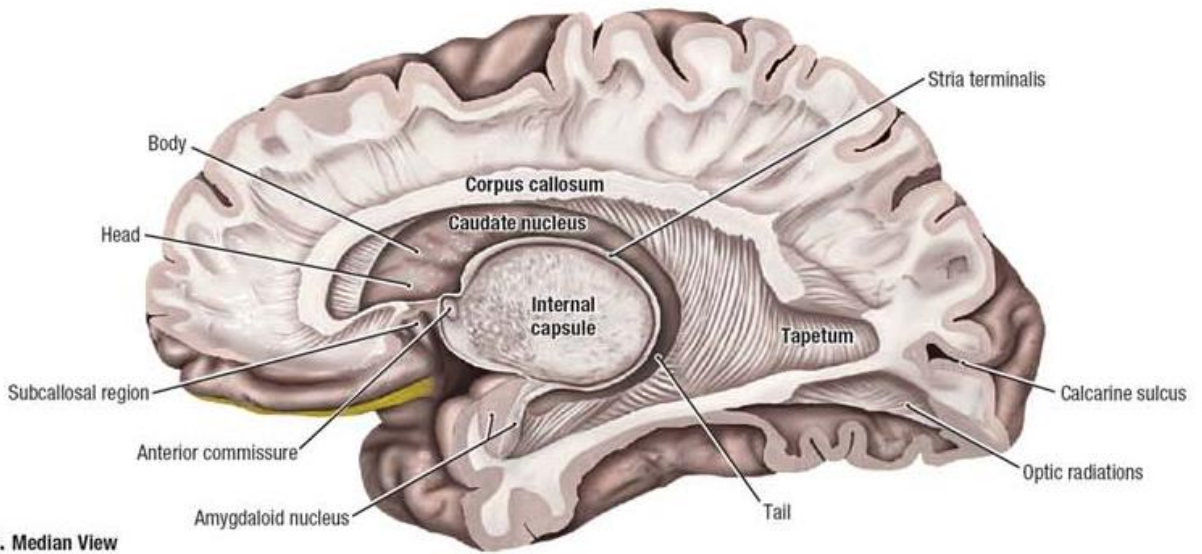


E. Lateral View

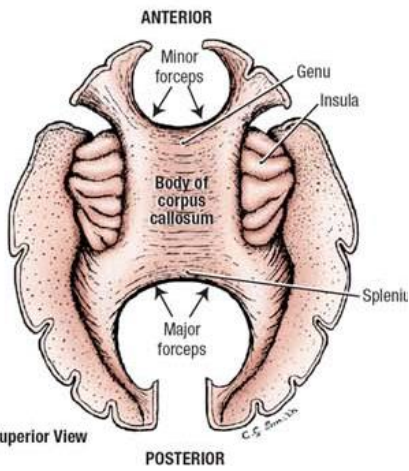


F. Lateral View

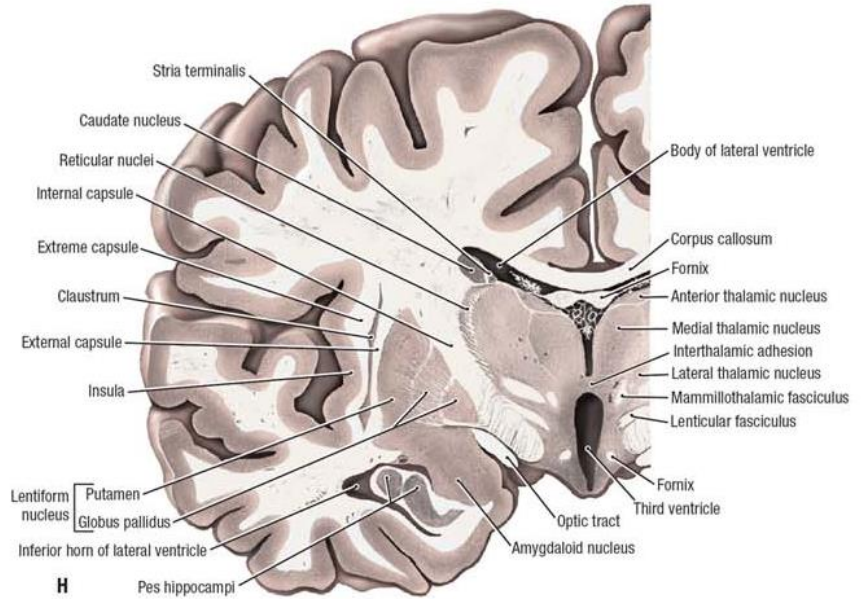




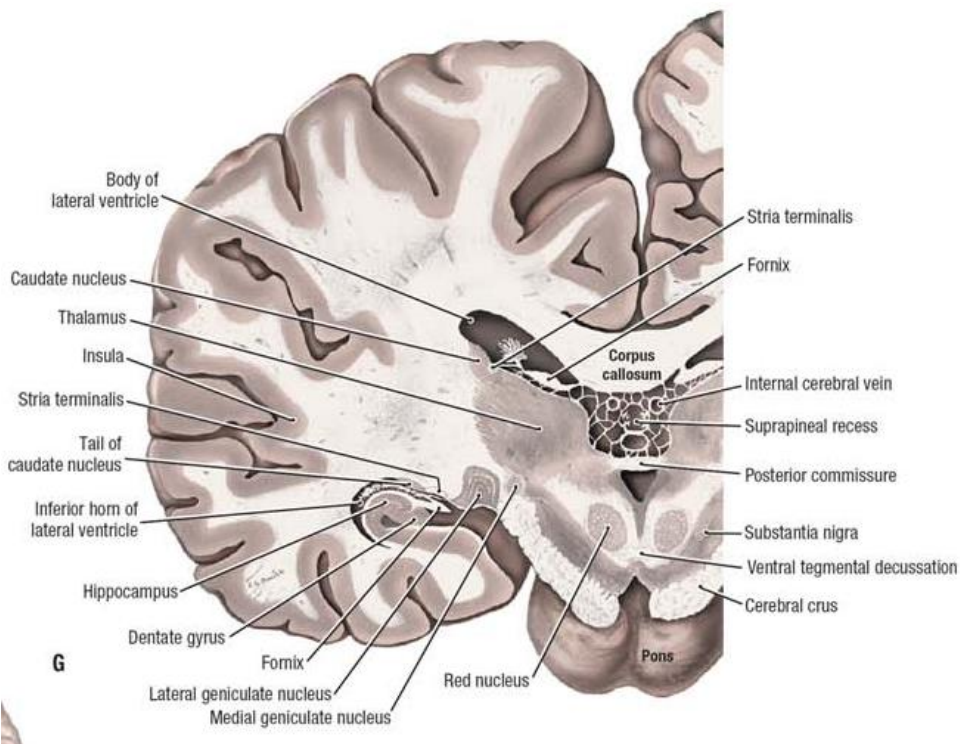
D. Median View



E. Superior View



H



G