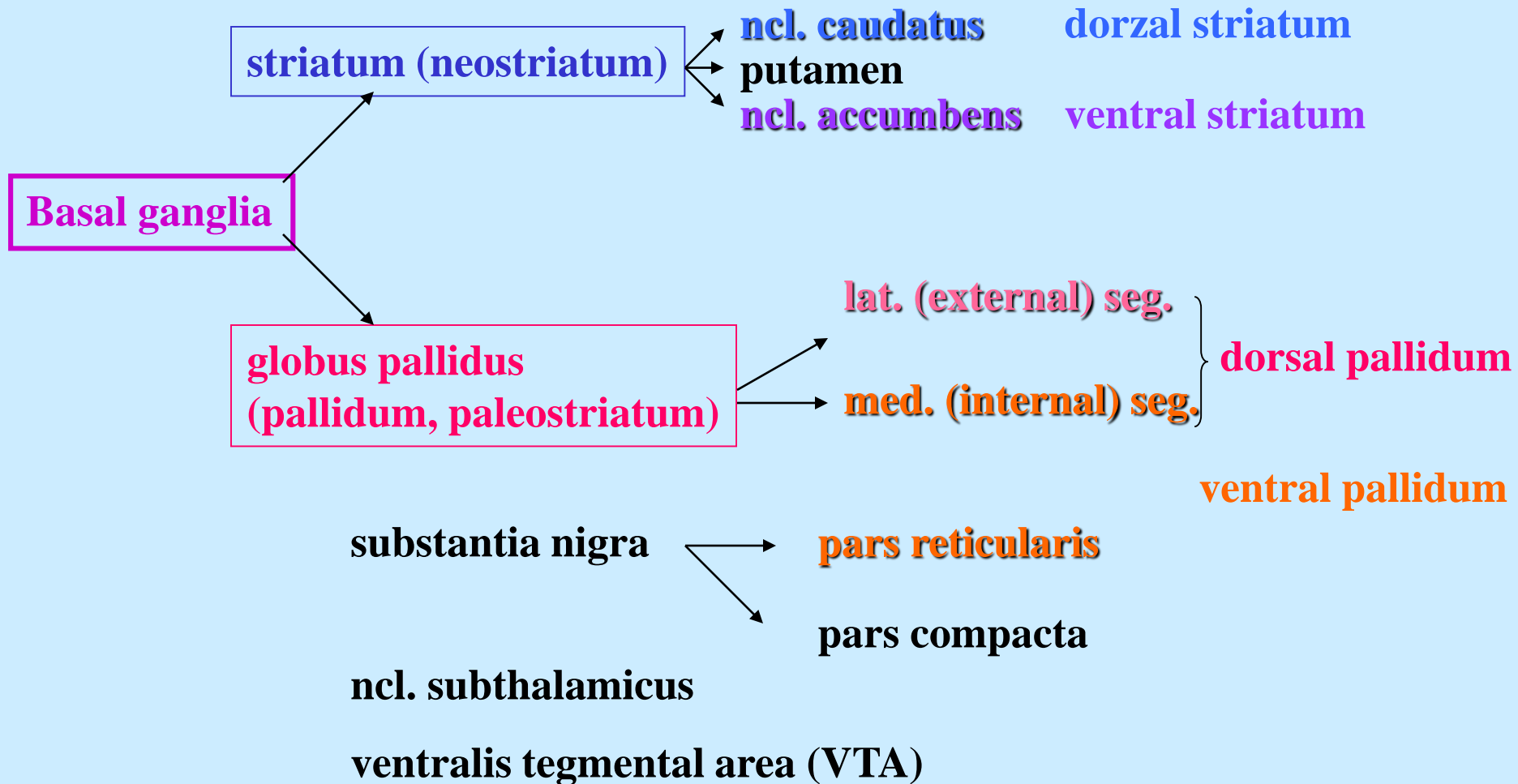


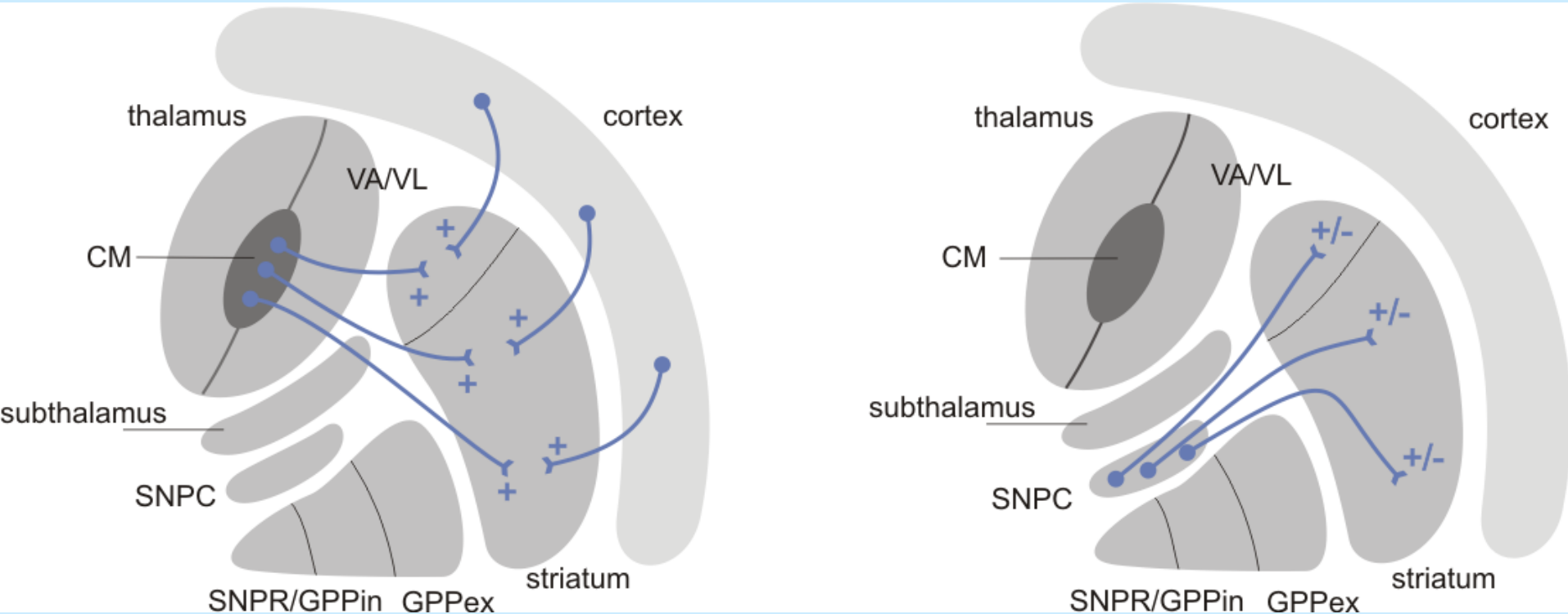
BASAL GANGLIA AND RELATED STRUCTURES



VENTRAL PALIDUM AND VENTRAL STRIATUM



AFFERENTATION OF BG

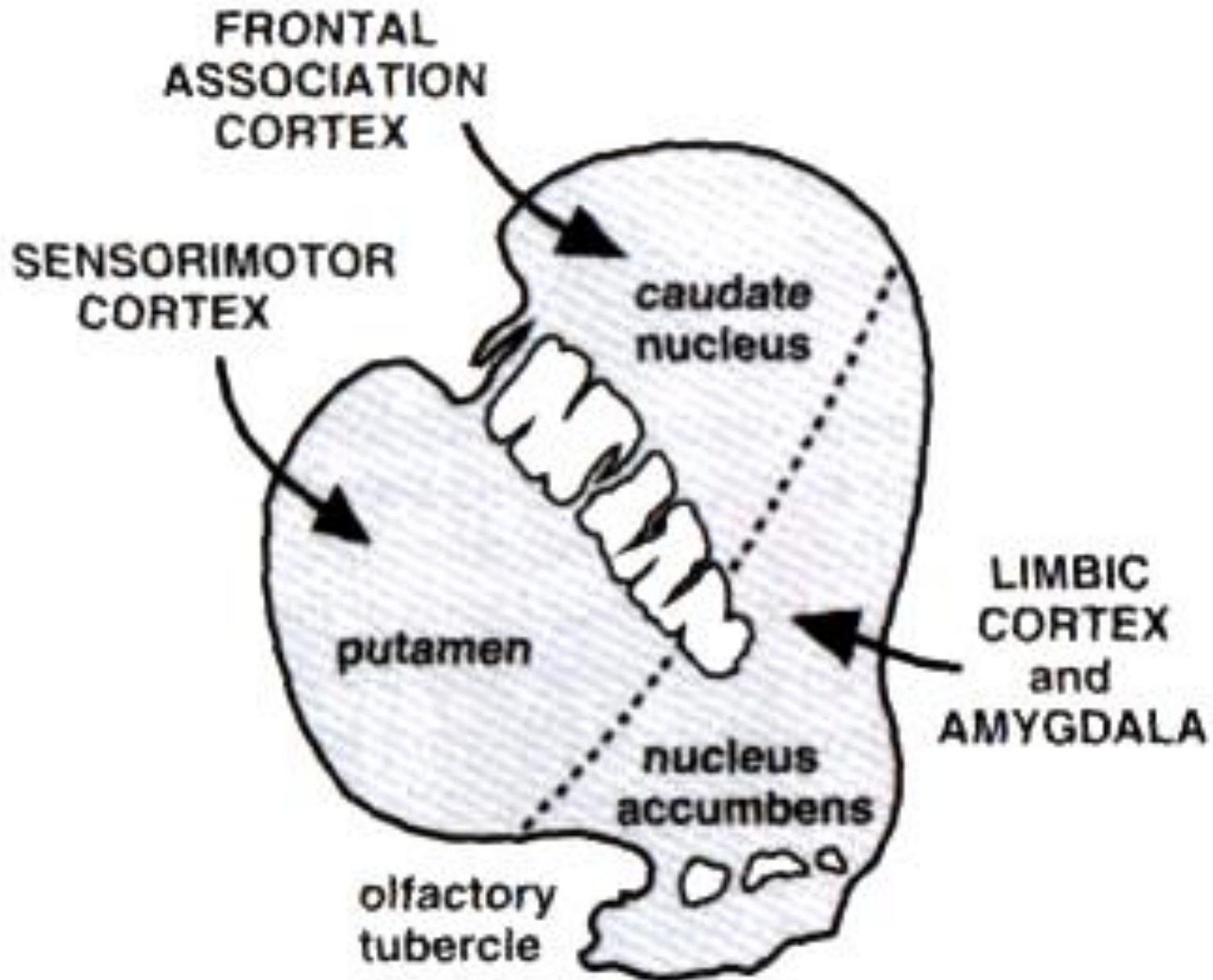


SNPC → striatum - dopamin

Dopamin-D1 = facilitatory on neurons of direct striatopalidal path

Dopamin-D2 = inhibitory on neurons of indirect striatopalidal path

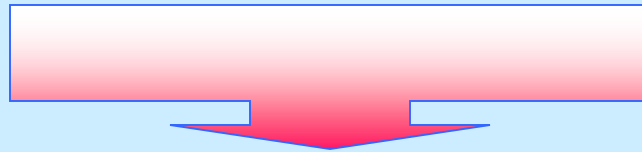
AFFERENTATION OF BG



AFFERENTATION OF BG

Input nuclei - STRIATUM

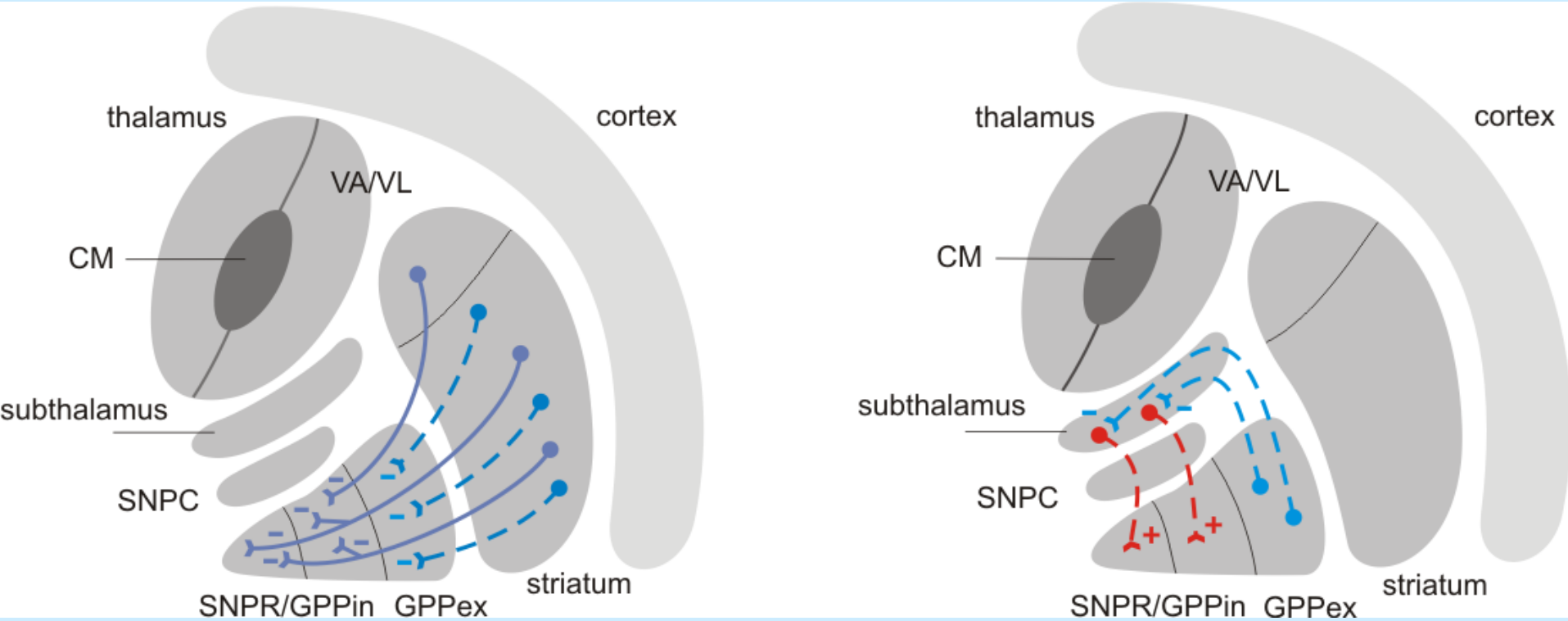
- **from cortex** - corticostriatic tr. – somatotopic arrangement
- **from thalamus** - centromedial ncl. – somatotopic arrangement



glutamate or aspartate (excitation)

- **from substantia nigra pars compacta** - nigrostriatal tract
dopaminergic projection, final effect according to D1 or D2 receptors

INTRINSIC CONNECTION OF BG



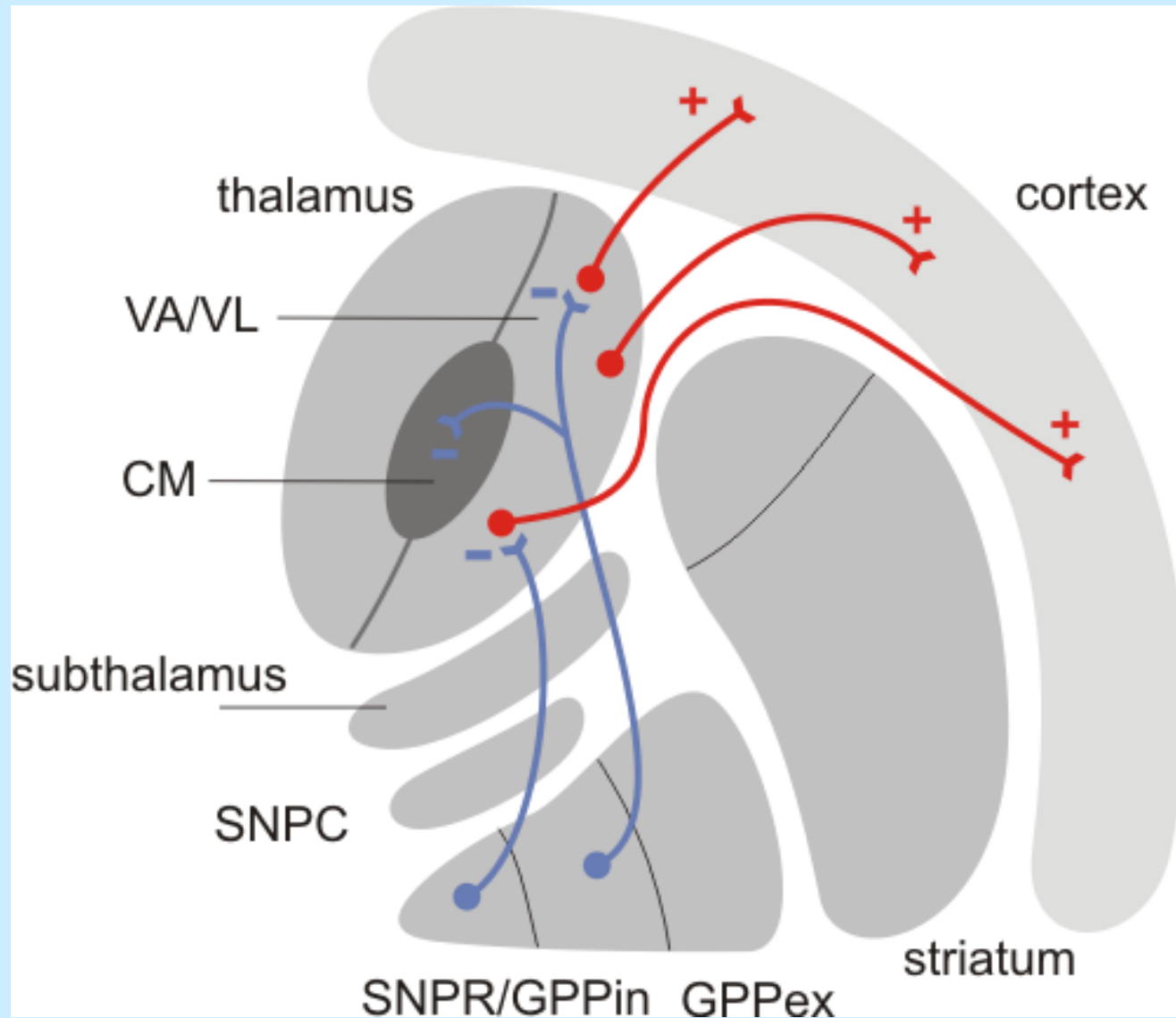
————— direct (-) GABA

== == == == == indirect (-) GABA, (+) glutamate

INTRINSIC CONNECTION OF BG

- **direct striatopallidal connections mainly into GPpm/SNpr (-GABA)**
- **indirect striatopallidal connections into GPpl (- GABA)→ nclSth
→ GPpm/SNpr (+glu), do GPpl (-)**
- **SNpc into striatum - dopamine**

EFFERENT CONNECTIONS OF BG

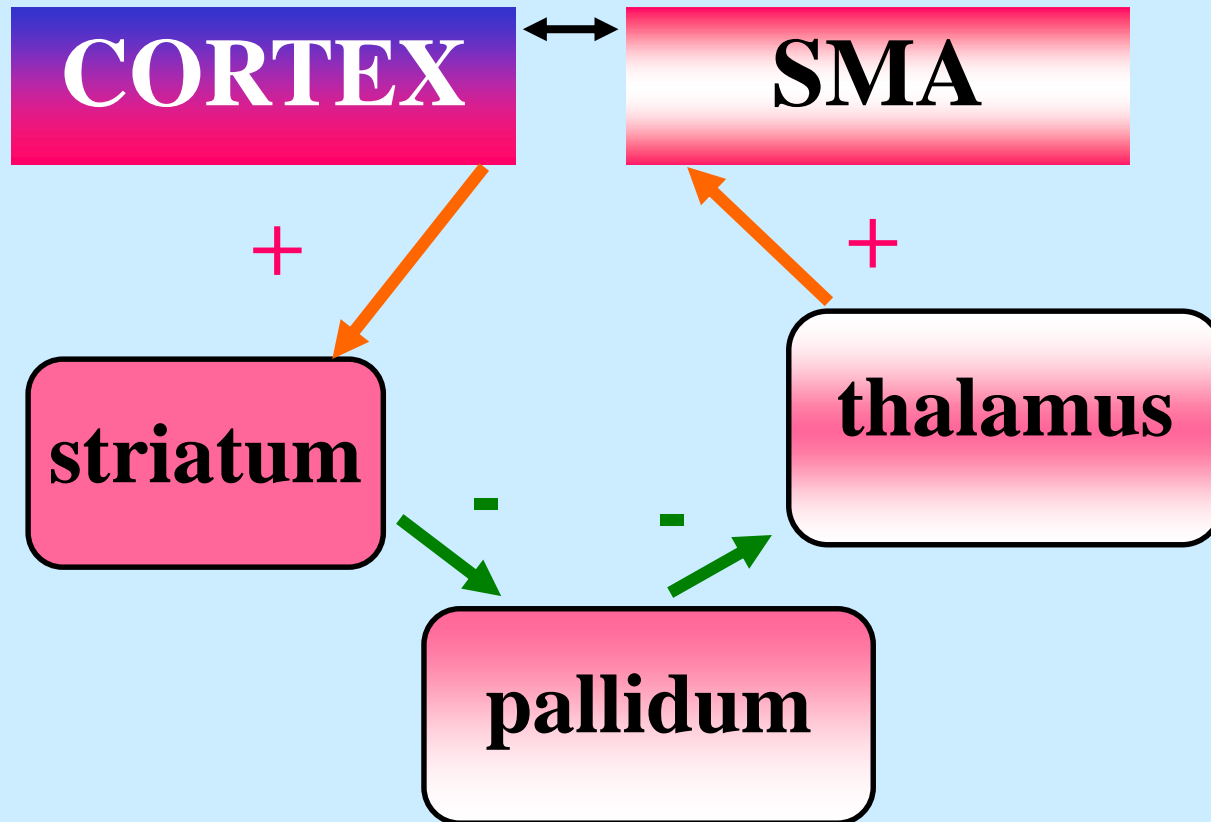


EFFERENT CONNECTIONS OF BG

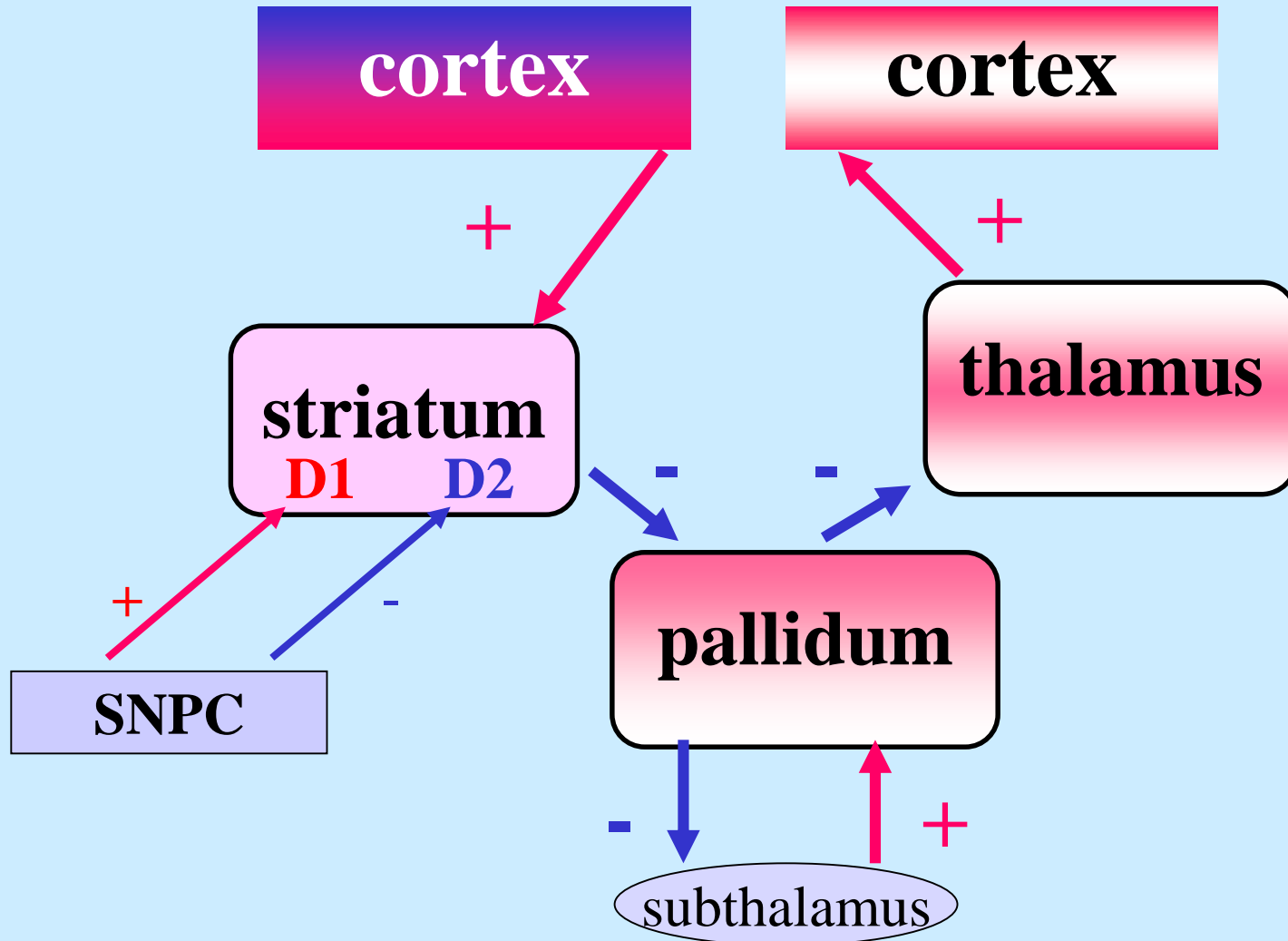
Output nuclei - GPpm, SNpr and ventral pallidum

- inhibitory connection (GABAergic) with motor thalamus (VL a VA)**

GENERAL CONNECTIONS OF BG



GENERAL CONNECTIONS OF BG



FUNCTIONAL LOOPS OF BASAL GANGLIA

Illustration of BG involvement in motor regulation

SENSORY-MOTOR LOOP

ASSOCIATION (PREFRONTAL) LOOP

LIMBIC LOOP

OCULOMOTOR LOOP