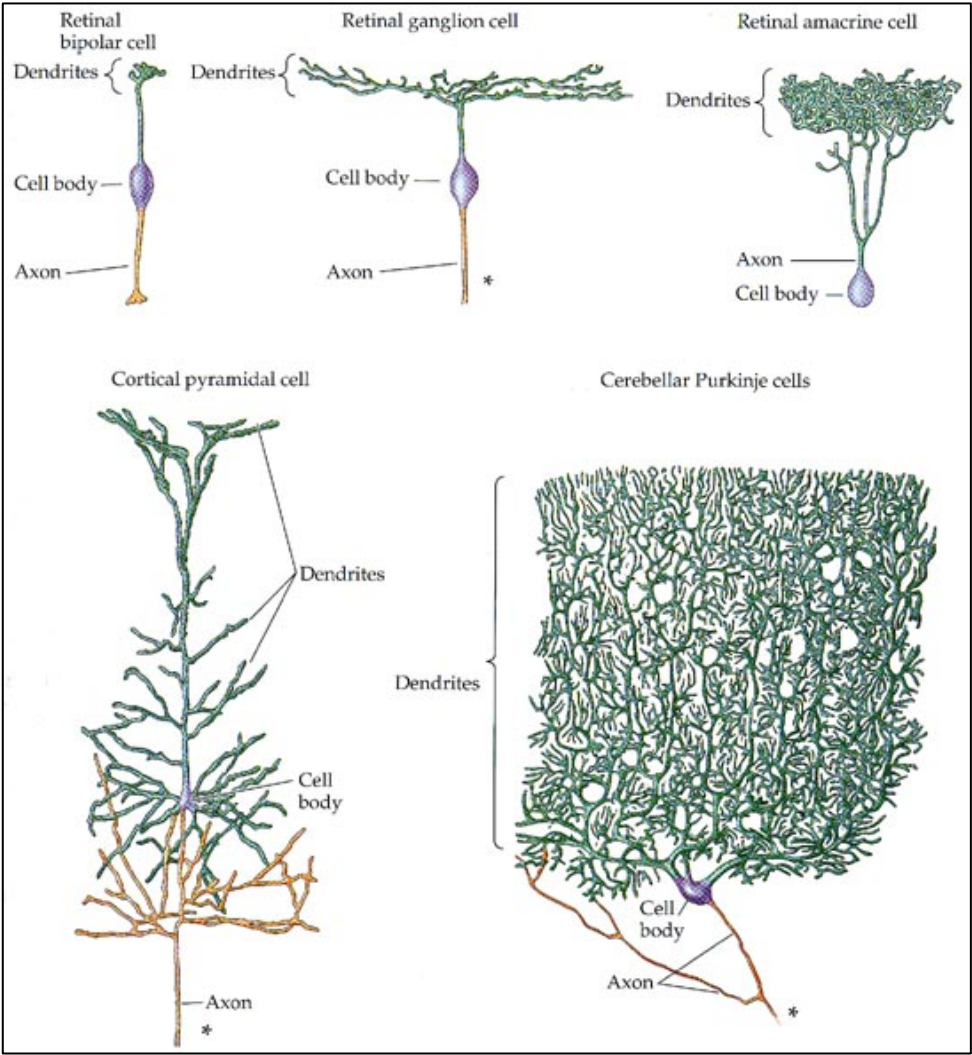
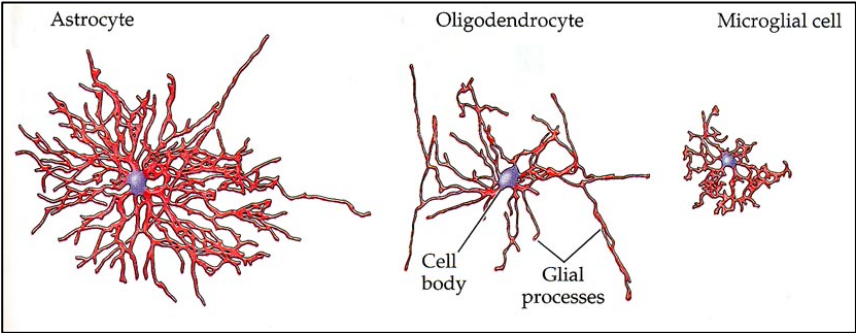


Cellular components of the mammalian nervous system

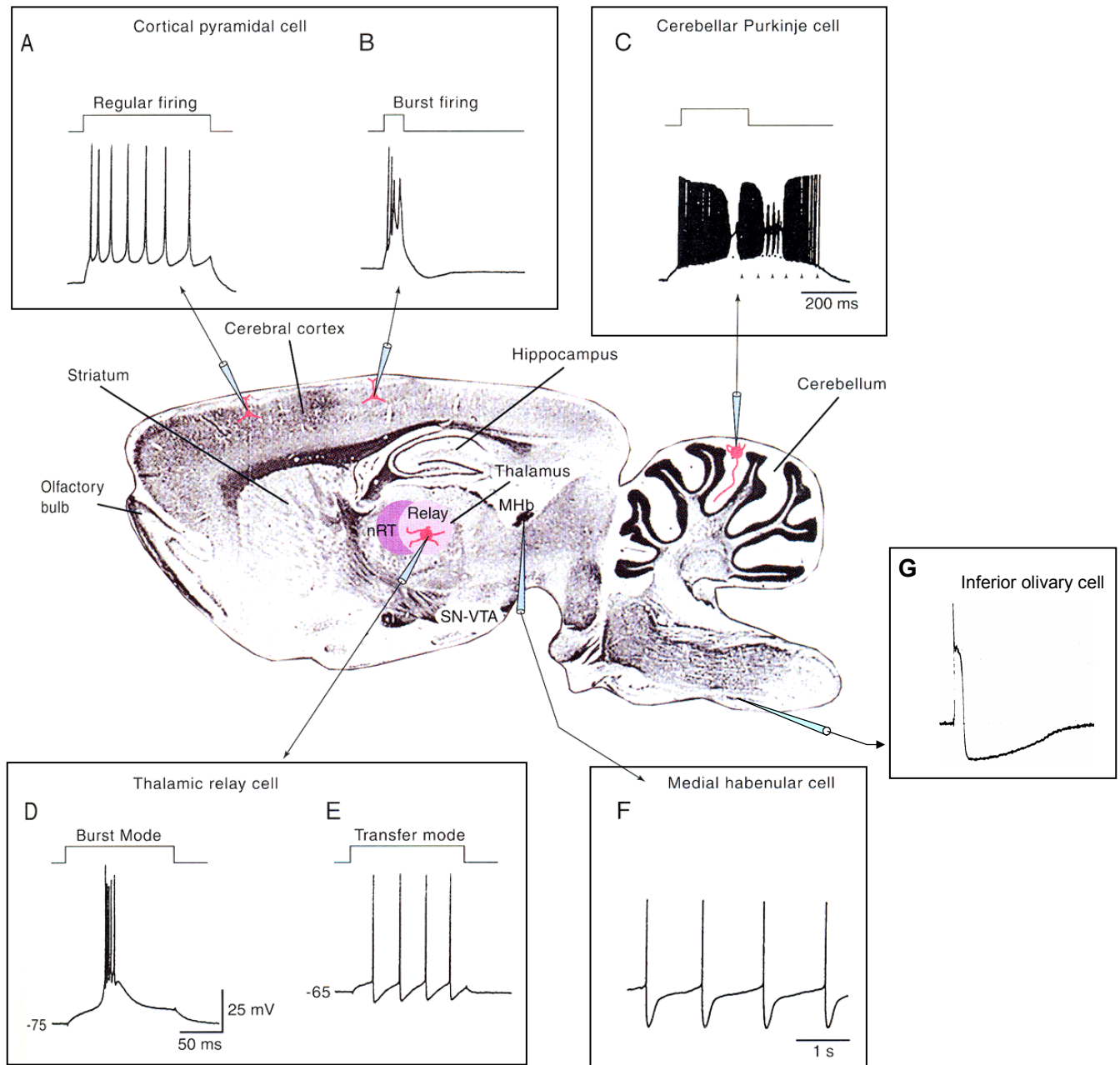
Neurons



Glial cells



**Neurons show
different
excitability
properties**



Functional organization of the nervous system

Neural circuits

Anatomical organization

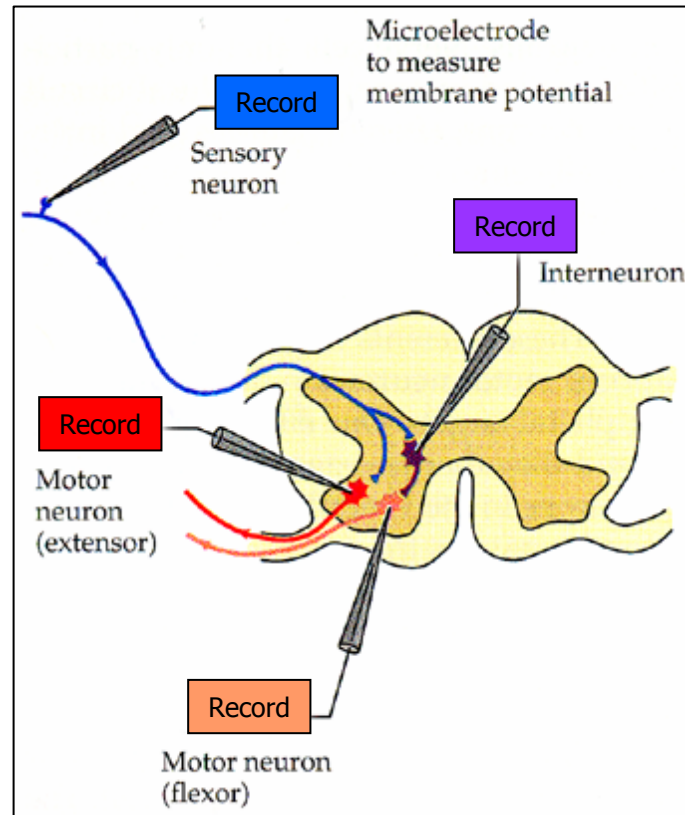
Central Nervous System (CNS)

- Brain
- Spinal Cord

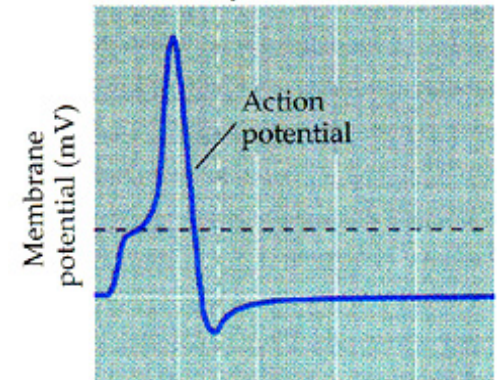
Peripheral Nervous System (PNS)

Autonomic Nervous System (ANS)

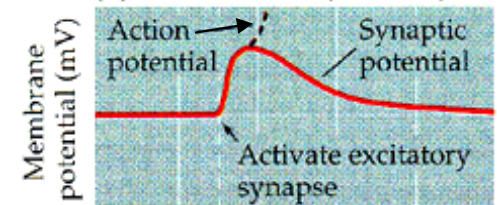
- Sympathetic division
- Parasympathetic division



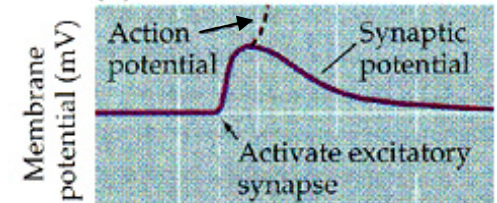
(A) Sensory neuron



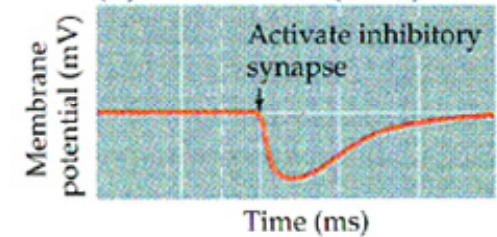
(B) Motor neuron (extensor)



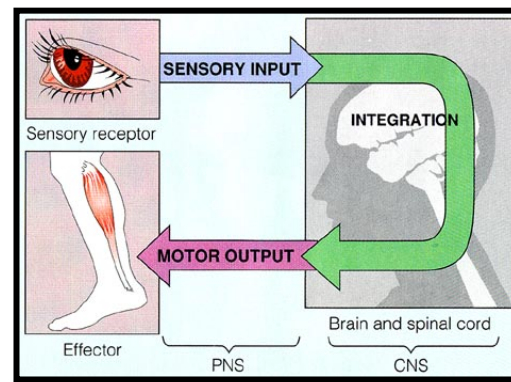
(C) Interneuron



(D) Motor neuron (flexor)

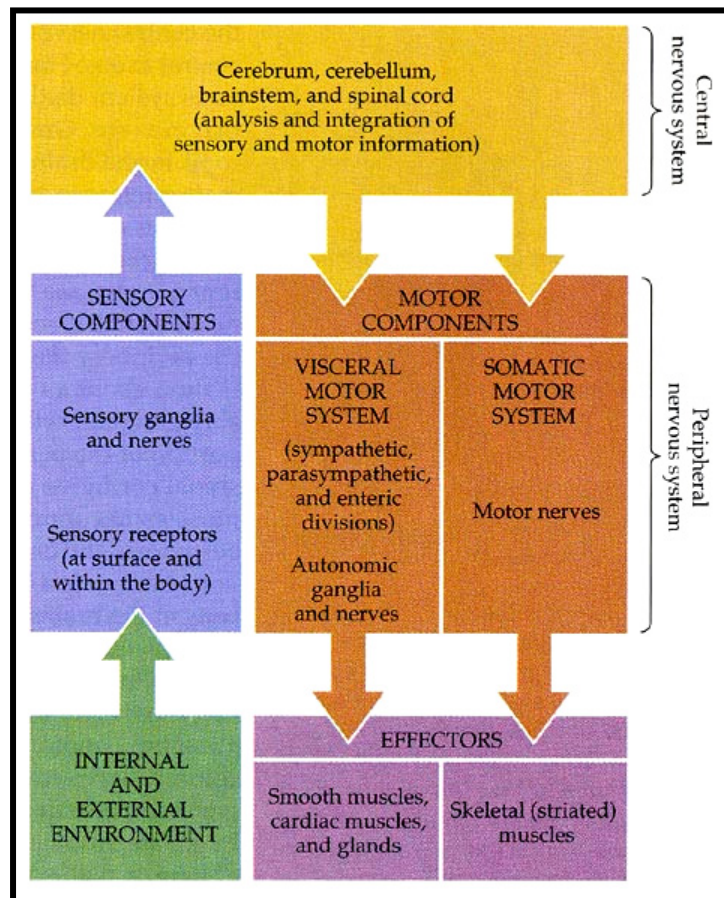


Functional organization of the nervous system



Five principles govern the organization of the major functional systems

Functional relationships among the major components of the nervous system



- 1 Each functional system involves several brain regions that perform different information processing.
- 2 Axon pathways link the components of a functional system.
- 3 Axonal projections occur in an orderly fashion, and create topographical maps.
- 4 Functional systems are organized in a hierarchical way.
- 5 Functional systems on one side of the nervous system control the contralateral side of the body.