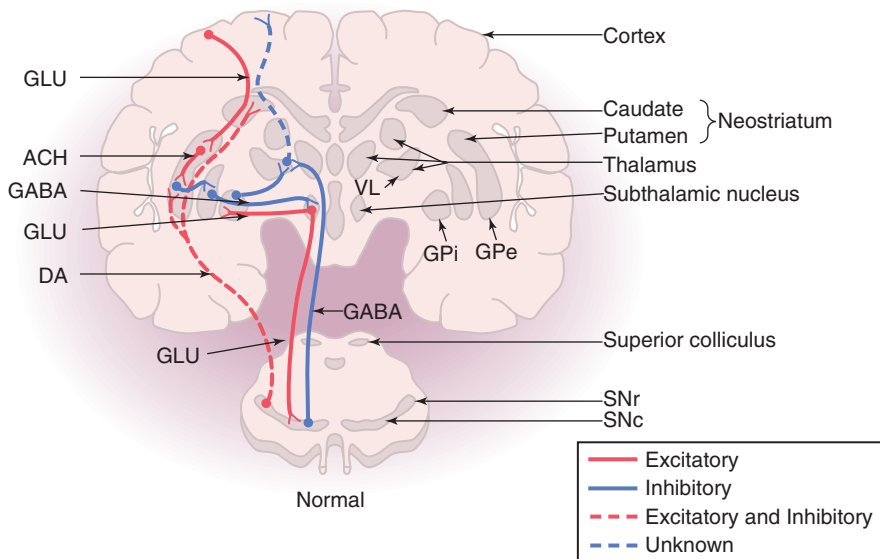


**FIGURE 114-1** Normal human voluntary motor system.



**FIGURE 114-2** Anatomy of the basal ganglia and their connections. The feedback loop proceeds from cerebral prefrontal areas to the basal ganglia and eventually back from the basal ganglia to the thalamus to the motor cortex. This ultimately regulates the descending corticospinal motor system. ACH, Acetylcholine; DA, dopamine; GABA,  $\gamma$ -aminobutyric acid; GLU, glutamate; GP, globus pallidum (e, external; i, internal); SN, substantia nigra (c, compacta; r, reticulate); VL, ventrolateral. (From Jankovic J: The extrapyramidal disorders: Introduction. In Goldman L, Bennett JC, editors: Cecil Textbook of Medicine, ed 21, Philadelphia, 2000, Saunders, p 2078).