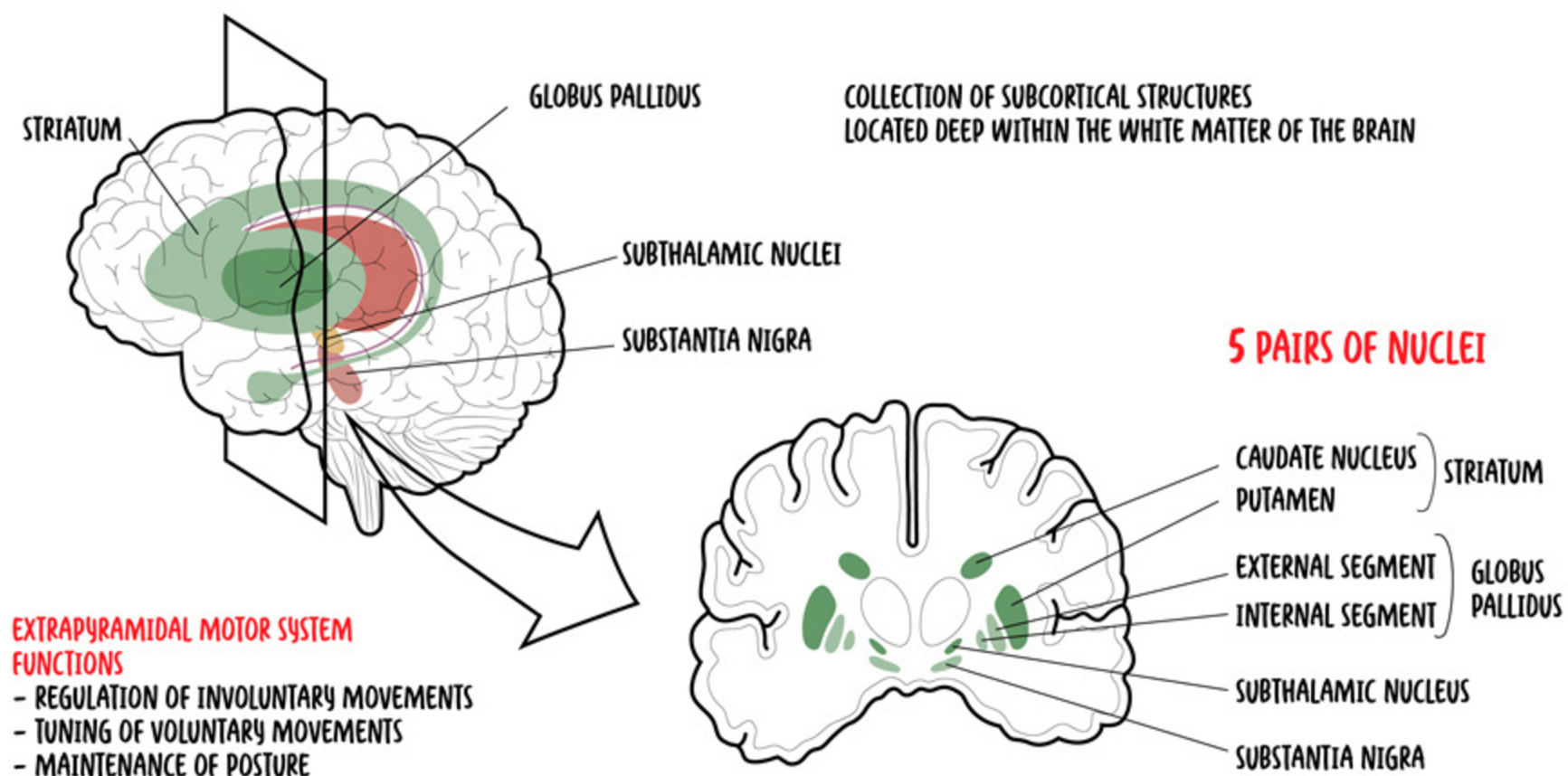
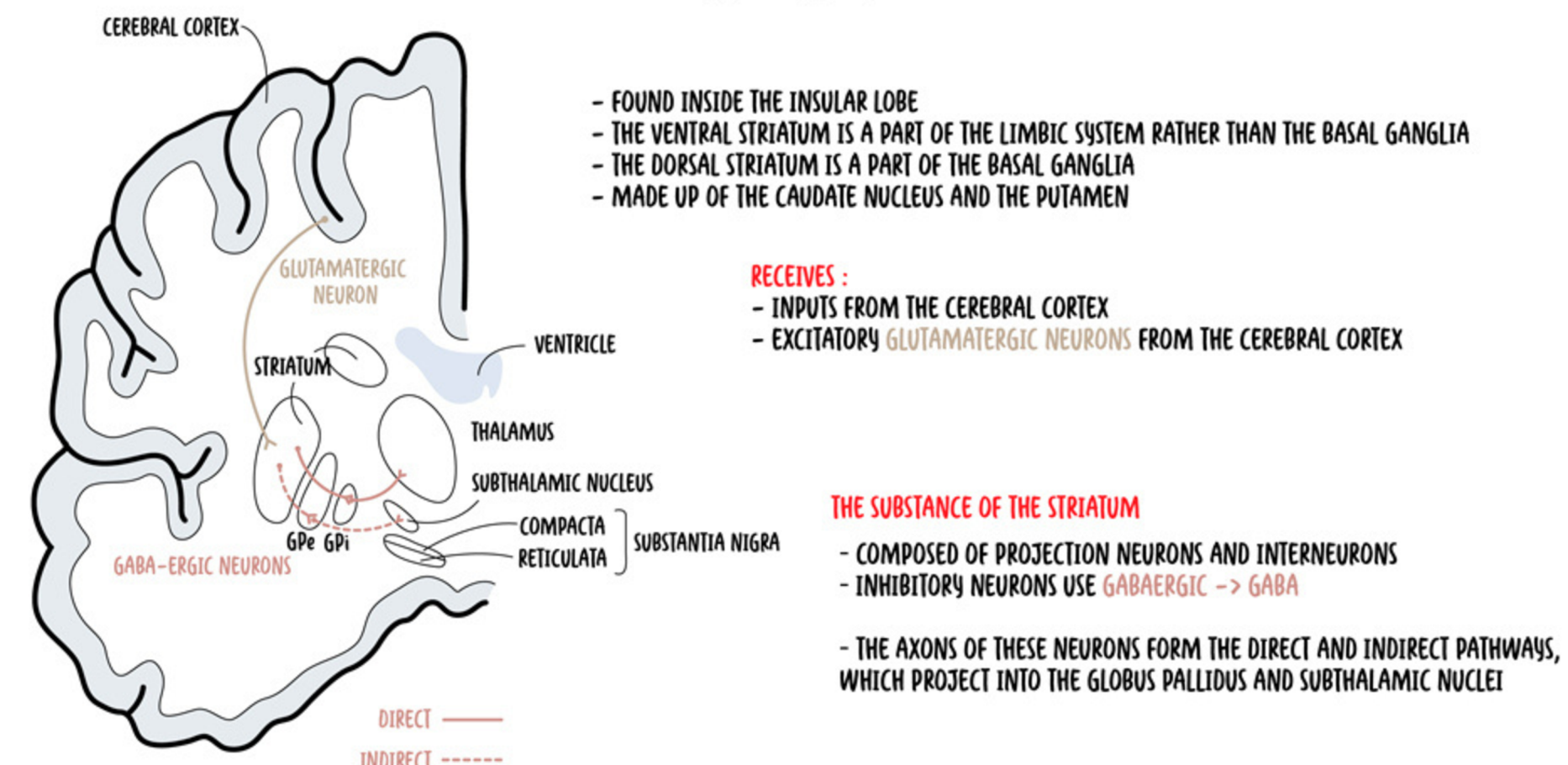


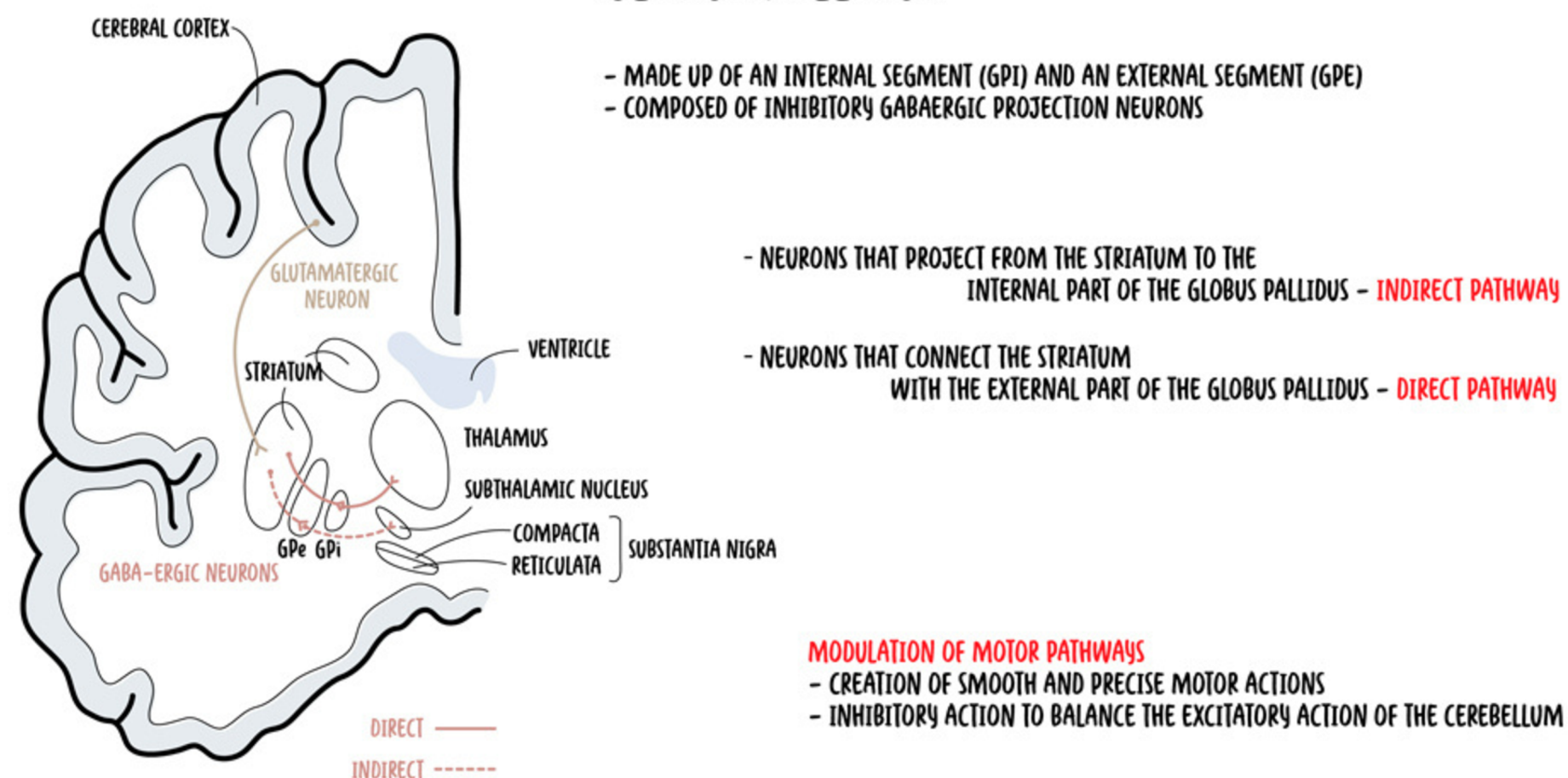
BASAL GANGLIA



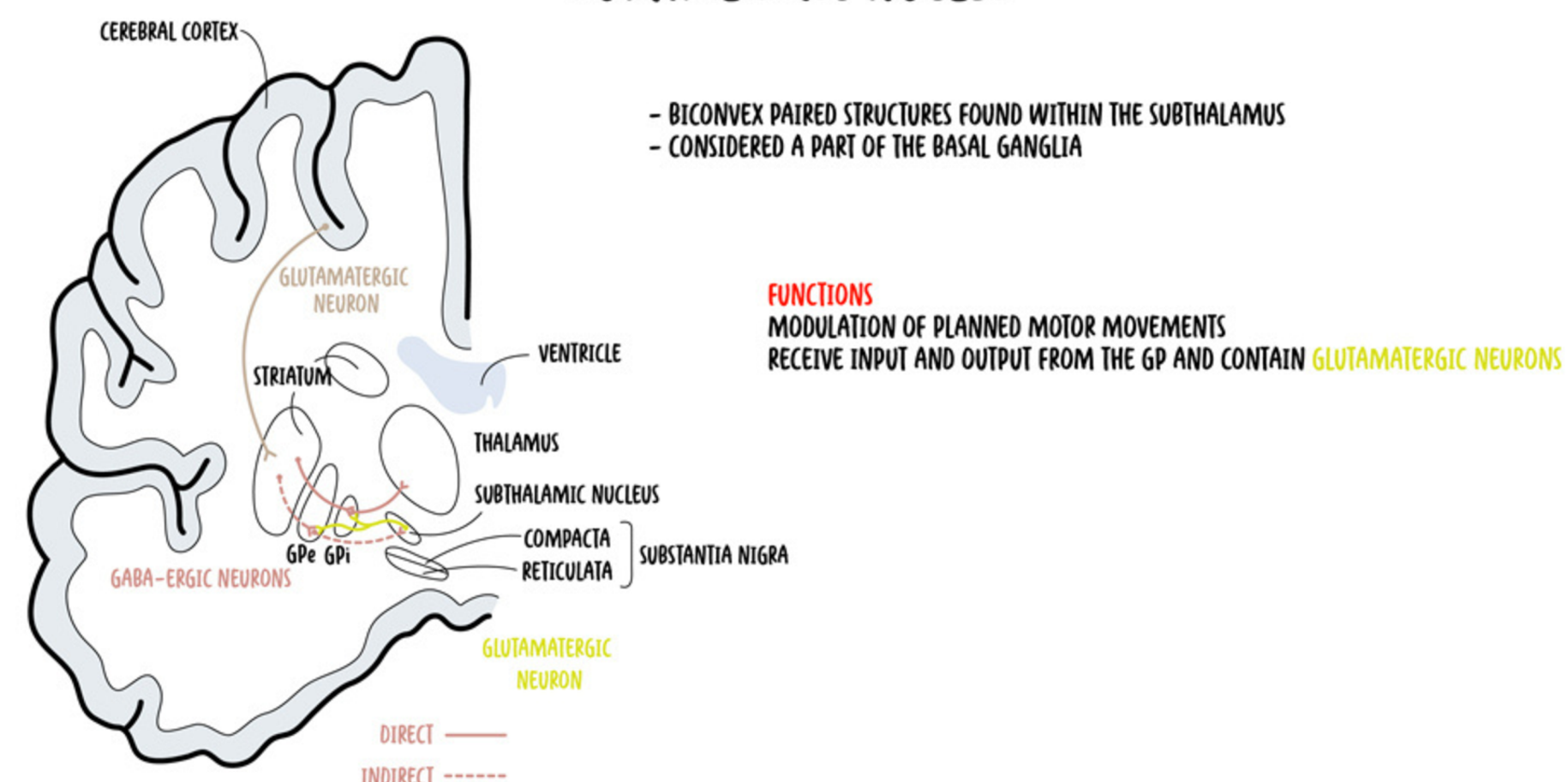
STRIATUM



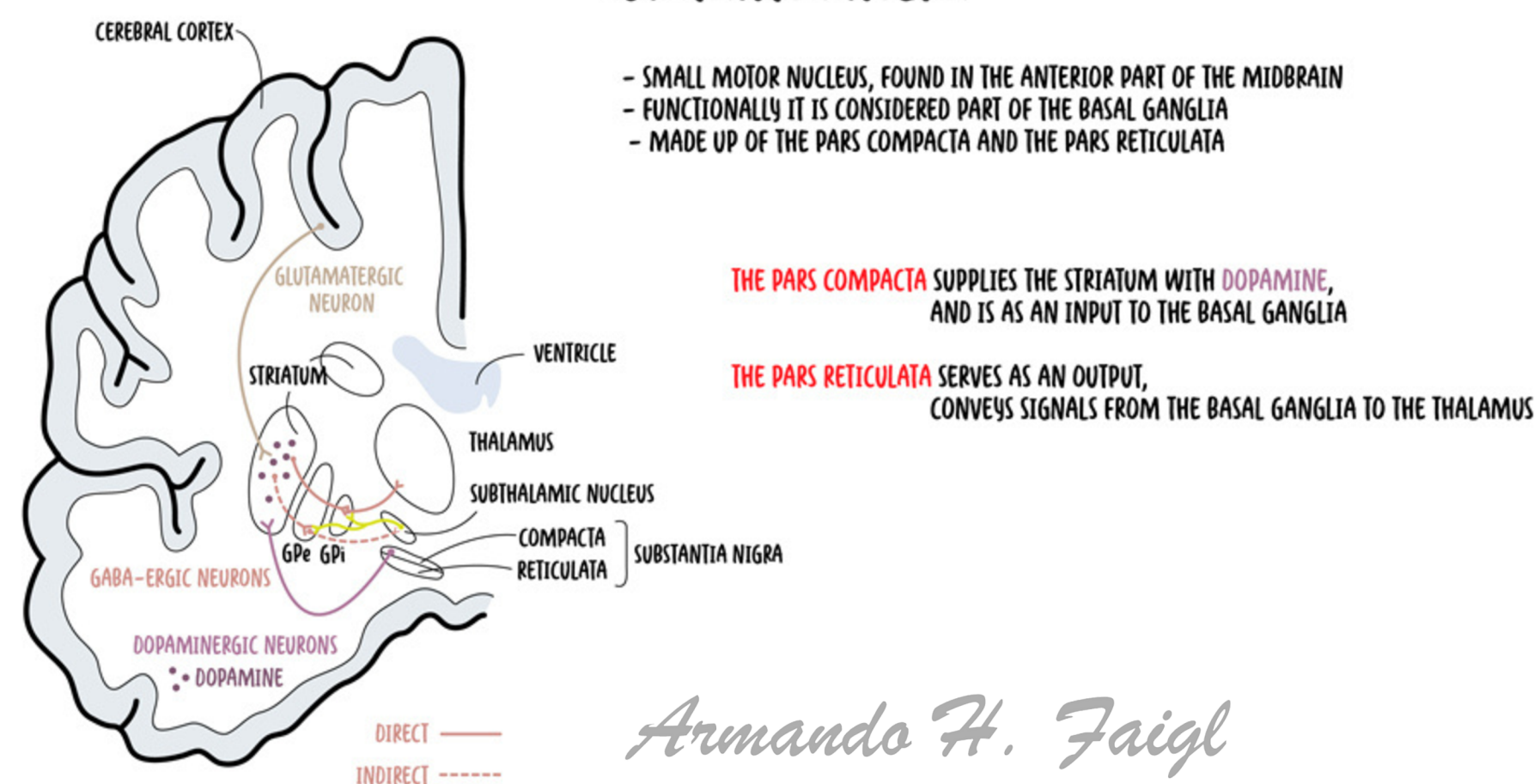
GLOBUS PALLIDUS



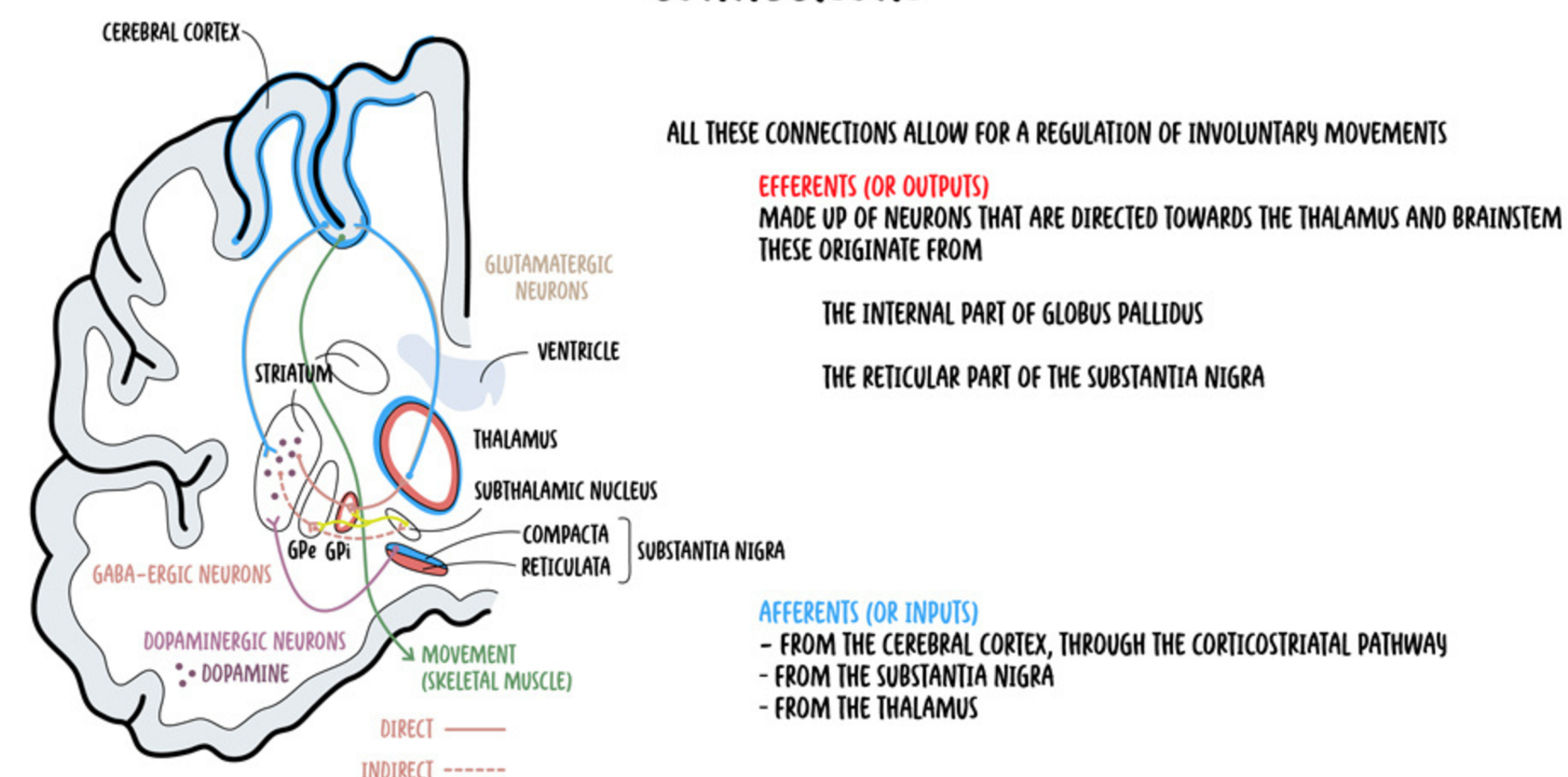
SUBTHALAMIC NUCLEI



SUBSTANTIA NIGRA

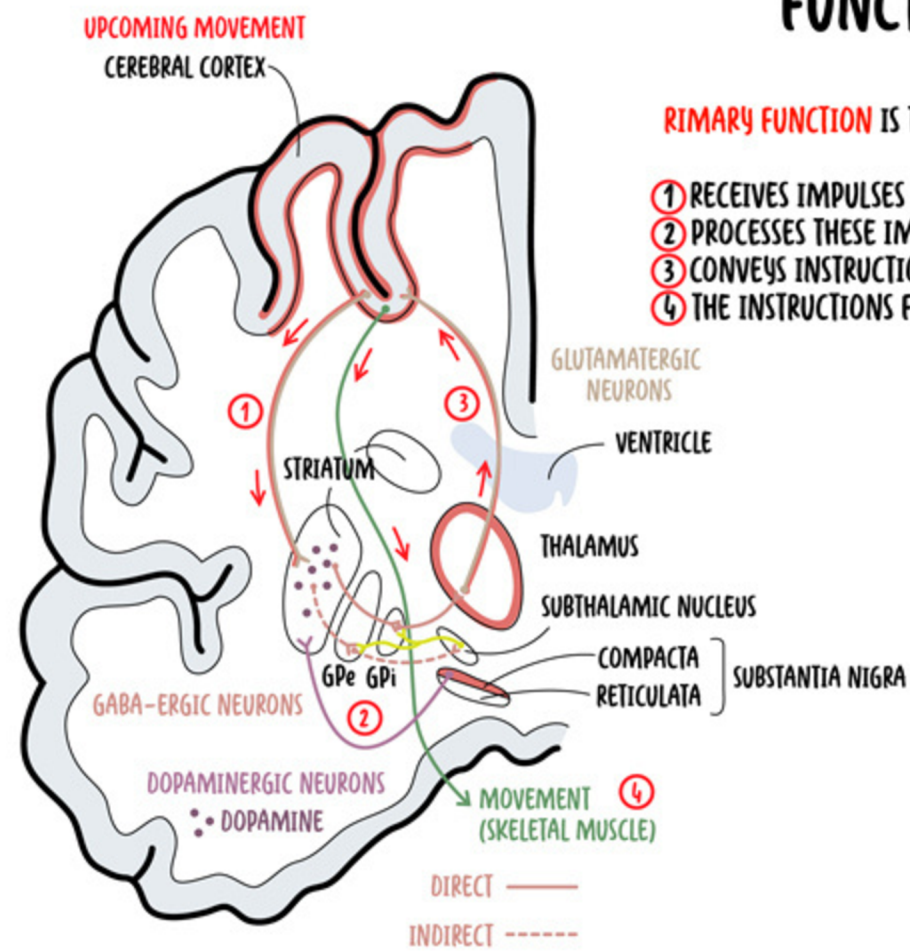


CONNECTIONS



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FUNCTIONS



PRIMARY FUNCTION IS TO FINE-TUNE VOLUNTARY MOVEMENTS

- 1 RECEIVES IMPULSES FOR THE UPCOMING MOVEMENT FROM THE CEREBRAL CORTIX
- 2 PROCESSES THESE IMPULSES
- 3 CONVEYS INSTRUCTIONS TO THE THALAMUS, WHICH SENDS THIS INFORMATION BACK TO THE CORTIX
- 4 THE INSTRUCTIONS FOR THE FINE-TUNED MOVEMENT IS THEN SENT TO THE SKELETAL MUSCLES VIA THE PYRAMIDAL MOTOR SYSTEM

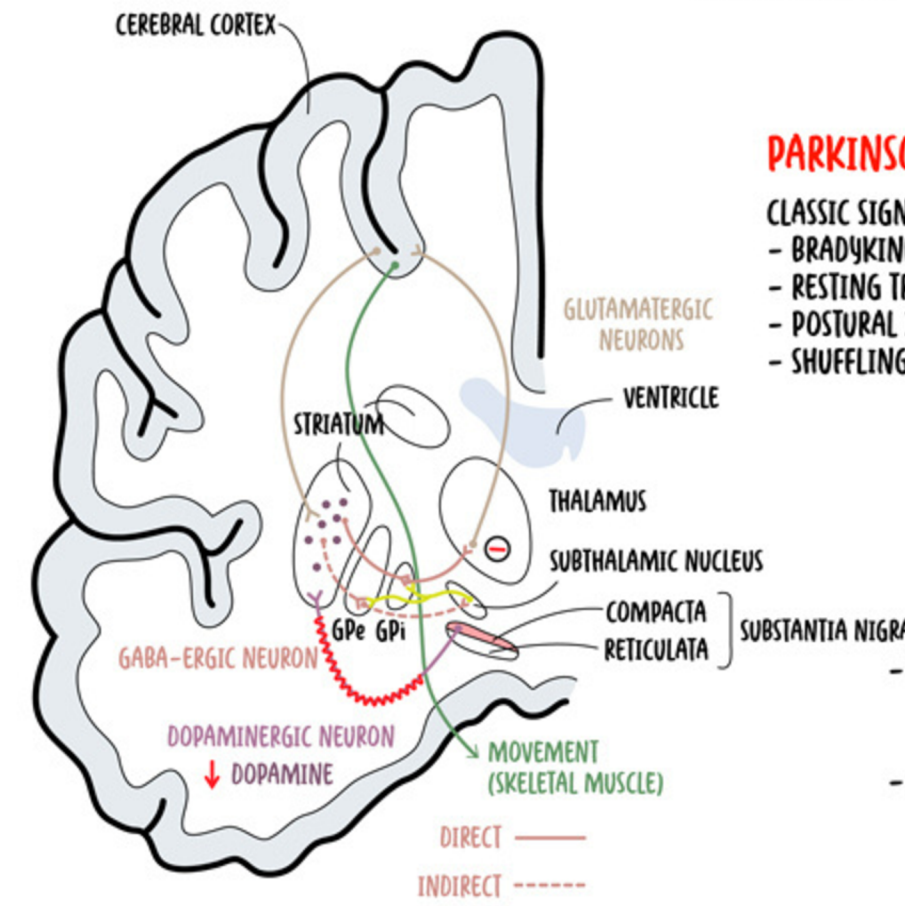
PREVENTING

- UNWANTED MOVEMENTS TO START AND REDUCING THE EXCITATORY INPUT FROM THE CEREBRAL CORTIX
- EXCESSIVE AND EXAGGERATED MOVEMENTS

OTHER FUNCTIONS INCLUDE:

- REWARD PROCESSING AND MOTIVATION
- DECISION MAKING
- WORKING MEMORY
- EYE MOVEMENTS

CLINICAL ANATOMY



PARKINSON DISEASE

CLASSIC SIGNS AND SYMPTOMS

- BRADYKINESIA
- RESTING TREMOR
- POSTURAL INSTABILITY
- SHUFFLING GAIT

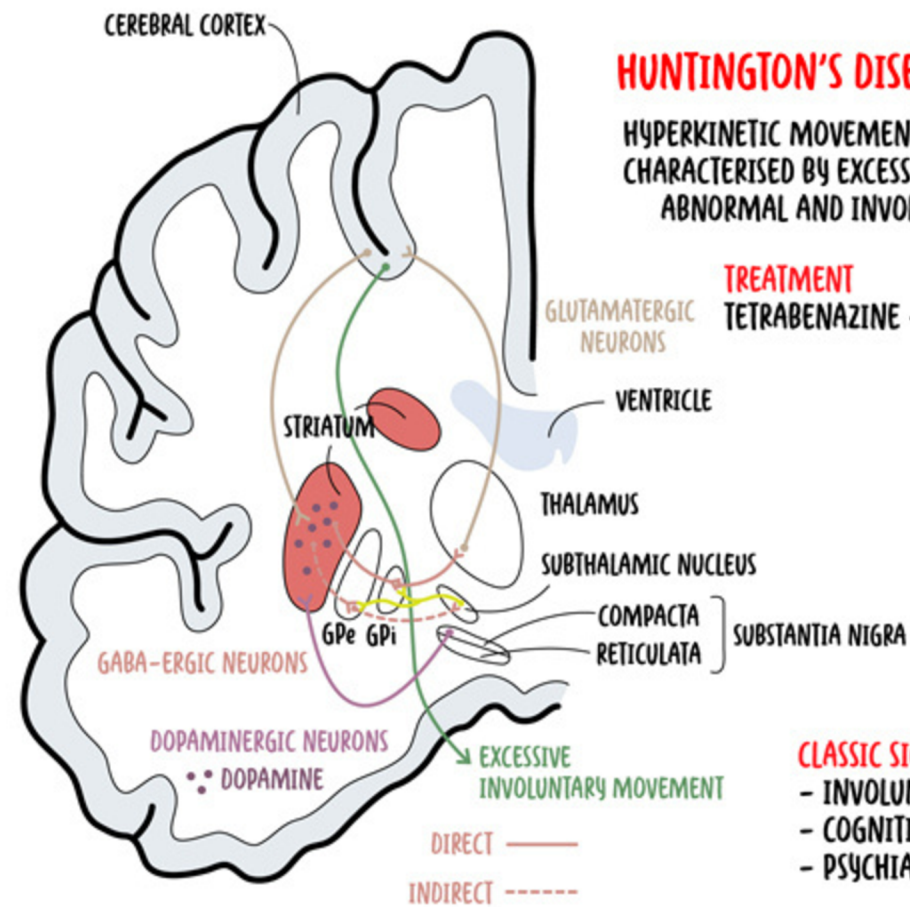


- RESULT OF NEURODEGENERATION OF DOPAMINERGIC NEURONS IN THE SUBSTANTIA NIGRA PARS COMPACTA

- CLASSIC FEATURES OF PARKINSON'S PATIENTS:

BRADYKINESIA, RESTING TREMOR, RIGIDITY AND POSTURAL INSTABILITY - HYPOKINETIC MOVEMENT DISORDER

CLINICAL ANATOMY



HUNTINGTON'S DISEASE

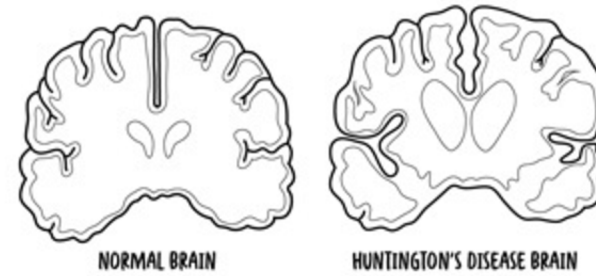
HYPERKINETIC MOVEMENT DISORDER CHARACTERISED BY EXCESSIVE, ABNORMAL AND INVOLUNTARY MOVEMENTS

TREATMENT

TETRABENAZINE - INHIBITS UPTAKE OF MONOAMINES

CAUSE

GENETIC ERROR - CAG REPEAT ON CHROMOSOME 4P
- ABNORMALLY LONG HUNTINGTON GENE LEADS TO NEURONAL DEATH IN THE CAUDATE AND PUTAMEN OF THE BASAL GANGLIA



CLASSIC SIGNS AND SYMPTOMS

- INVOLUNTARY MOVEMENTS
- COGNITIVE DEGENERATIVE
- PSYCHIATRIC DYSFUNCTION

CLINICAL ANATOMY

HEMIBALLISM

- HYPERKINETIC
- INVOLUNTARY
- FORCEFUL MOVEMENTS OF THE IPSILATERAL ARM AND LEG



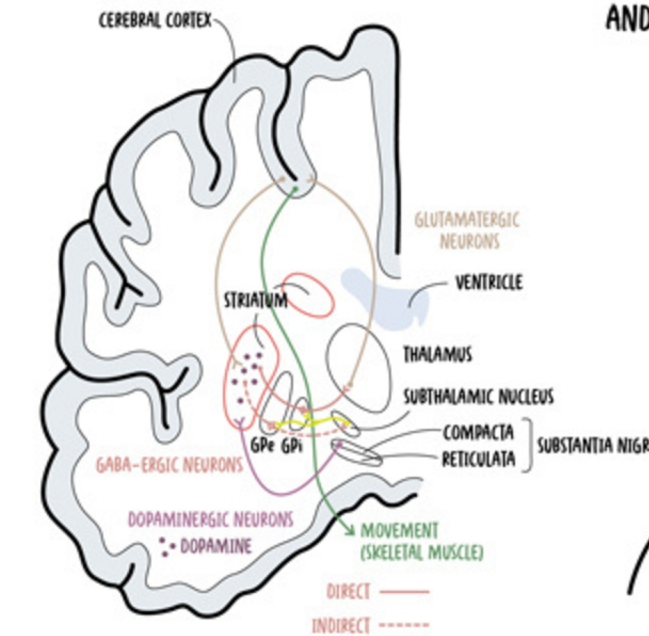
CAUSE

- LESION IN THE CONTRALATERAL SUBTHALAMIC NUCLEI
- STROKE
- TRAUMATIC BRAIN INJURY
- NEOPLASM
- VASCULAR MALFORMATION

TOURETTE SYNDROME

SUDDEN, REPETITIVE UNCONTROLLED MOVEMENTS AND VOCALISATIONS CALLED "TICS"

TICS ARE ASSOCIATED WITH DYSFUNCTION OF PROJECTIONS FROM THE STRIATUM AND RESULT IN INCREASED DOPAMINERGIC ACTIVITY



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