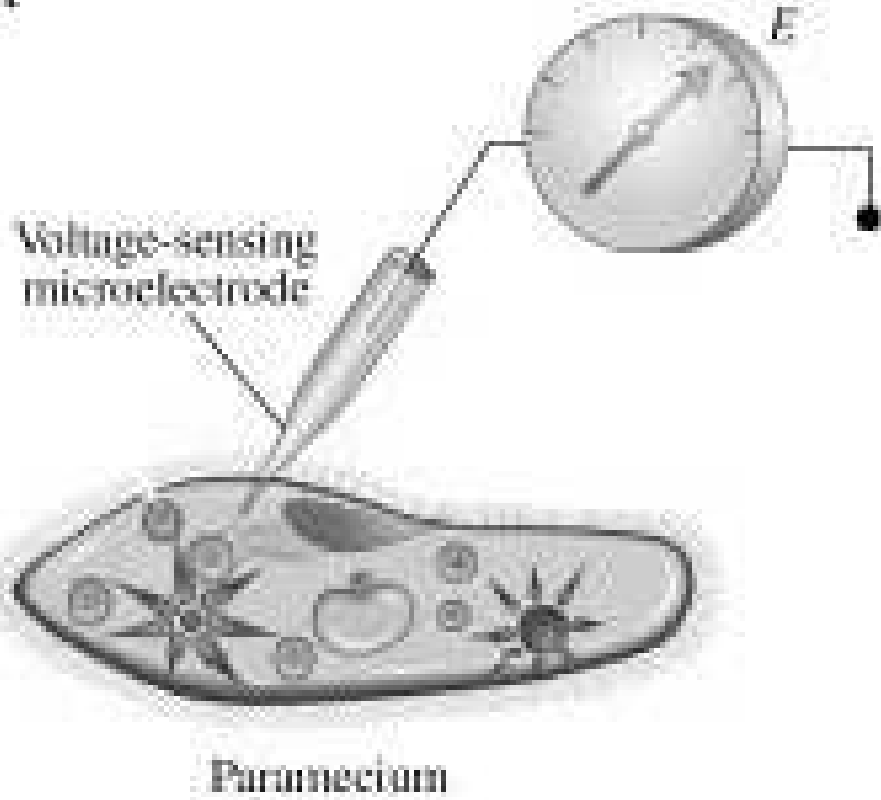
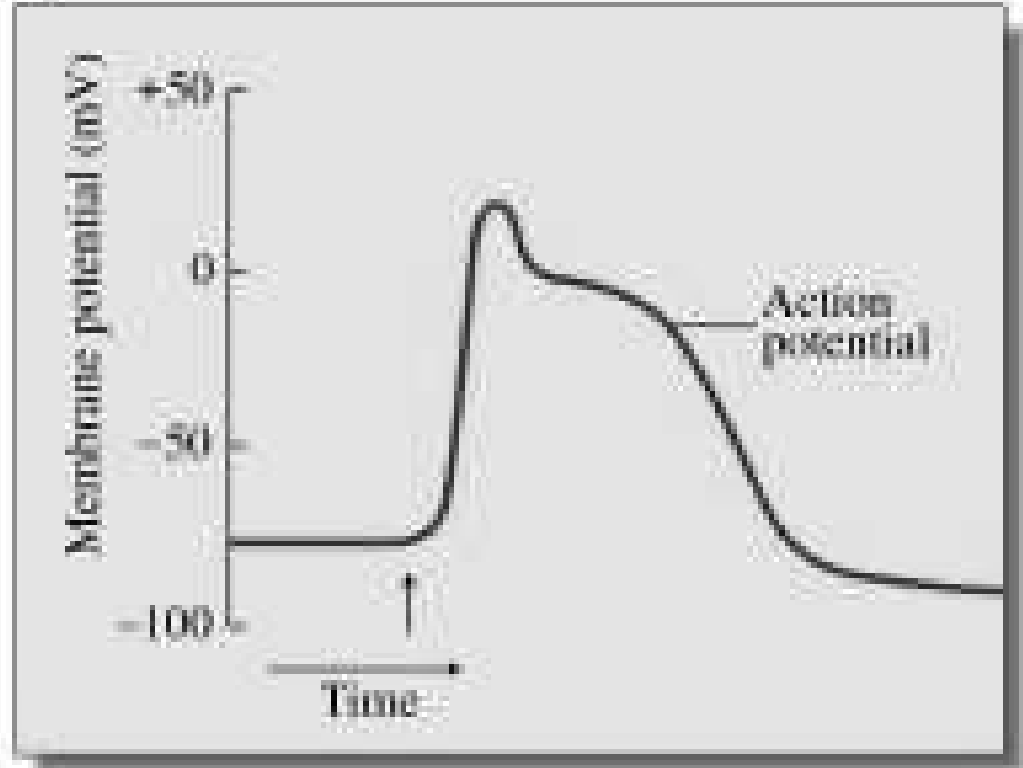


# Nervová soustava

A



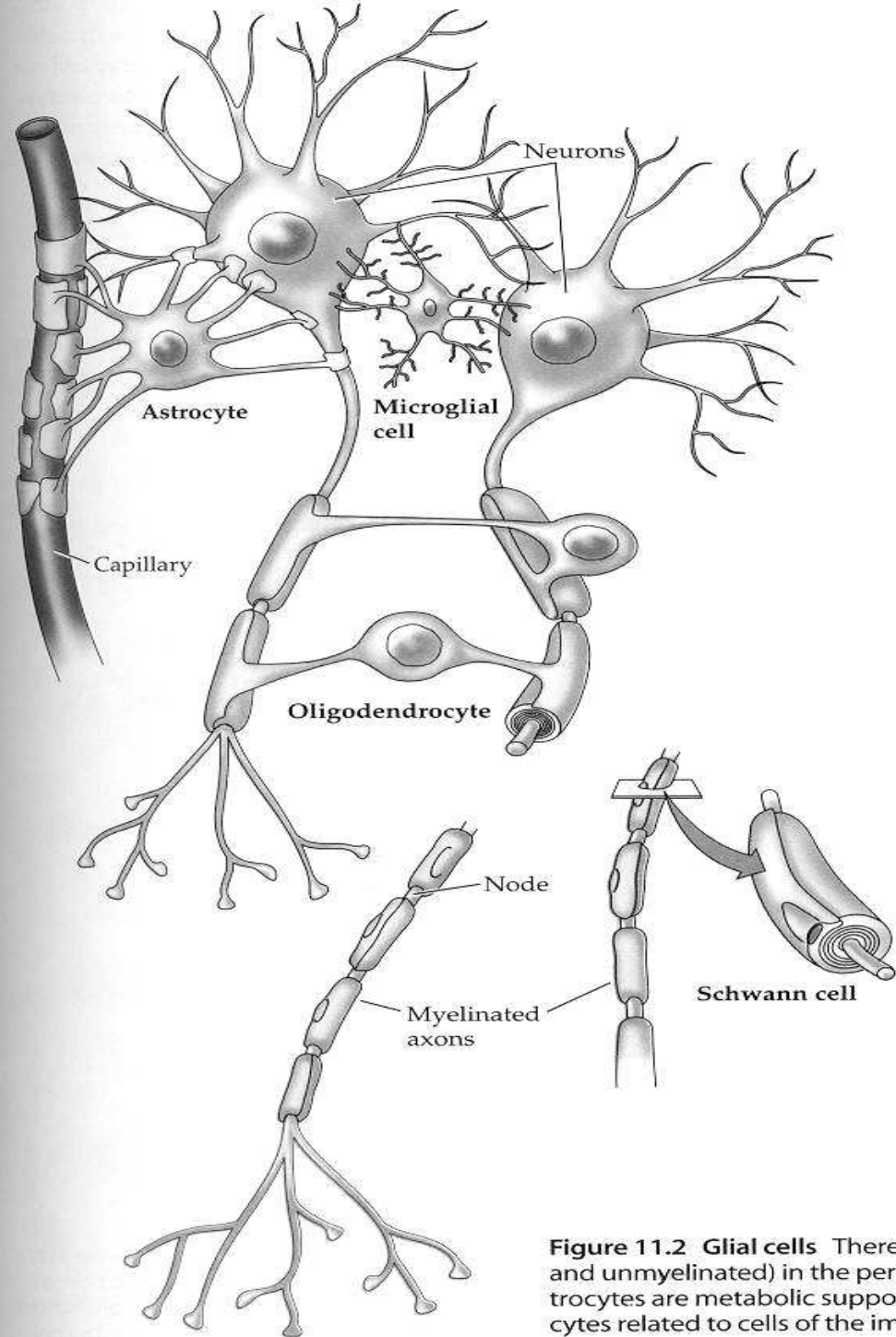
B



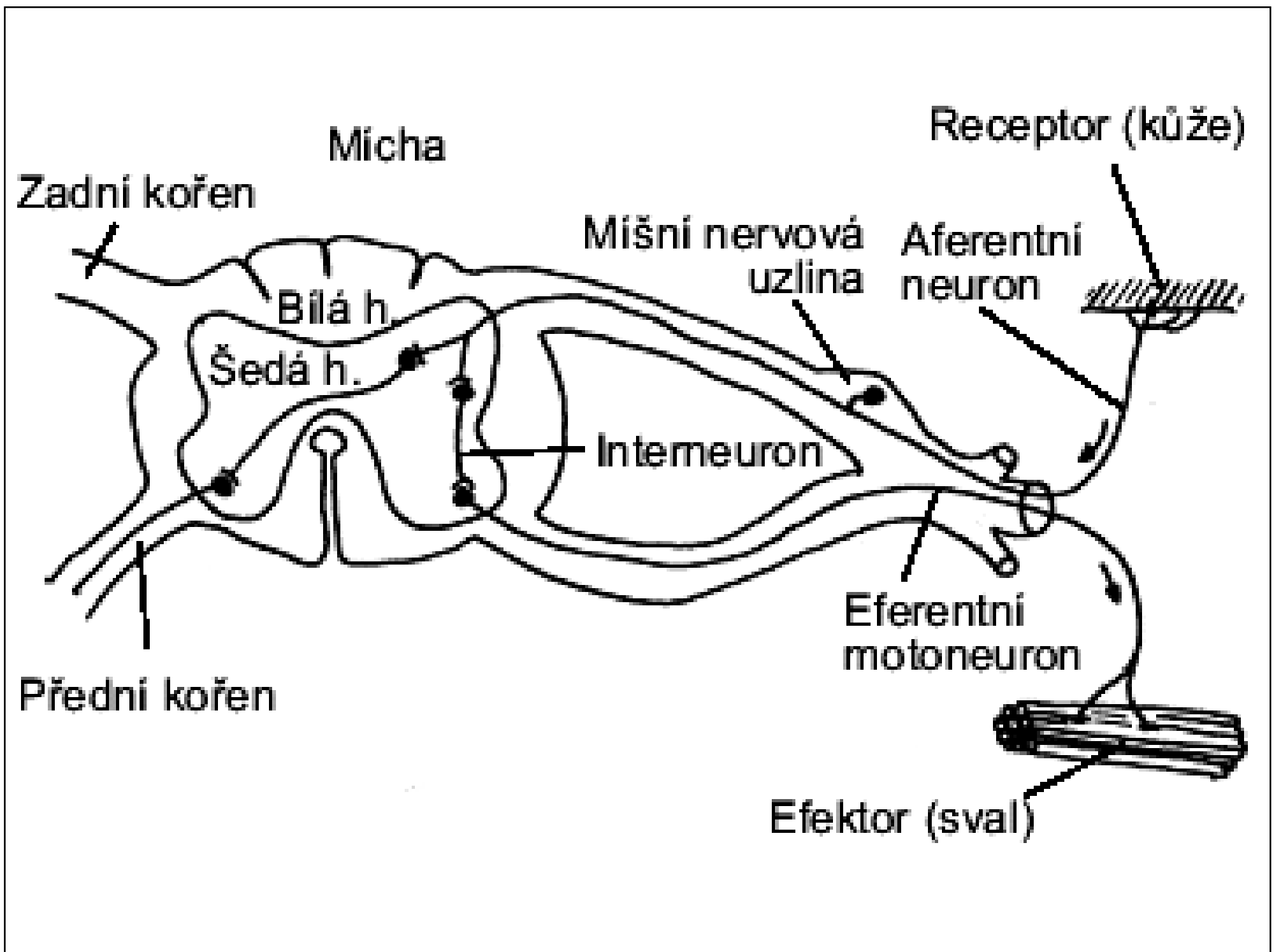
*b*

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**Figure 11.2 Glial cells** There are (myelinated and unmyelinated) in the periphery. Astrocytes are metabolic support cells related to cells of the immune system.



Mícha

Receptor (kůže)

Zadní kořen

Mišni nervová uzlina

Aferentní neuron

Bílá h.

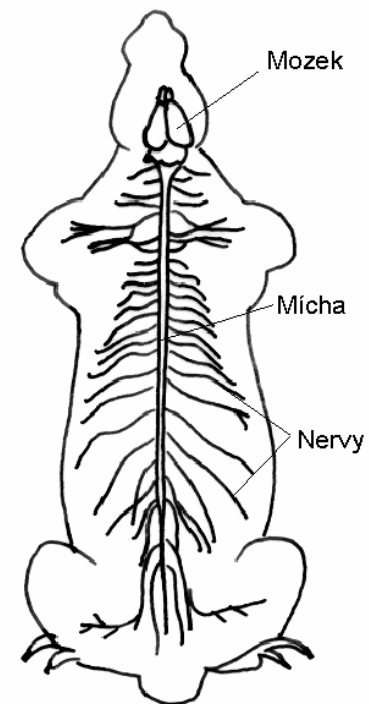
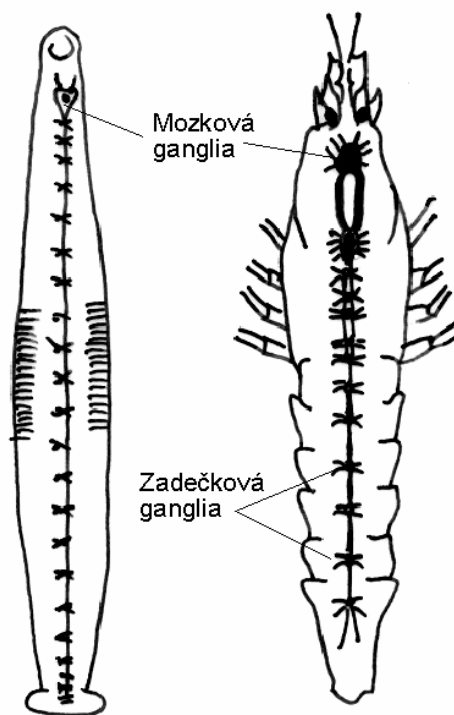
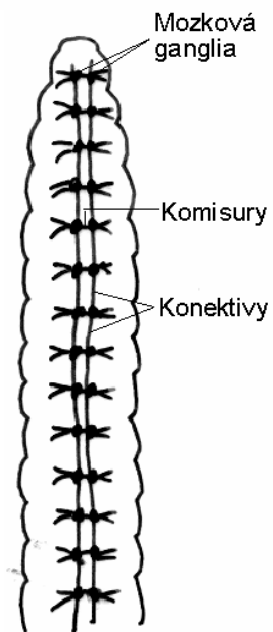
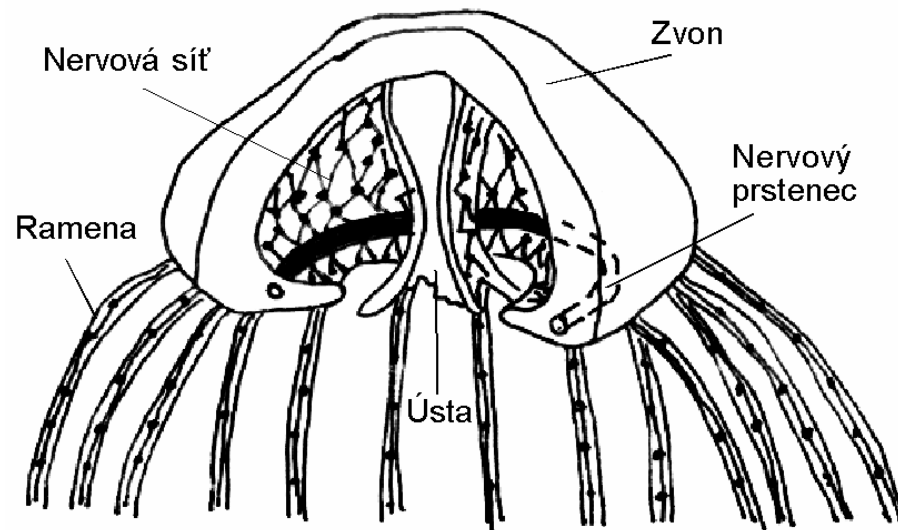
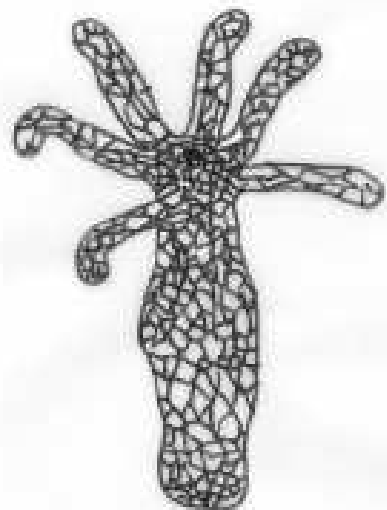
Šedá h.

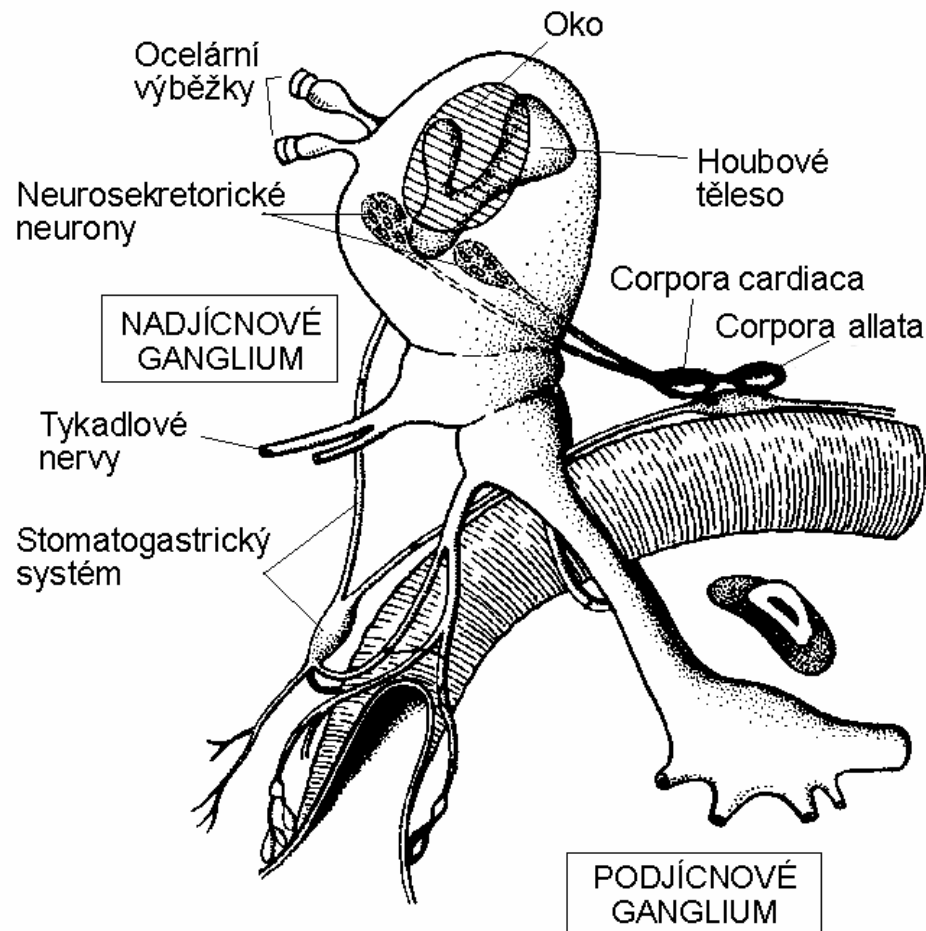
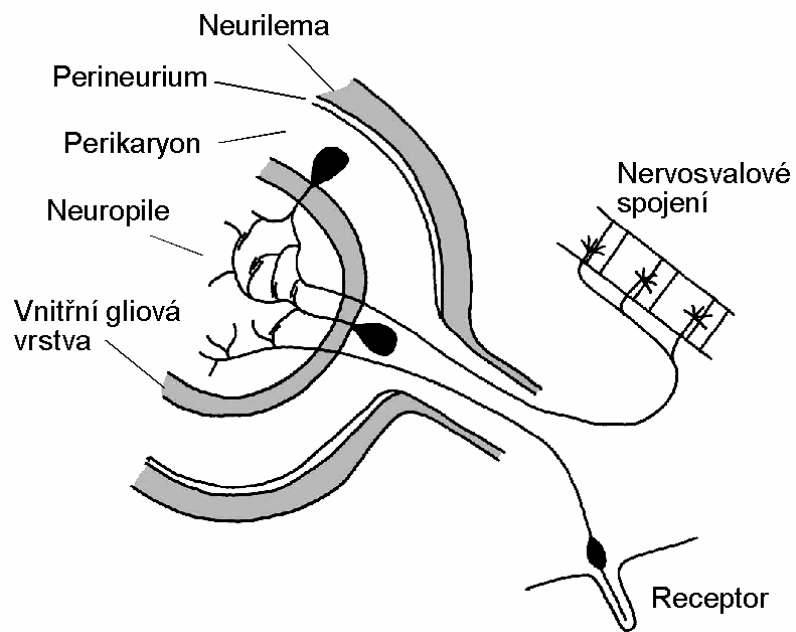
Intemeuron

Eferentní motoneuron

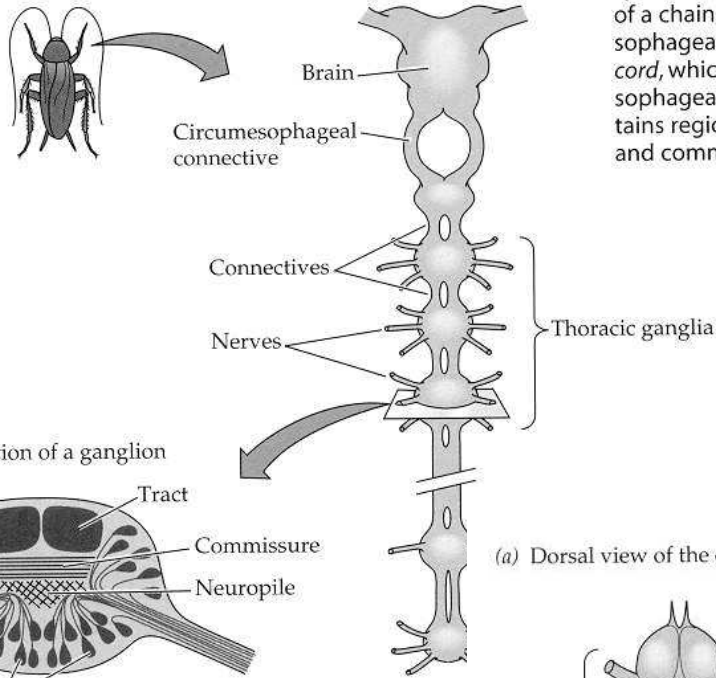
Přední kořen

Efektor (sval)

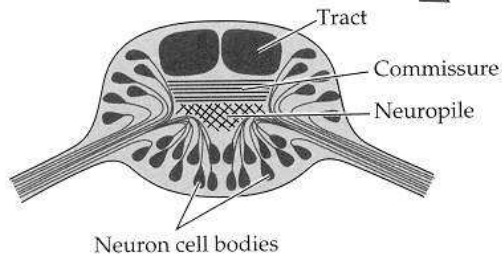




(a) Dorsal view of the central nervous system



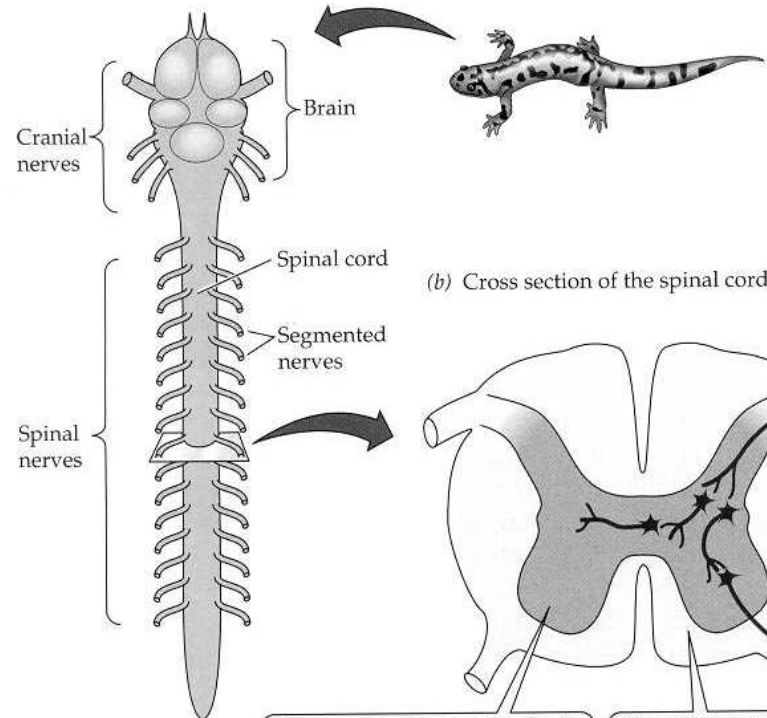
(b) Cross section of a ganglion



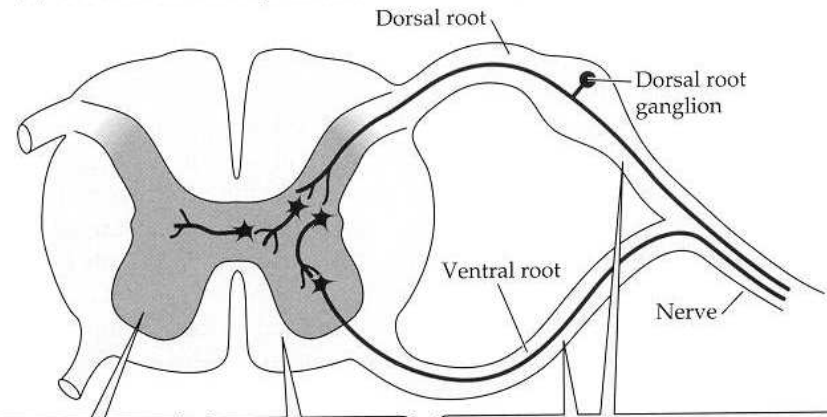
**Figure 10.5 The organization of an arthropod central nervous system** (a) The CNS, which is shown here in a dorsal view, consists of a chain of segmental ganglia linked by connectives. The anterior brain and the posterior ventral nerve cord, which consists of the linked ganglia posterior to the brain, are connected by the circumesophageal connective. (b) A ganglion, shown in cross section, contains regions of cell bodies, of synaptic neuropile, and commissures).

**THE VERTEBRATE CENTRAL NERVOUS SYSTEM**  
**VERTEBRATE CENTRAL NERVOUS COLUMN** Vertebrate central nervous system is in contrast to those of arthropods. It consists of a continuous column of neural tissue and synaptic areas intermingled with the peripheral nervous system of vertebrates consists of the spinal cord (Figure 10.6). It differs from the arthropod system in that it is a continuous column of neural tissue.

(a) Dorsal view of the central nervous system



(b) Cross section of the spinal cord

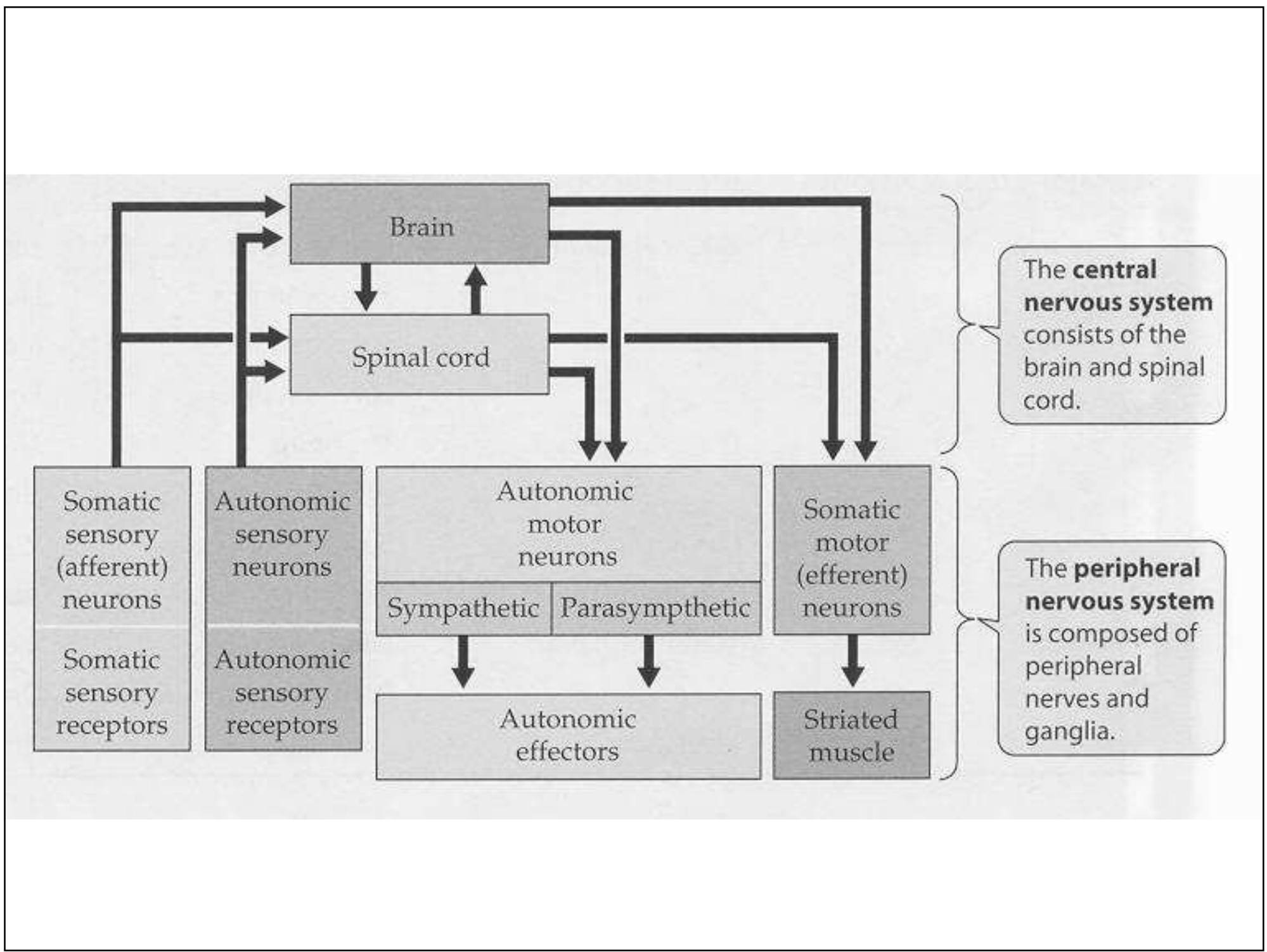


The **gray matter** consists of cell bodies, synapses, and unmyelinated neural processes.

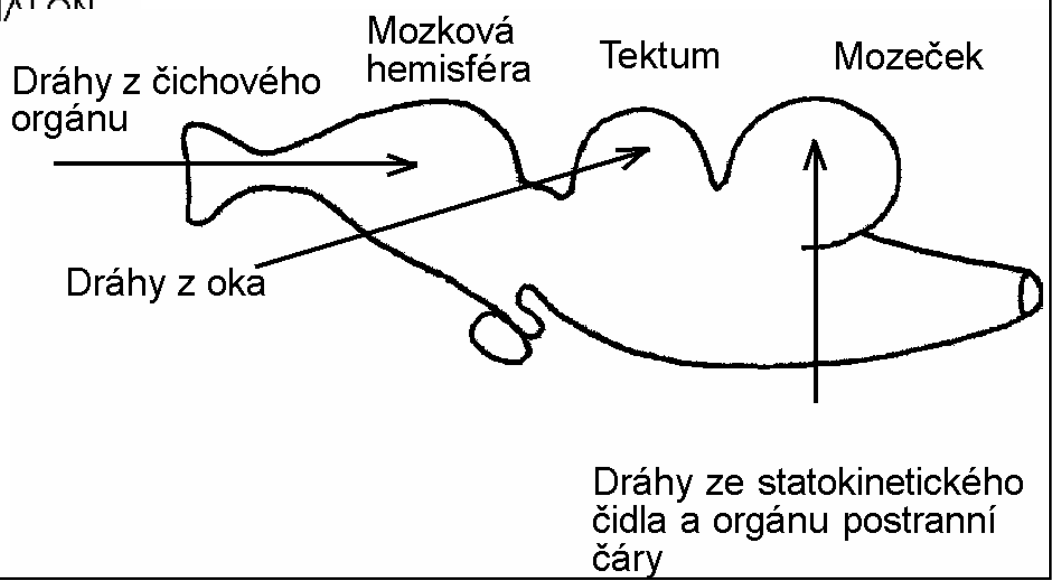
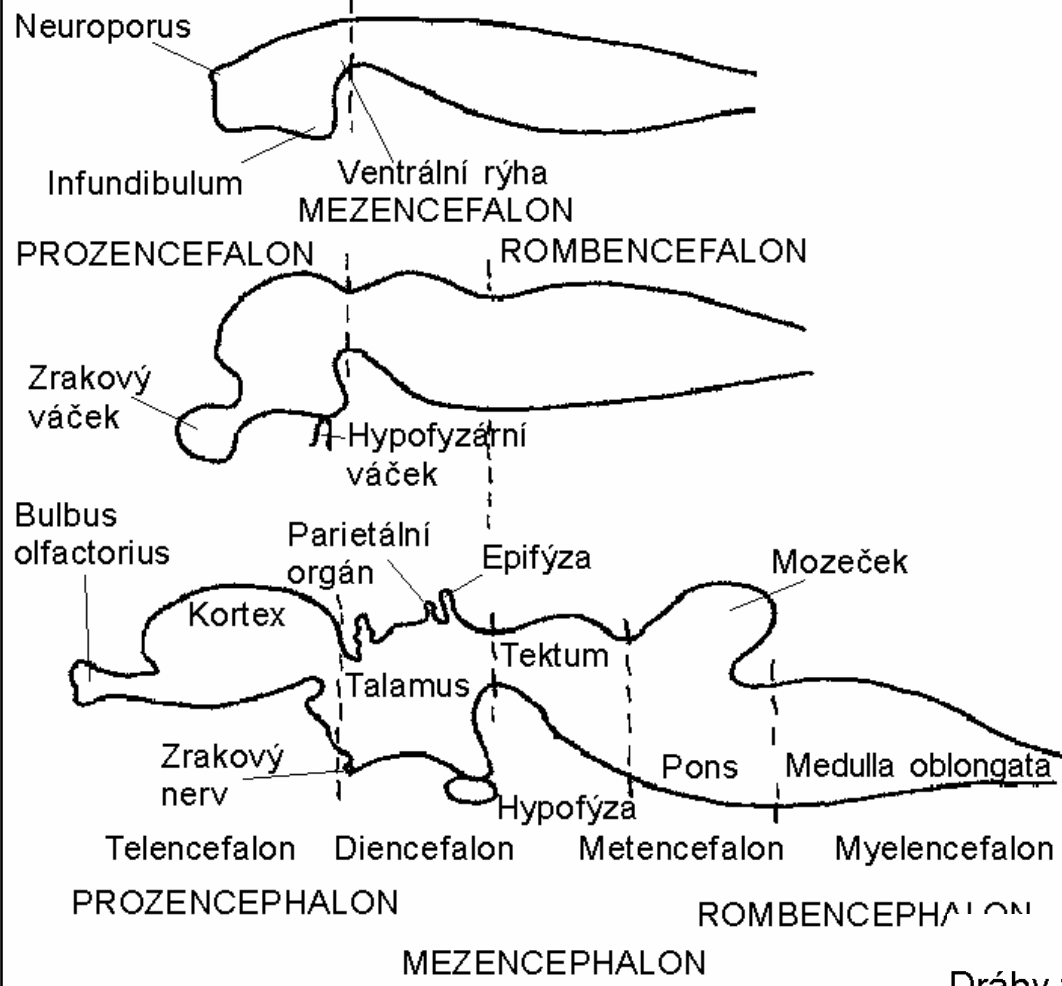
The **white matter** consists of tracts of myelinated axons.

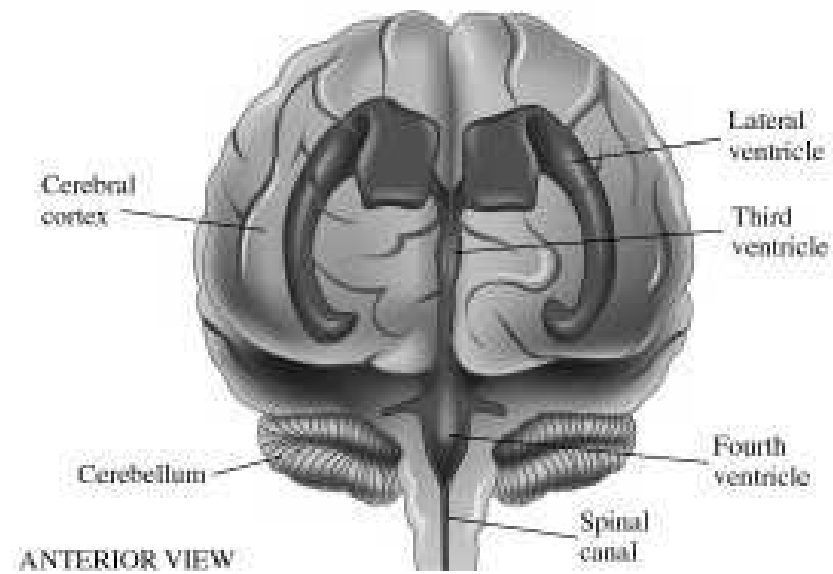
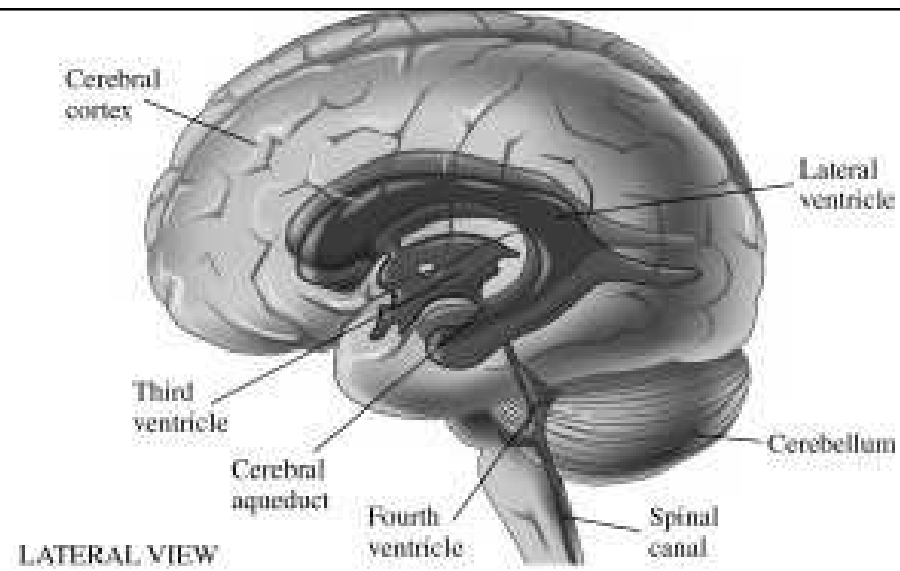
Segmental nerves of the peripheral nervous system connect to the spinal cord via sensory dorsal roots and motor ventral roots.

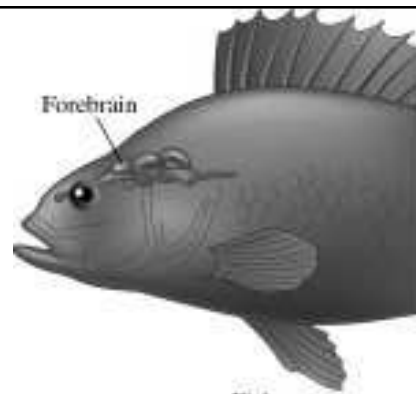
**Figure 10.6 The organization of a vertebrate central nervous system** (a) A schematic vertebrate central nervous system shown in dorsal view, consists of a single continuous column of neural tissue and synaptic areas intermingled with the peripheral nervous system of vertebrates consists of the spinal cord (Figure 10.6). It differs from the arthropod system in that it is a continuous column of neural tissue. (b) A cross section of the spinal cord shows the dorsal root and dorsal root ganglion, and the ventral root. The nerve is formed by the union of these two roots. The central part of the spinal cord shows the gray matter and white matter.



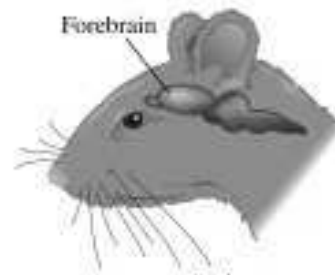








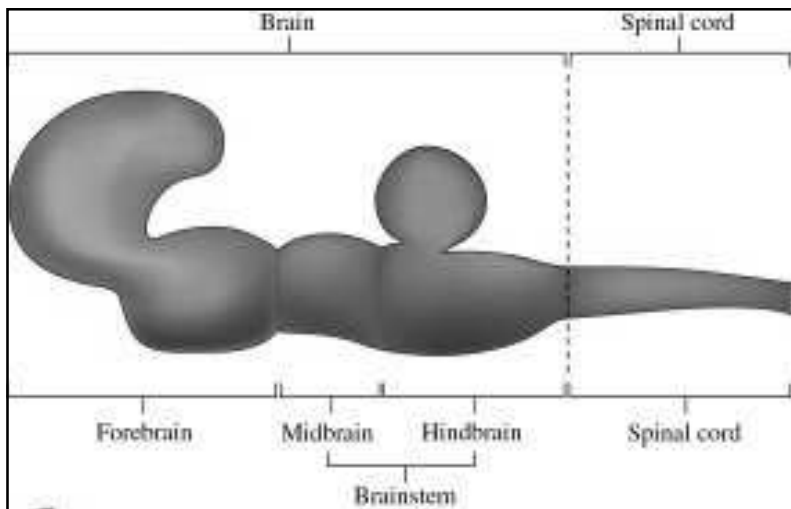
Fish



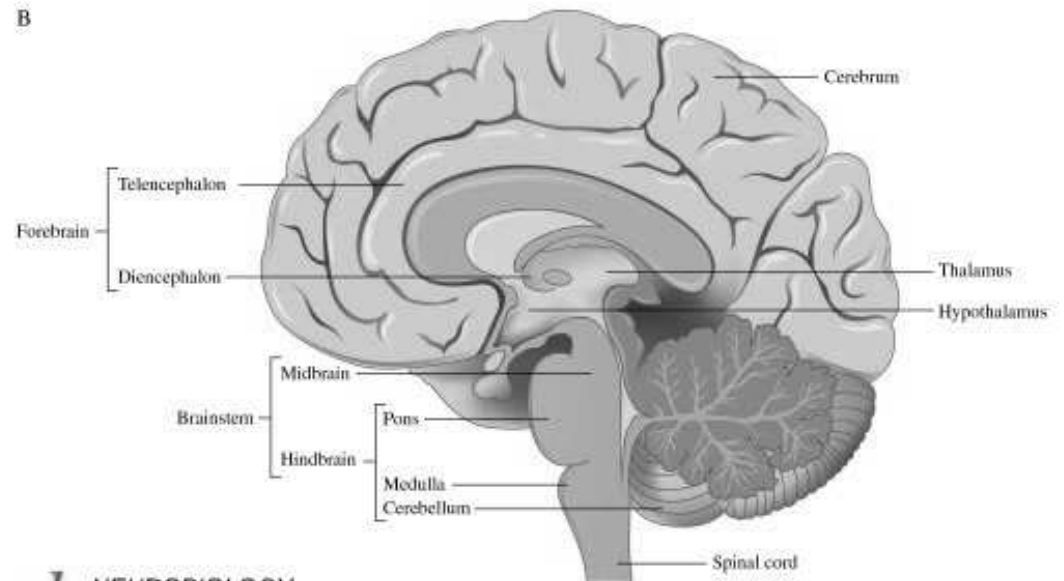
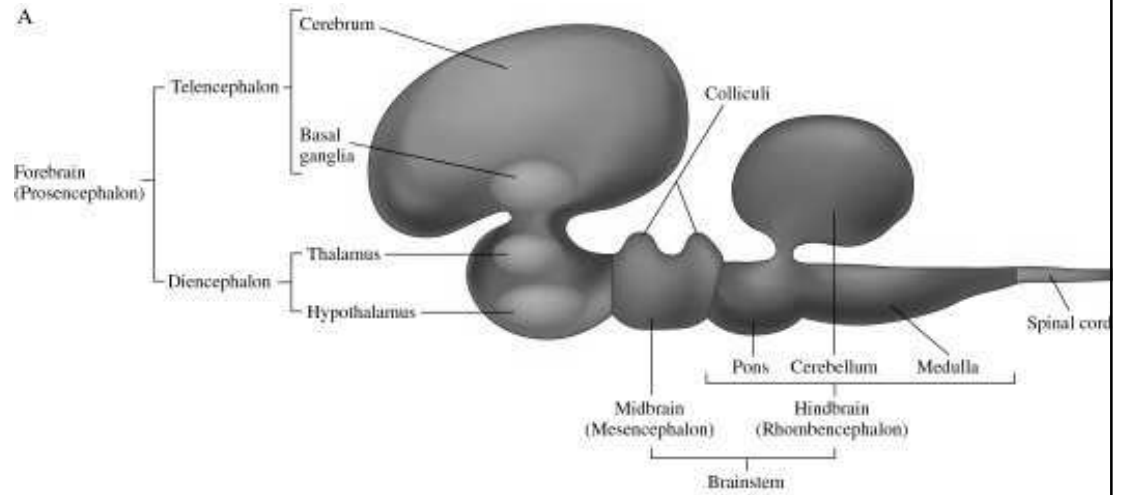
Rodent



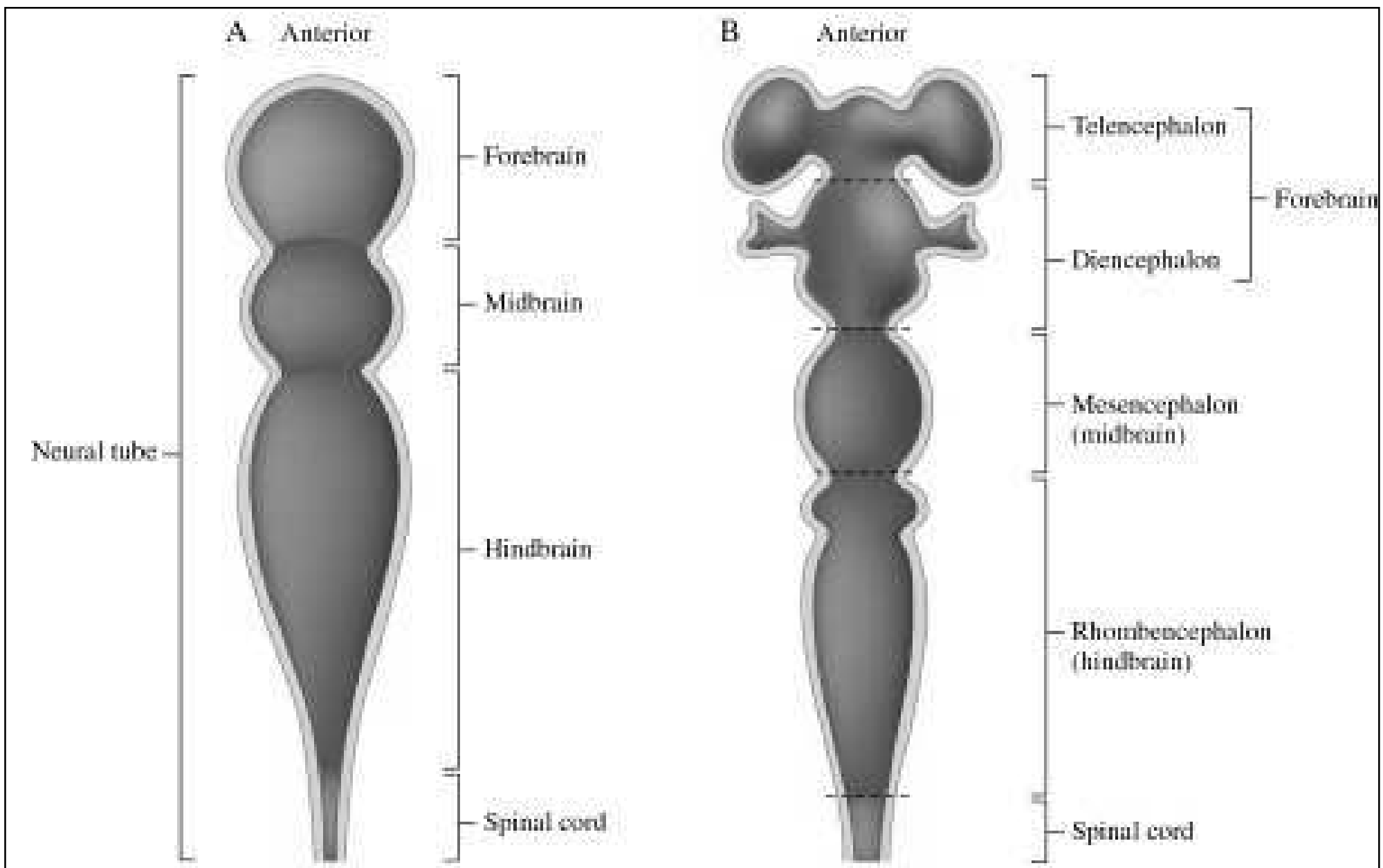
Human

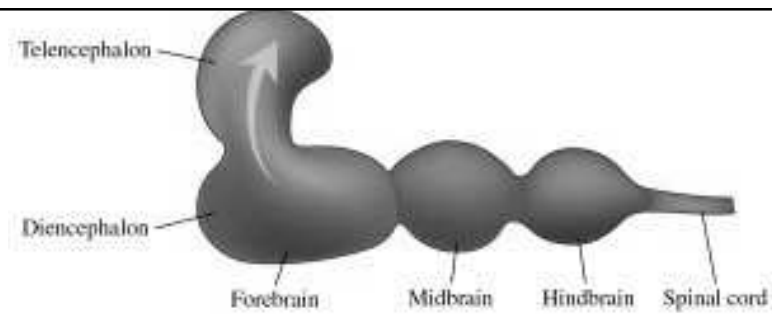


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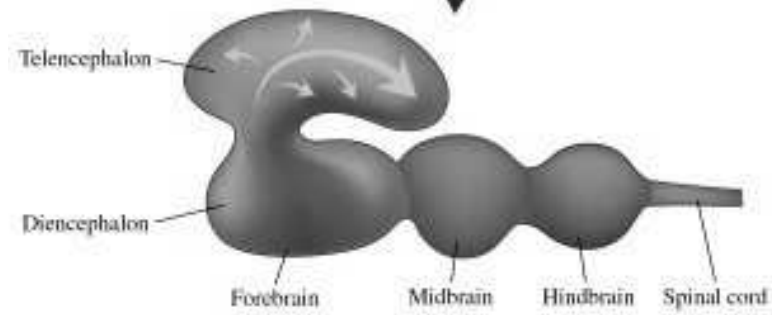


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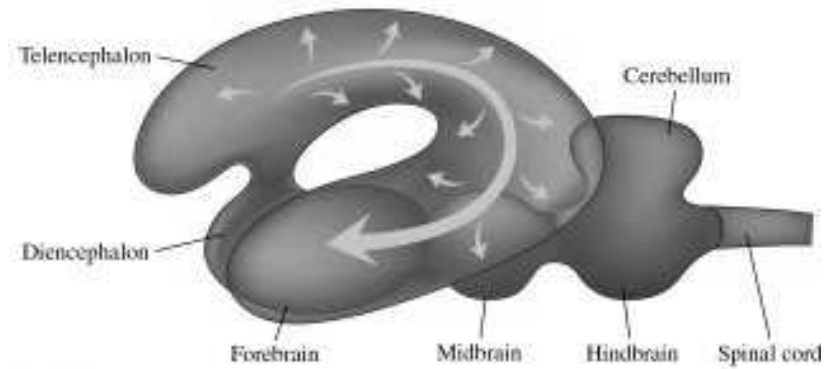


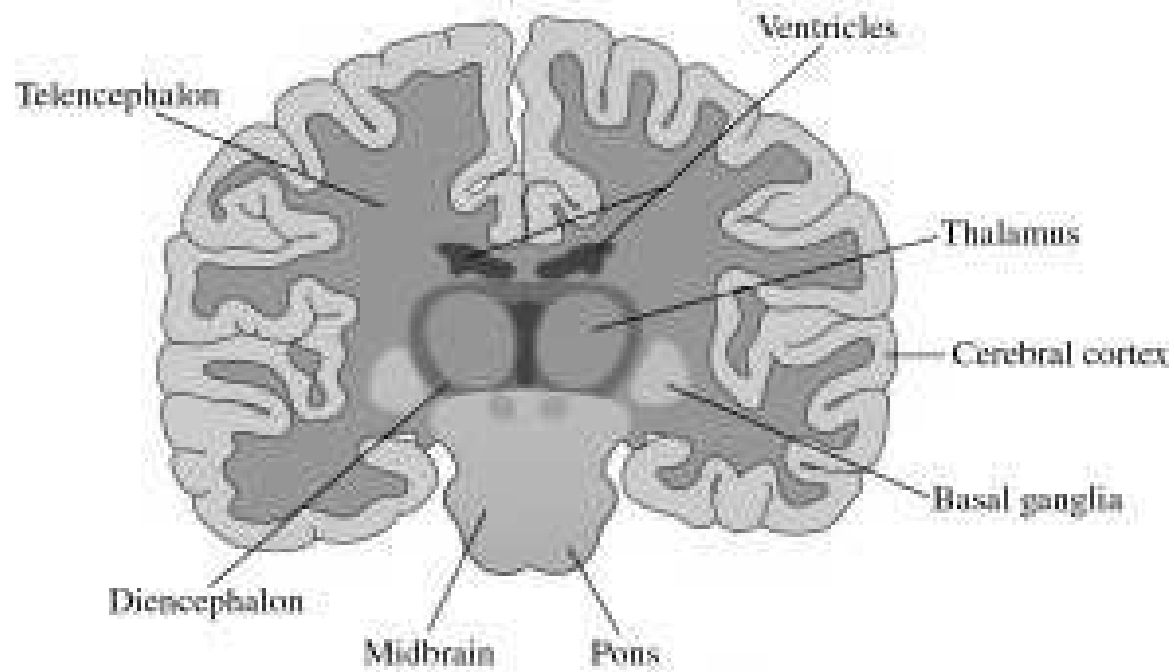
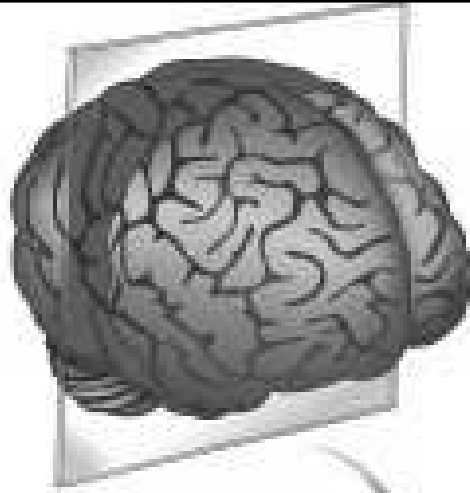


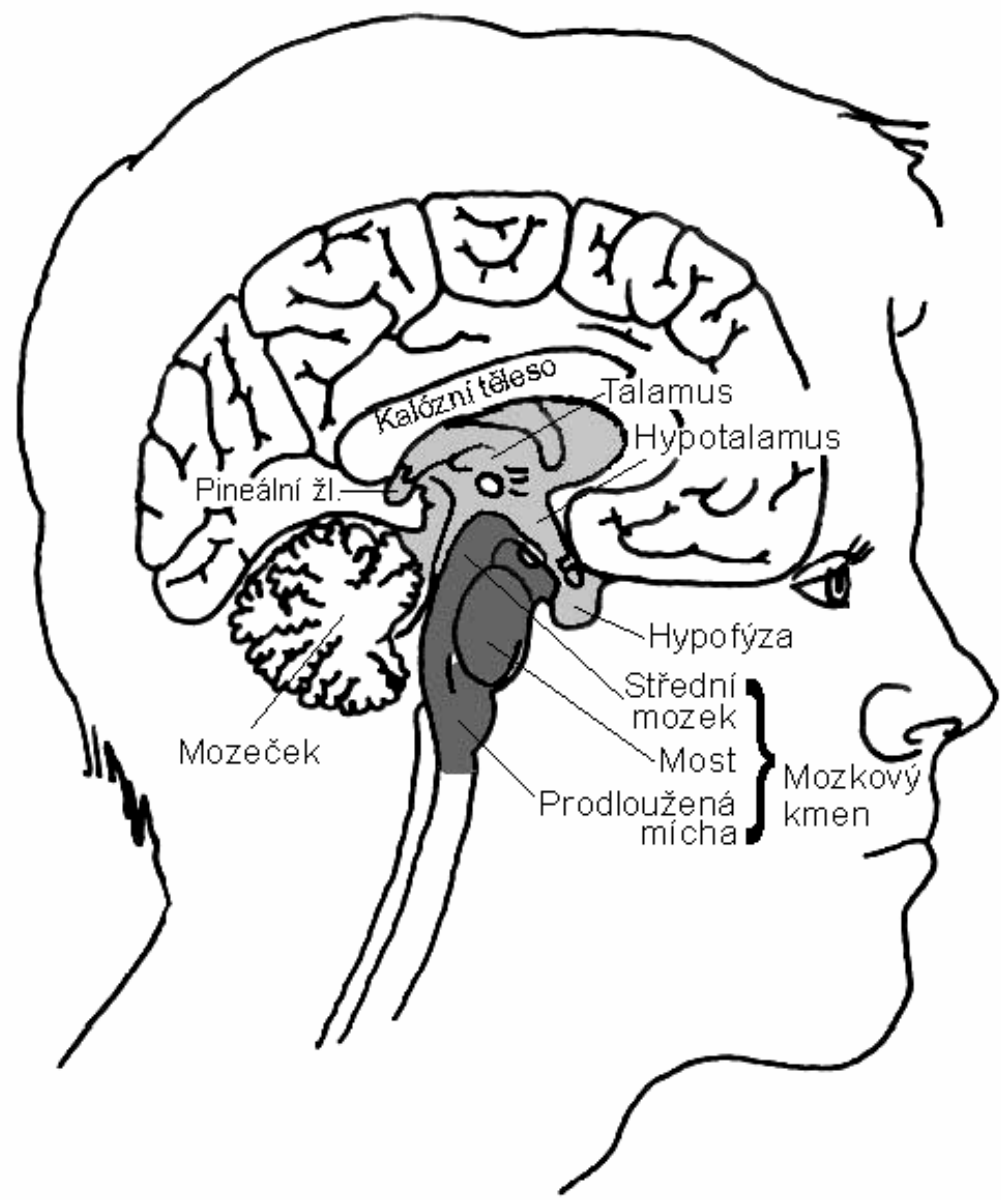
Development



Development







Kalózní těleso

Talamus

Hypotalamus

Pineální žl.

Mozeček

Hypofýza

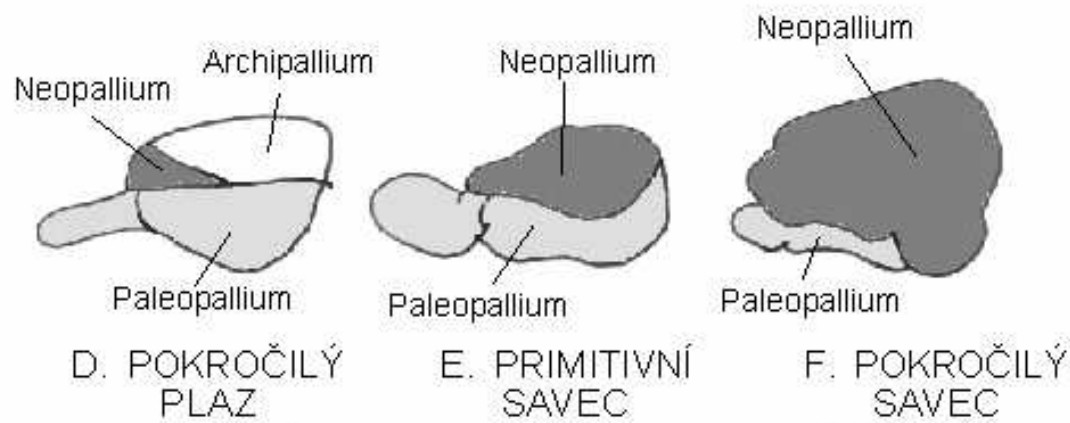
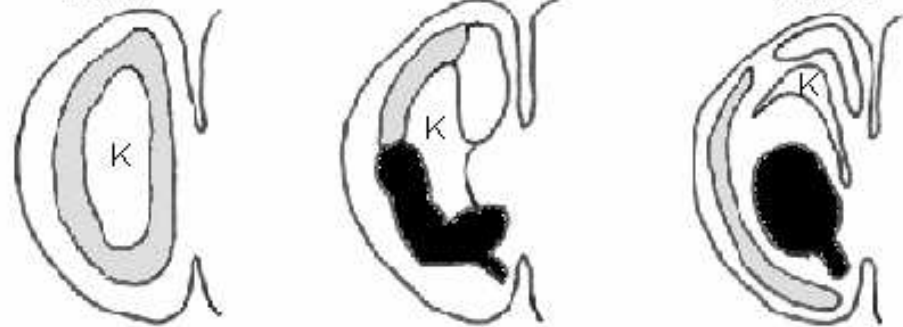
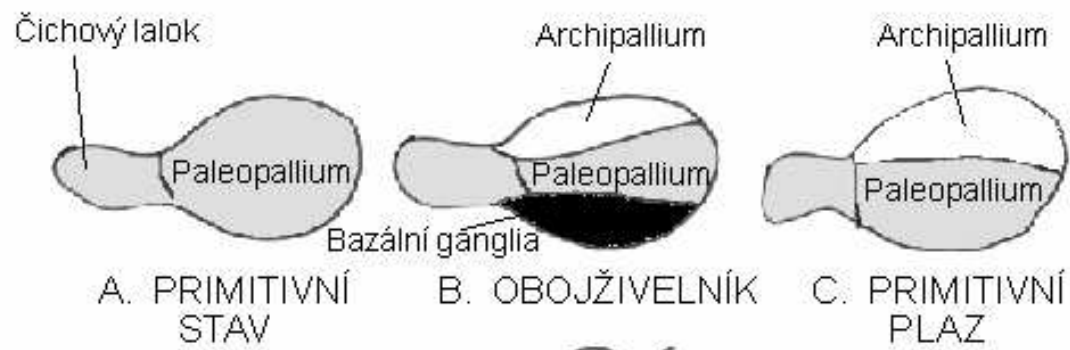
Střední  
mozek

Most

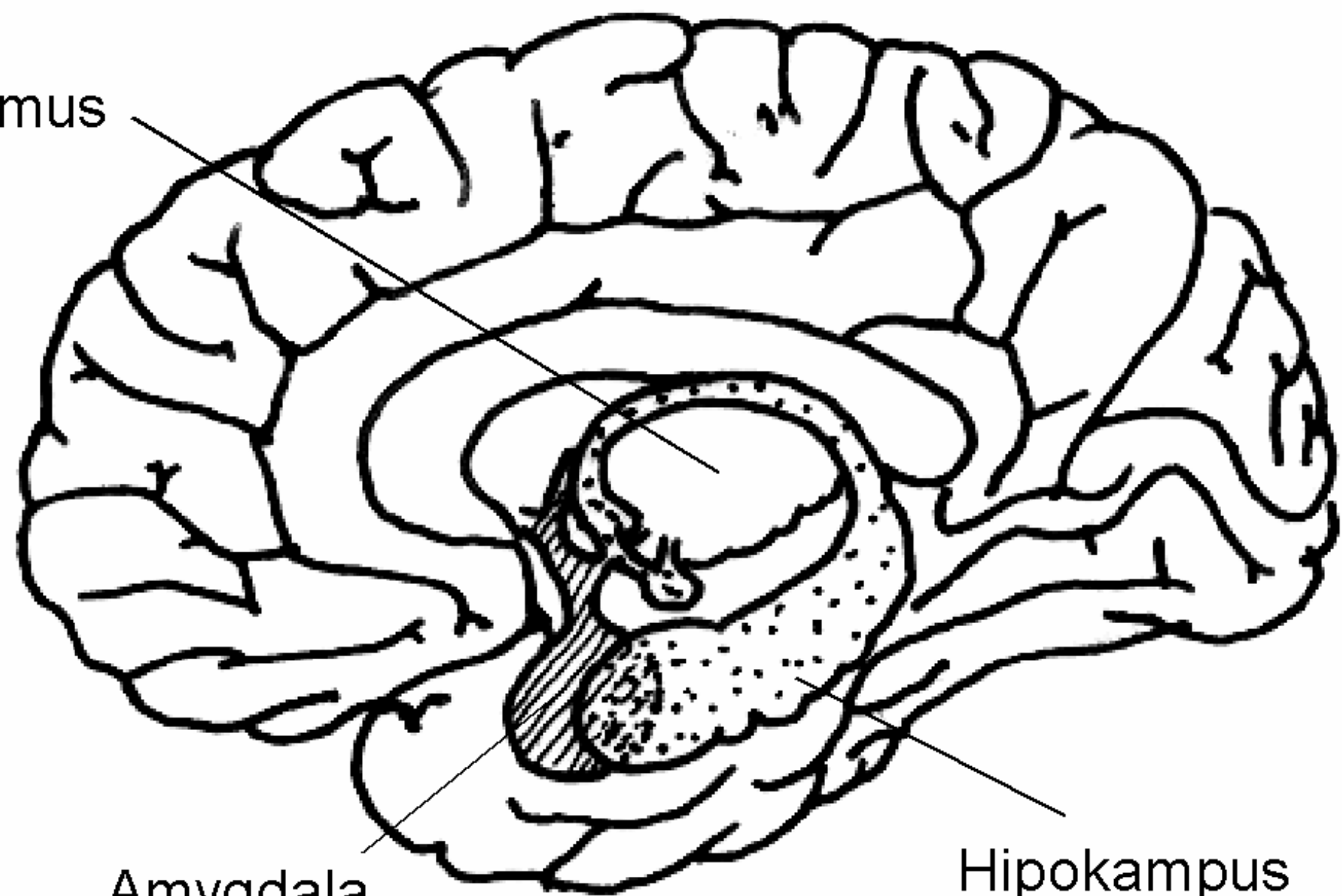
Prodloužená  
mícha

Mozkový  
kmen



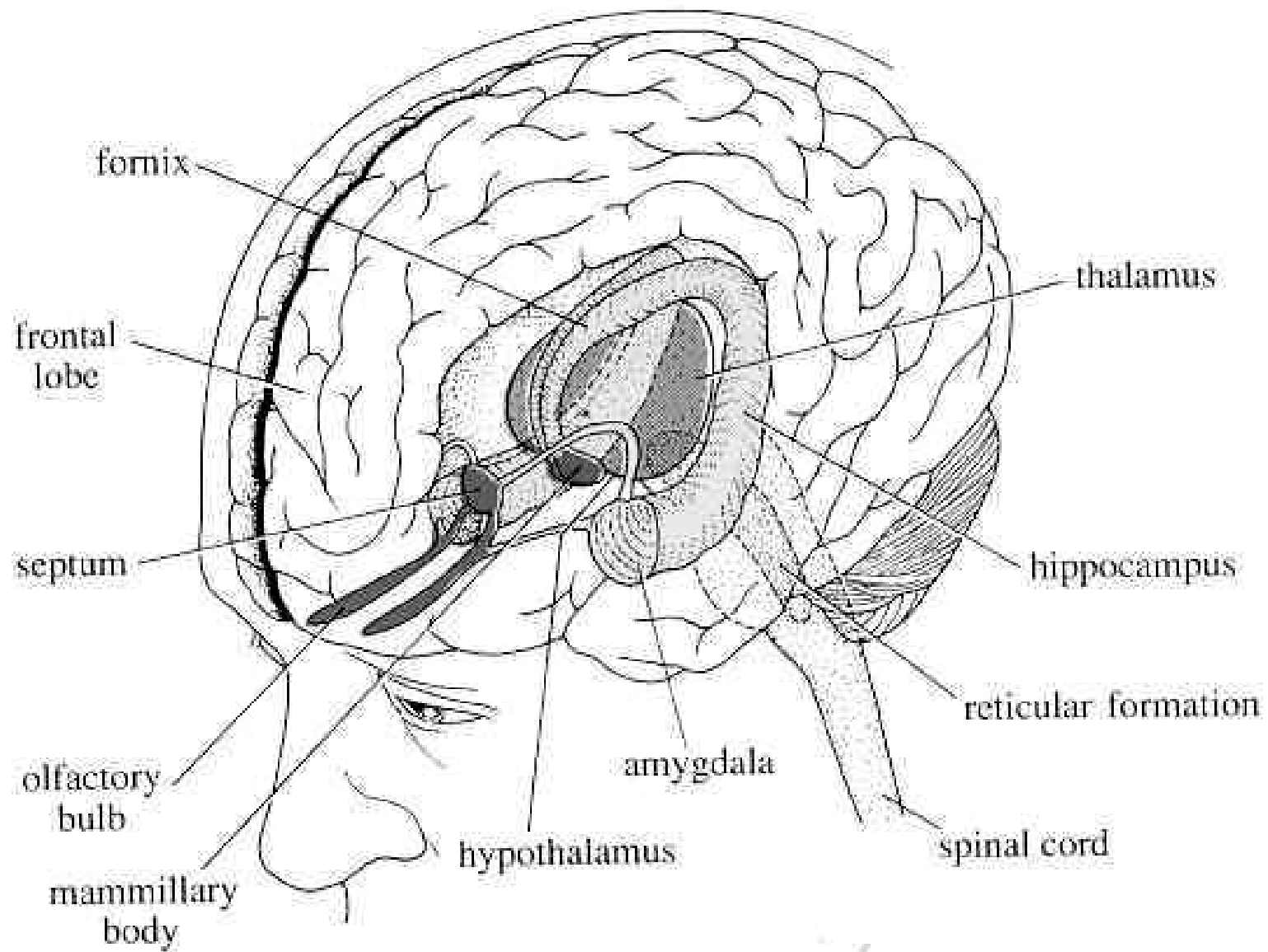


Talamus

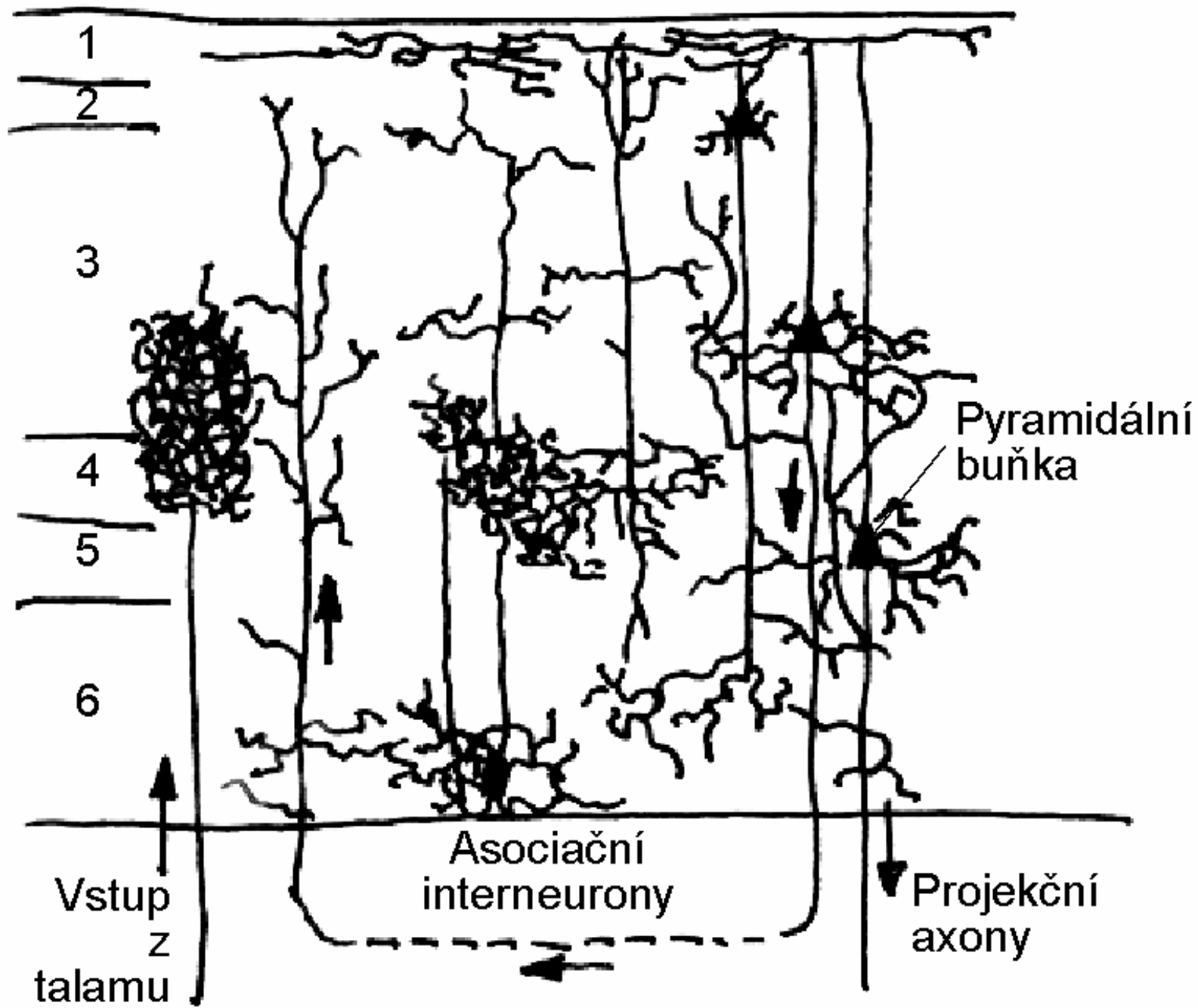


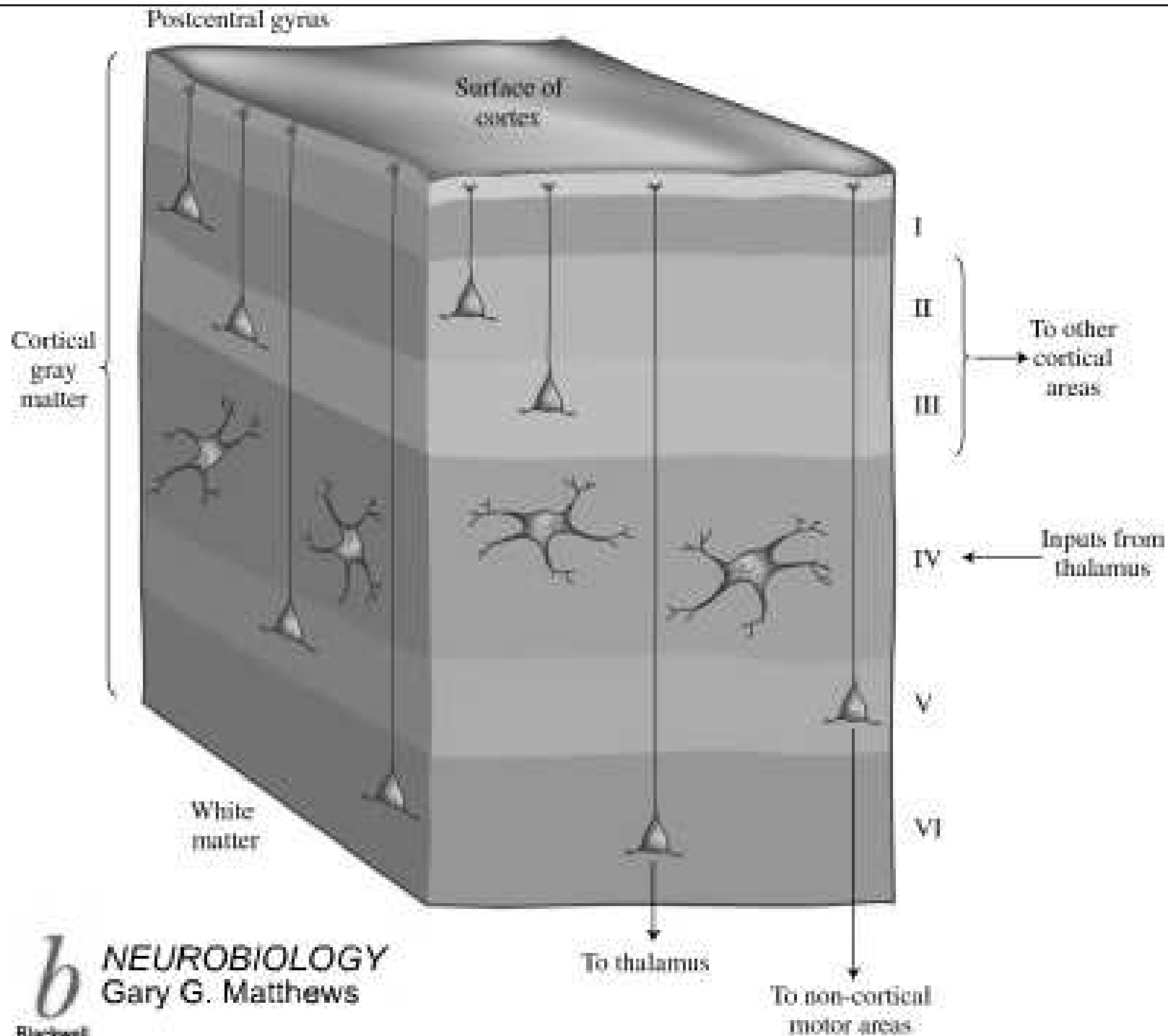
Amygdala

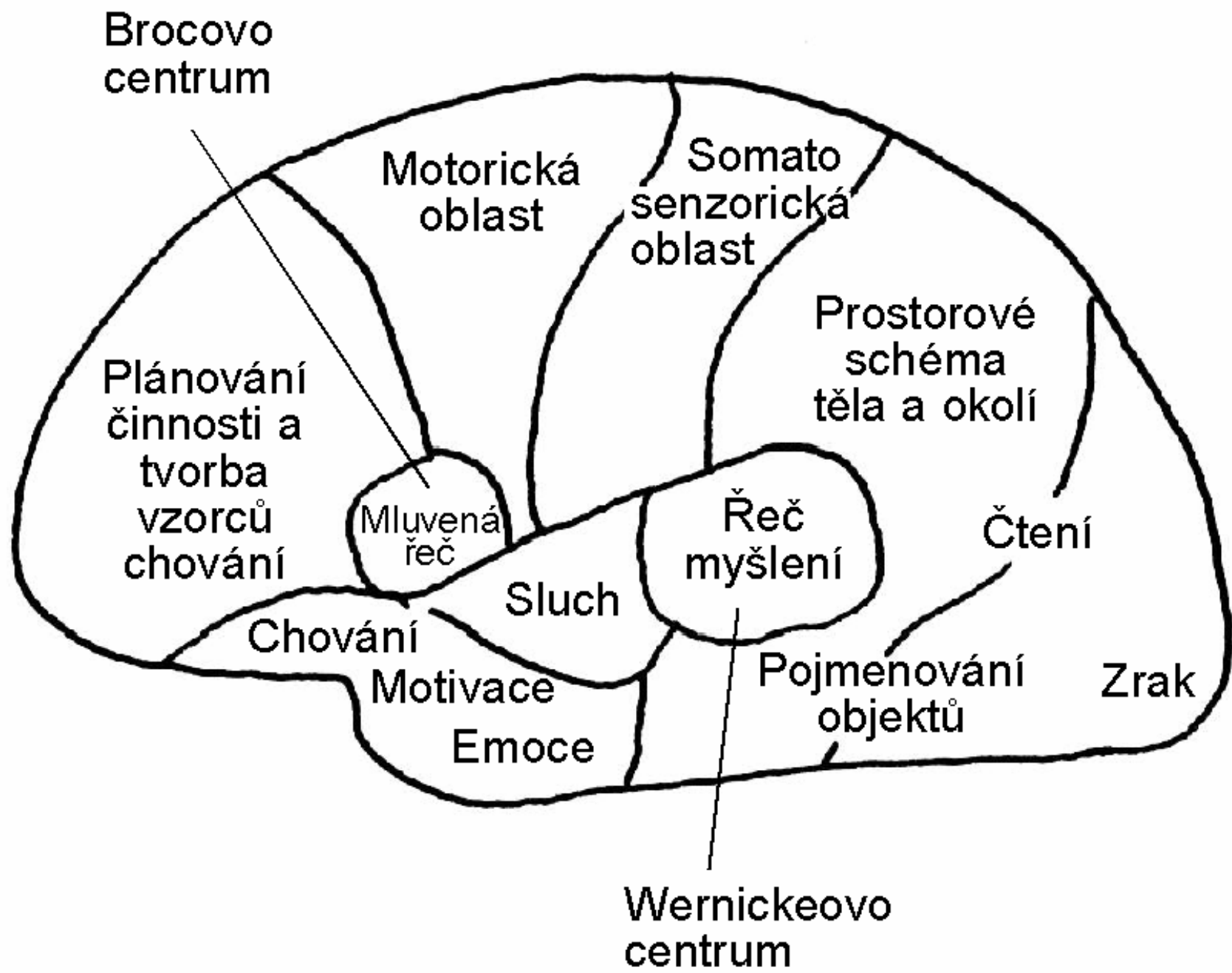
Hipokampus



**Figure 10.1** The limbic system (the main limbic system structures are shown in red).

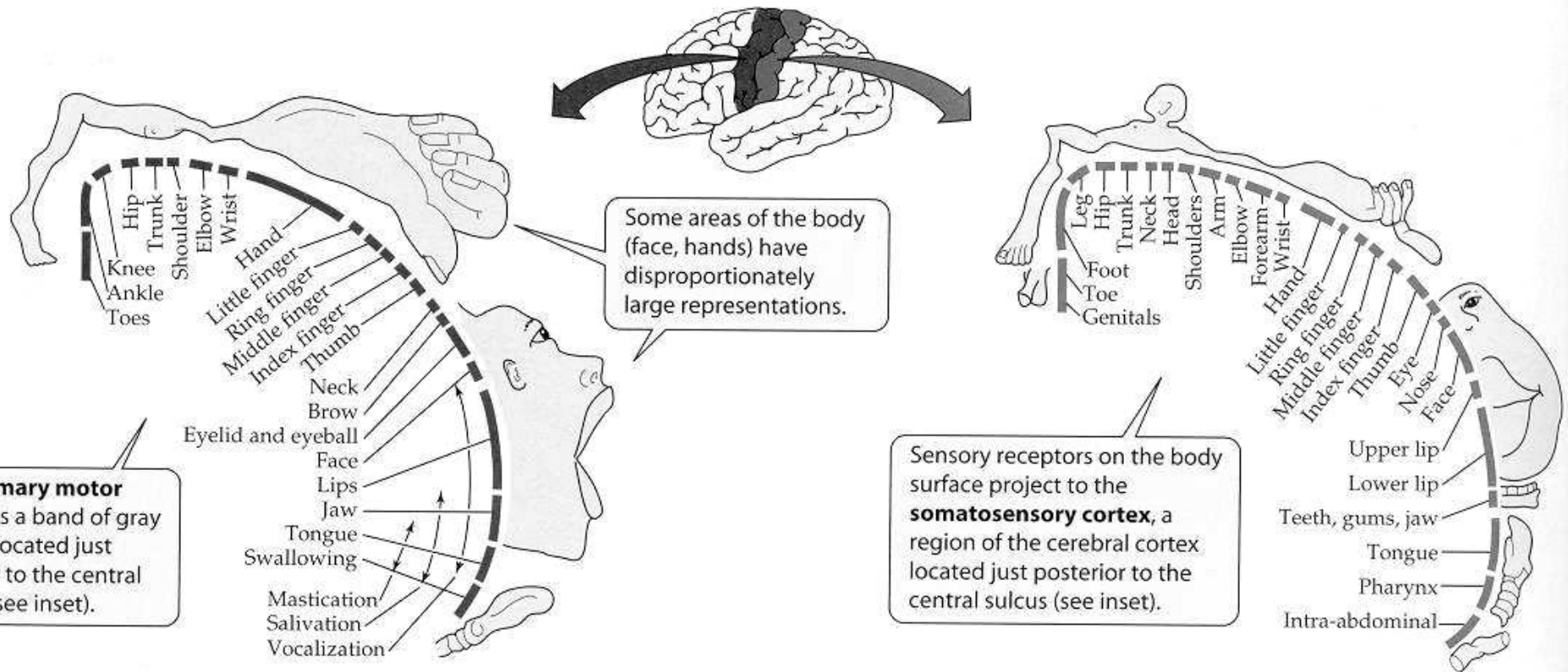






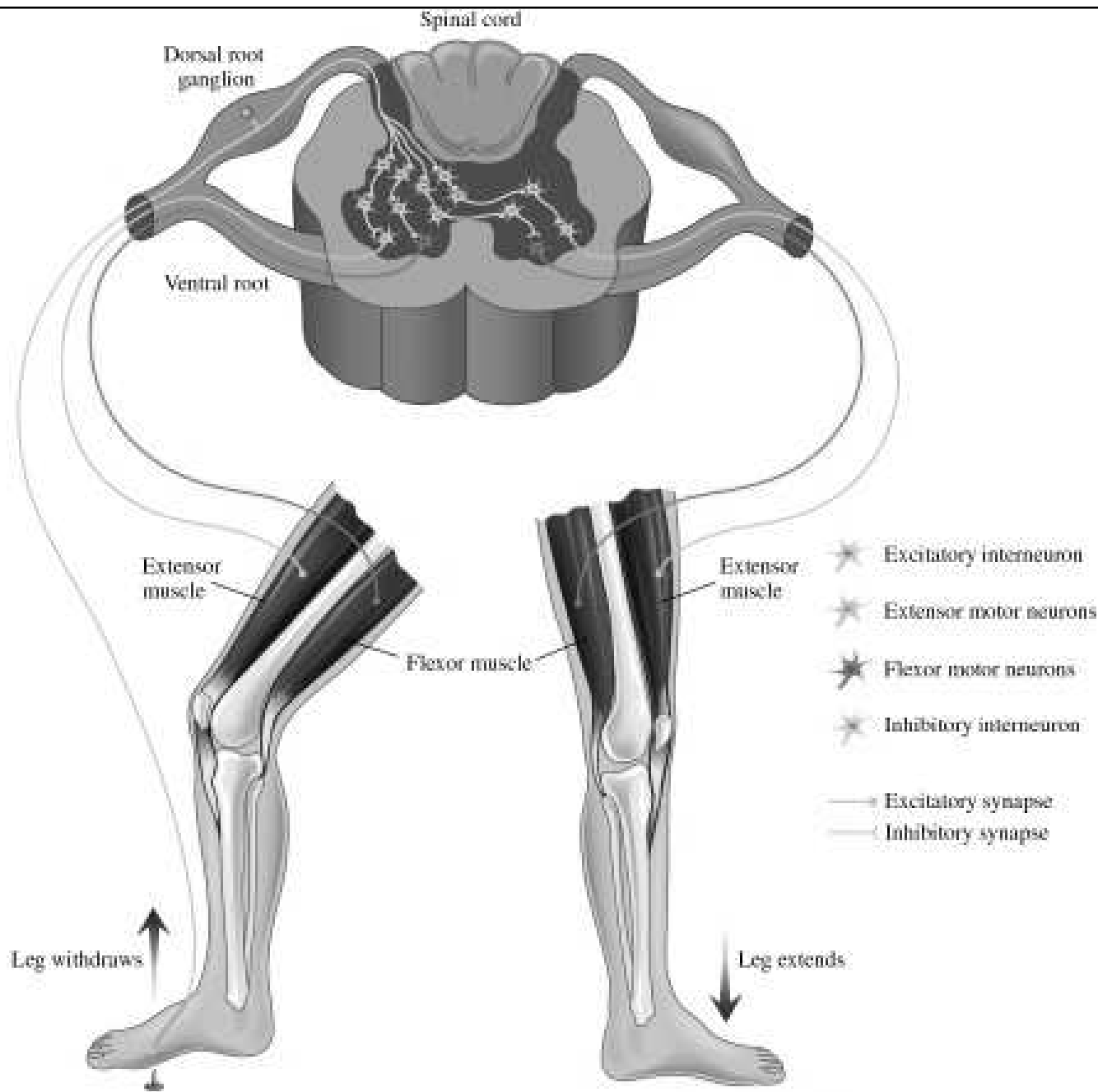
(a) Motor homunculus

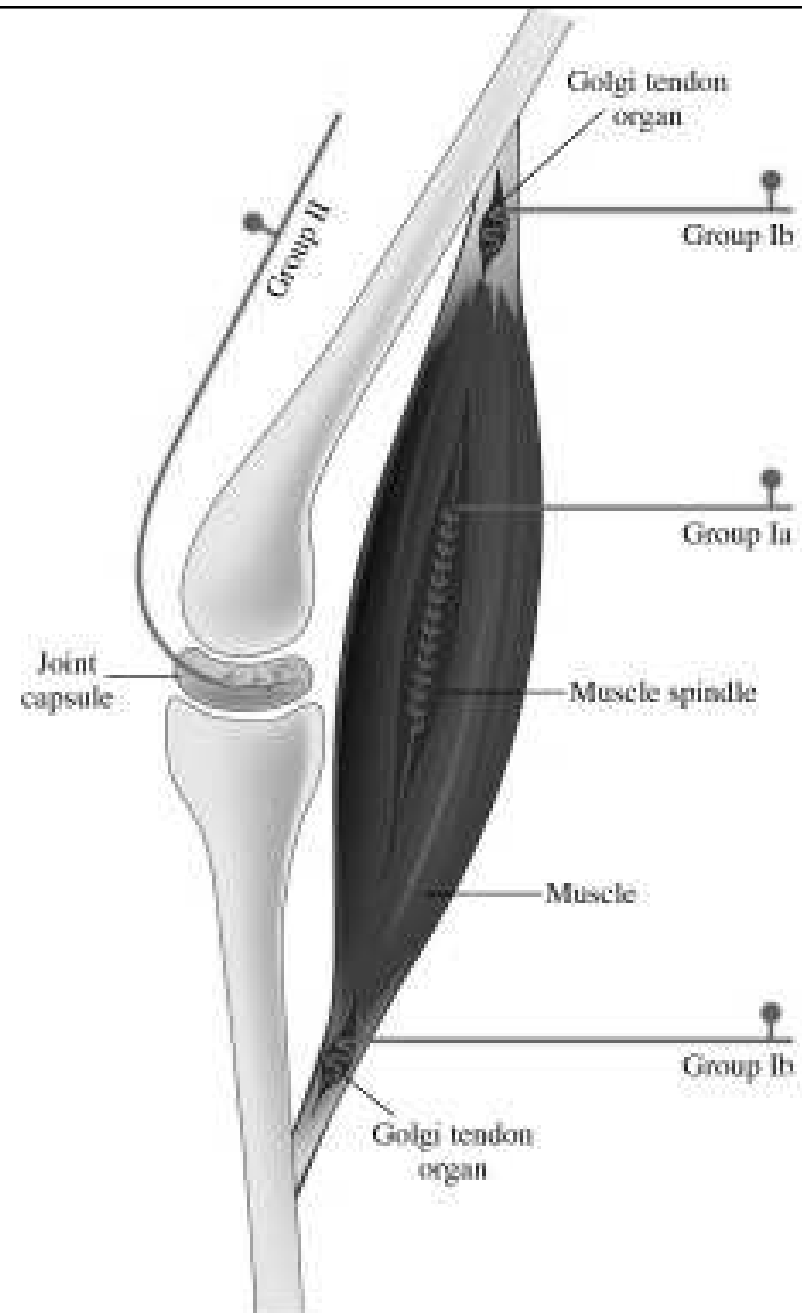
(b) Sensory homunculus

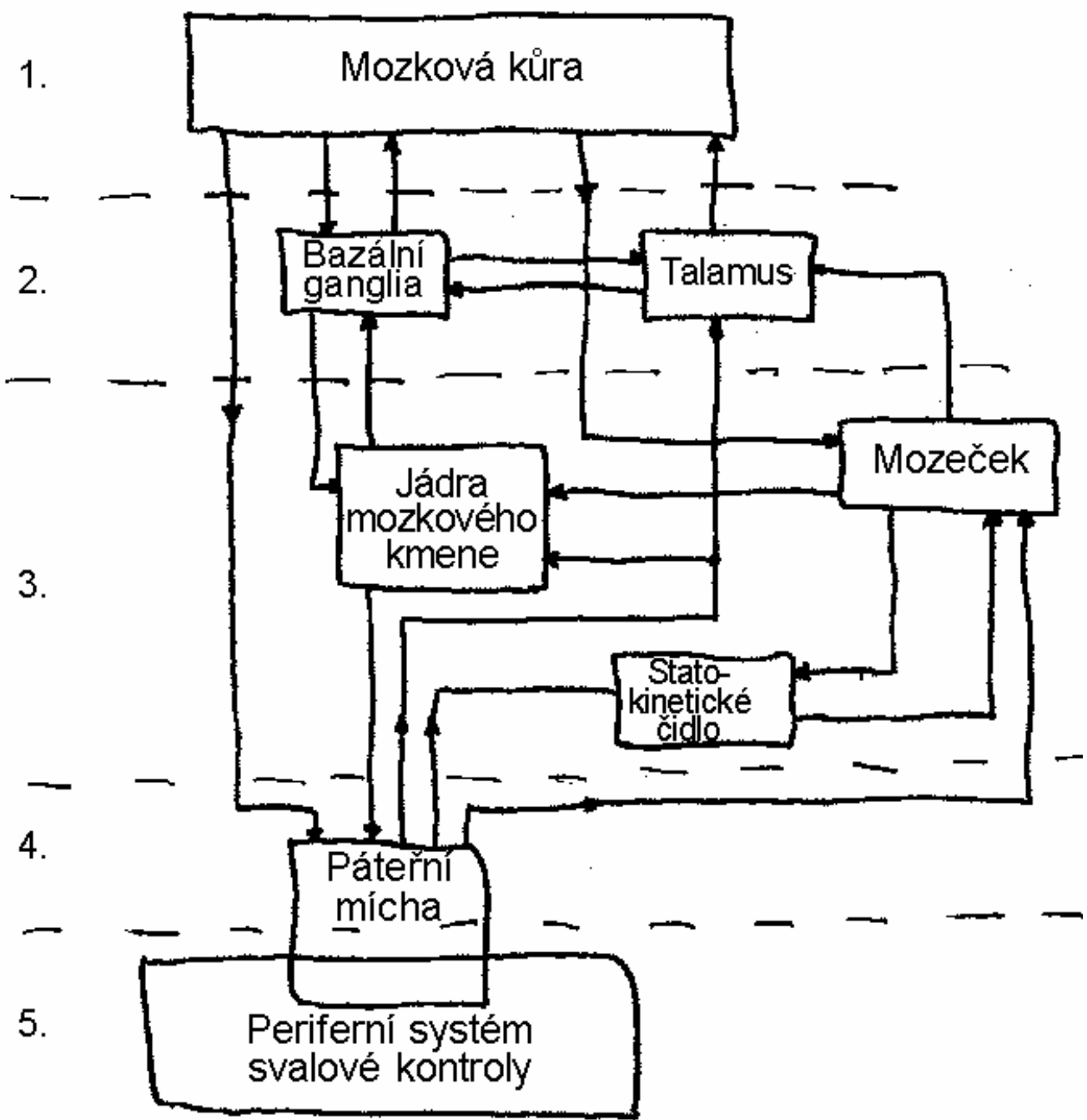


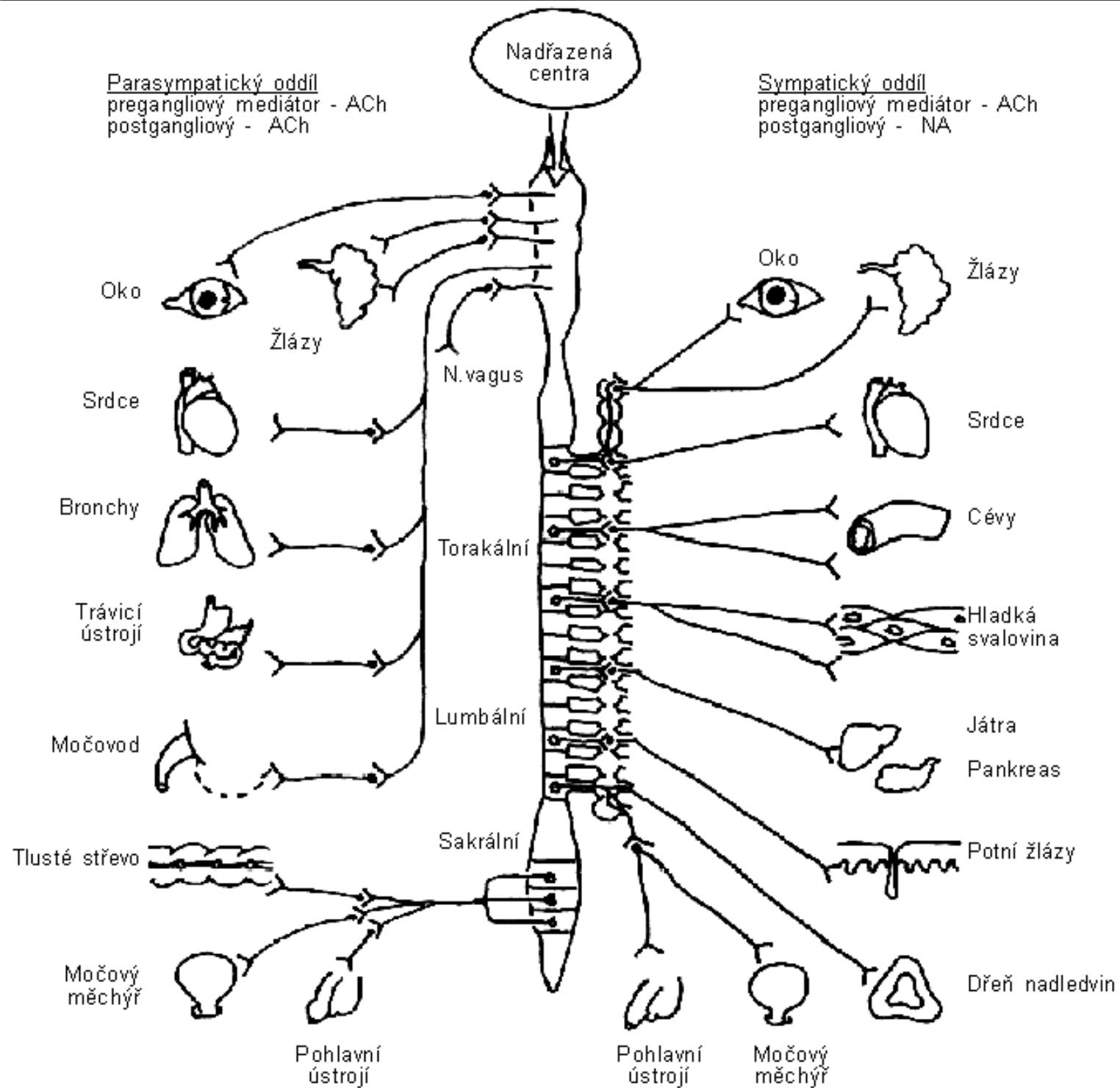






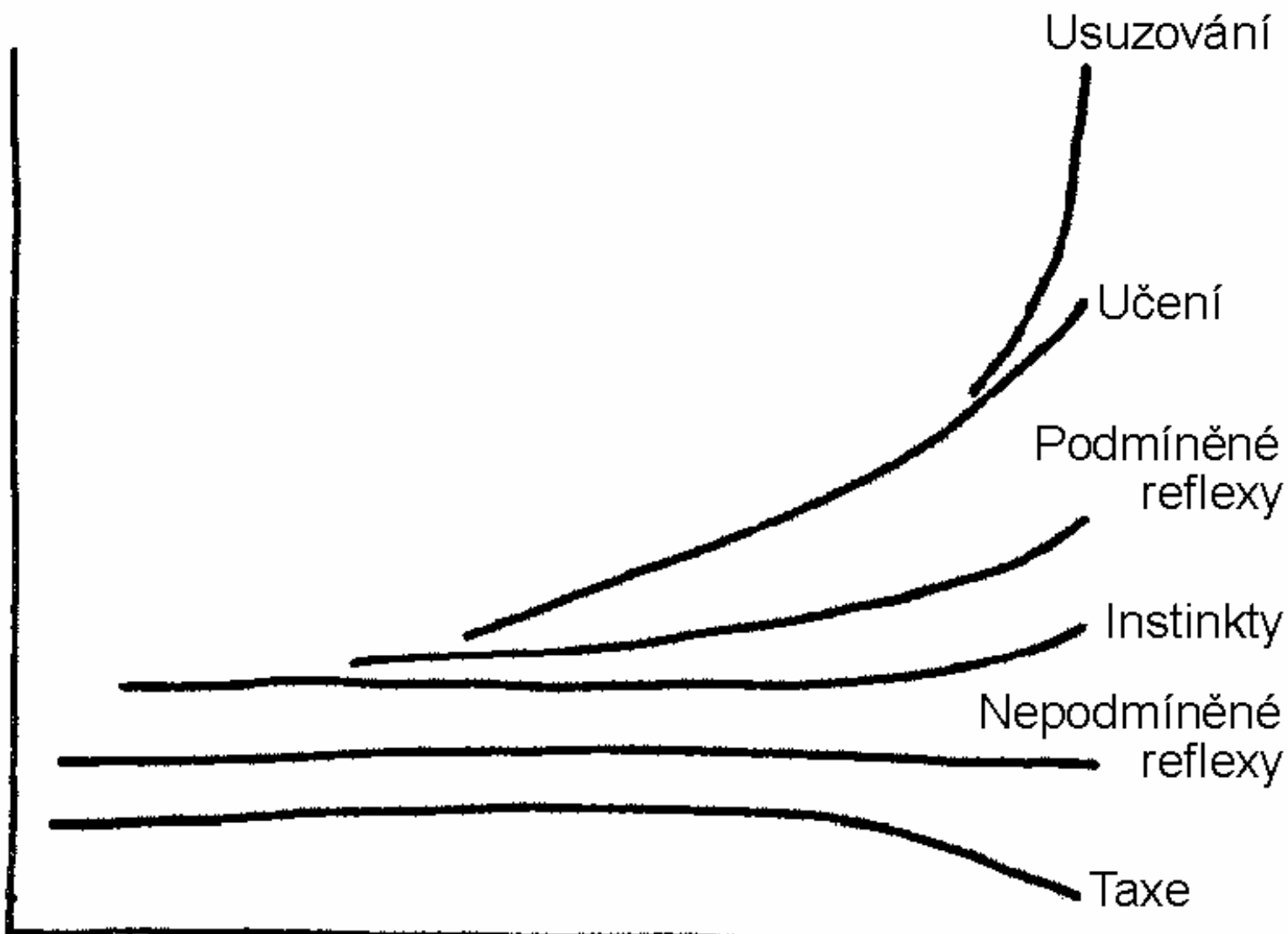






Orgán	Vliv sympatiku	Vliv parasympatiku
<b>1. Orgány s dvojí inervací:</b>		
Srdce	Zrychlení tepu	Zpomalení tepu
Hladké svaly:		
Trávicí trubice	Snížení hybnosti	Zvýšení hybnosti
Sfinktery trávicí trubice	Stah	Uvolnění
Bronchy	Uvolnění	Stah
Zornice oka:		
m. sphincter pupillae		Stah – zúžení zornice
m. dilatator pupillae	Stah – rozšíření zornice	
<b>2. Orgány inervované hlavně sympatikem:</b>		
Hladké svaly:		
Arterioly kůže a ledvin	Vazokonstrikce	
m. arrectores pilorum	Stah – ježení chlupů	
Žlázy:		
Dřeň nadledvin	Sekrece	
Potní žlázy	Sekrece	
<b>3. Orgány inervované hlavně parasympatikem:</b>		
Hladké svaly:		
Cévy vnějších pohl. org.		Vazodilatace – erekce
m. ciliaris		Stah – akomodace
Žlázy:		
Slinné		Sekrece
Žaludeční		Sekrece
Pankreas		Sekrece

Složky chování

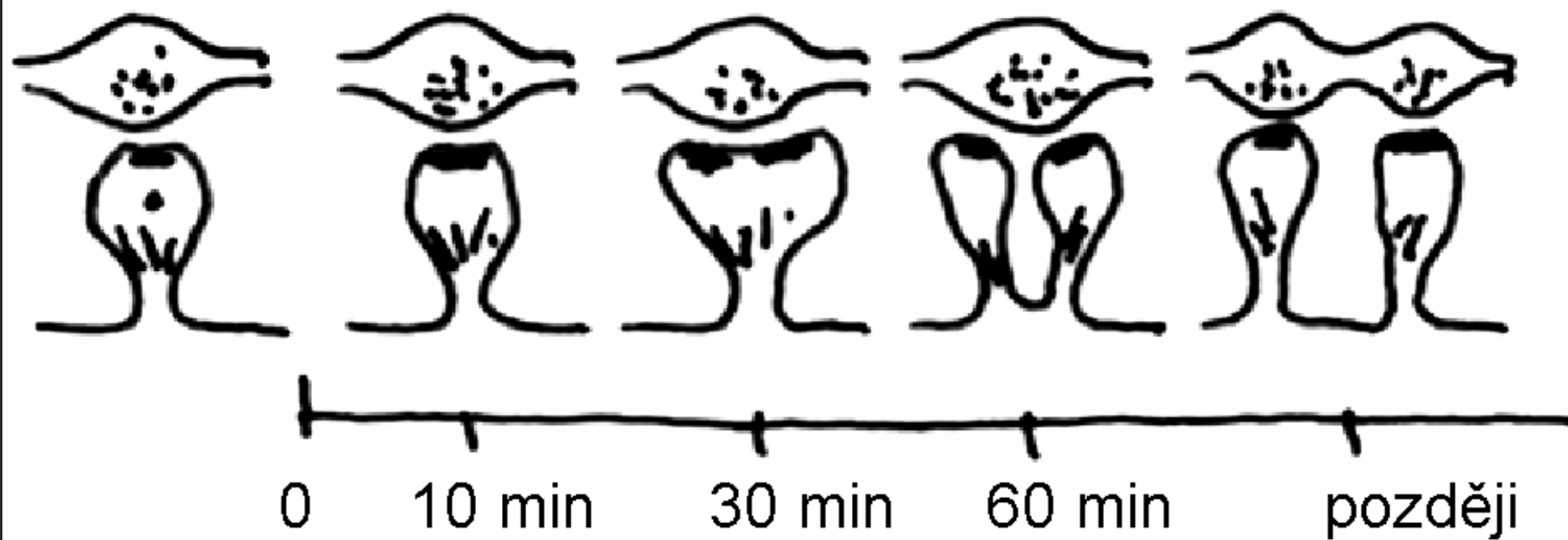


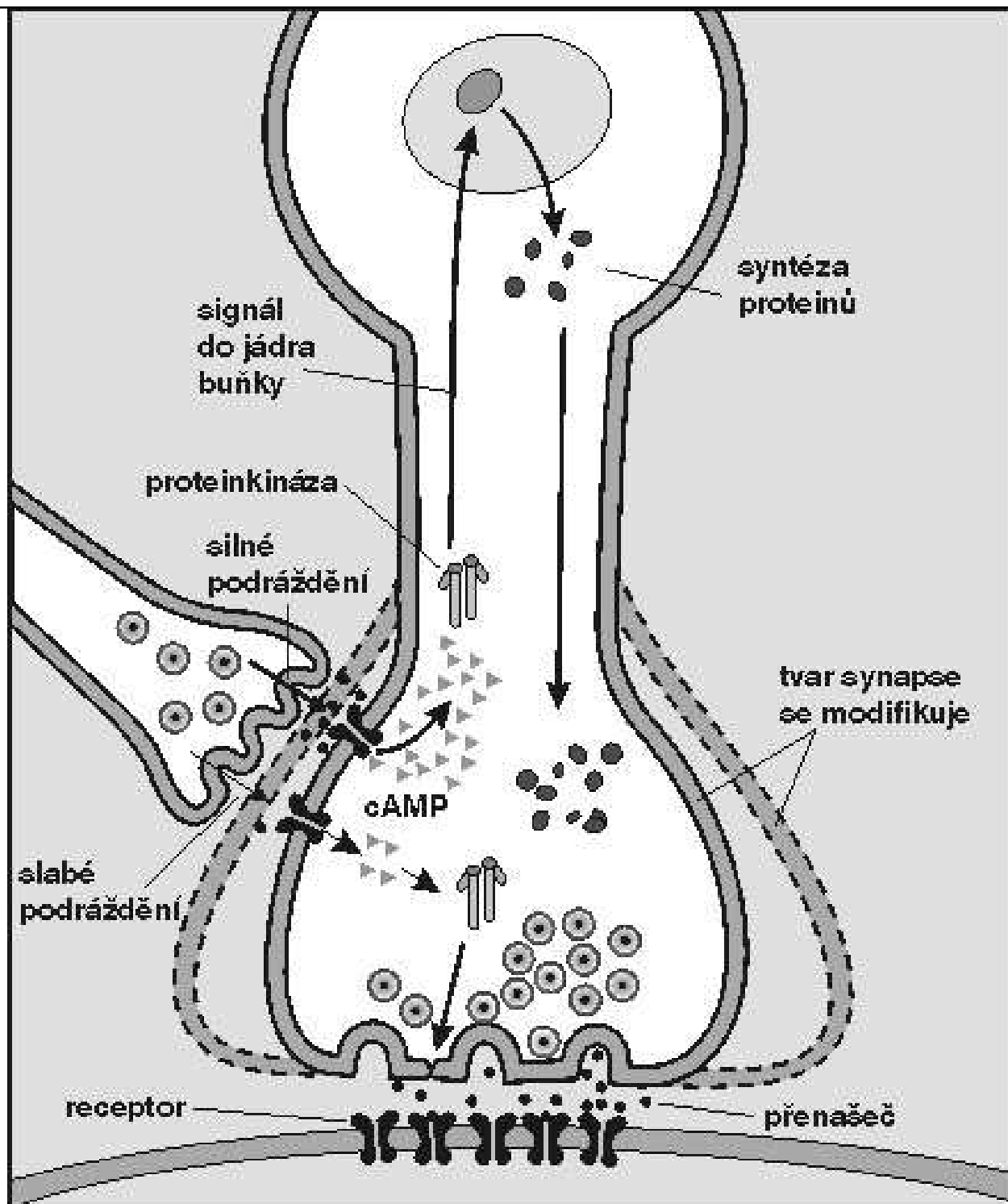
Geologický čas

Bezobratlí →

Obratlovci →

## Dlouhotrvající potenciace - LTP







(a) Normal synaptic transmission

(b) LTP induction

