

Dr. Ali Mohsin

# Basal Ganglia

Anterior horn of lateral ventricle

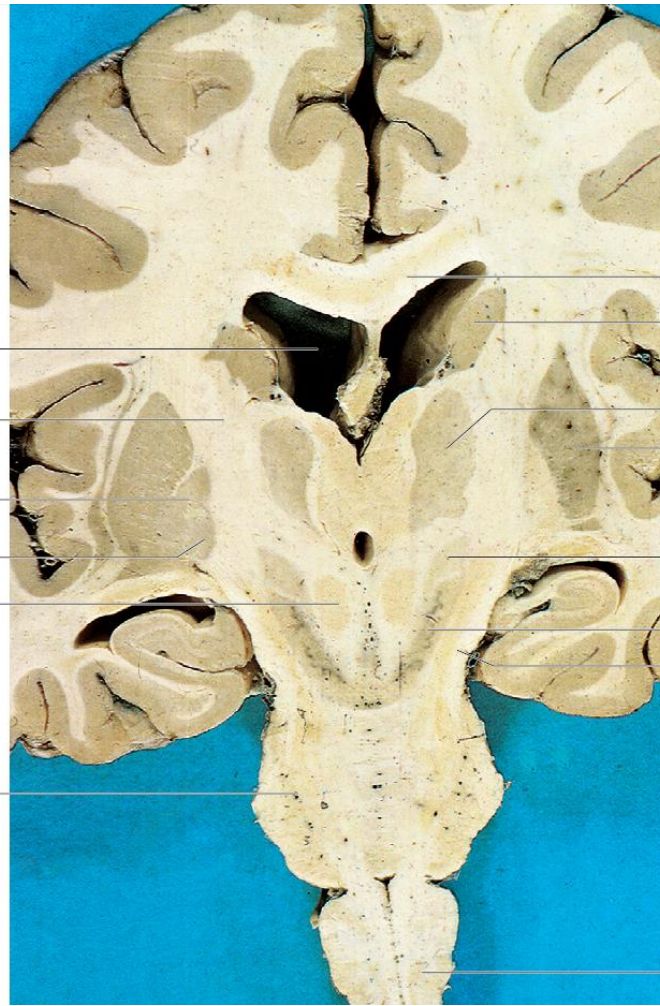
Internal capsule

Globus pallidus lateral segment

Globus pallidus medial segment

Red nucleus

Pons



Corpus callosum

Head of caudate nucleus

Thalamus

Putamen

Subthalamic nucleus

Substantia nigra

Crus cerebri

Medulla oblongata

Gray matter of cerebral cortex

Genu of corpus callosum

White matter of cerebrum

Anterior horn of lateral ventricle

Septum pellucidum

Head of caudate nucleus

Anterior column of fornix

Internal capsule (anterior limb)

Genu of internal capsule

Third ventricle

Internal capsule (posterior limb)

Lateral sulcus

Pineal body

Superior colliculus

Inferior colliculus

Vermis of cerebellum

Cerebellar hemispheres

Clastrum

Putamen

Globus pallidus

Insular cortex

External capsule

Thalamus

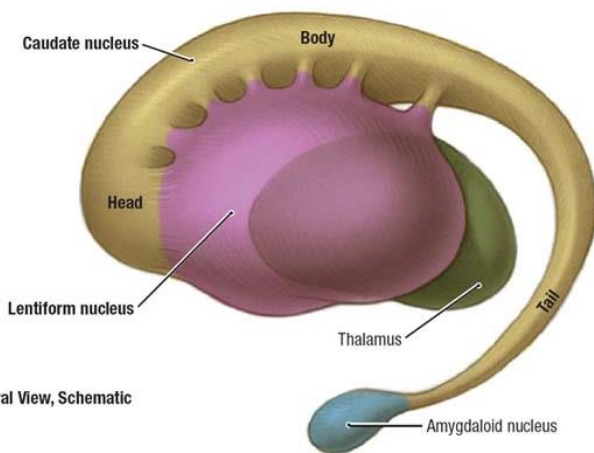
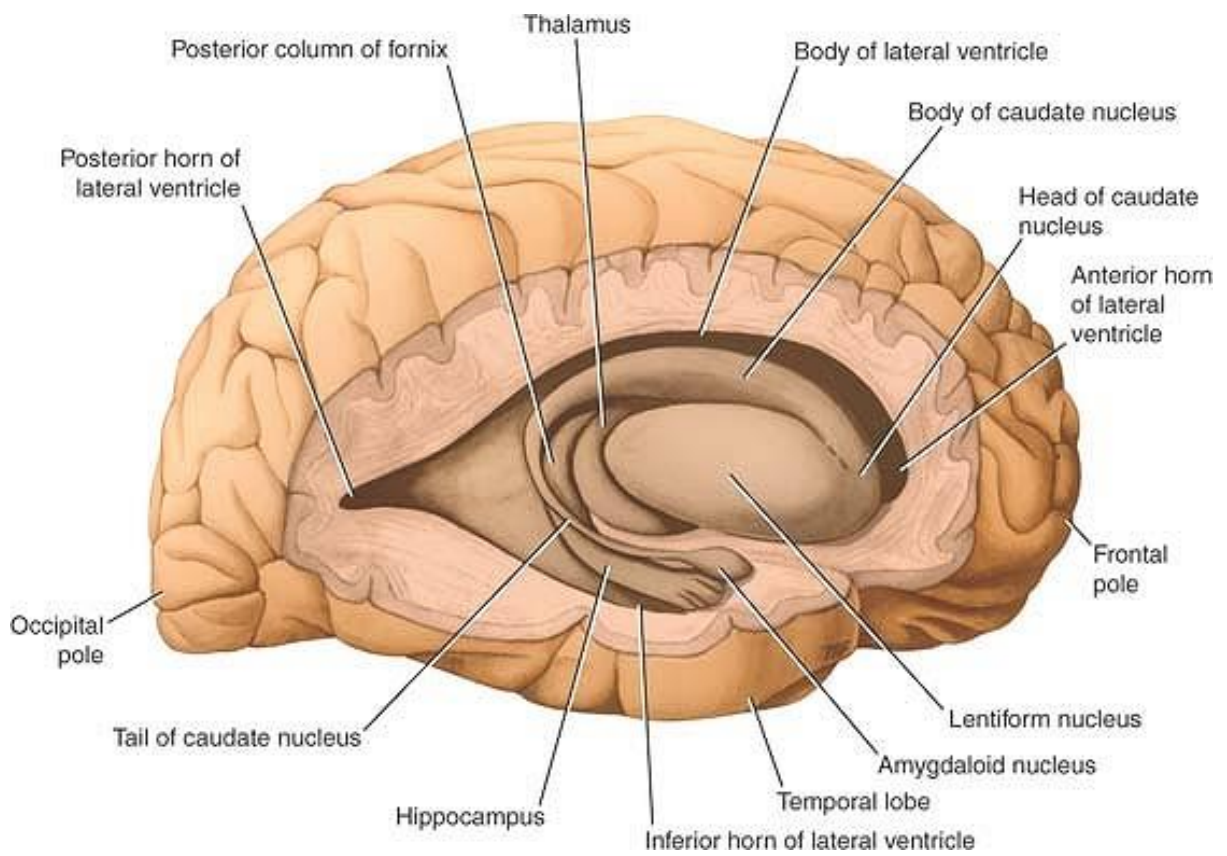
Tail of caudate nucleus

Choroid plexus

Posterior horn of lateral ventricle

Optic radiation

Lentiform nucleus



B. Lateral View, Schematic

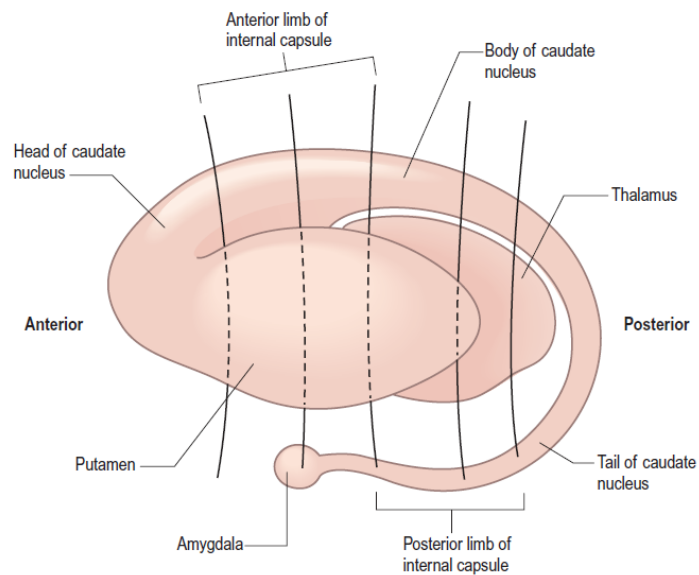
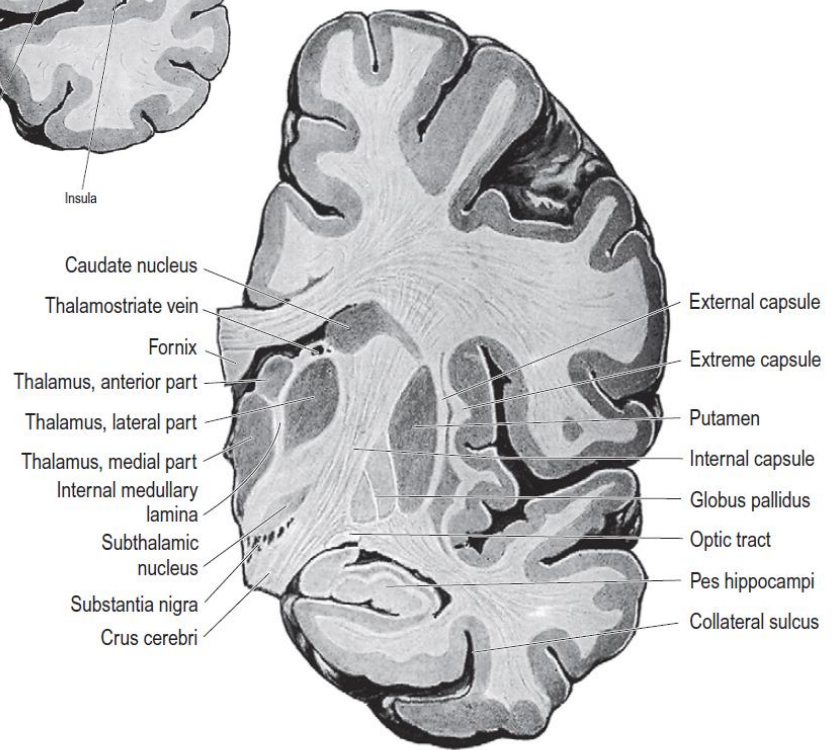
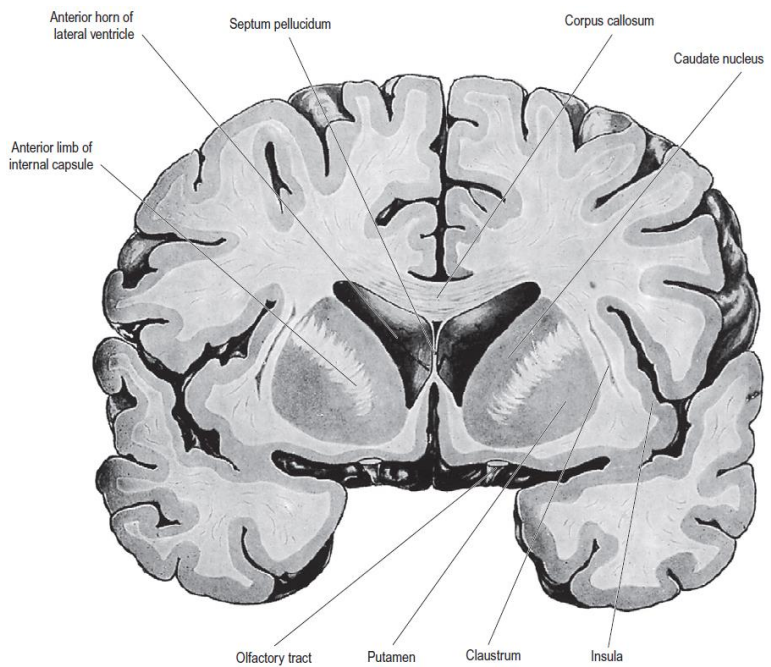
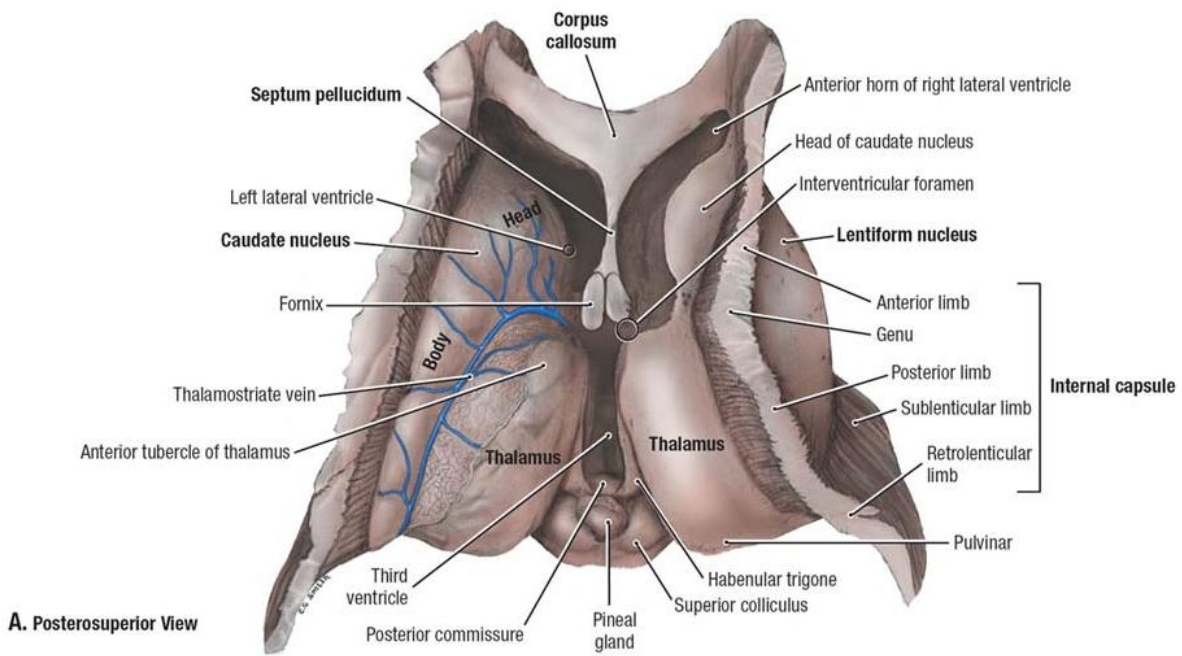
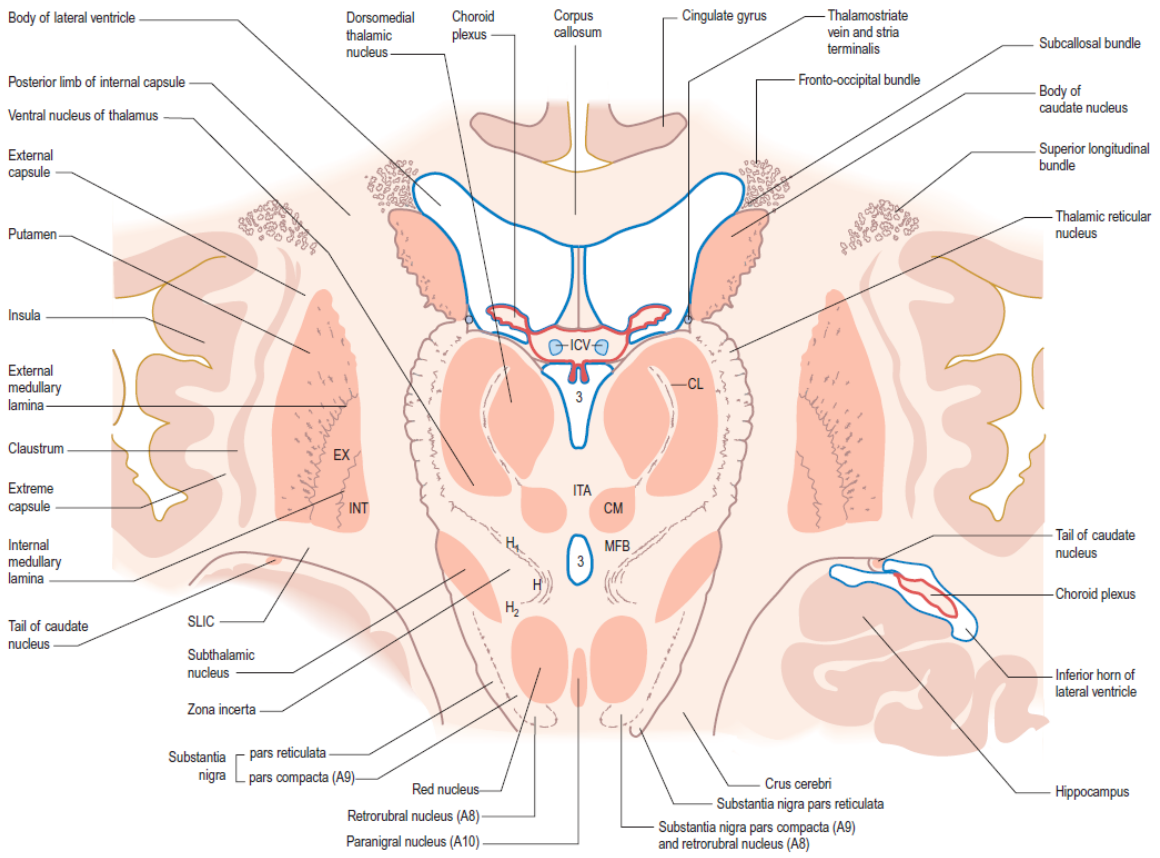


Fig. 14.4 Striatum within the left cerebral hemisphere. (By permission from Crossman, A.R., Neary, D., 2000. Neuroanatomy, 2nd ed. Churchill Livingstone, Edinburgh.)

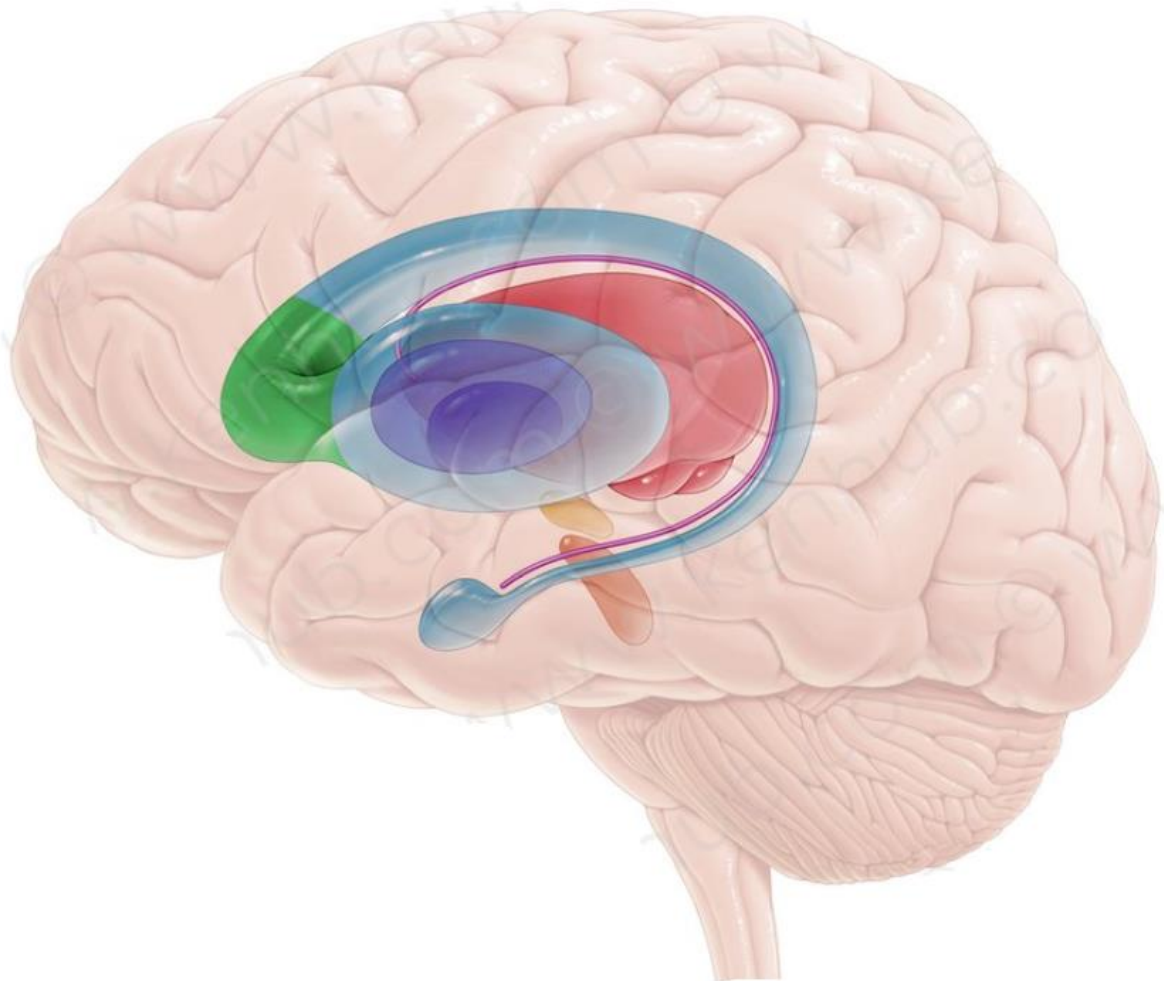
Term	Structure
Corpus striatum	Caudate nucleus + Lentiform nucleus
Lentiform nucleus	Putamen + Globus pallidus
Striatum (neostriatum)	Caudate nucleus + Putamen
Pallidum	Corpus pallidus (external & internal segments)

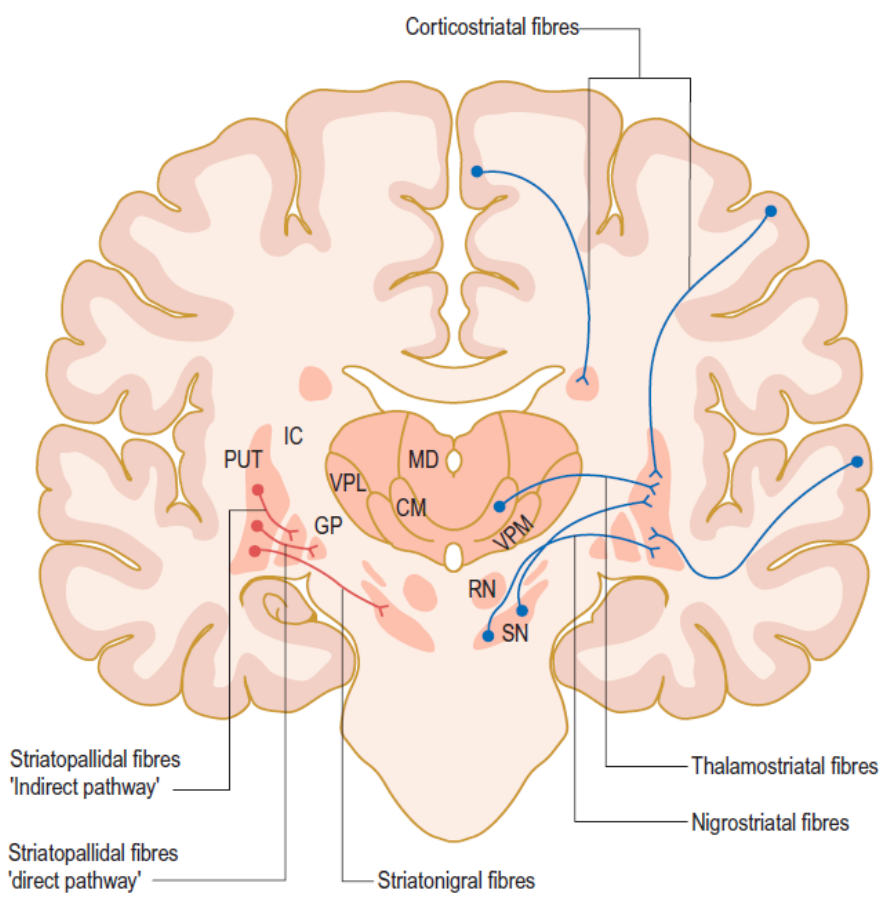


**Fig. 14.8** Anterior aspect of a coronal section through the left cerebral

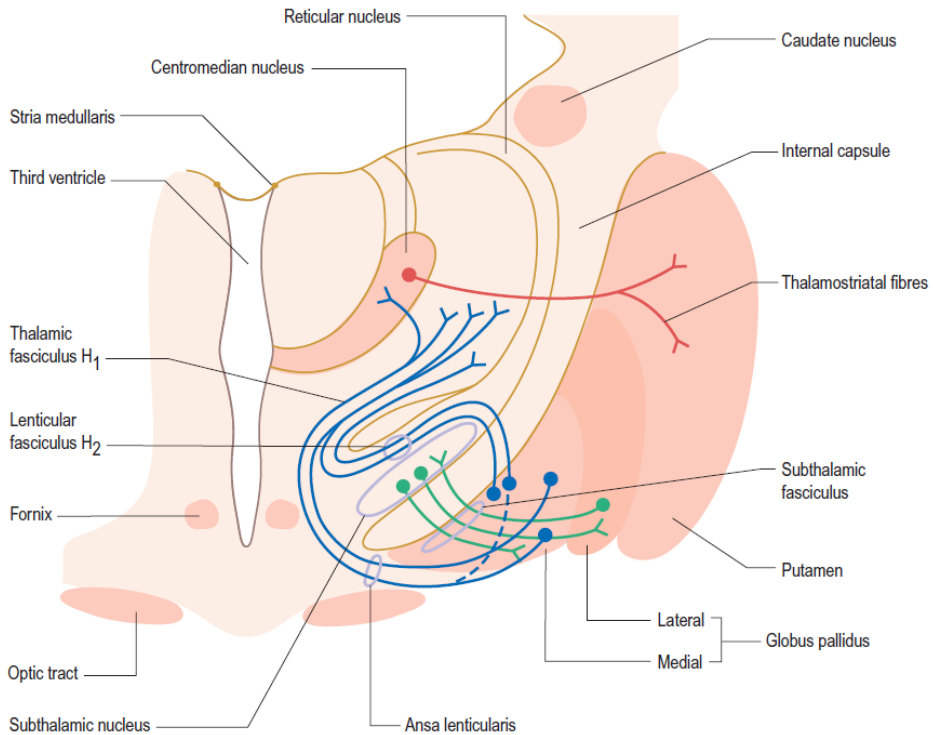


**Fig. 14.5** Oblique section through the diencephalon and basal ganglia. A8, A9, A10, dopaminergic cell groups; CL, centrolateral nucleus of thalamus; CM, centromedian nucleus of thalamus; EX, external pallidal segment; H, HI, H2, subthalamic fields of Forel; ICV, internal cerebral veins in the transverse fissure; INT, internal pallidal segment; ITA, interthalamic adhesion; MFB, median forebrain bundle; SLIC, sublenticular internal capsule; 3, third ventricle.





**Fig. 14.9** Connections of the striatum. The major afferent projections to the striatum are shown on the left, and the major efferent projections from the striatum are shown on the right. CM, centromedian nucleus; GP, globus pallidus; IC, internal capsule; MD, medial dorsal nucleus; PUT, putamen; RN, red nucleus; SN, substantia nigra; VPL, ventral posterolateral nucleus of the thalamus; VPM, ventral posteromedial nucleus of the thalamus.



**Fig. 14.12** Major interconnections of the basal ganglia.

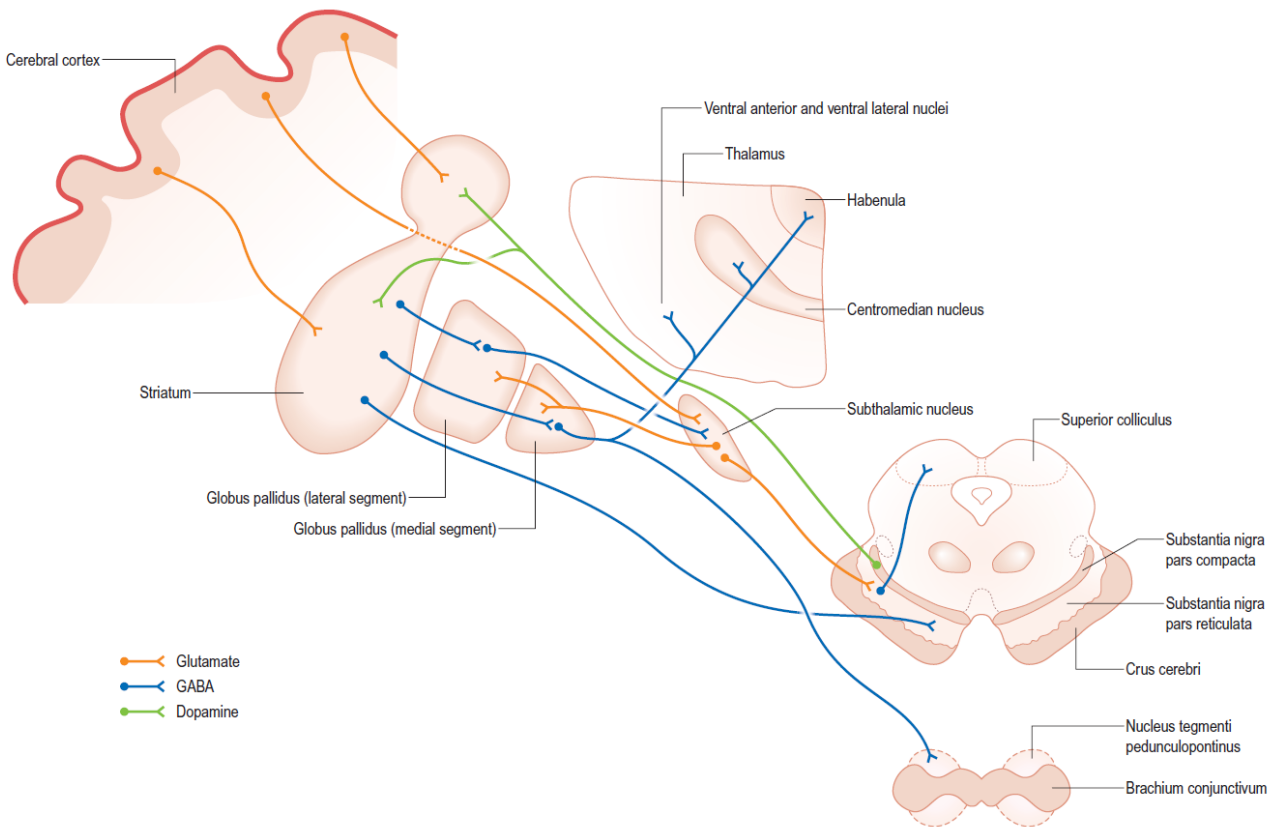
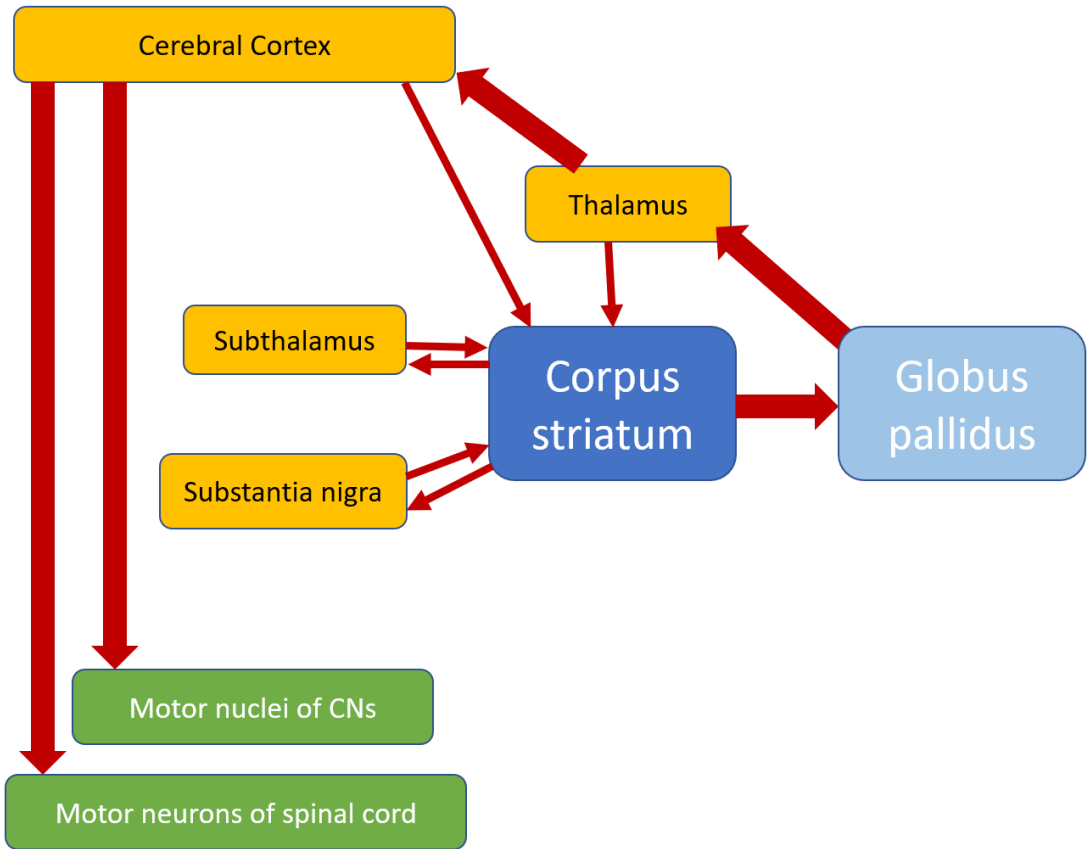
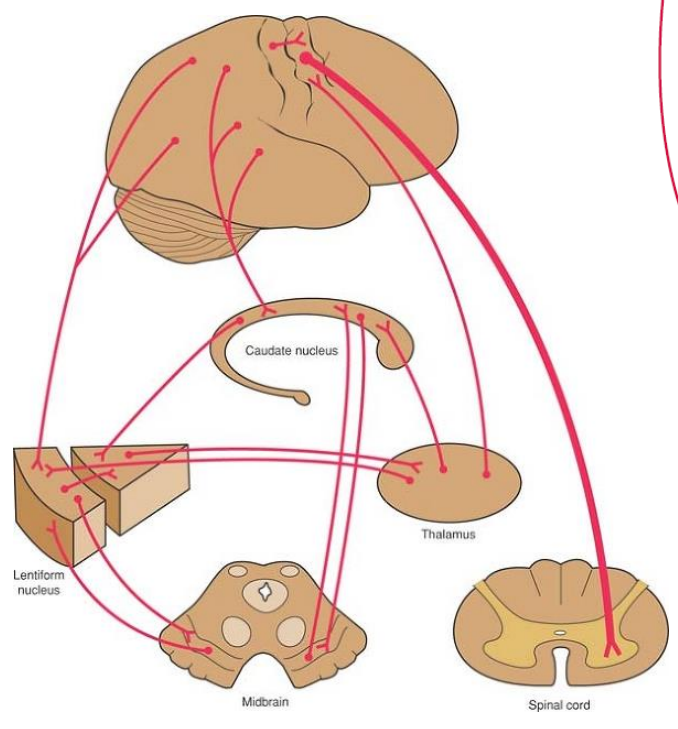
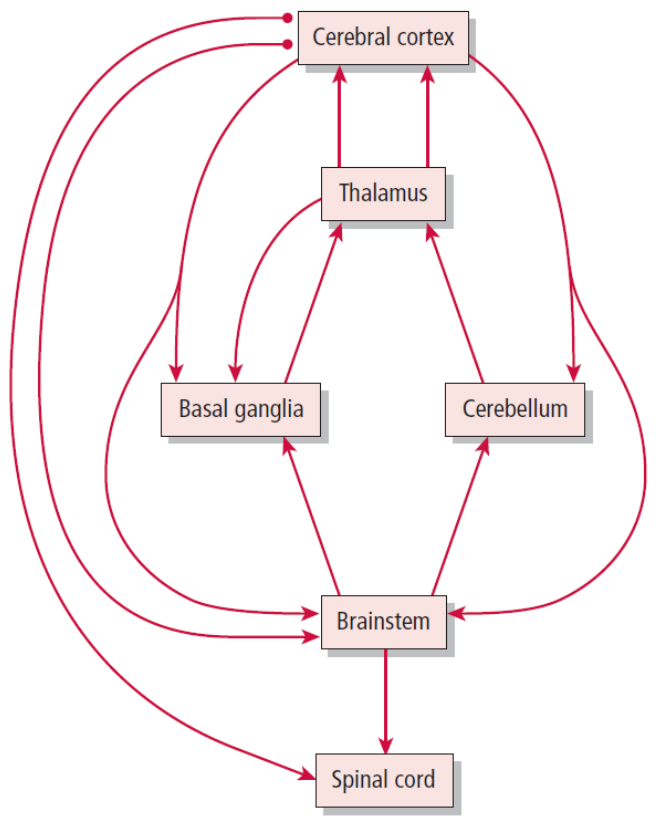
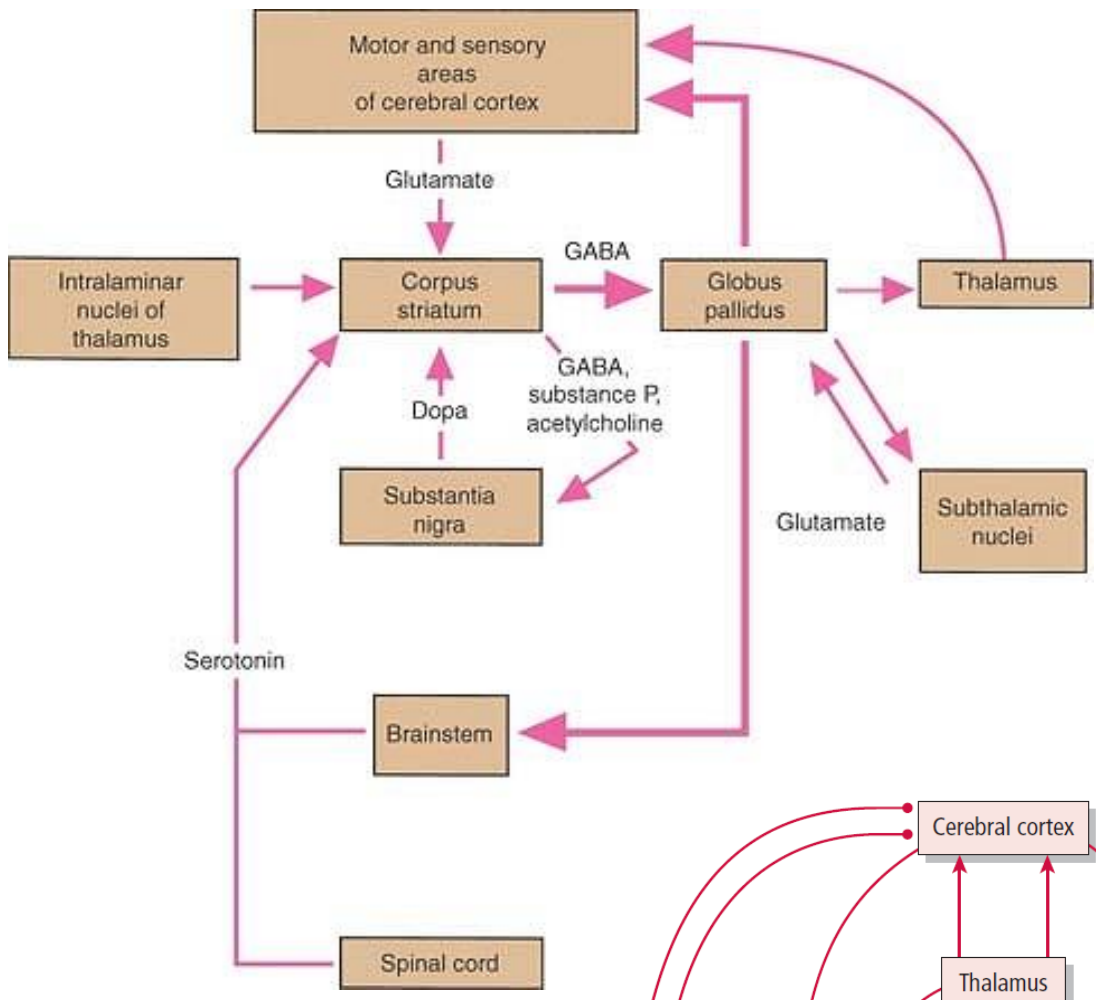
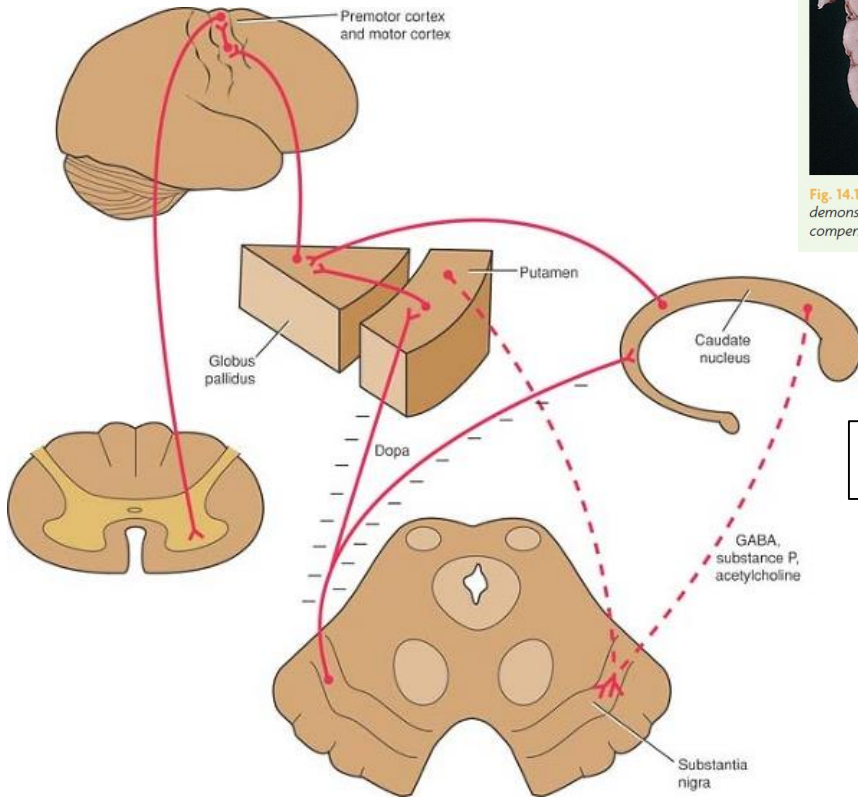


Fig. 14.14 Transverse section through the basal ganglia showing the principal connections of the globus pallidus with the thalamus and subthalamic nucleus.

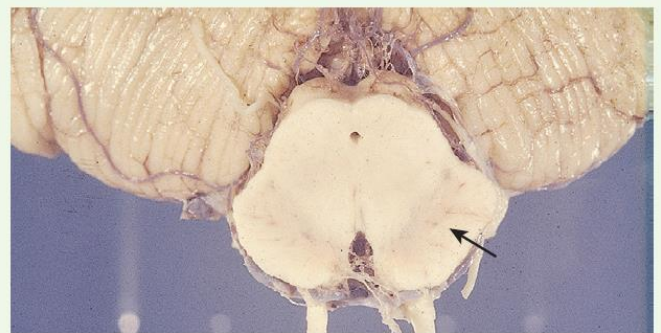




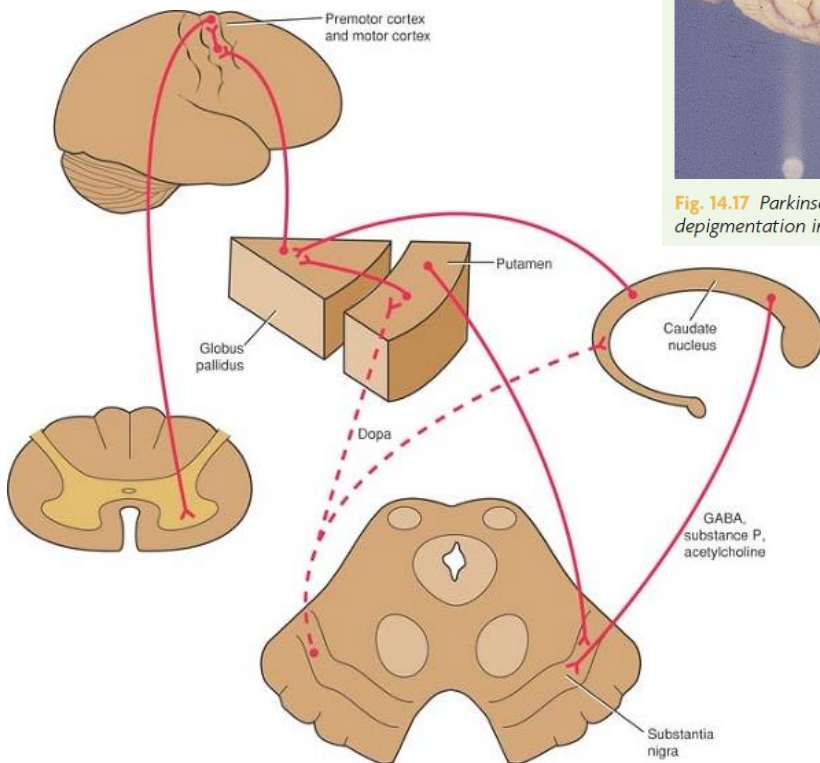
**Fig. 14.15** Huntington's disease. Section through the cerebral hemisphere demonstrating marked atrophy of the caudate nuclei (arrows), with compensatory enlargement of the lateral ventricles.



## Huntington's disease



**Fig. 14.17** Parkinson's disease. Section through the midbrain demonstrating depigmentation in the substantia nigra due to loss of melanin (arrow).



## Parkinson's disease