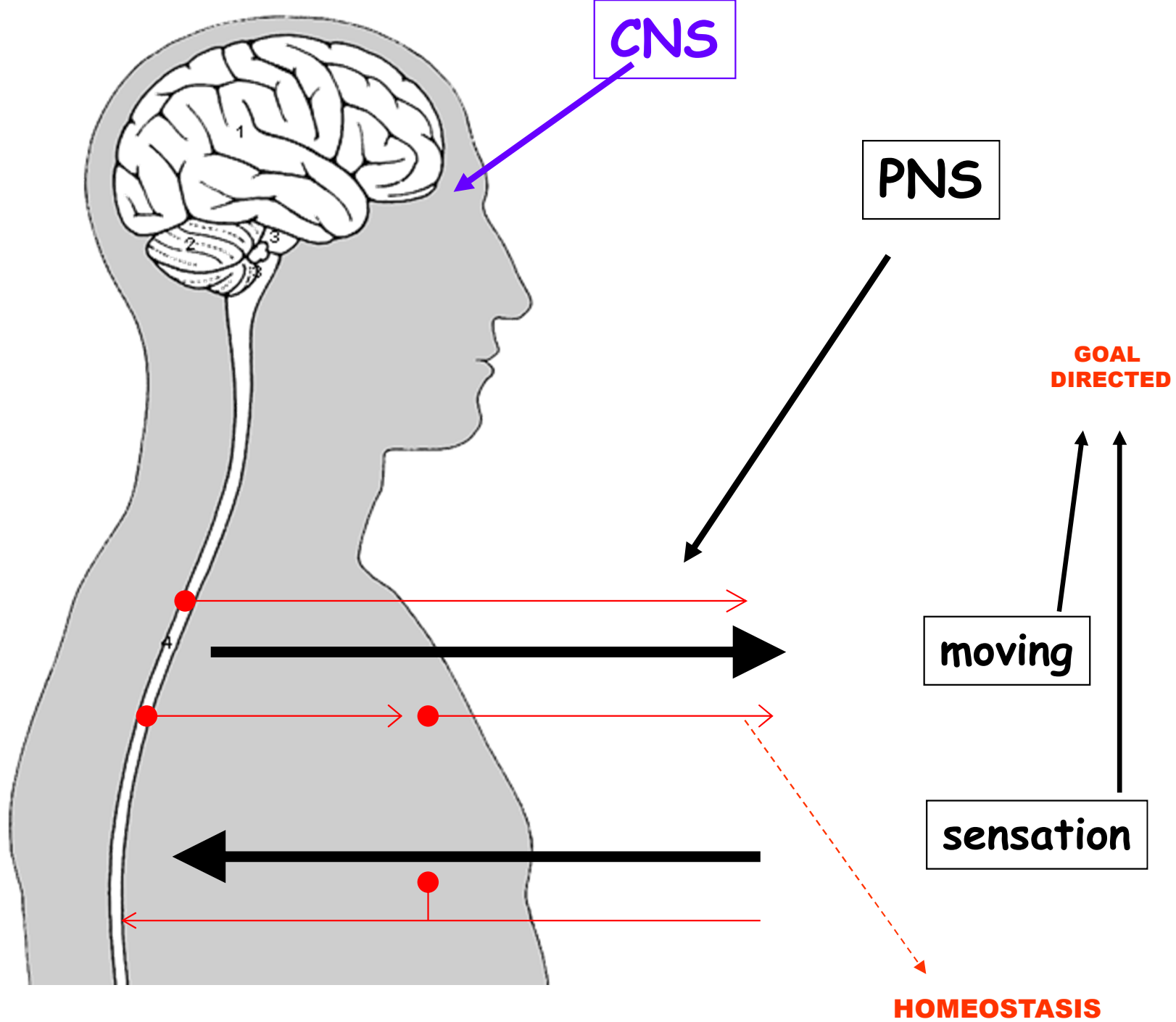
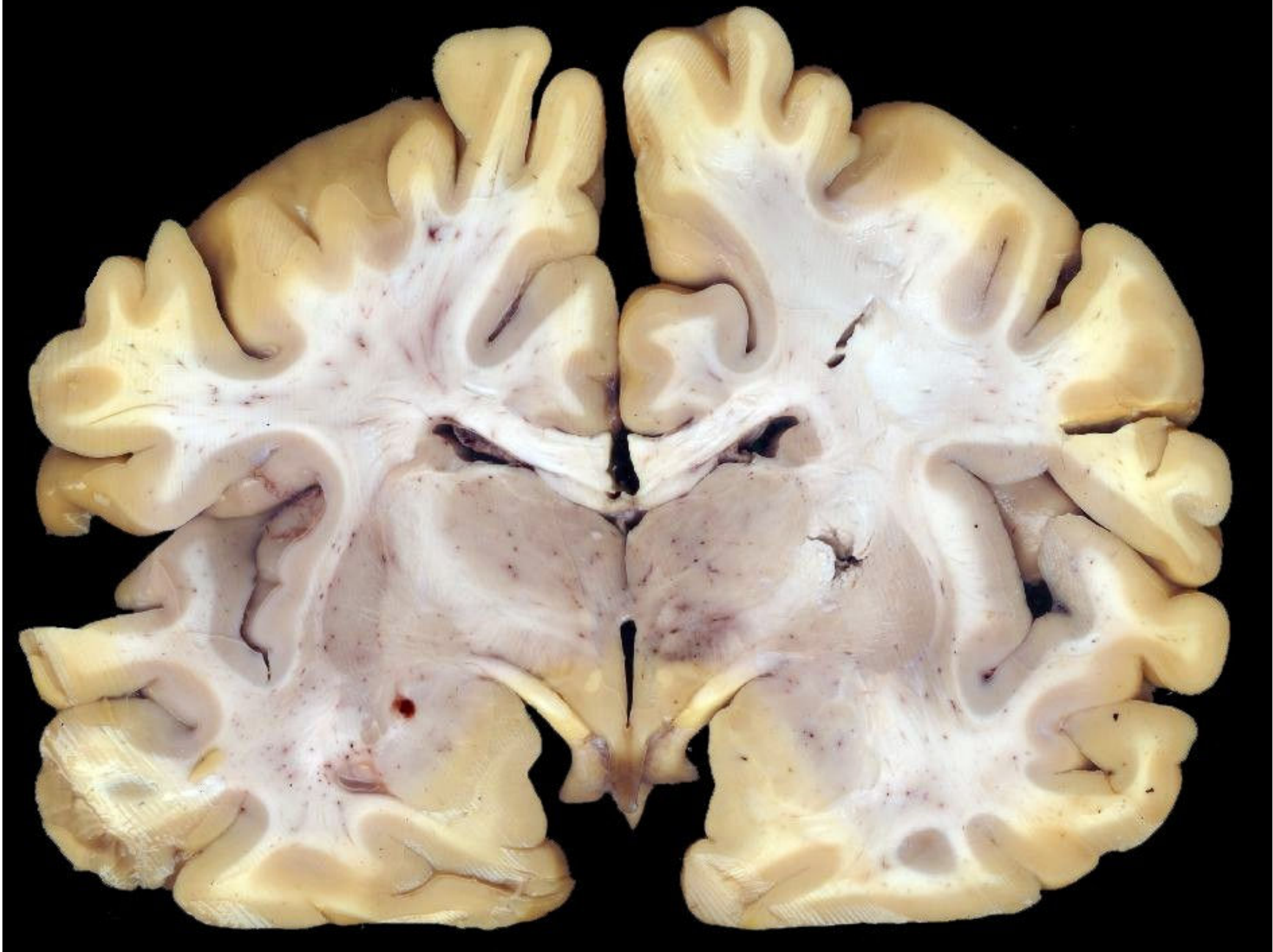
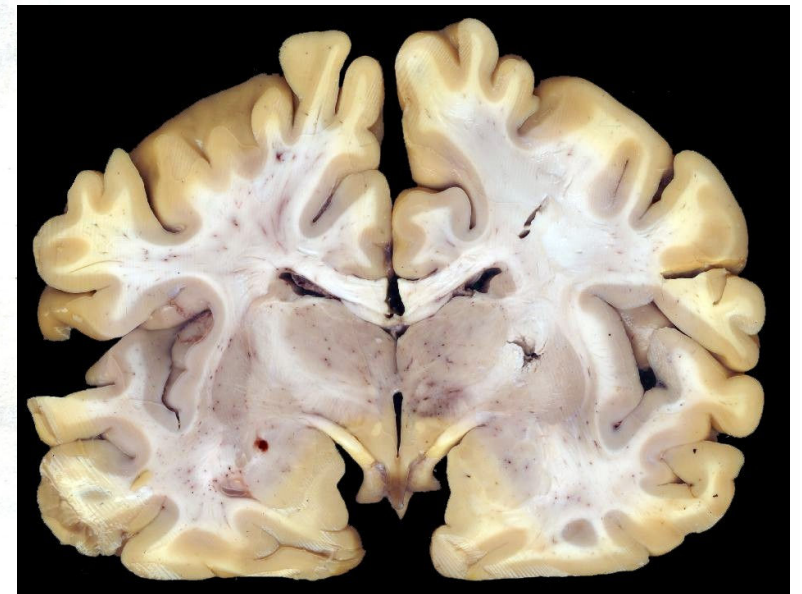
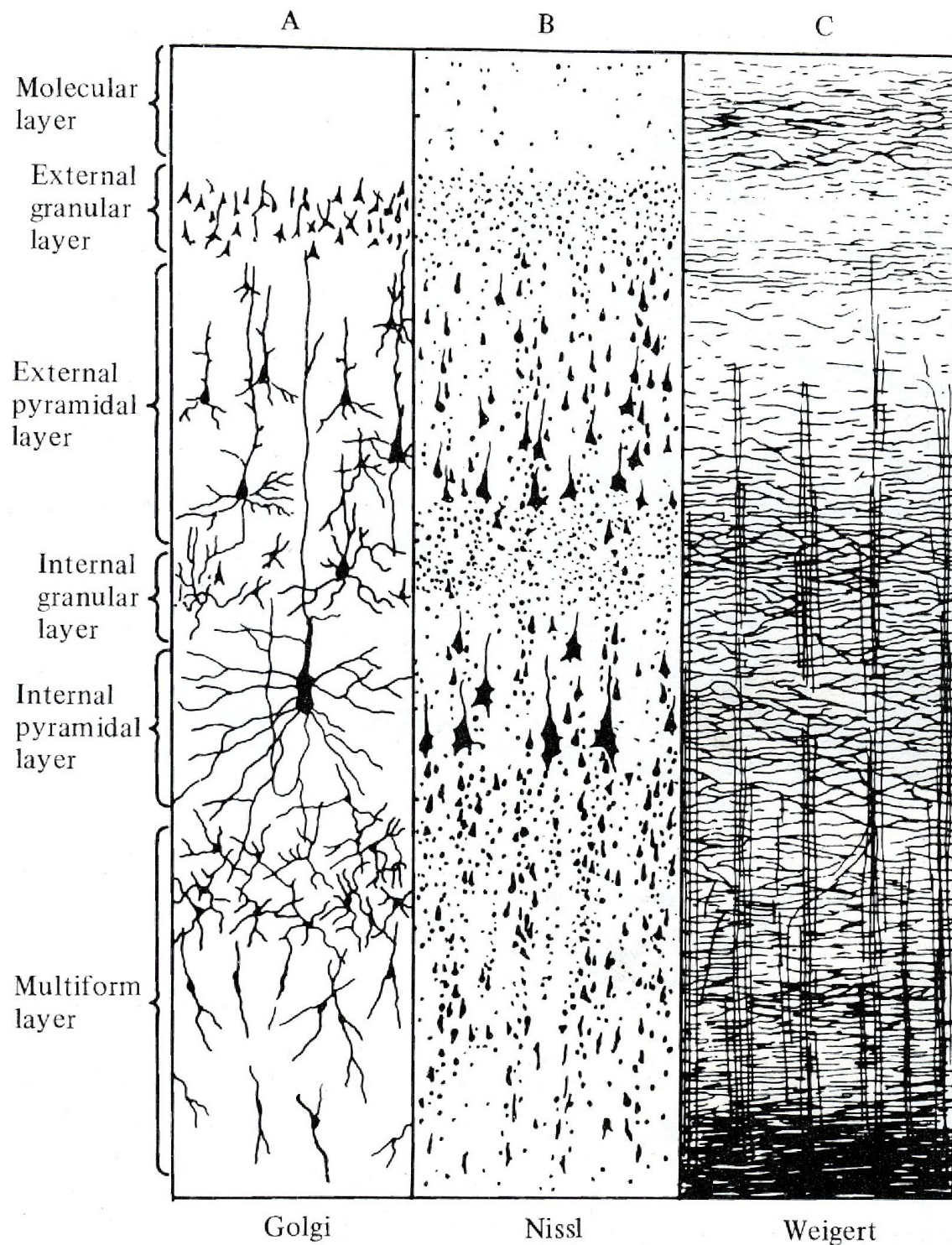
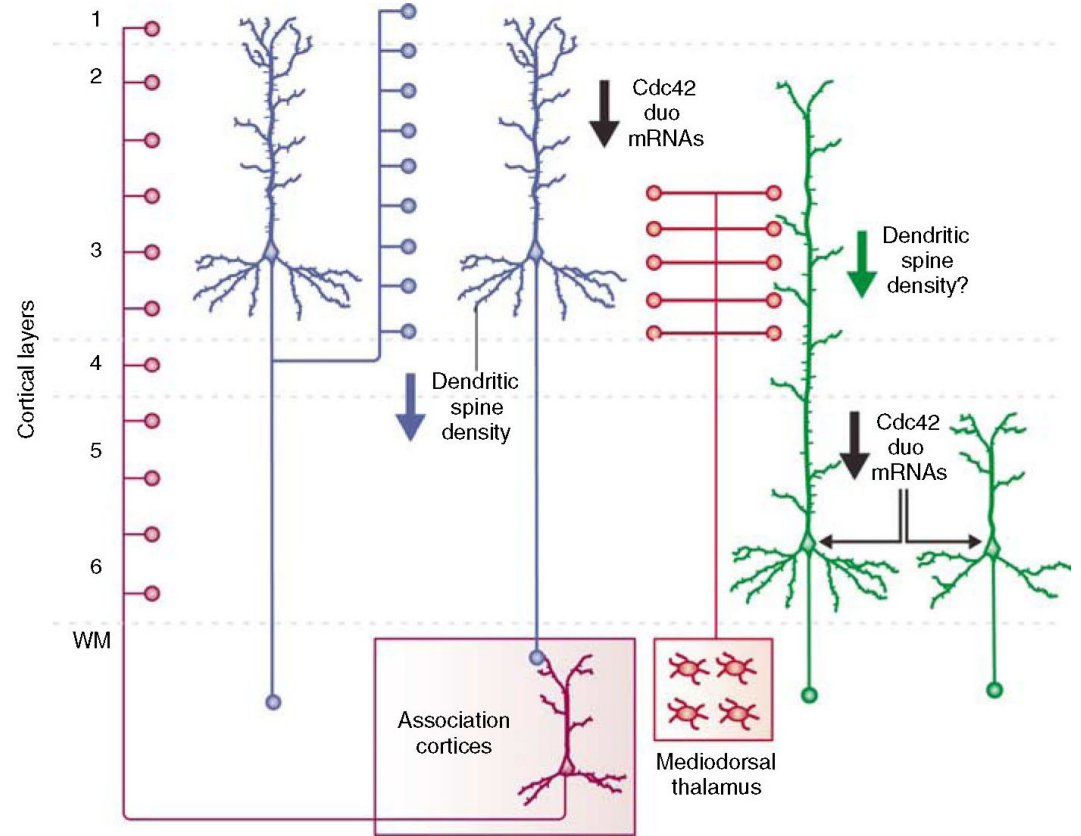
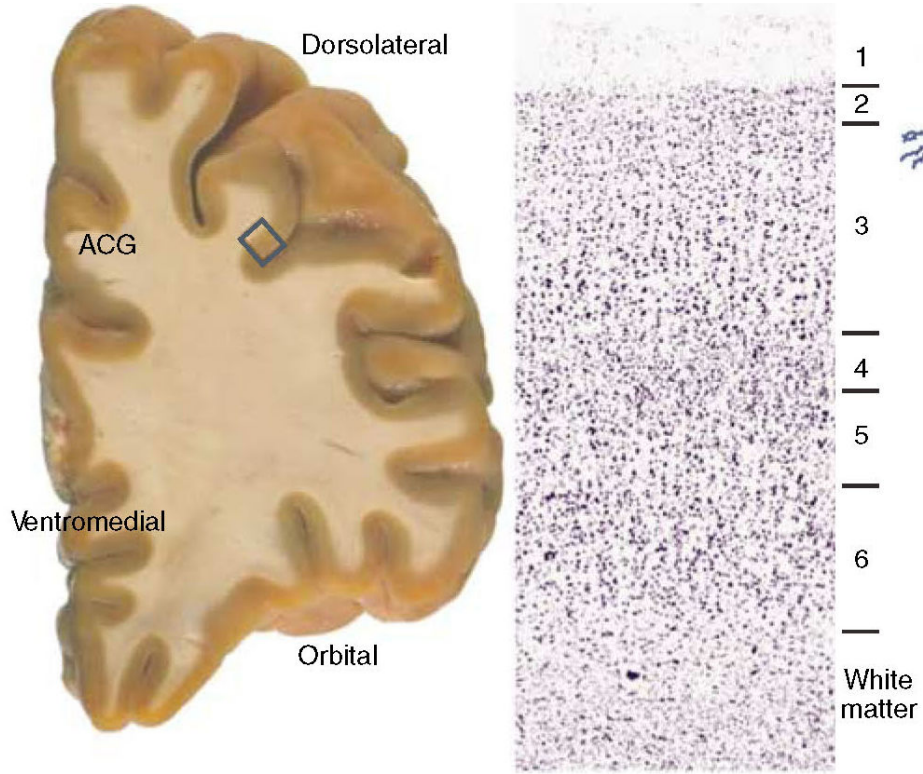


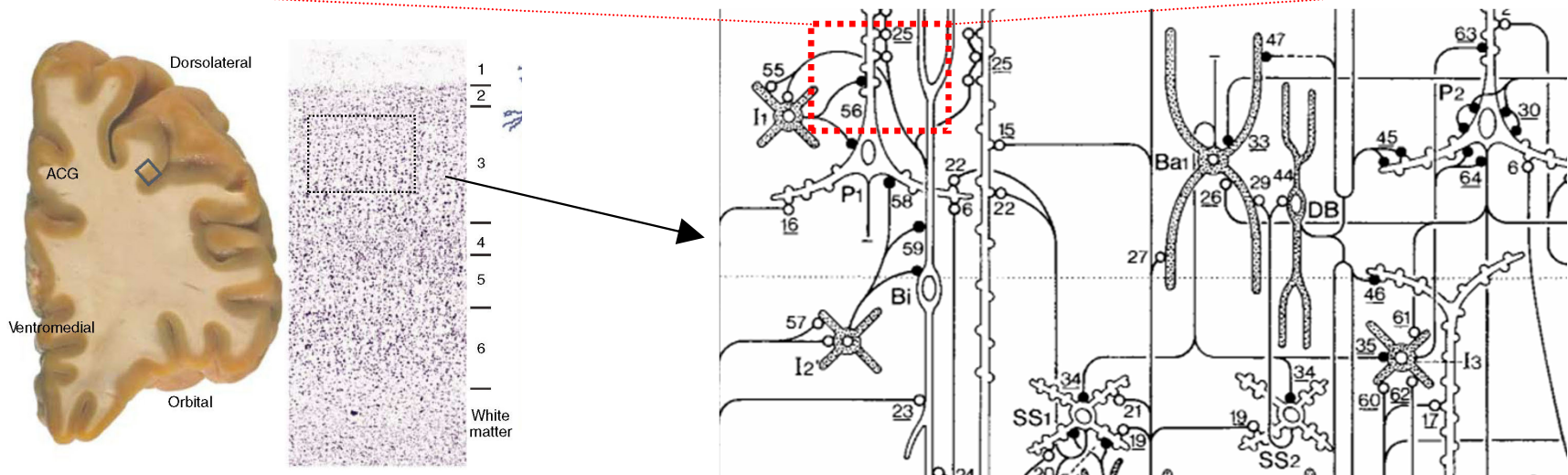
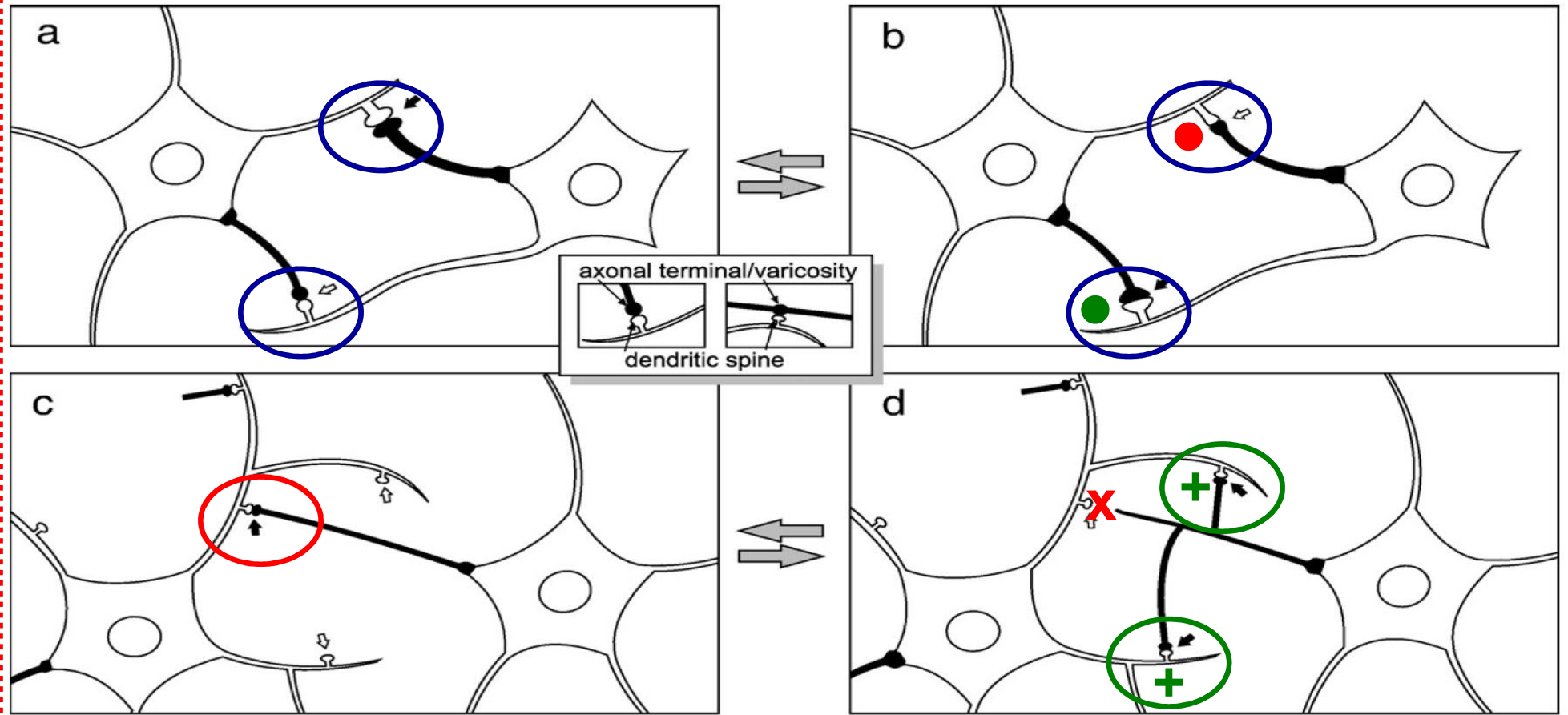
**ANATOMIJA 1A -
MORFOLOGIJA SREDIŠNJEG
ŽIVČANOG SUSTAVA**

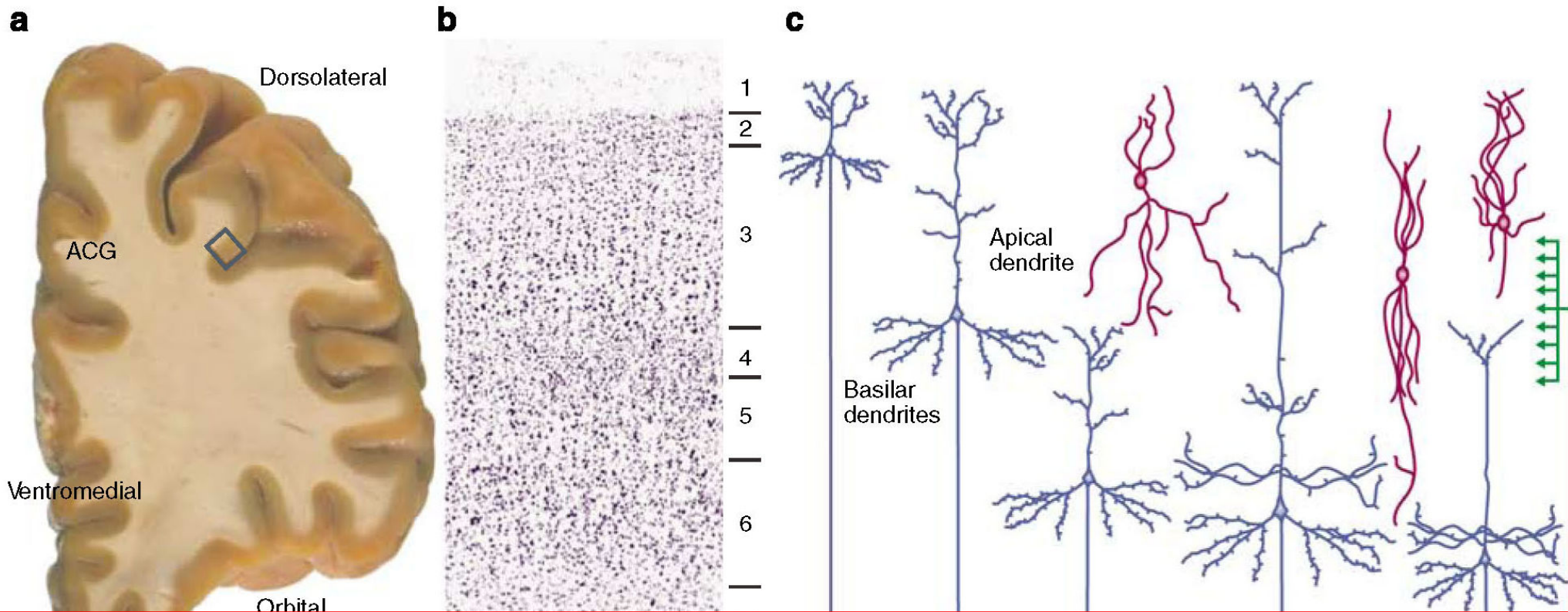












Human

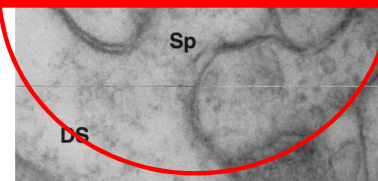
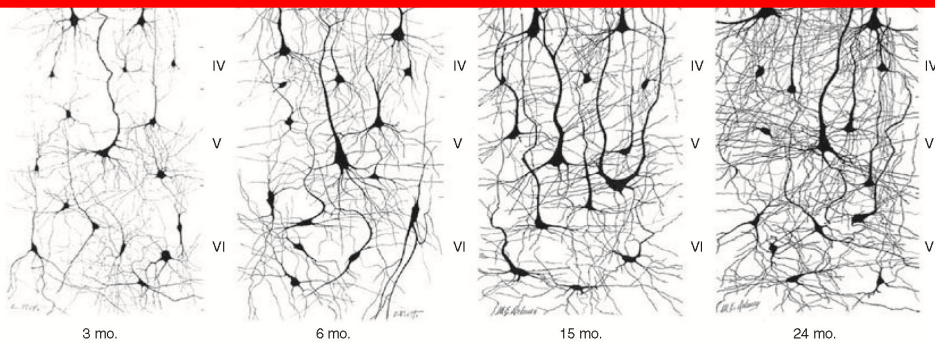
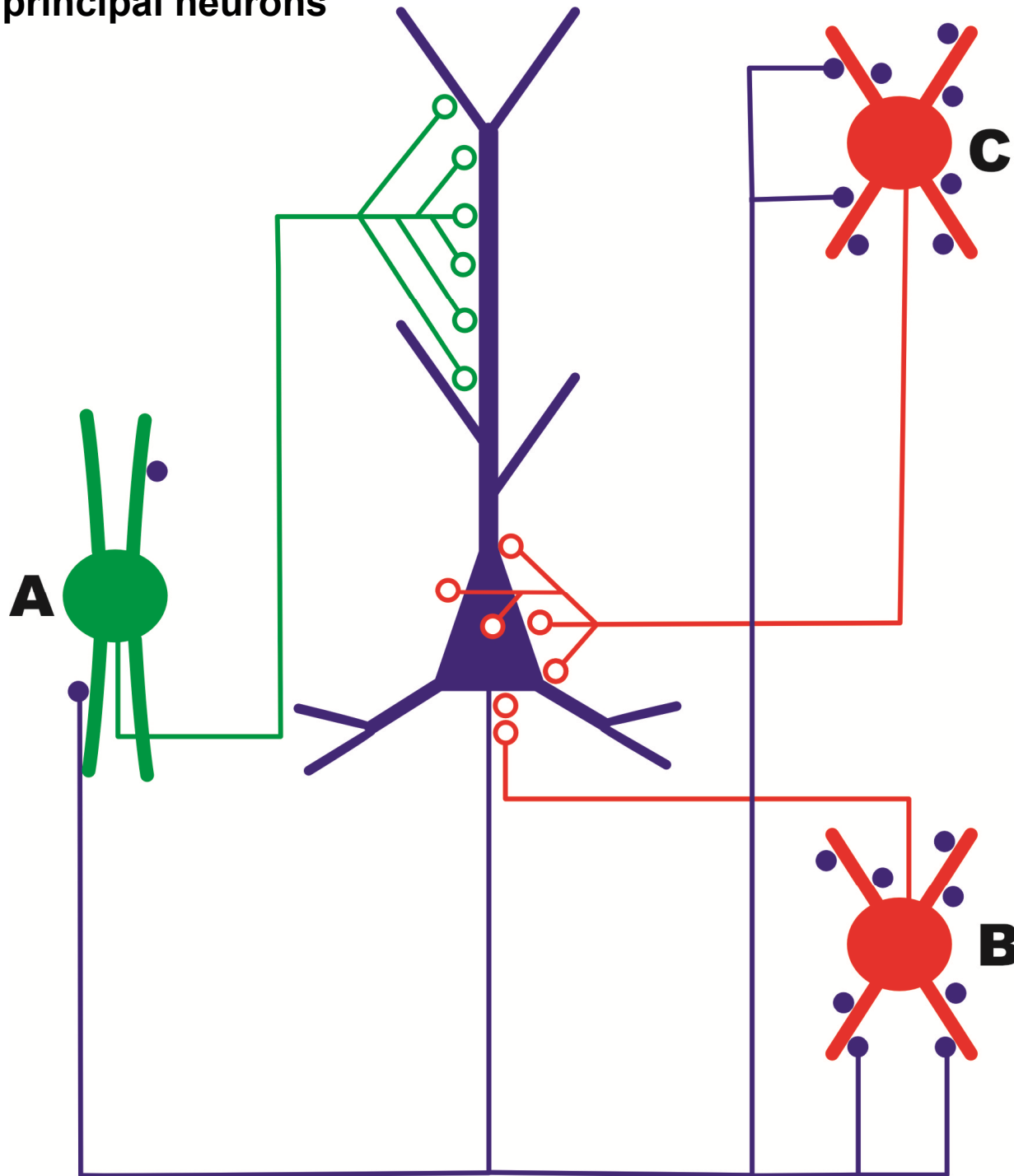


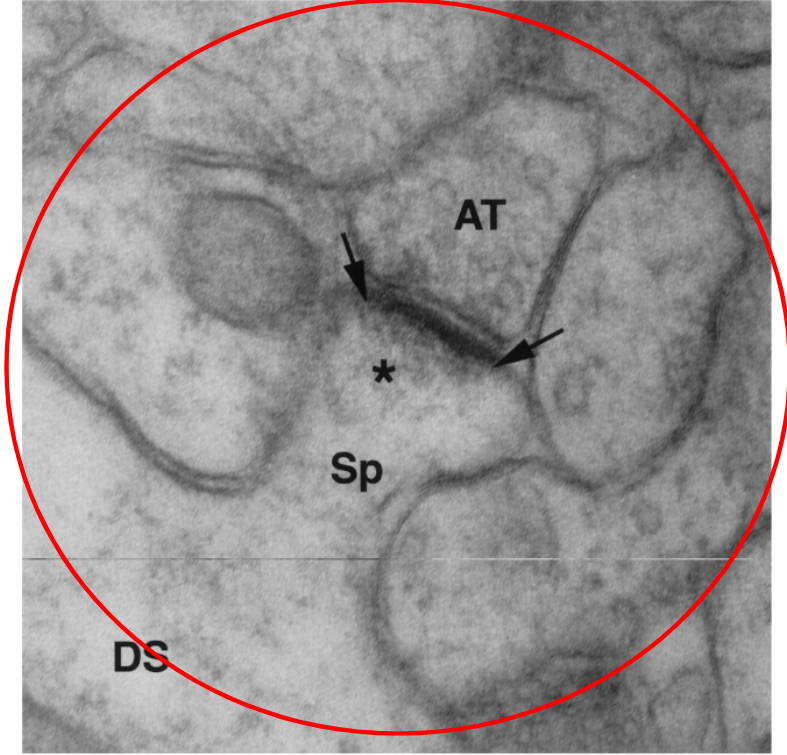
FIGURE 2.3 Development of neuronal architecture in human prefrontal cortex. *Top*: Prenatal period from 10.5 weeks to birth. From Mirzljak *et al.* (1990), with permission. *Bottom*: 3, 6, 15, and 24 months after birth. From Conel (1963), with permission.

Fuster, 2008, *The prefrontal cortex*

GABAergic neurons are morphologically and functionally more heterogeneous than principal neurons

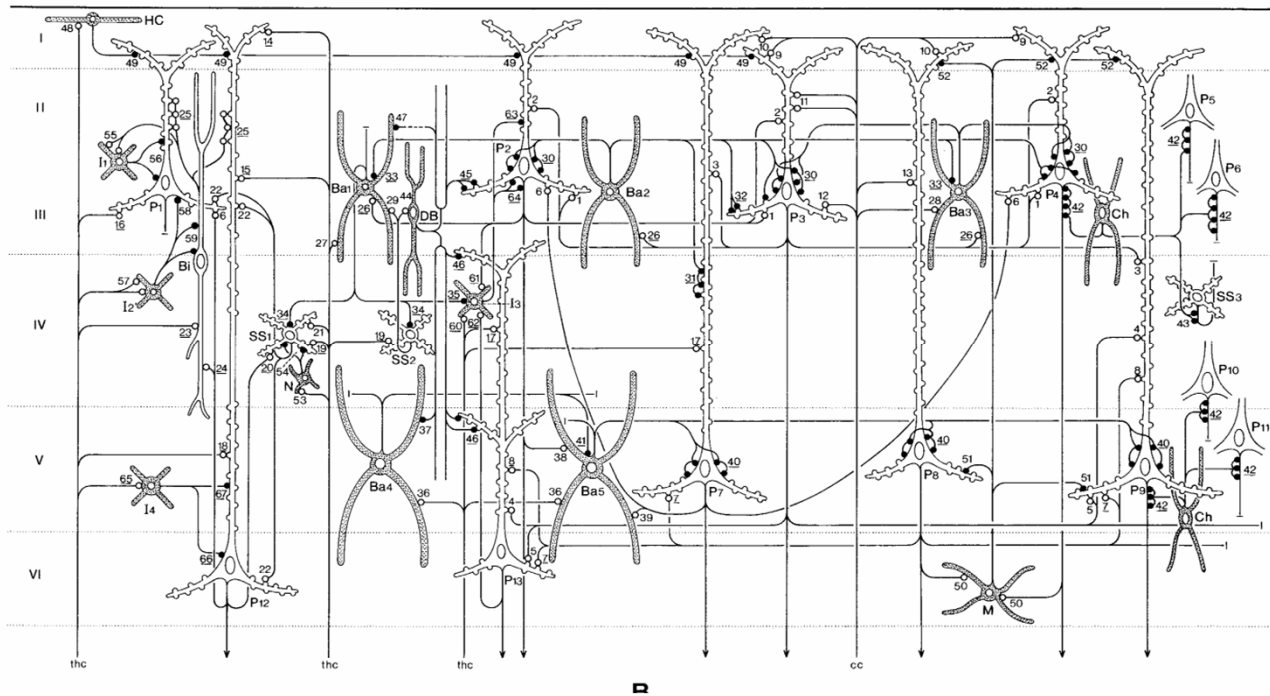
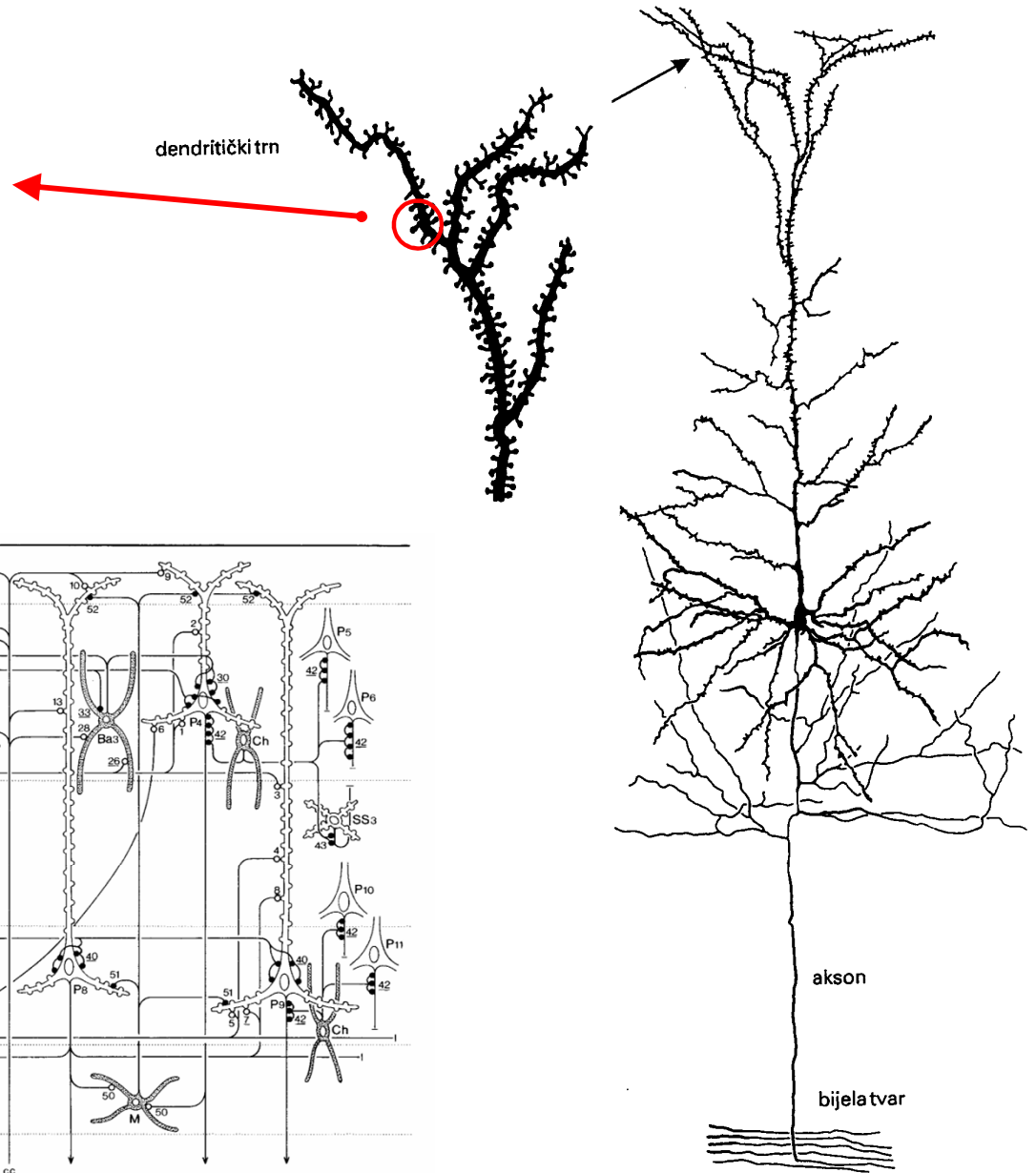


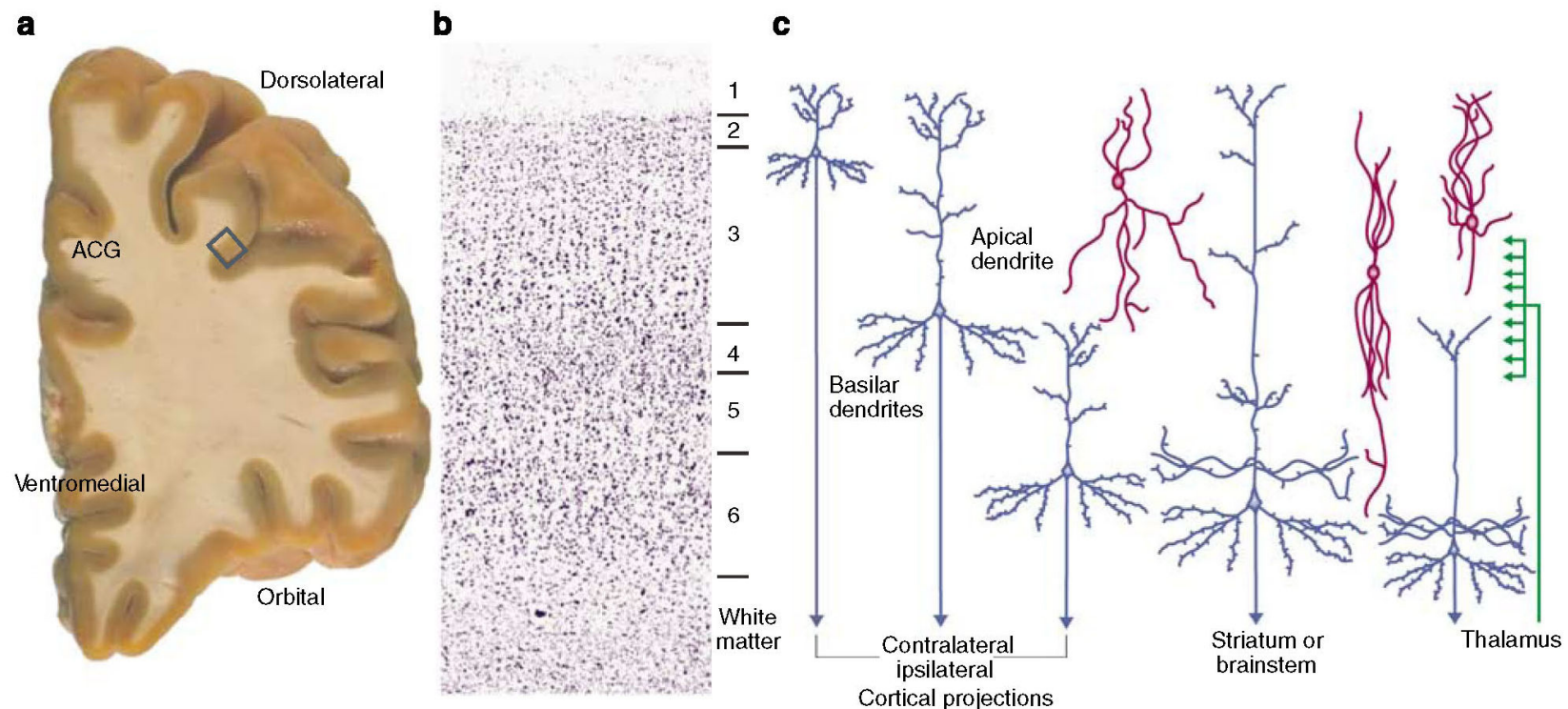
Kostović, I., Judaš, M., and Petanjek, Z. (2008). Structural development of the human prefrontal cortex. In: *Handbook of developmental cognitive neuroscience*, Nelson, C.A., and Luciana, M., eds. (Cambridge: MIT Press), pp. 213-235.



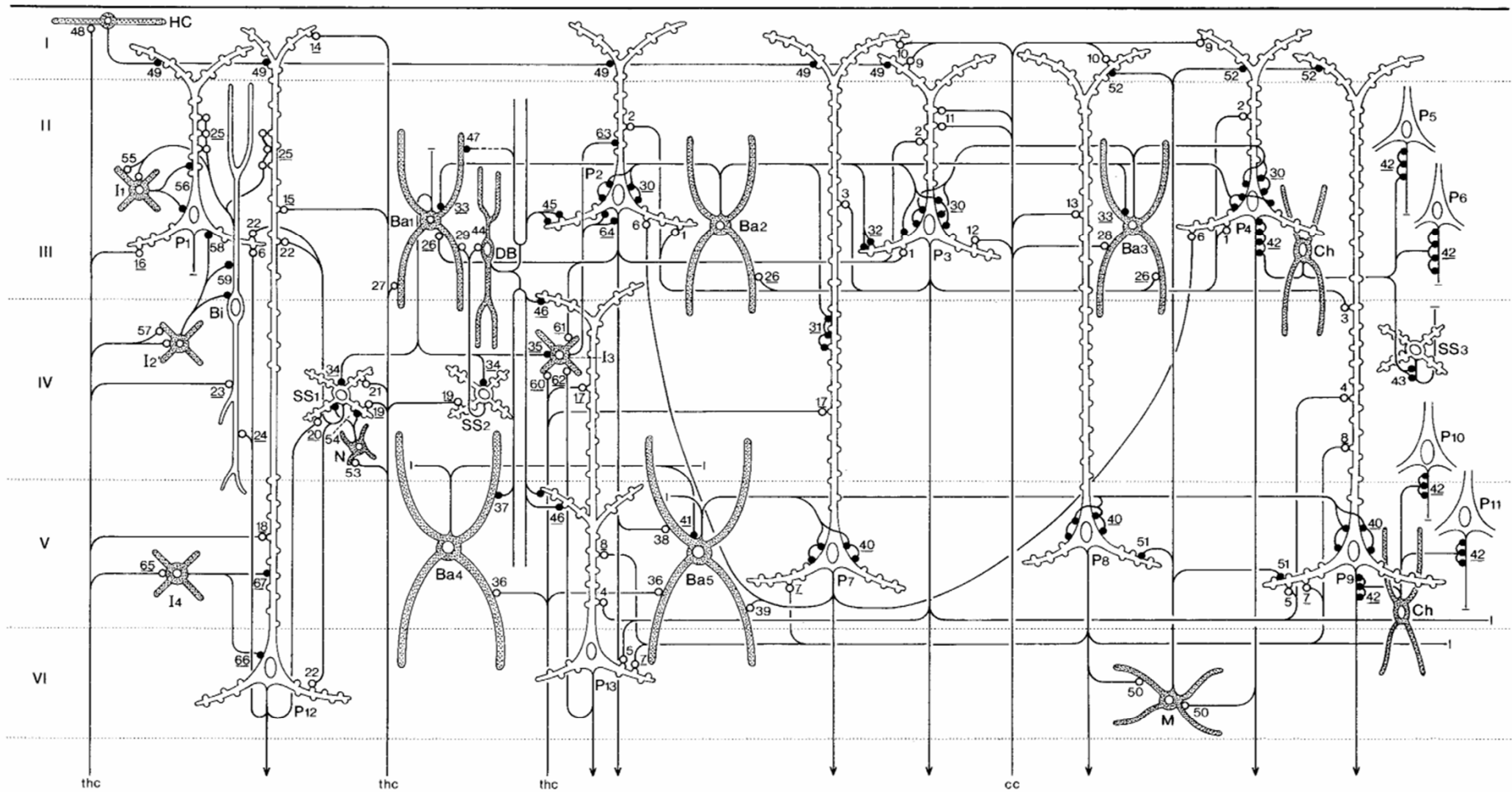
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DENDRITIC SPINE
↓
GLUTAMATERGIC SYNAPSE





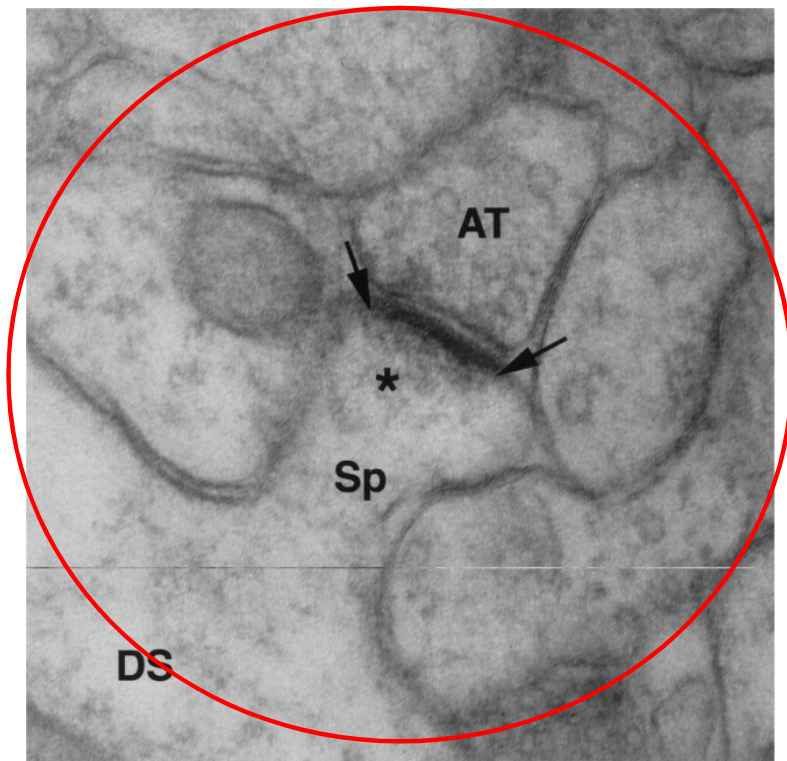
In the primate brain, the prefrontal cortex is generally considered to encompass a set of structurally and functionally heterogeneous cortical areas located anterior to the motor and premotor regions of the frontal lobe. These regions share a granular cytoarchitecture (that is, a discernible layer 4) and they are the recipients of axonal projections from the mediodorsal thalamus, although each of these features has exceptions. The prefrontal cortex can be divided into dorsolateral, orbital, and ventromedial regions as shown in (a), an unstained coronal block cut immediately anterior to the corpus callosum through the left hemisphere of a postmortem human brain. This block also includes the adjacent anterior cingulate gyrus (ACG) of the limbic lobe. The portion of the dorsolateral prefrontal cortex (DLPFC) delineated by the small rectangle is shown at higher magnification after staining for Nissl substance in (b). This section shows the typical appearance of six layers or lamina, numbered from the pial surface of the cortex to the underlying white matter, based on the size and packing density of neurons. Distributed across these layers are different types of pyramidal neurons (red cells in (c)), which represent about 75% of cortical neurons. These neurons typically have triangular shaped cell bodies, a single apical dendrite directed towards the pial surface and an array of basilar dendrites. Depending on their laminar location, the axons of pyramidal neurons provide excitatory projections to different brain regions, with those located in layers 2 and 3 projecting principally to other cortical regions in the same (ipsilateral) or opposite (contralateral) hemisphere, those located in layer 5 projecting principally to the striatum or brainstem and those in layer 6 projecting principally to the thalamus. Axons that project to the DLPFC from other brain regions also tend to innervate different subsets of cortical layers. For example, axonal projections (green) from the thalamus terminate in layers deep 3 and 4. The remaining ~25% of DLPFC neurons are local circuit or interneurons (blue cells). These neurons use the inhibitory neurotransmitter GABA, and have axons that arborize locally and innervate other neurons in the same area of the prefrontal cortex. Figure adapted from Lewis (2004).



B

Fig. 8. Diagram of neocortical circuits, based on data mentioned in the text showing excitatory elements (A) and excitatory plus inhibitory elements (B). *Ba1, Ba2 etc.*, Basket cells; *Bi*, bipolar cell; *Ch*, chandelier cells; *cc*, cortico-cortical fibre; *DB*, double bouquet cell; *HC*, horizontal cell of Cajal; *I1, I2 etc.*, different types of interneurons; *M*, Martinotti cell; *N*, neurogliaform or spiderweb cell; *P1, P2 etc.*, pyramidal neurons; *SS1, SS2 etc.*, spiny stellate

cells; *thc*, thalamocortical fibres; *I, II etc.*, cortical layers; *1, 2 etc.*, synaptic connections specified in the text; *underlined numbers* refer to connections that have been conclusively demonstrated by the study of experimental material (labelled or degenerating elements) at the ultrastructural level. Excitatory neurons and their synaptic terminals are shown by *open profiles*, inhibitory neurons and their terminals by *filled profiles*

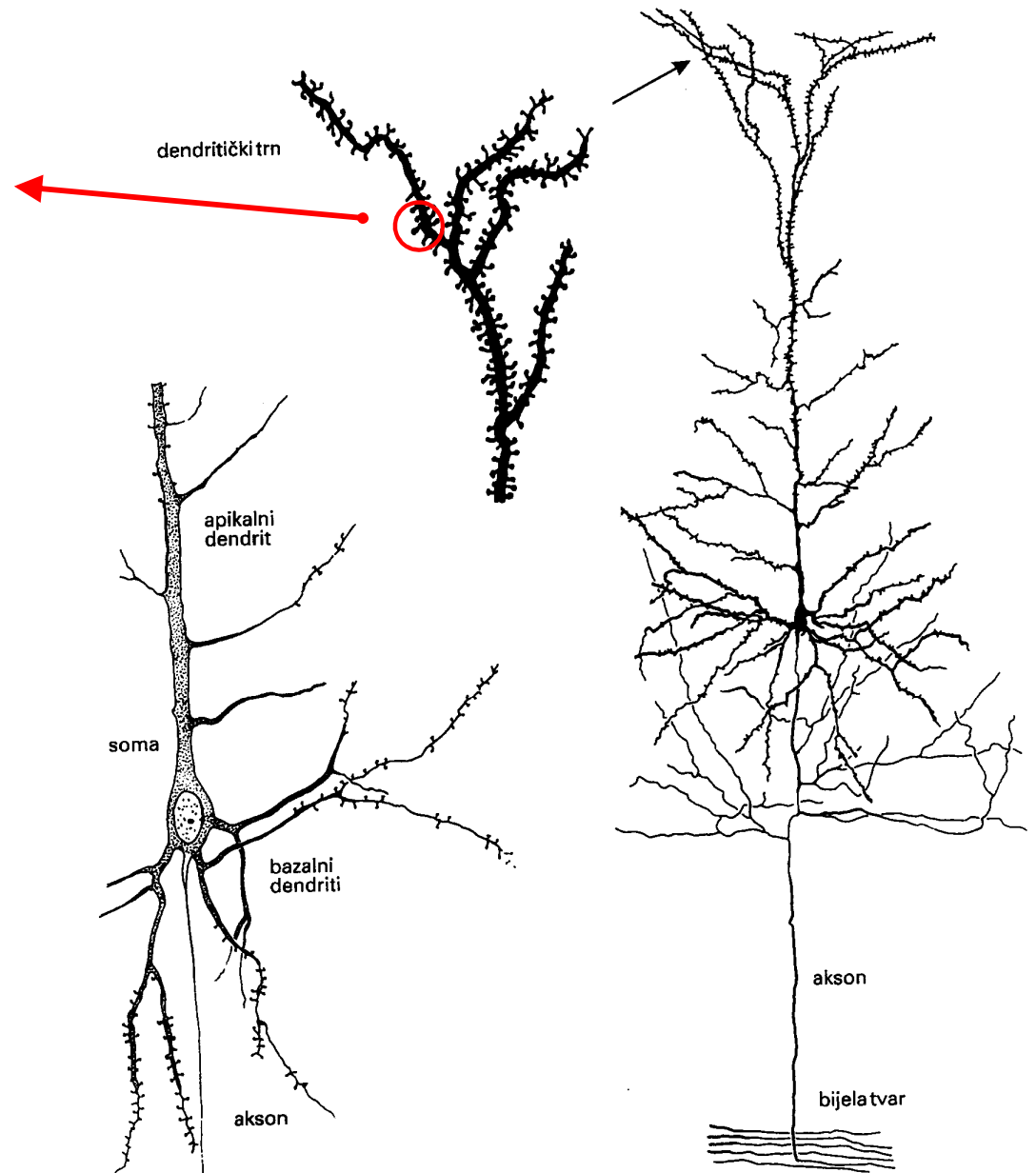


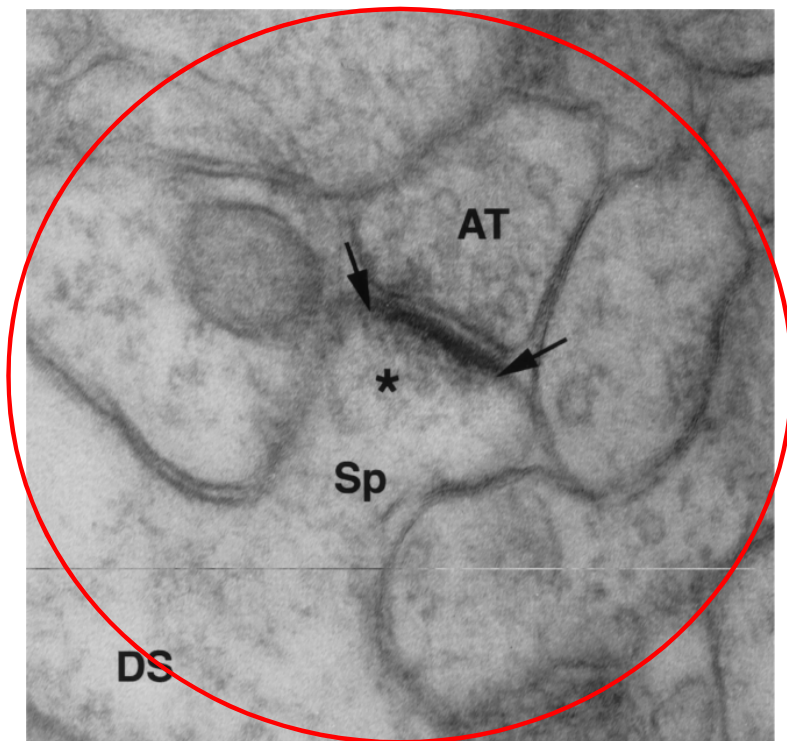
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DENDRITIC SPINE

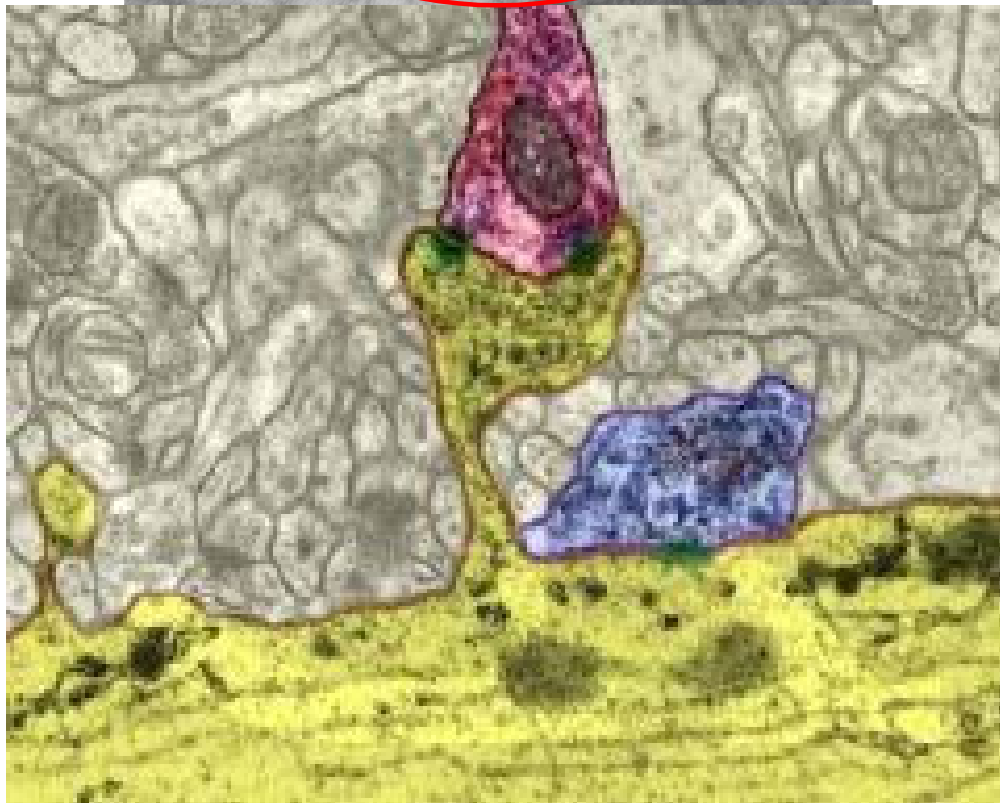
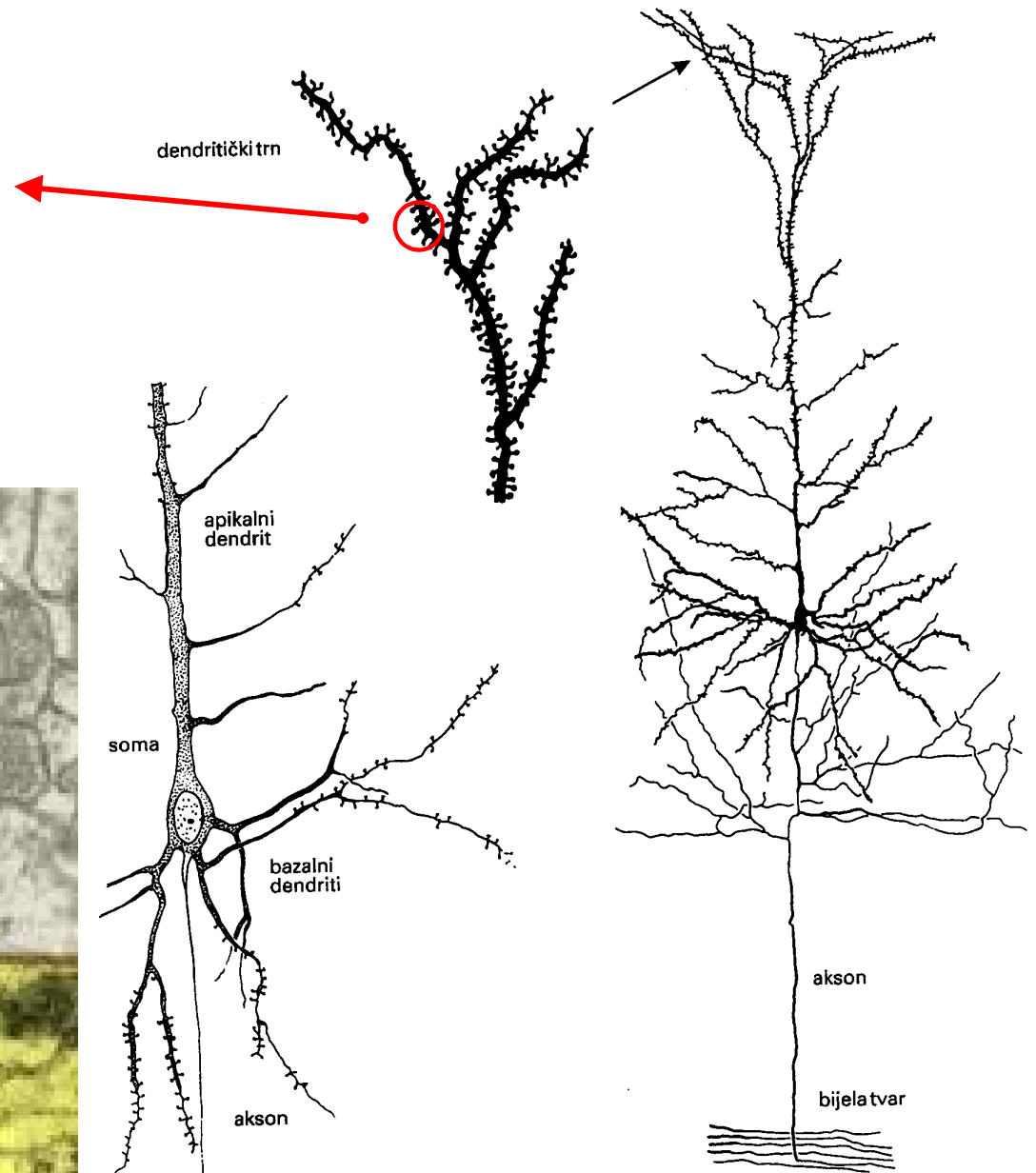


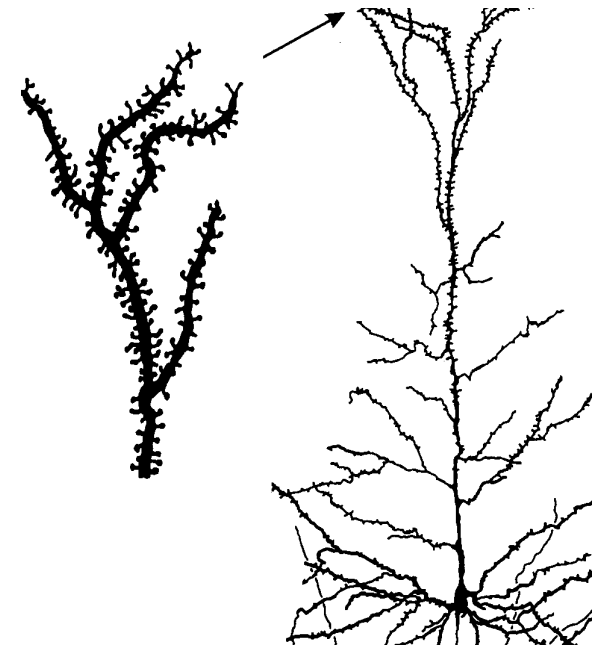
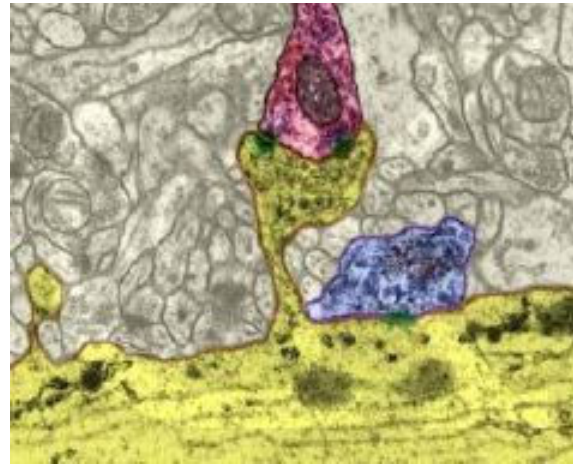
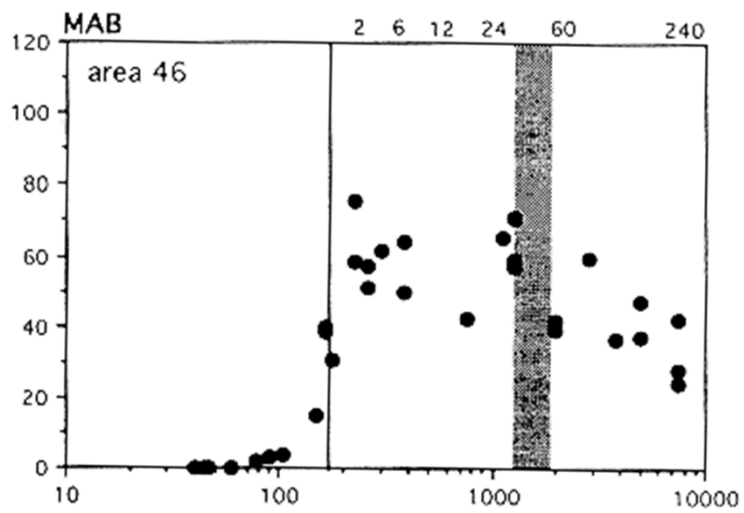
GLUTAMATERGIC SYNAPSE



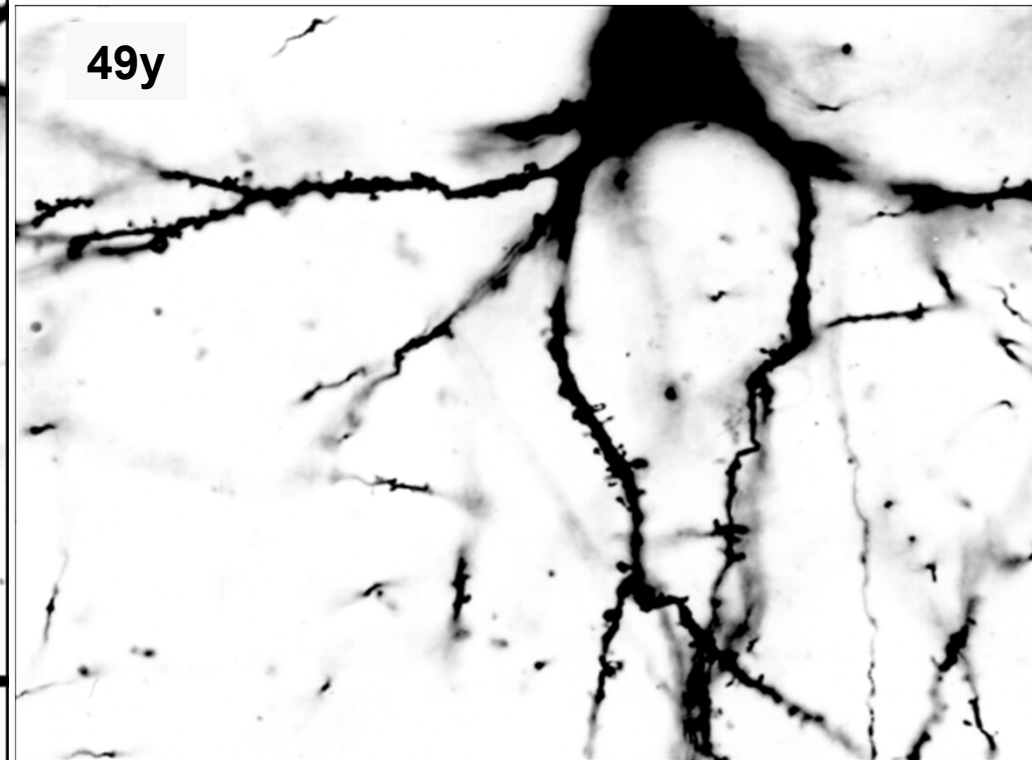
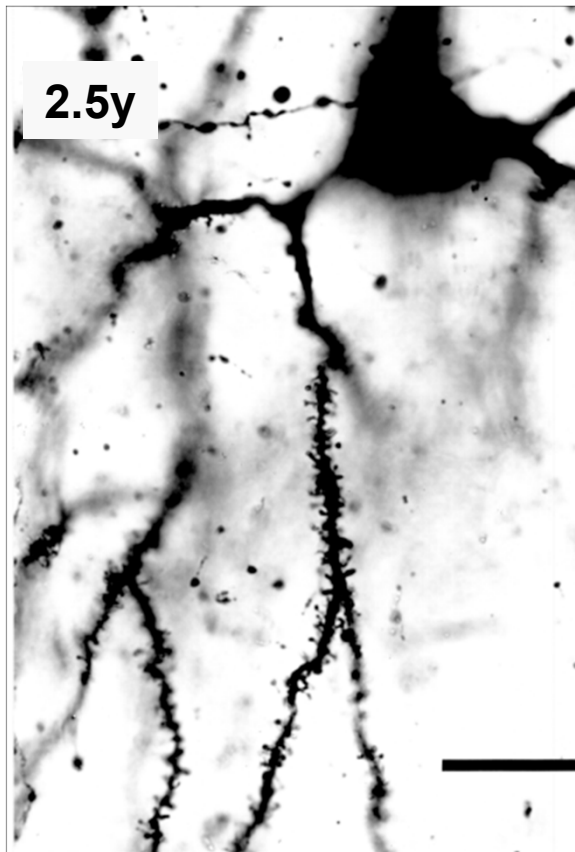


DENDRITIC SPINE
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GLUTAMATERGIC SYNAPSE








Rakic P, Bourgeois JP, Goldman-Rakic PS., *Prog Brain Res.* 1994;102:227-43.,
 Synaptic development of the cerebral cortex: implications for learning, memory, and mental illness.



SYNAPTIC INPUTS ON PYRAMIDAL NEURONS

Shapes	Dimension
<p>1. Stubby</p>  <p>Average length 1.0μ Range $0.5-1.5 \mu$</p>	
<p>2. Mushroom-shaped</p>  <p>Average length 1.5μ Range $0.5-2.5 \mu$ Average stalk length 0.8μ Average bulb dimensions $1.4 \times 0.6 \mu$</p>	
<p>3. Thin</p>  <p>Average length 1.7μ Range $0.5-4.0 \mu$ Average stalk length 1.1μ Average bulb dimensions 0.6μ</p>	

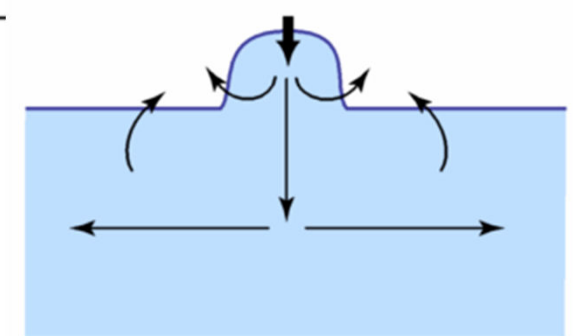
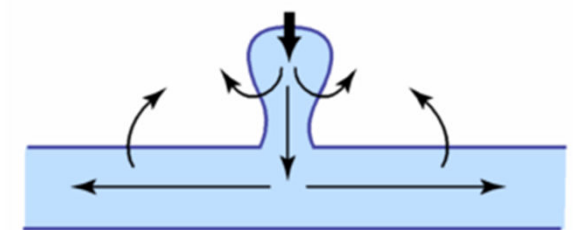
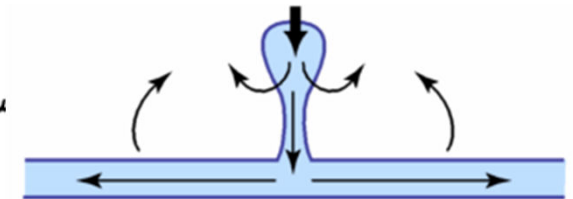
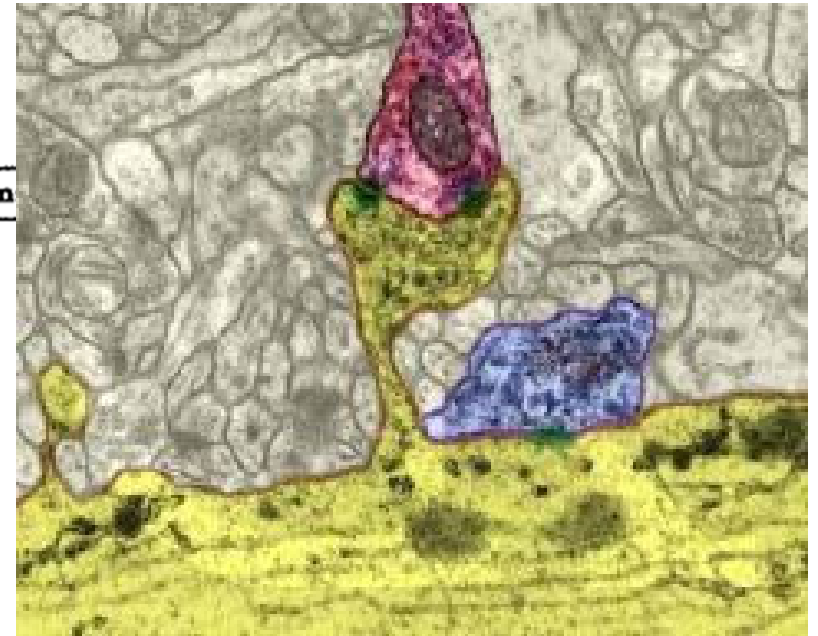
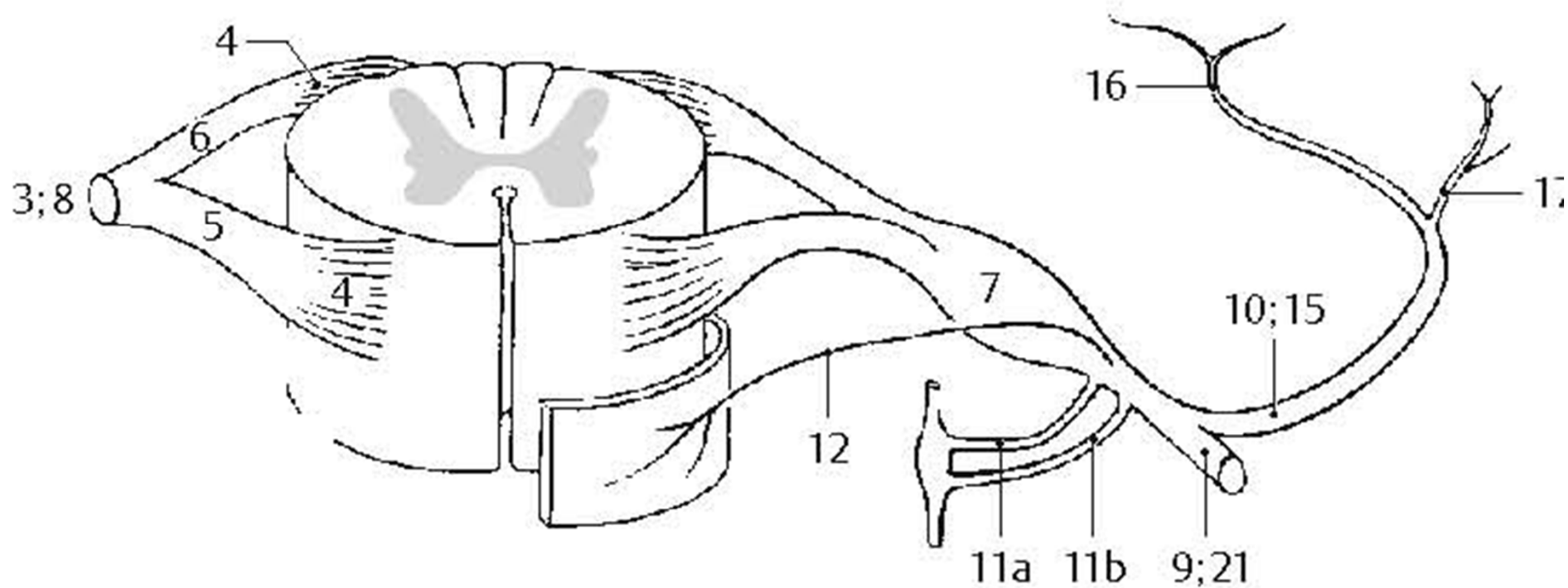
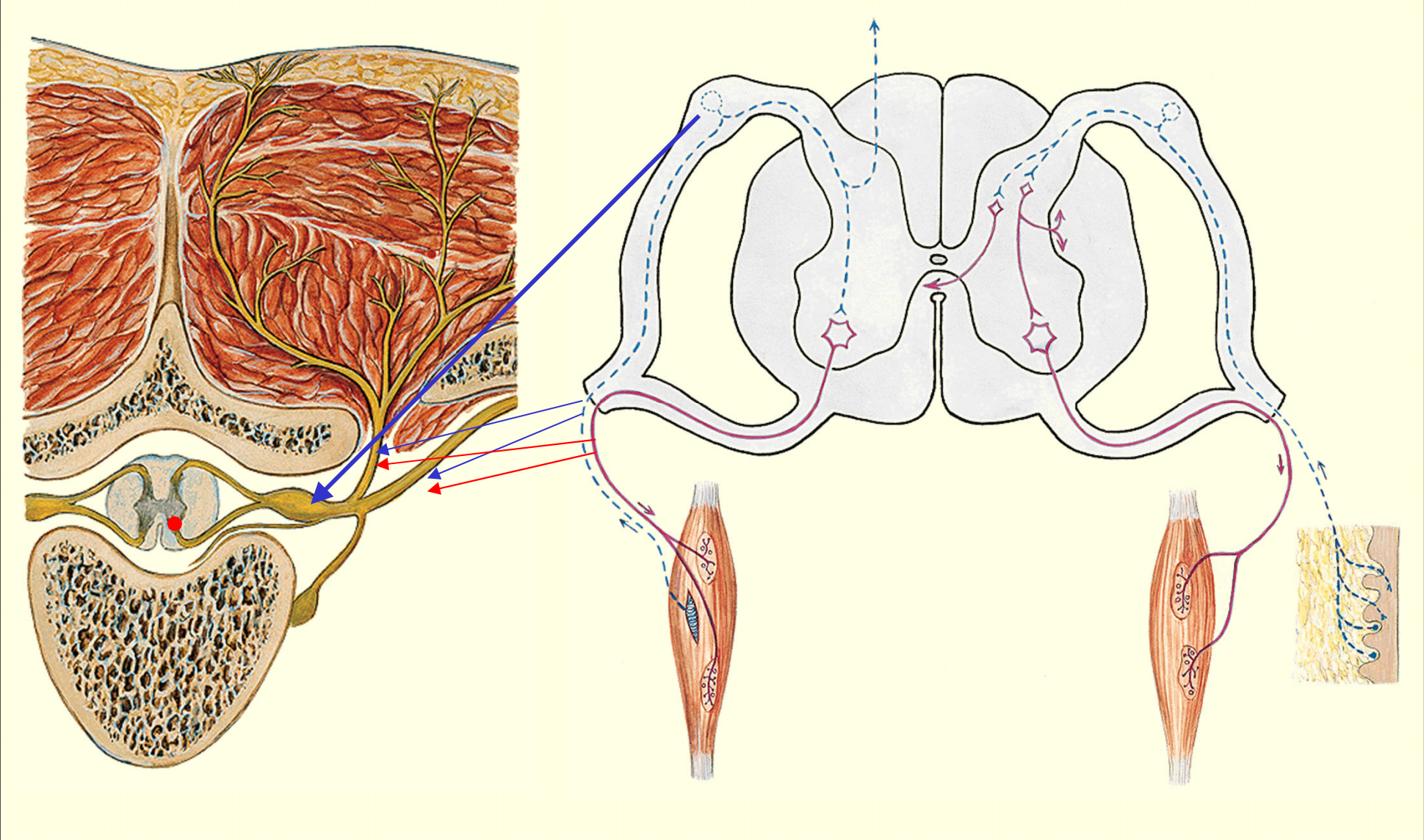
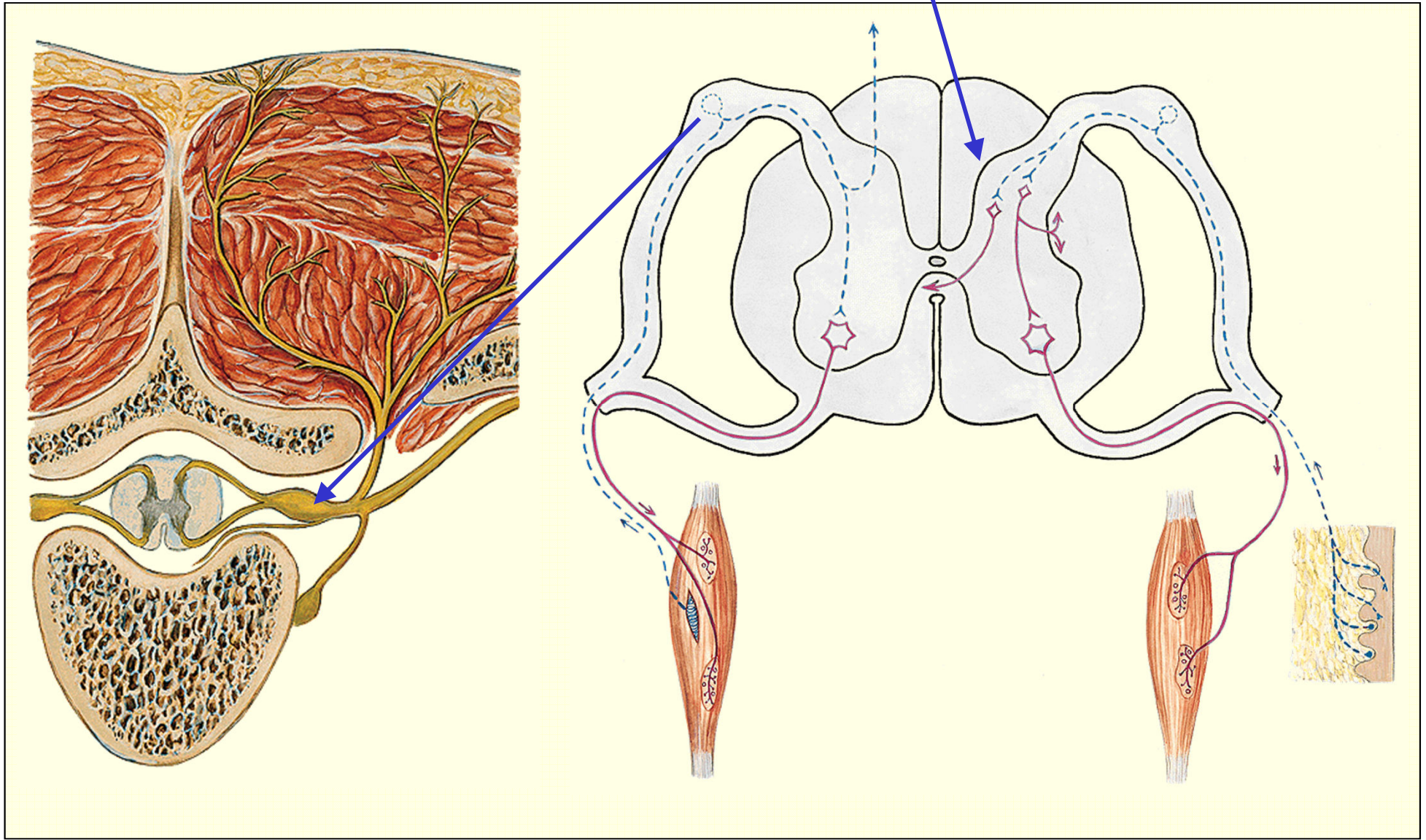


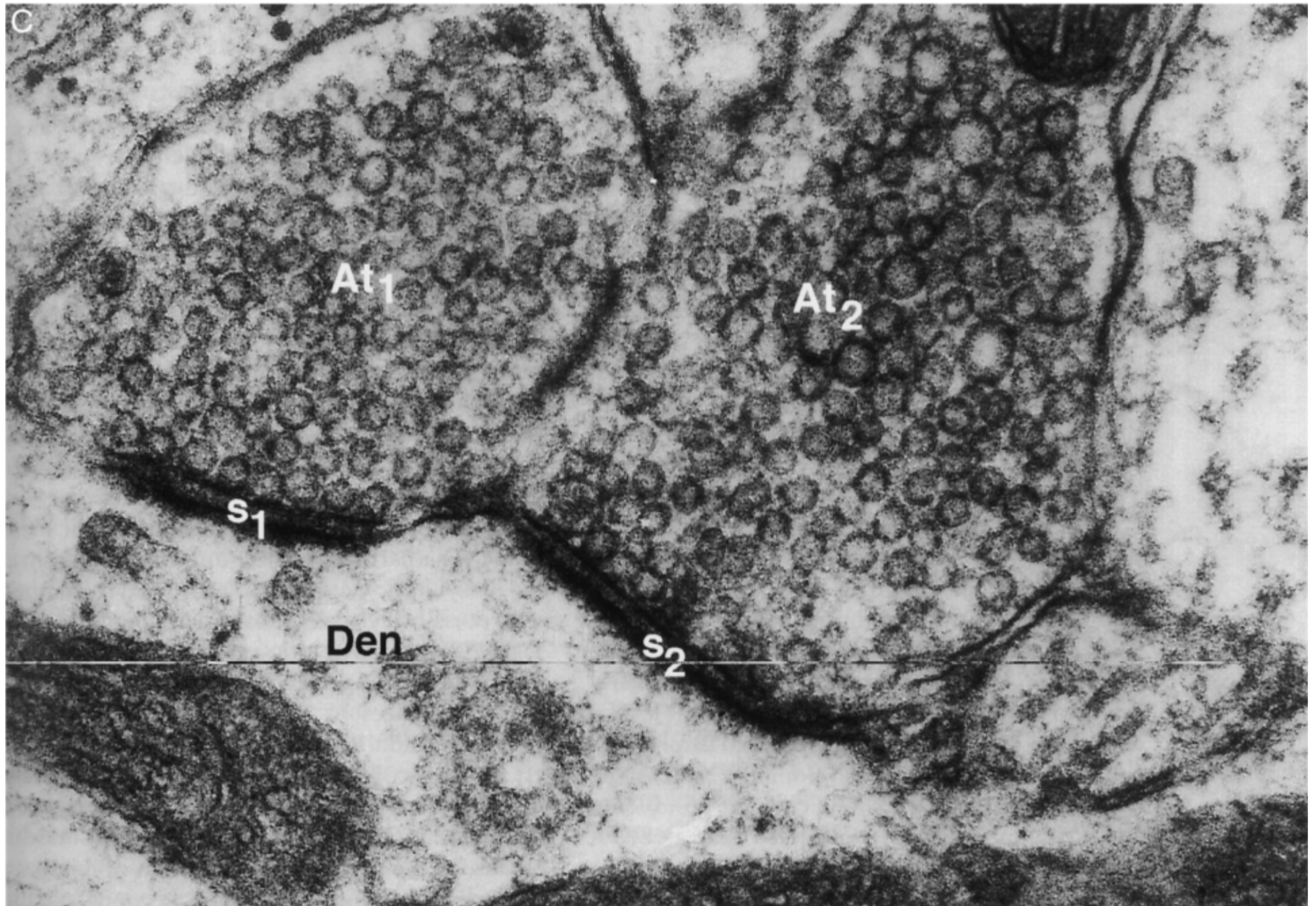
FIG. 17. Shapes and lengths of dendritic spines. (From Peters and Kaiserman-Abramof, 1970.)



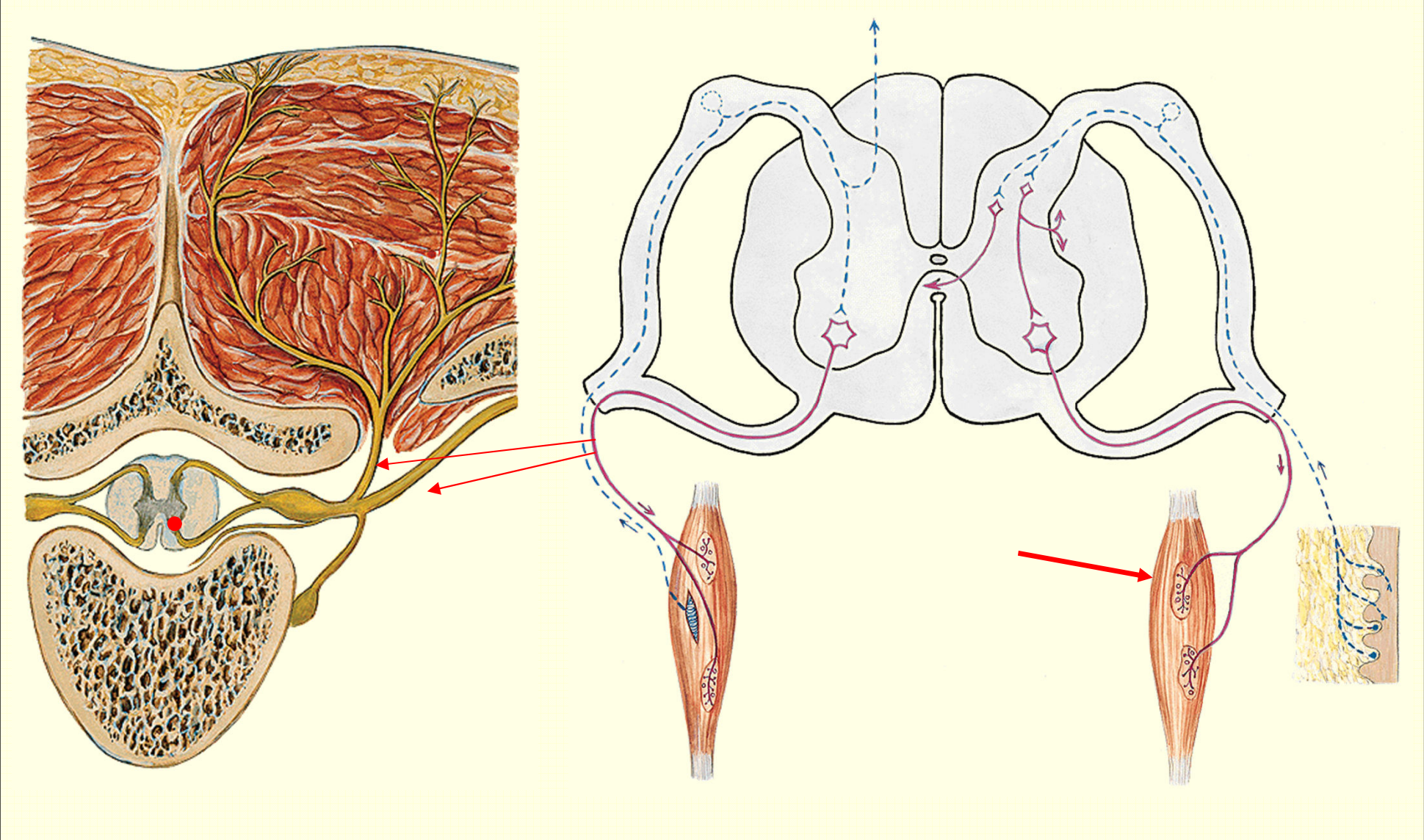
A Spinal nerve with roots and branches

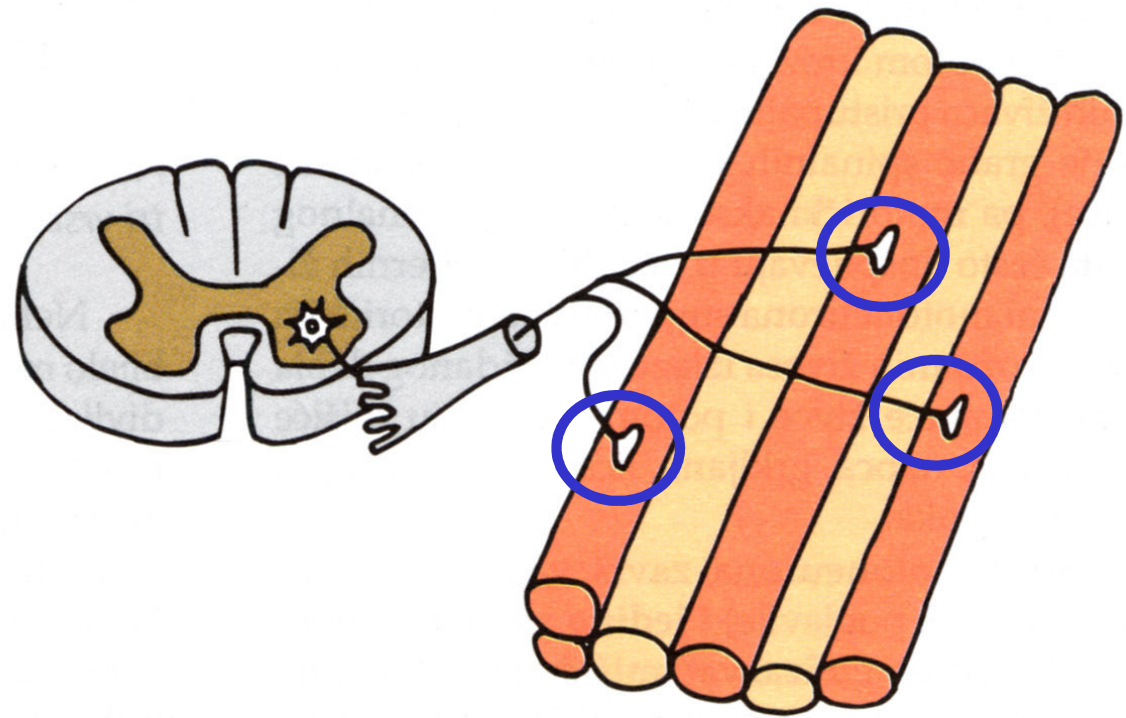
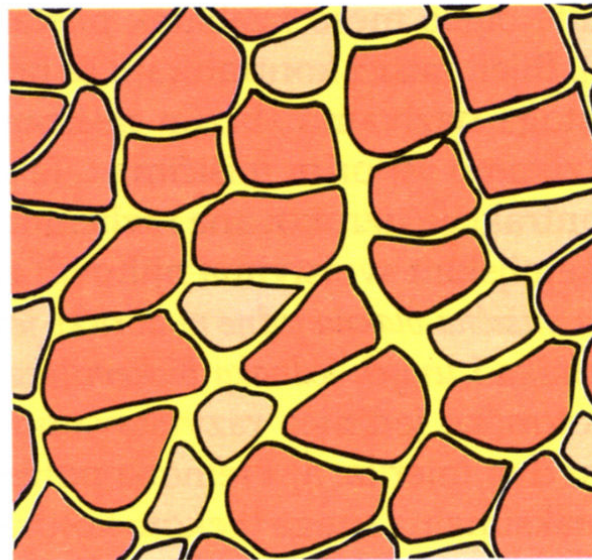
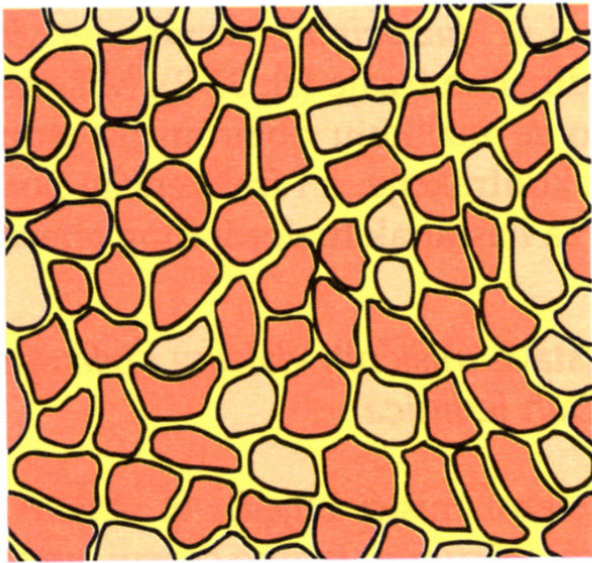




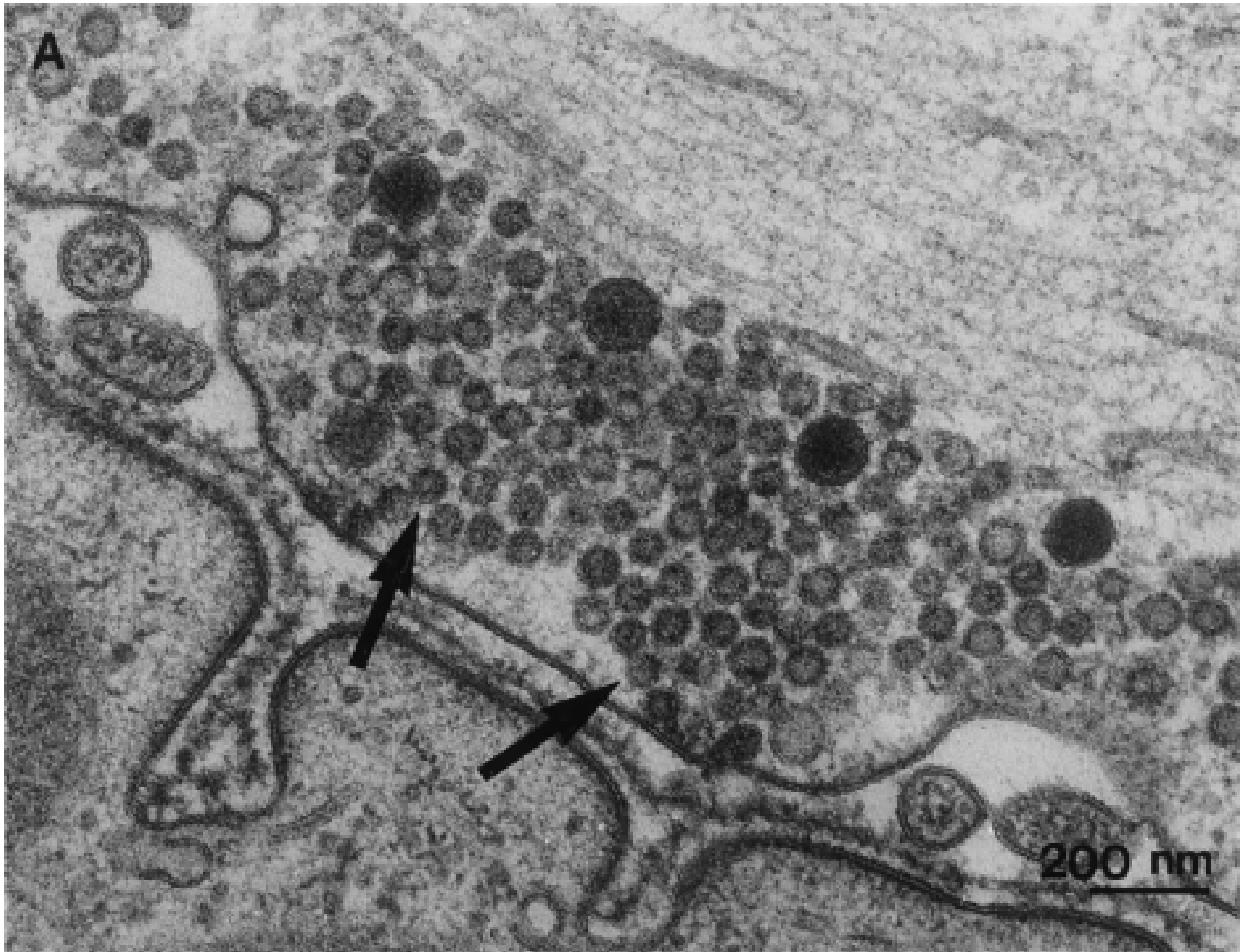


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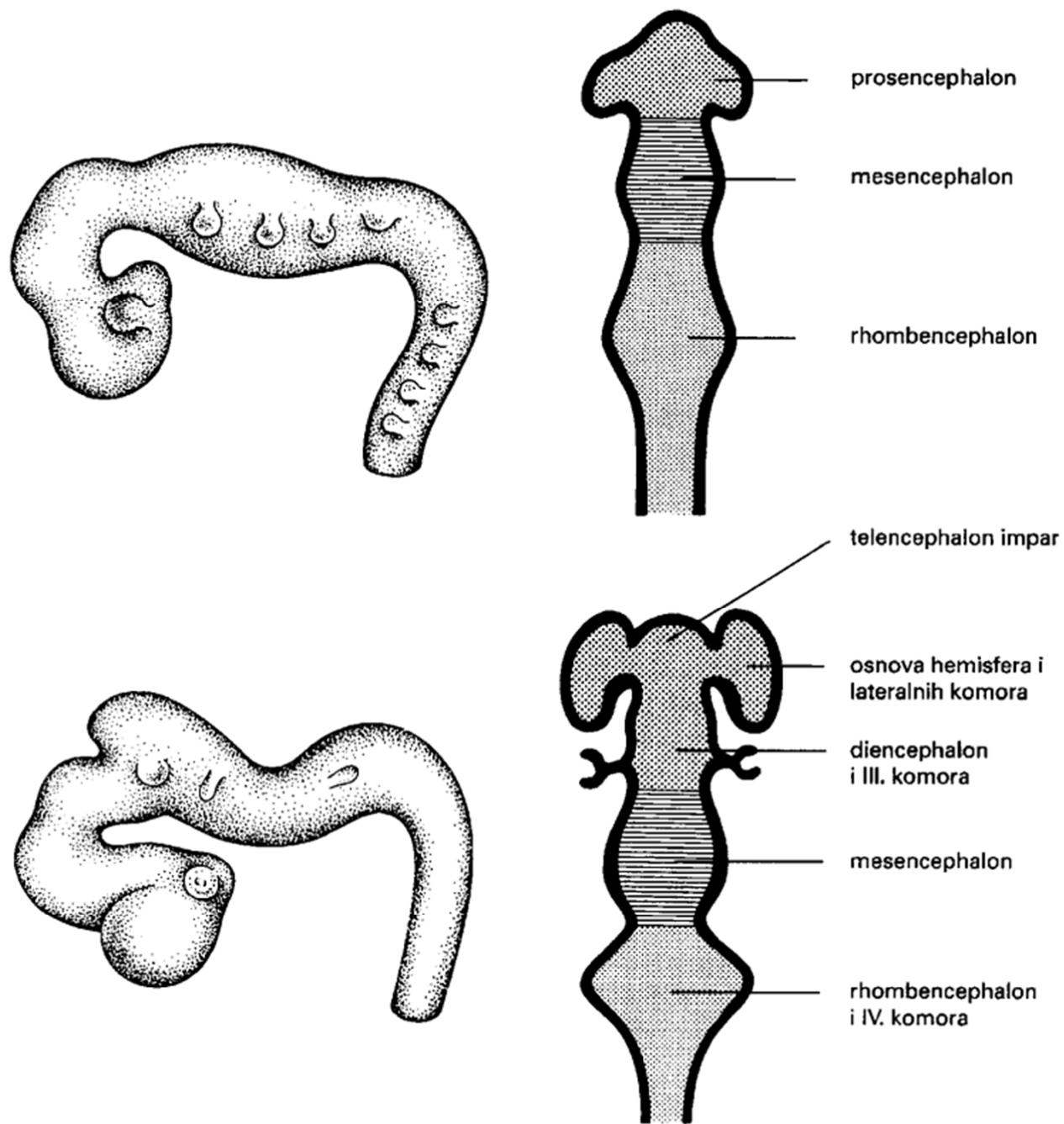




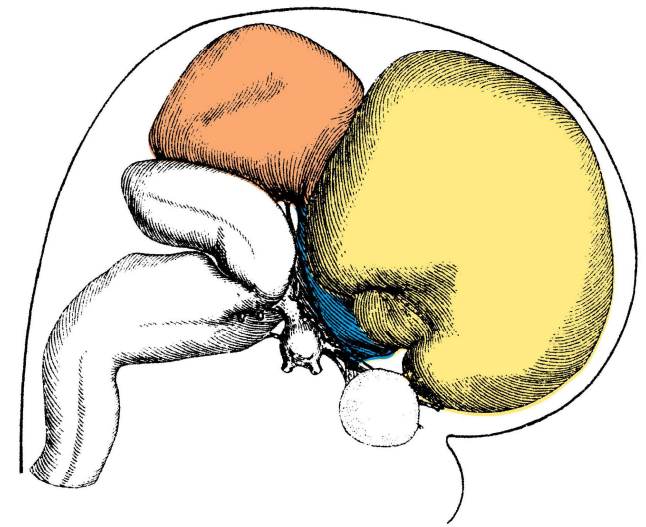
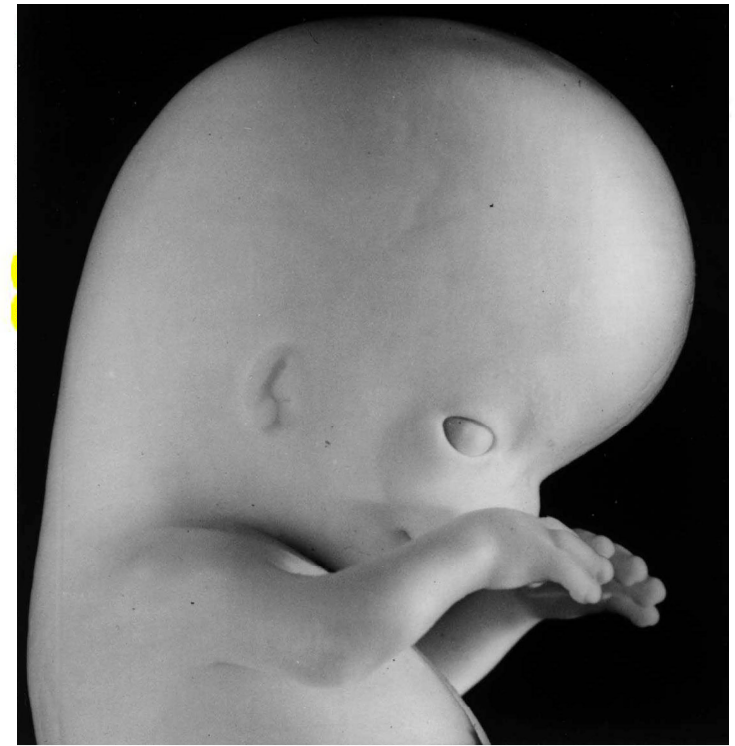
Slika 31-3. Lijevo: Ekstrafuzalna mišićna vlakna mogu biti crvena i bijela, ovisno o količini miozin-ATPaze u njima (za potankosti vidi tekst). Gornji crtež načinjen je prema preparatu ljudskog skeletnog mišića, a donji prema preparatu skeletnog mišića dizača utega – uočite da se ustrajnim vježbanjem povećava debljina pojedinačnih mišićnih vlakana (i time debljina mišića), ali ne i broj mišićnih vlakana. **Desno:** Motorička jedinica sastoji se od tijela i aksona motoneurona, neuromišićne sinapse i inerviranih mišićnih vlakana. Uočite da svi ogranci aksona inerviraju istu vrstu mišićnih vlakana.



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Slika 1–4. Primarni (gore) i sekundarni (dolje) moždani mjehurići temelj su regionalne podjele odraslog mozga – vidi i sl.



The brain at the end of the embryonic period (stage 23, 8 postfertilizational weeks). The color scheme used here (telencephalon in yellow, diencephalon in blue, mesencephalon in brown) will be repeated in a number of illustrations throughout the book.

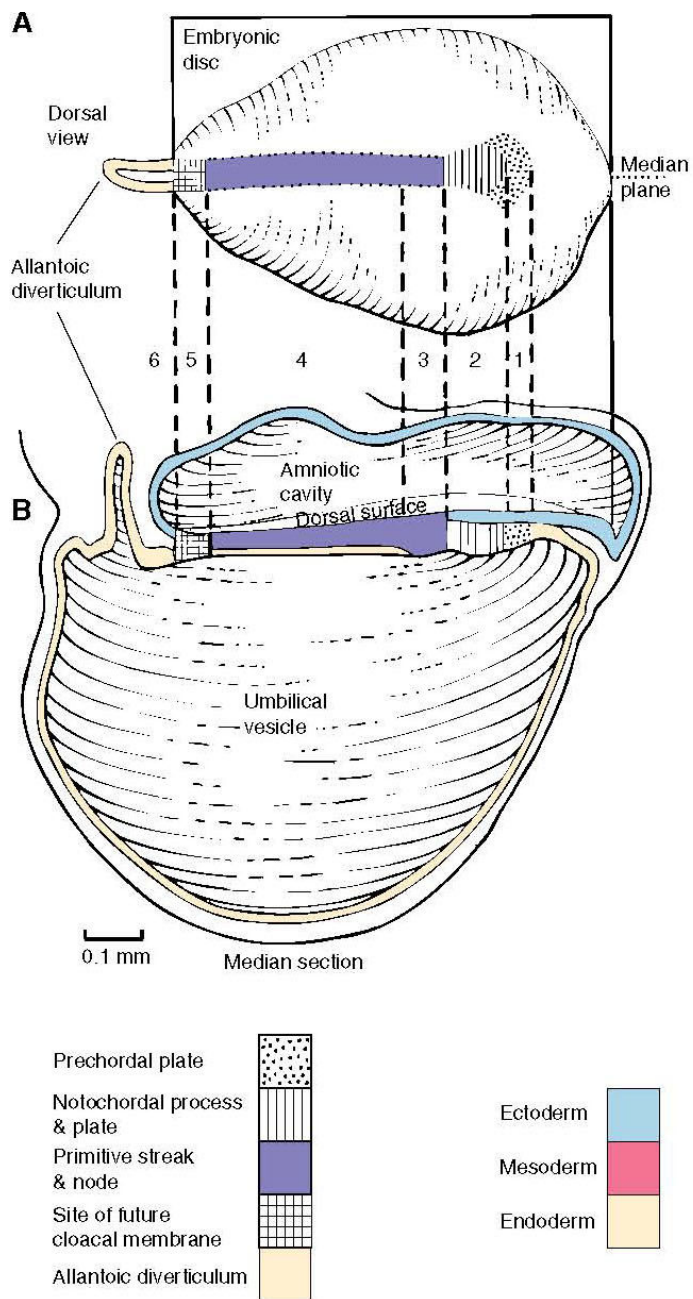


Figure 7-1. Reconstruction of an embryo at stage 7 (nearly 3 weeks), immediately before the neural groove and folds become visible. (A) Dorsal view and (B) median view. The various features are identified in the keys below the drawing.

THE EMBRYONIC HUMAN BRAIN: AN ATLAS OF DEVELOPMENTAL STAGES
O'RAHILLY and MULLER, 2006

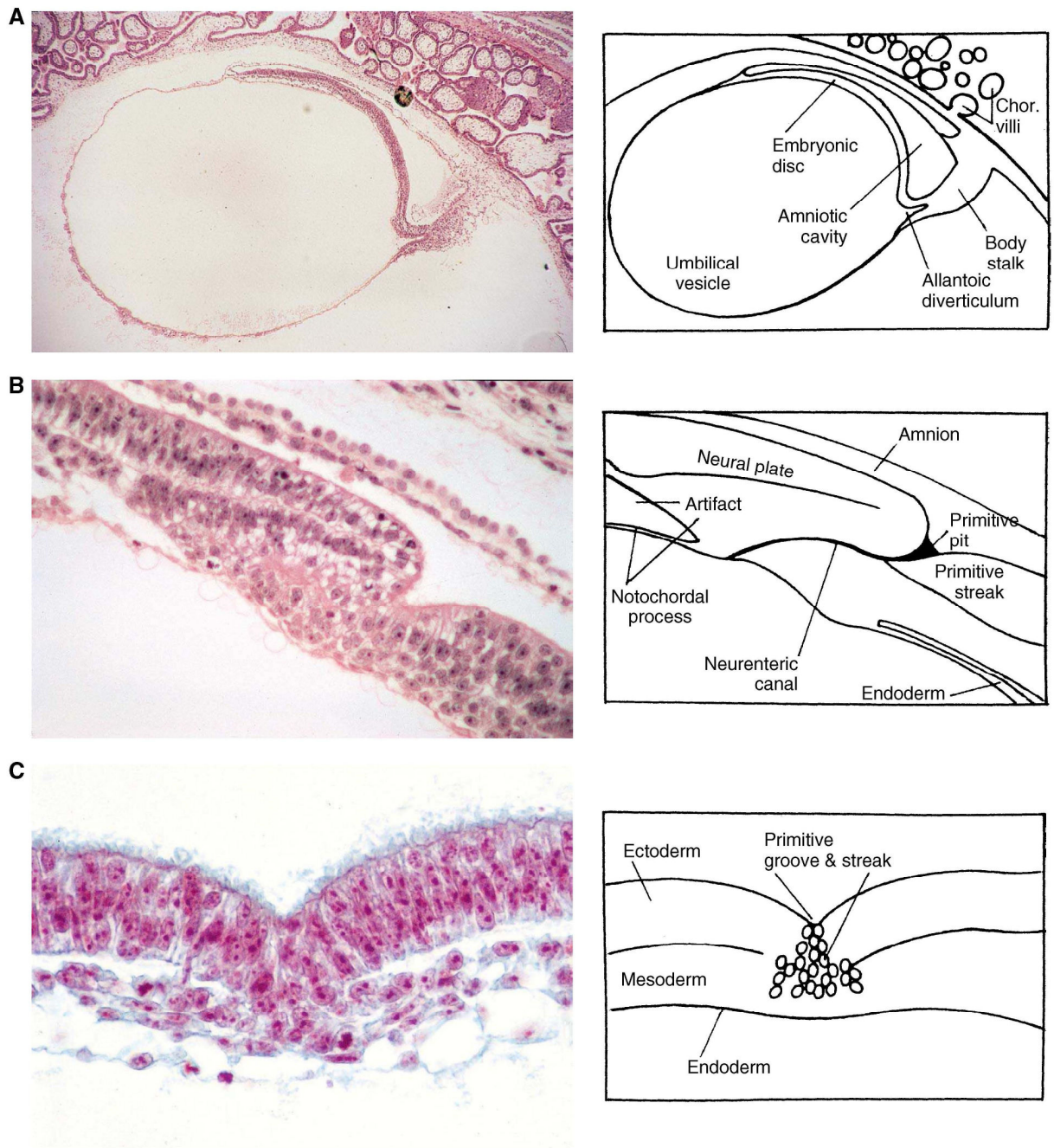


Figure 8-5. The formation of the primitive streak at stage 8a. (A) Median section of an embryonic disc of nearly $1\frac{1}{2}$ mm in length. (B) A higher powered view of the section shown above. The neurenteric canal connects the amniotic cavity with the umbilical vesicle temporarily. It is an important landmark in stages 8 to 10 (Table 8-1). (C) Transverse section through the primitive groove and primitive streak, which attains its greatest length at this stage. THE EMBRYONIC HUMAN BRAIN: AN ATLAS OF DEVELOPMENTAL STAGES, O'RAHILLY and MULLER, 2006

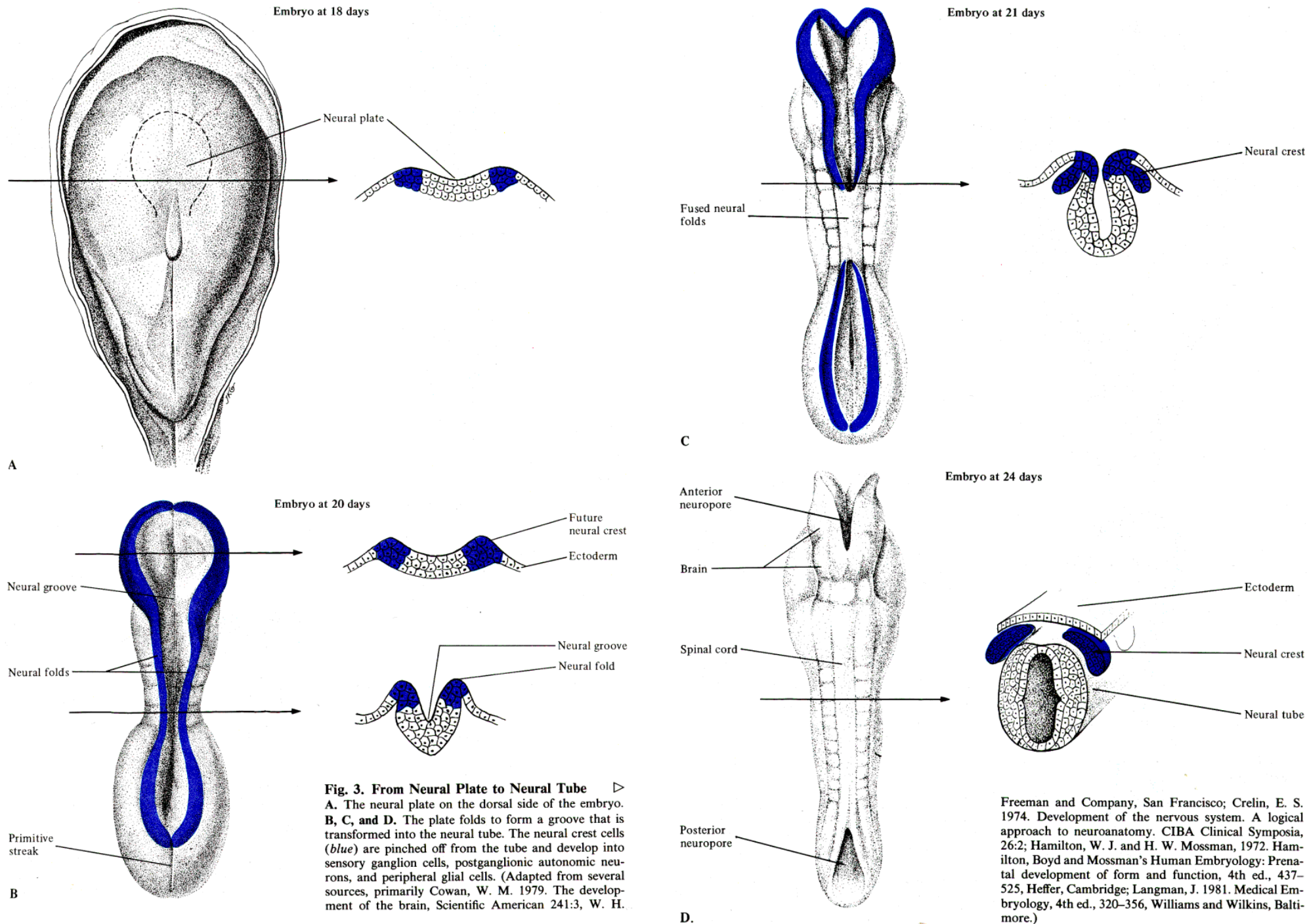
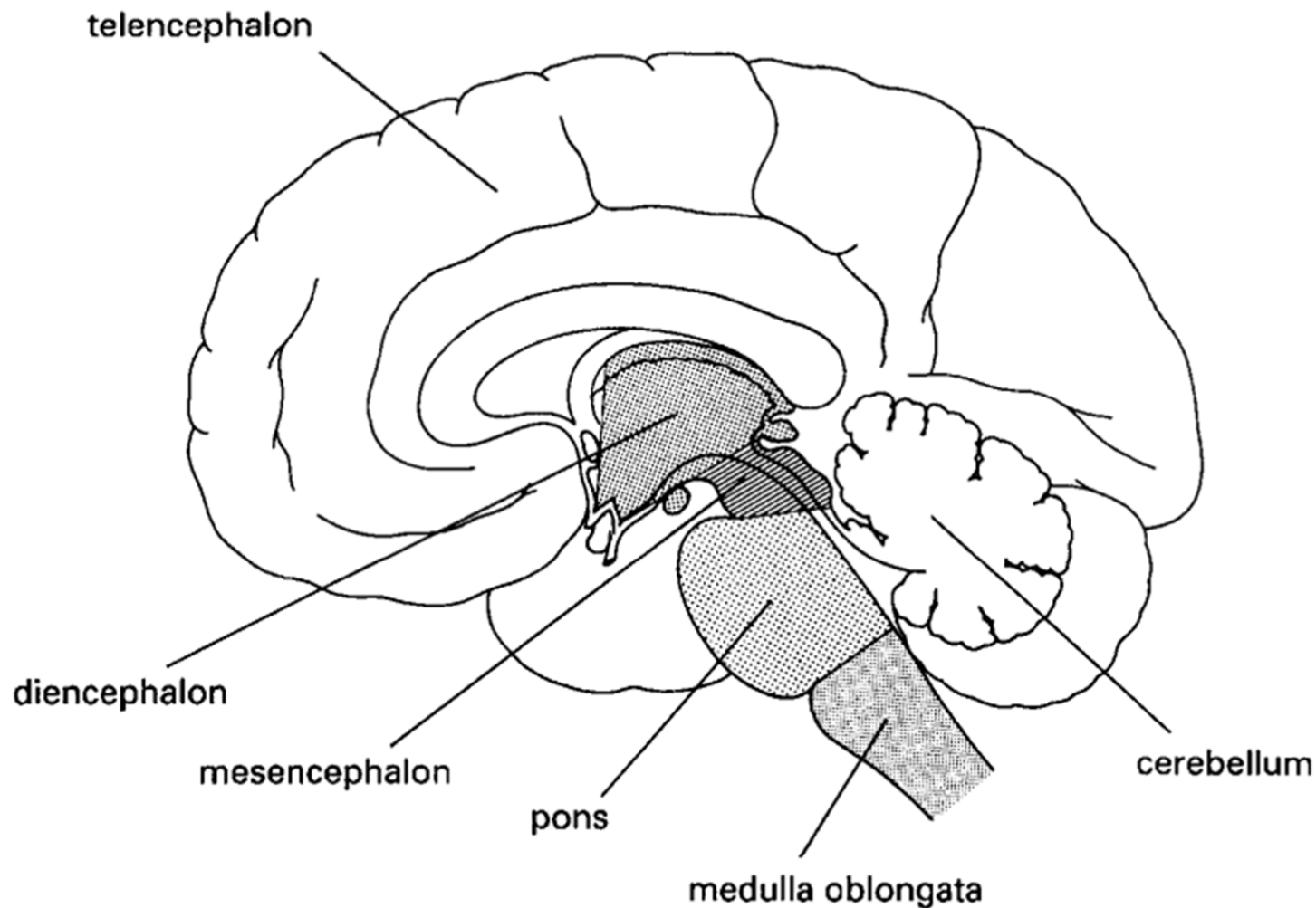
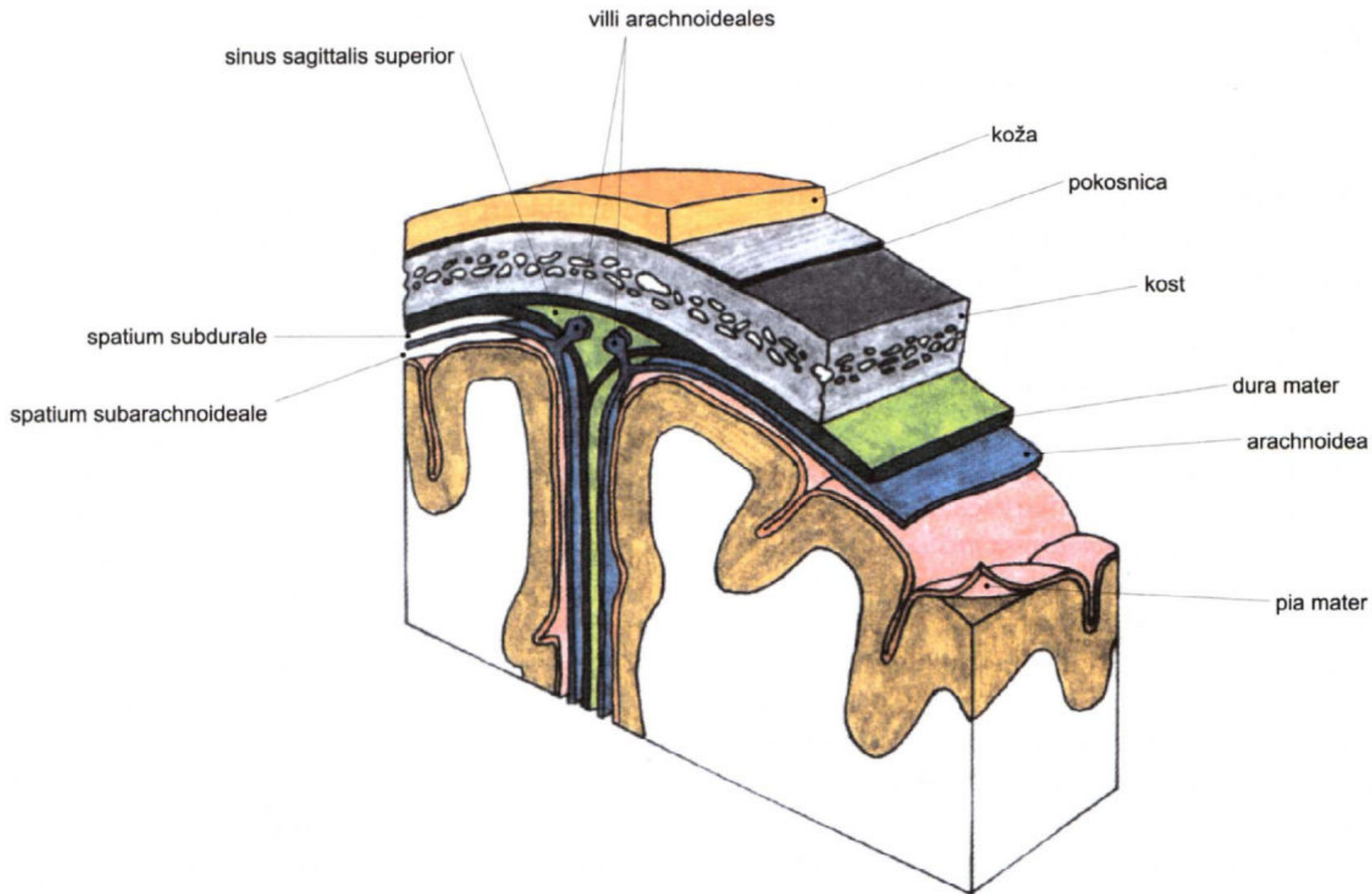


Fig. 3. From Neural Plate to Neural Tube ▷
 A. The neural plate on the dorsal side of the embryo.
 B, C, and D. The plate folds to form a groove that is transformed into the neural tube. The neural crest cells (blue) are pinched off from the tube and develop into sensory ganglion cells, postganglionic autonomic neurons, and peripheral glial cells. (Adapted from several sources, primarily Cowan, W. M. 1979. The development of the brain, *Scientific American* 241:3, W. H.

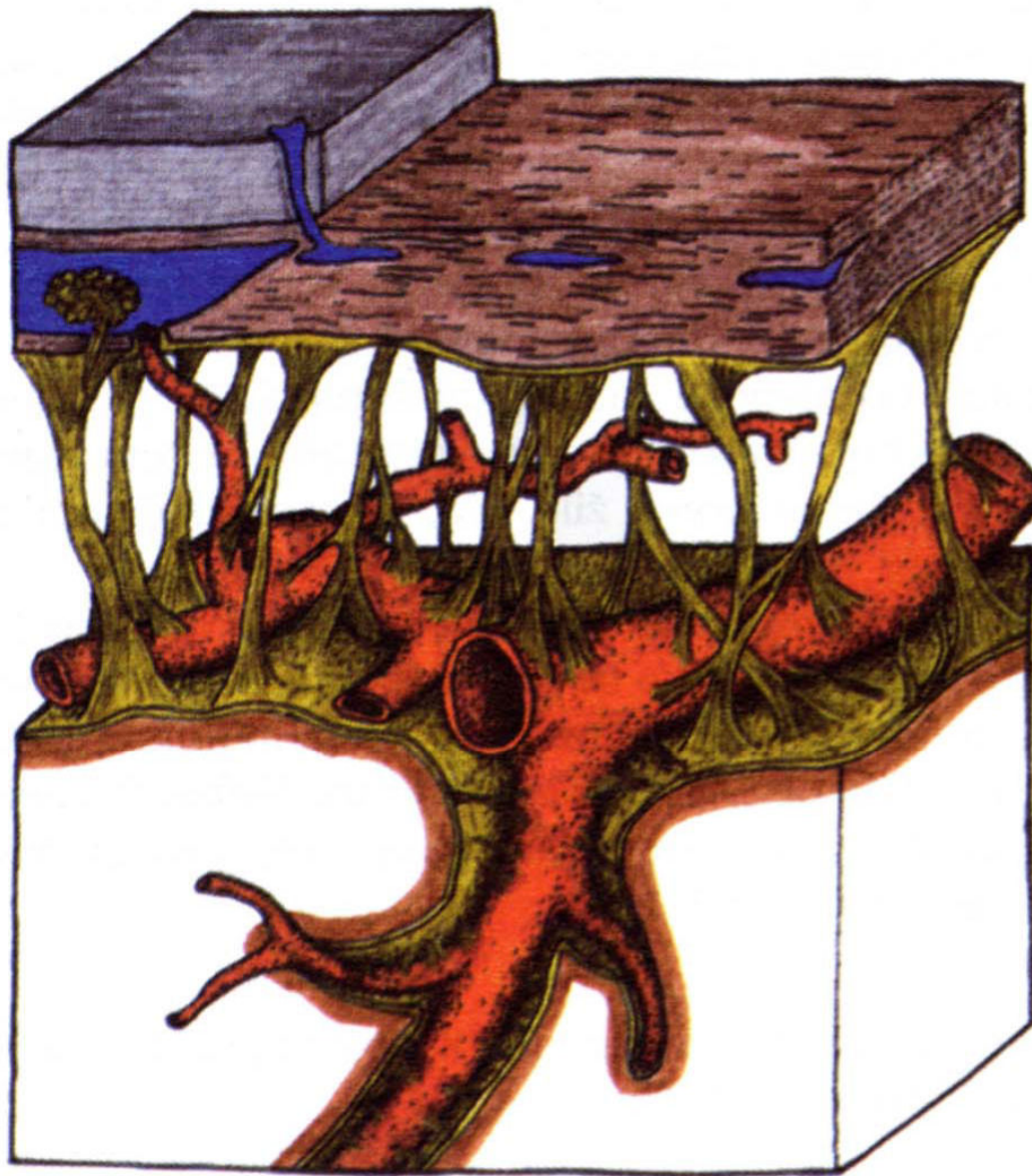
Freeman and Company, San Francisco; Crelin, E. S. 1974. Development of the nervous system. A logical approach to neuroanatomy. *CIBA Clinical Symposia*, 26:2; Hamilton, W. J. and H. W. Mossman, 1972. Hamilton, Boyd and Mossman's *Human Embryology: Prenatal development of form and function*, 4th ed., 437-525, Heffer, Cambridge; Langman, J. 1981. *Medical Embryology*, 4th ed., 320-356, Williams and Wilkins, Baltimore.)



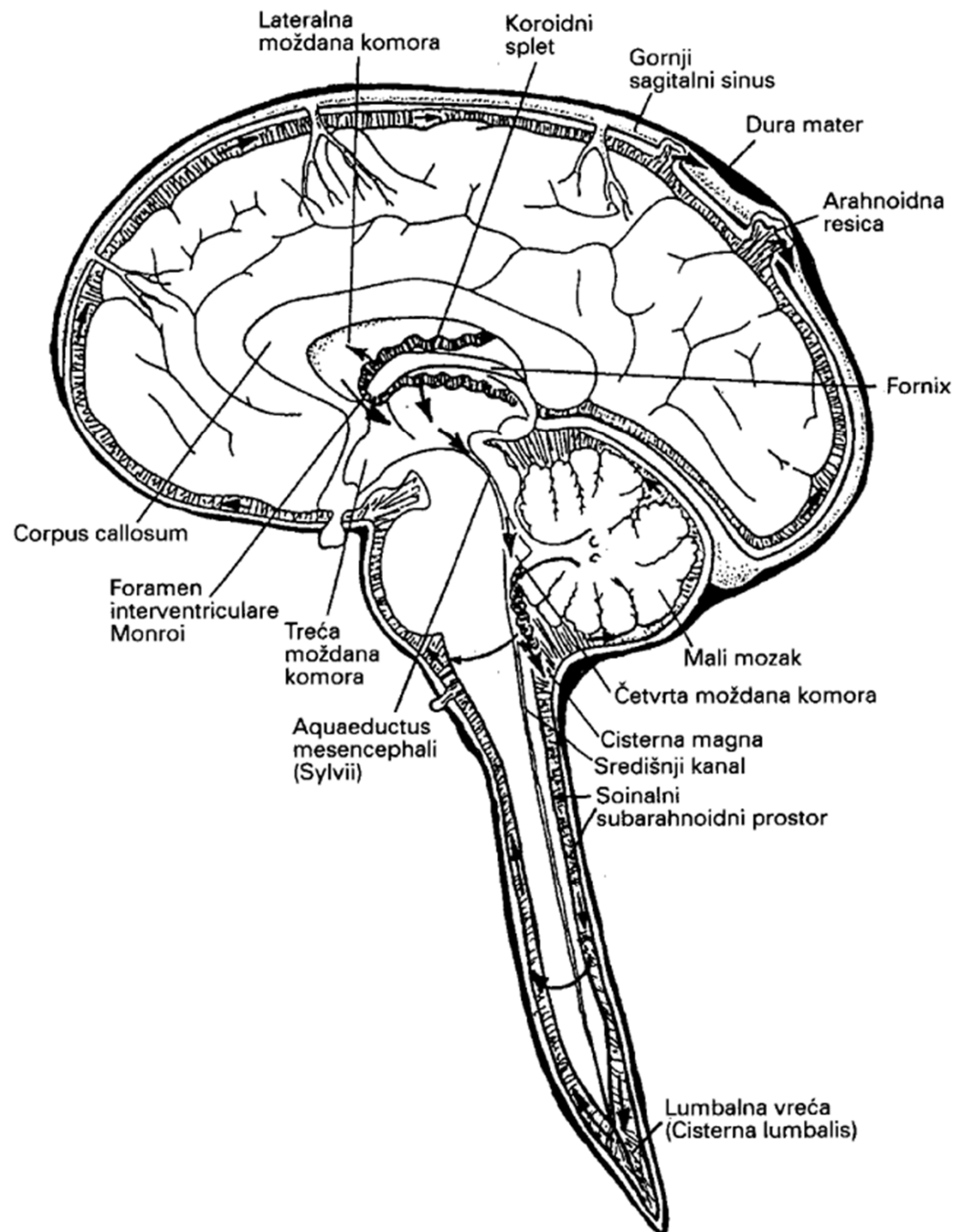
Slika 1–5. Temeljni dijelovi odraslog mozga nastali su od sekundarnih moždanih mjehurića. Mozak (*encephalon*) se sastoji od velikog mozga (*cerebrum*) što obuhvaća krajnji mozak (*telencephalon*) i međumozak (*diencephalon*), malog mozga (*cerebellum*) te moždanog debla (*truncus encephalicus*) što obuhvaća srednji mozak (*mesencephalon*), most (*pons*) i produljenu moždinu (*medulla oblongata*). Uočite da se produljena moždina razvije od mijelencefalona, most i mali mozak od metencefalona, a strukture velikog mozga od prosencefalona.



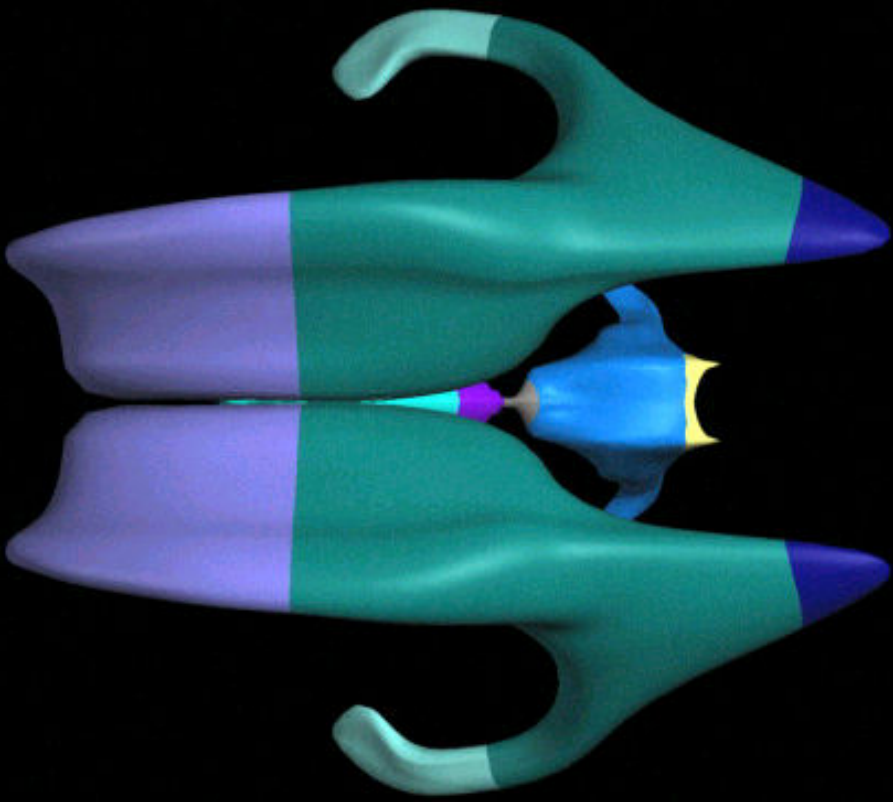
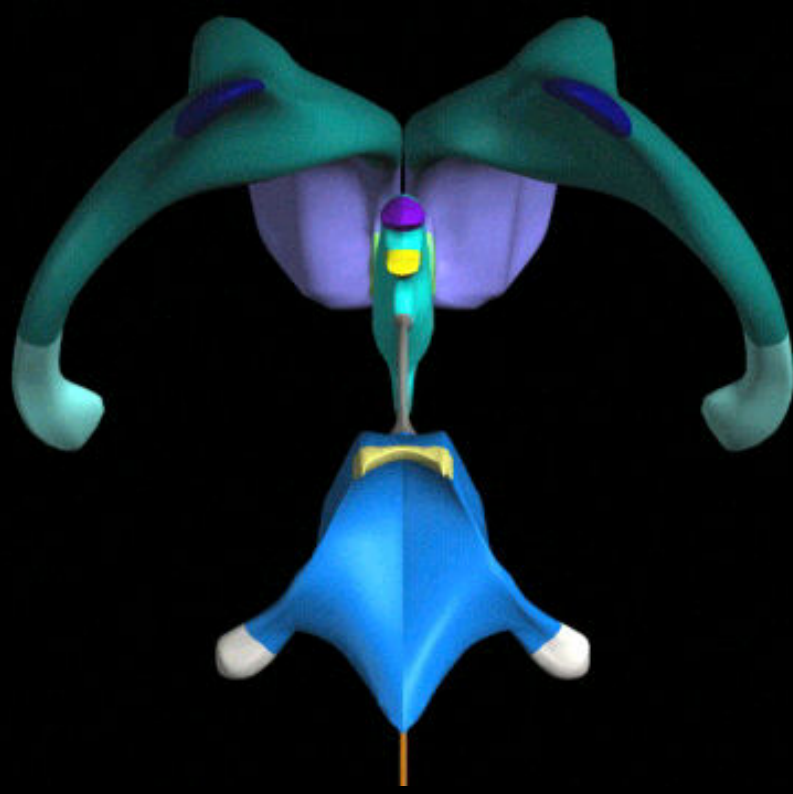
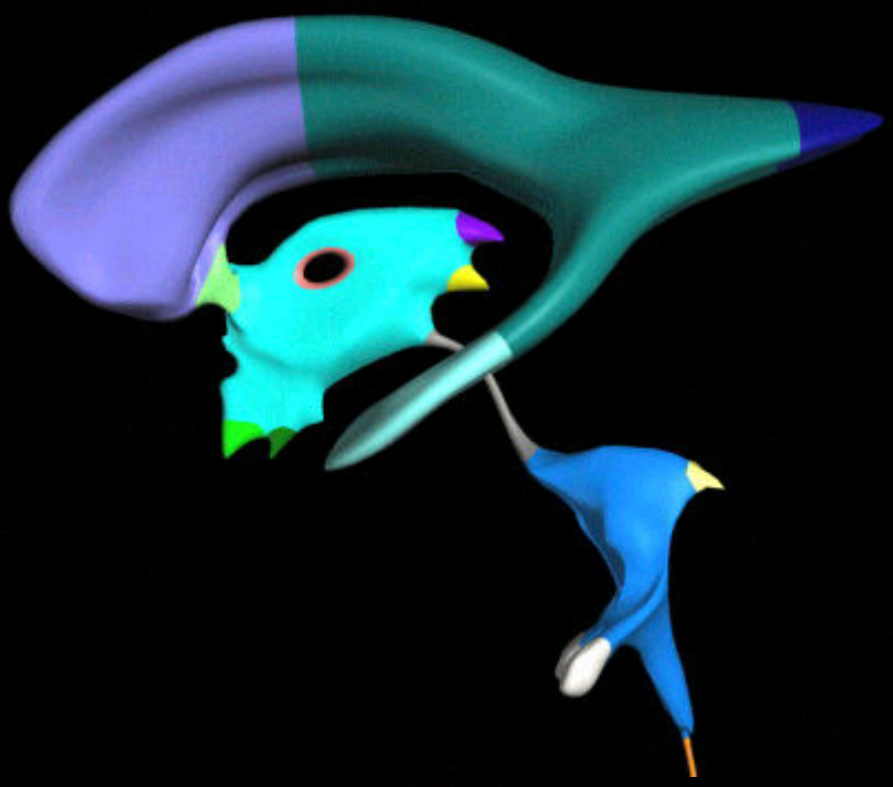
Slika 20-1. Tri moždane ovojnice su dura mater, arachnoidea mater i pia mater. Za pojedinosti vidi tekst. Nacrtno, uz izmjene, prema Hickey (1986).

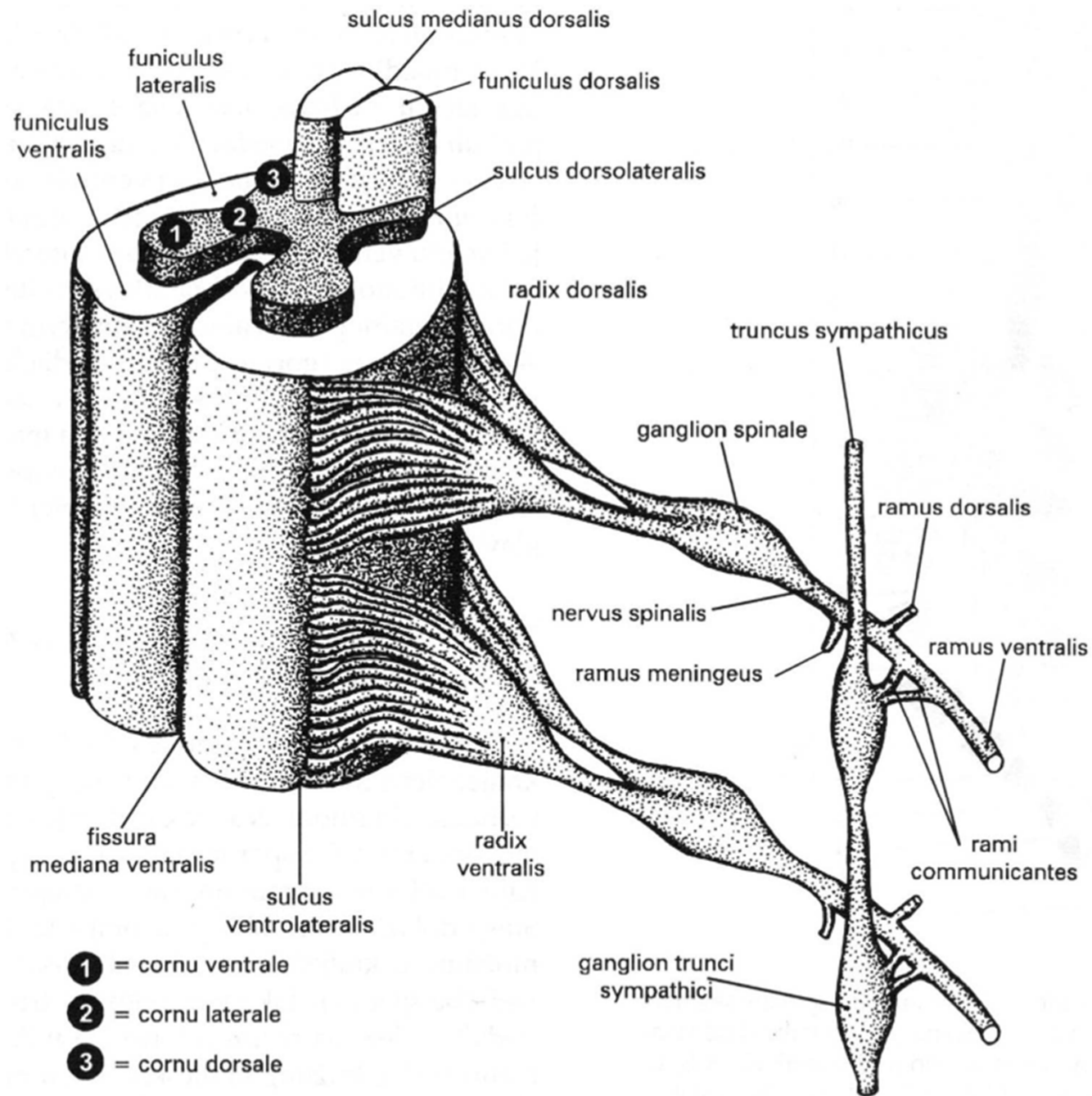


Slika 20-2. Arahnoideja i pija spojene su vezivnim mostićima, a između njih je subarahnoidni prostor u kojem su smještene krvne žile. Pija prati sve pregibe moždane površine i prati krvne žile dok poniru u moždano tkivo – tako nastaje Virchow-Robinov prostor (*spatium leptomeningicum*). Prema Benninghoff i Goerttler (1964), uz manje izmjene.

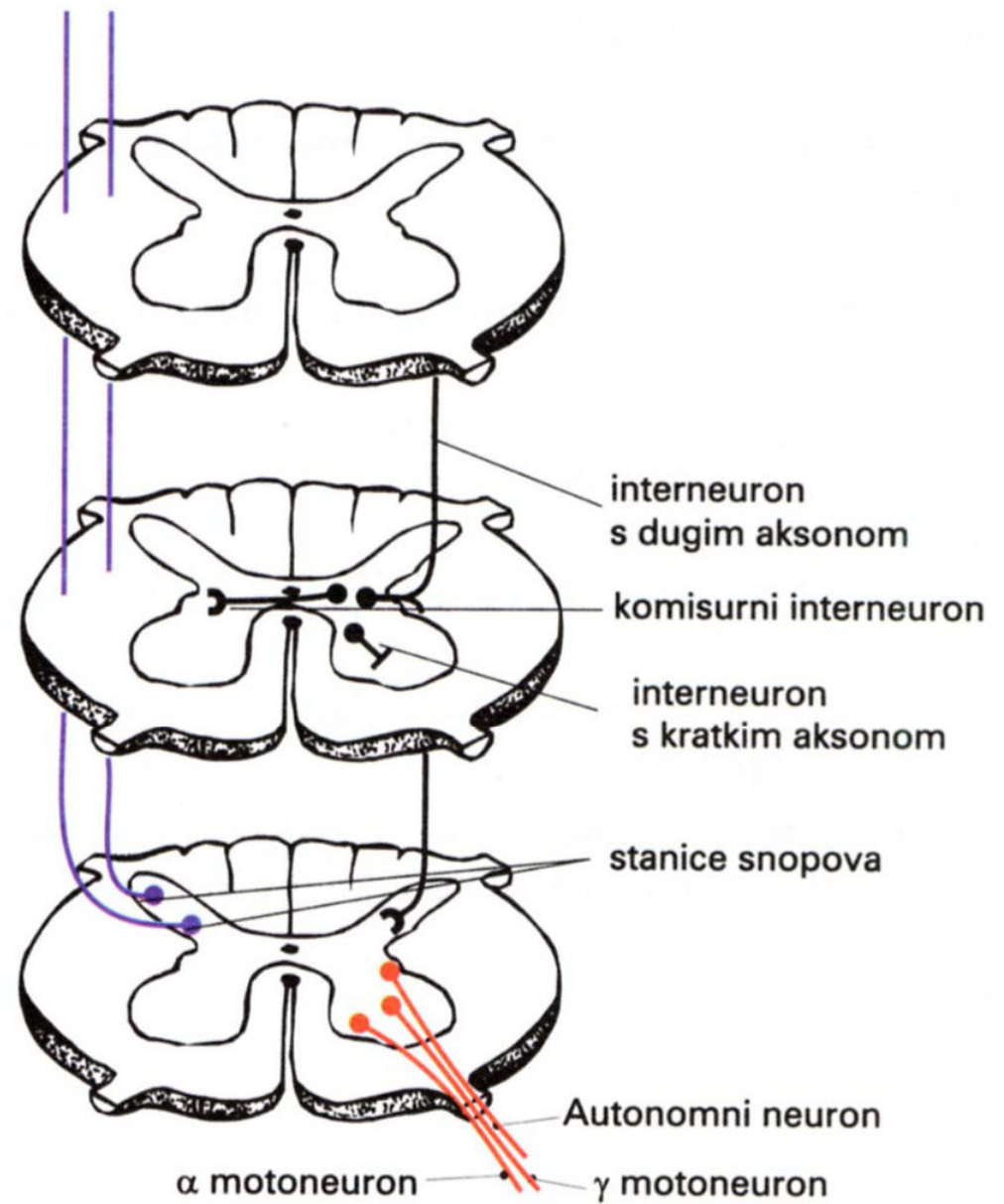
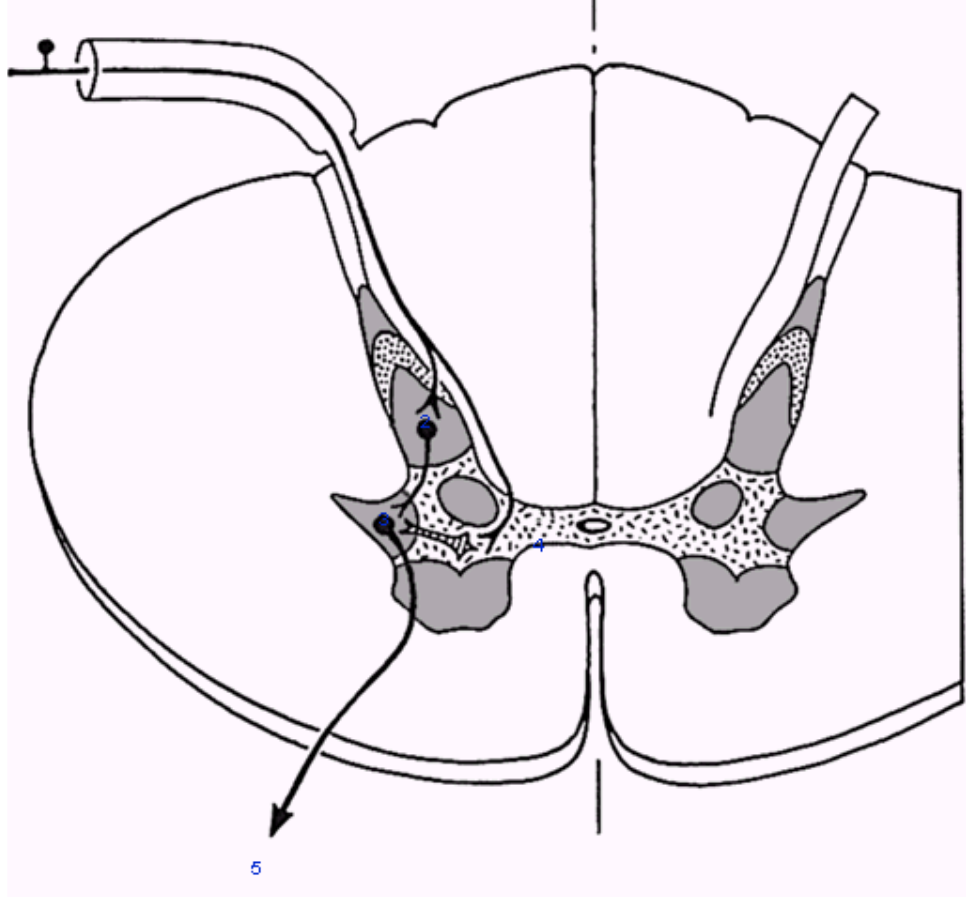


Slika 21-2. Shema cirkulacije likvora. Za pojedinosti vidi tekst.

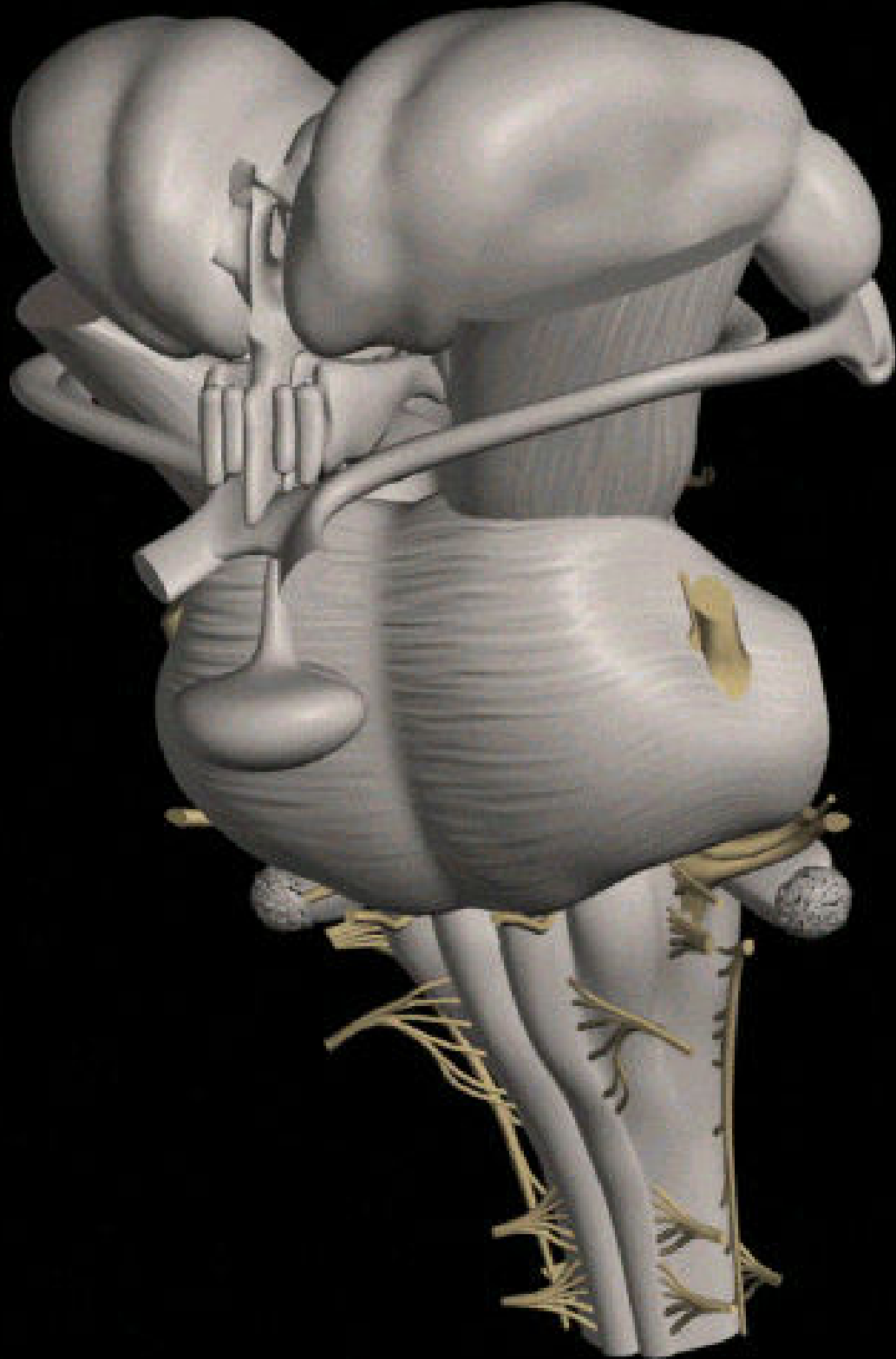
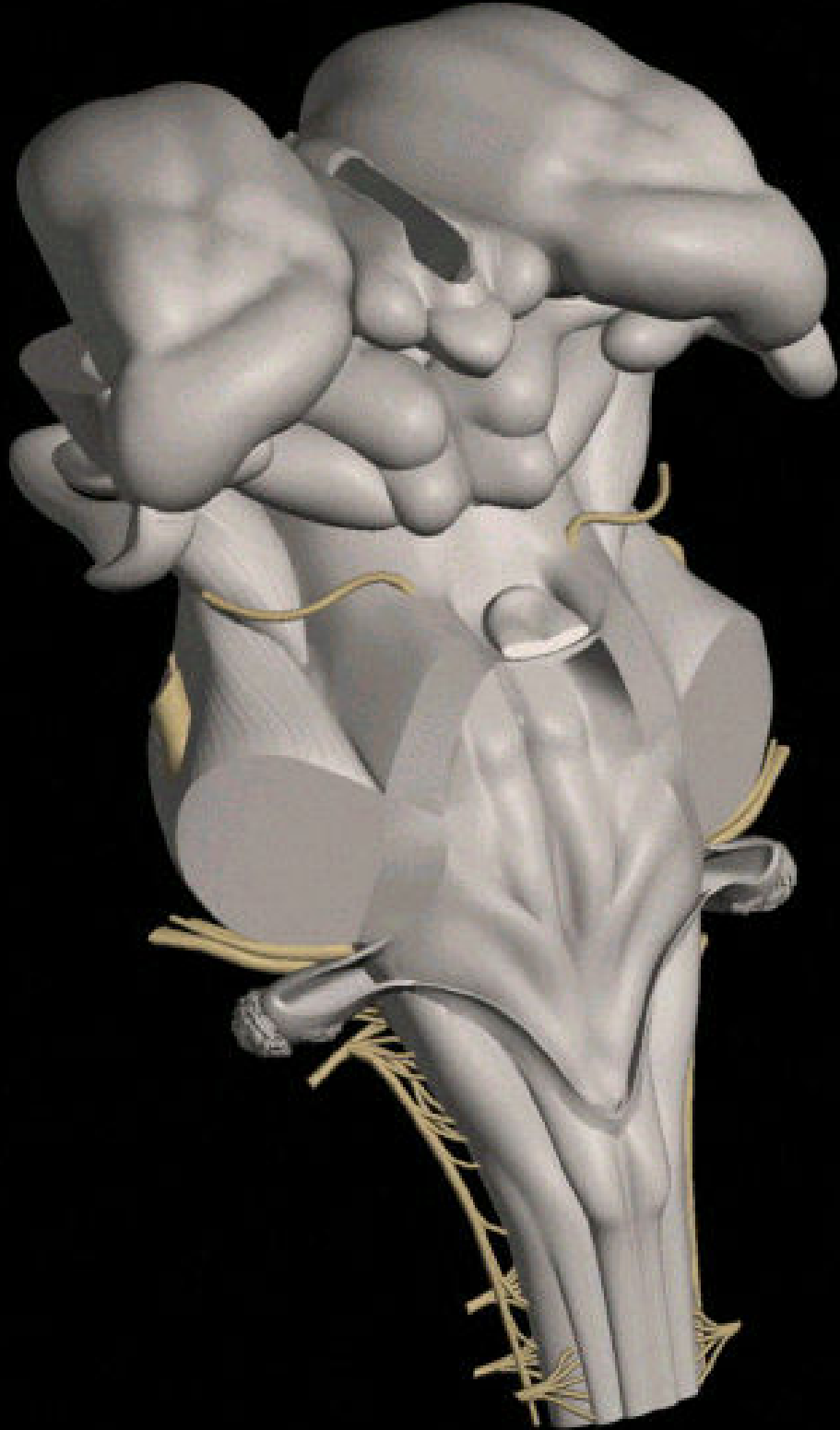


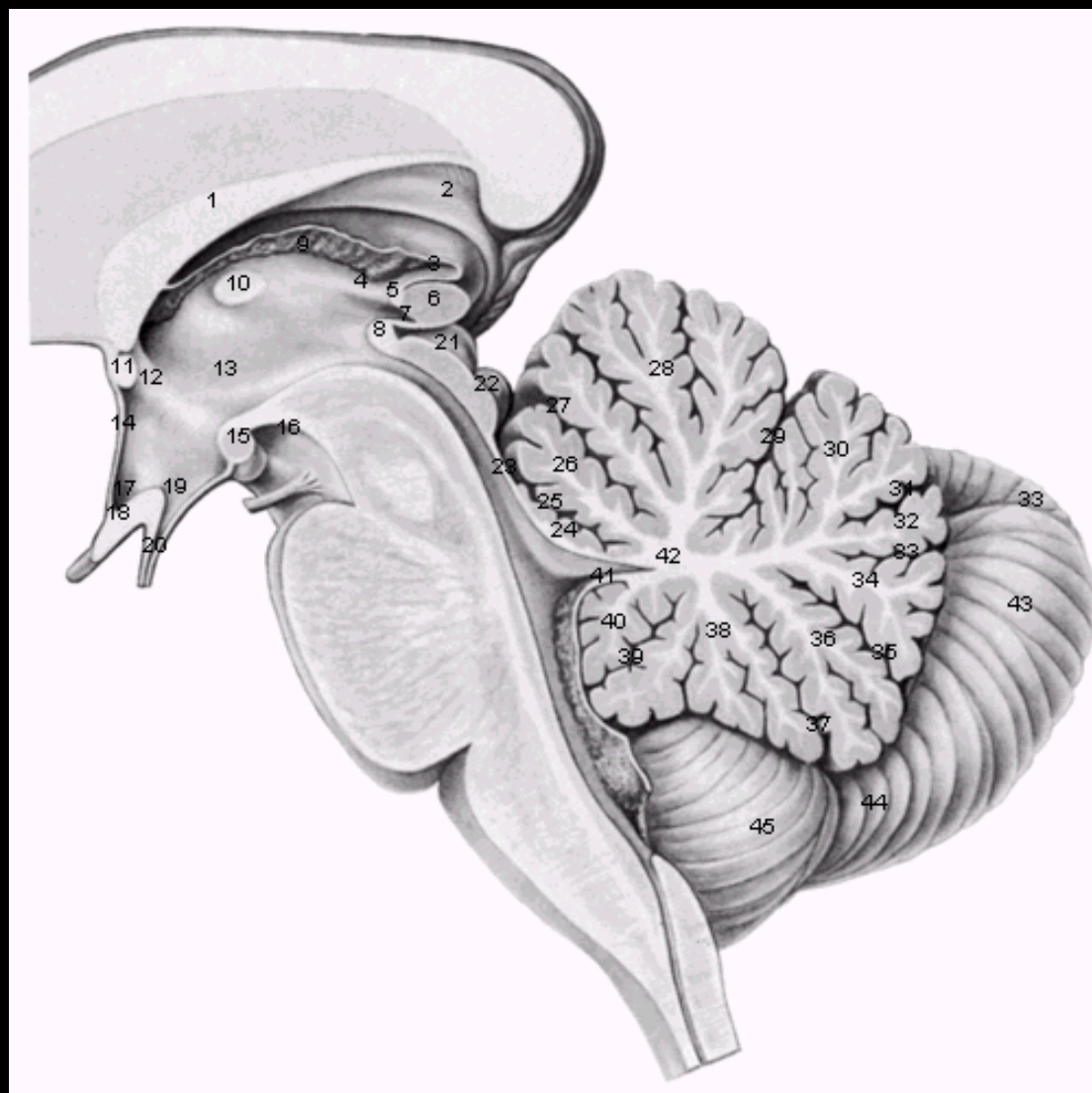


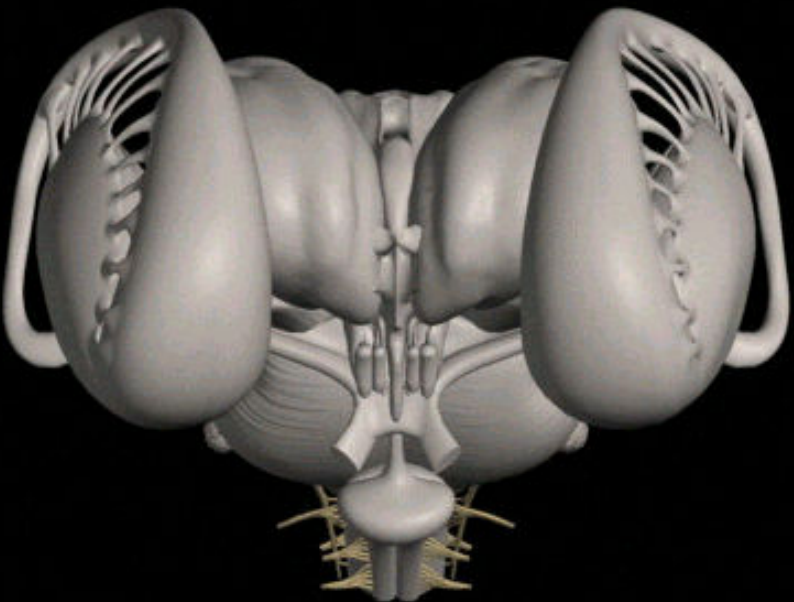
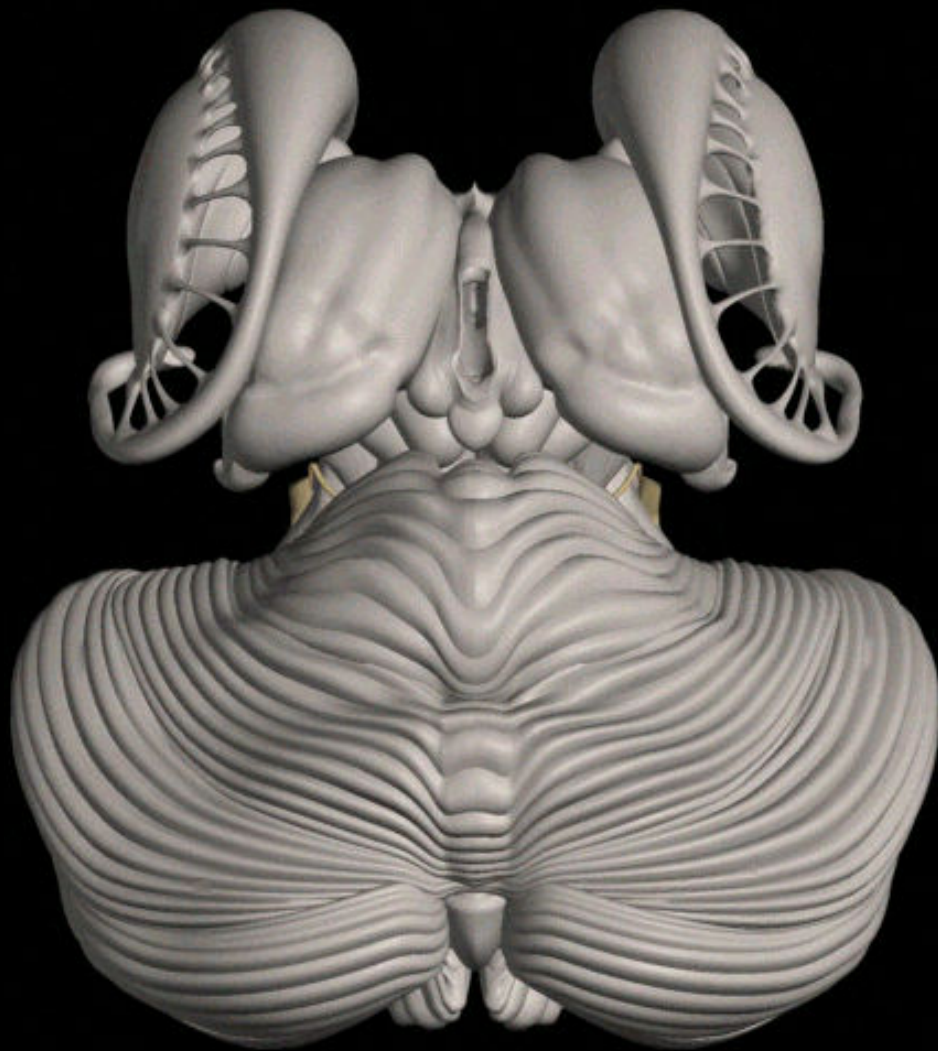
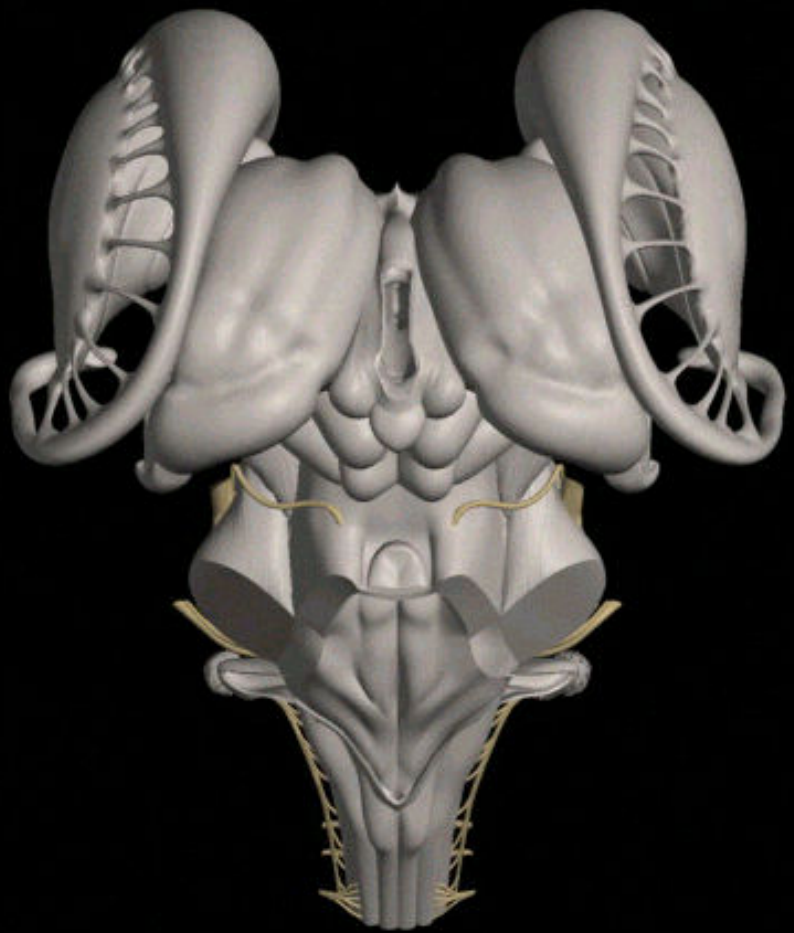
Slika 4-2. Temeljni dijelovi sive i bijele tvari kralježnične moždine. Za pojedinosti vidi tekst.

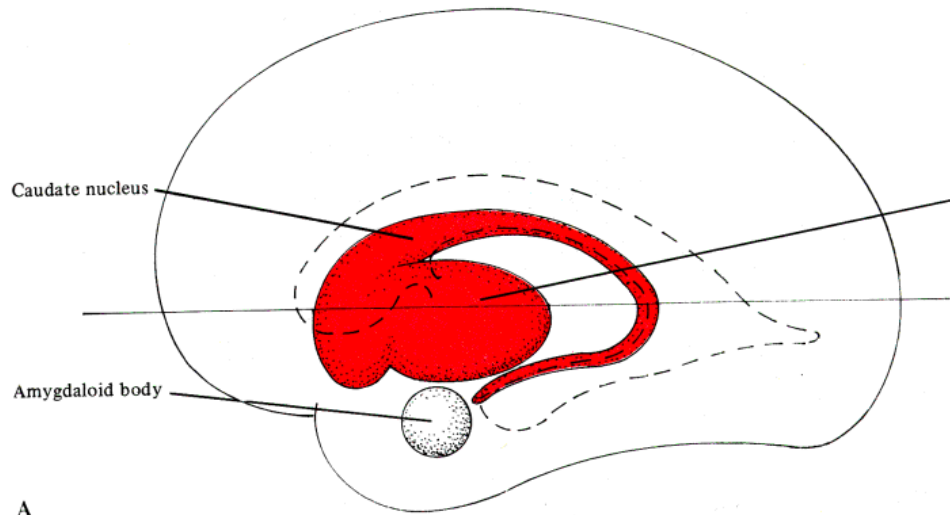


Slika 14-3. Tri glavne vrste neurona u sivoj tvari kralježnične moždine su: a) motoneuroni (α, γ , i autonomni), b) stanice snopova, čiji aksoni uzlaze kroz bijelu tvar i c) interneuroni. Za pojedinosti vidi tekst.

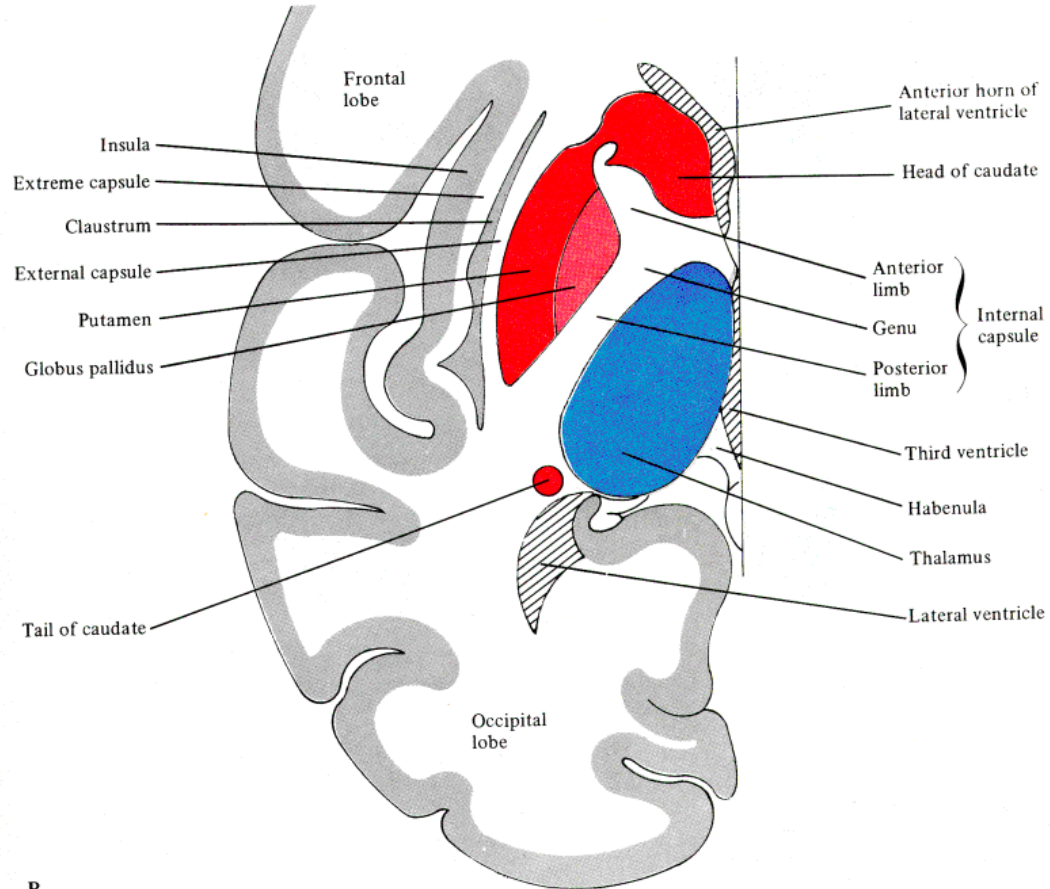
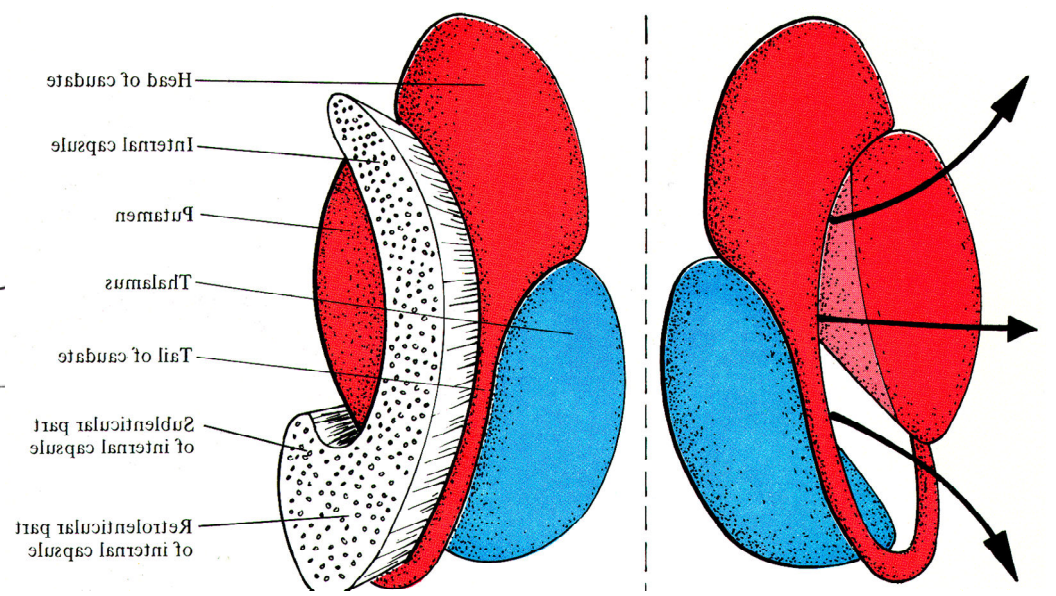




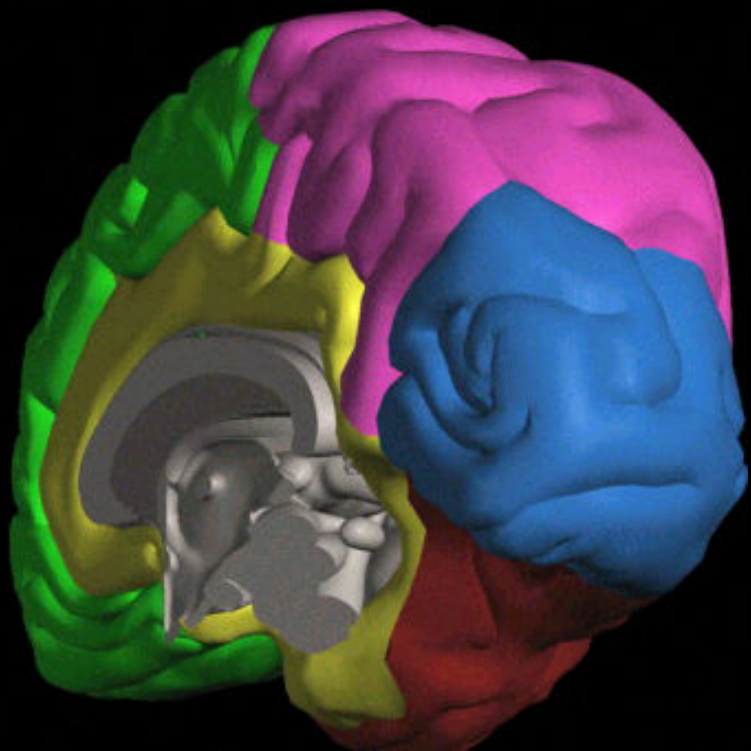
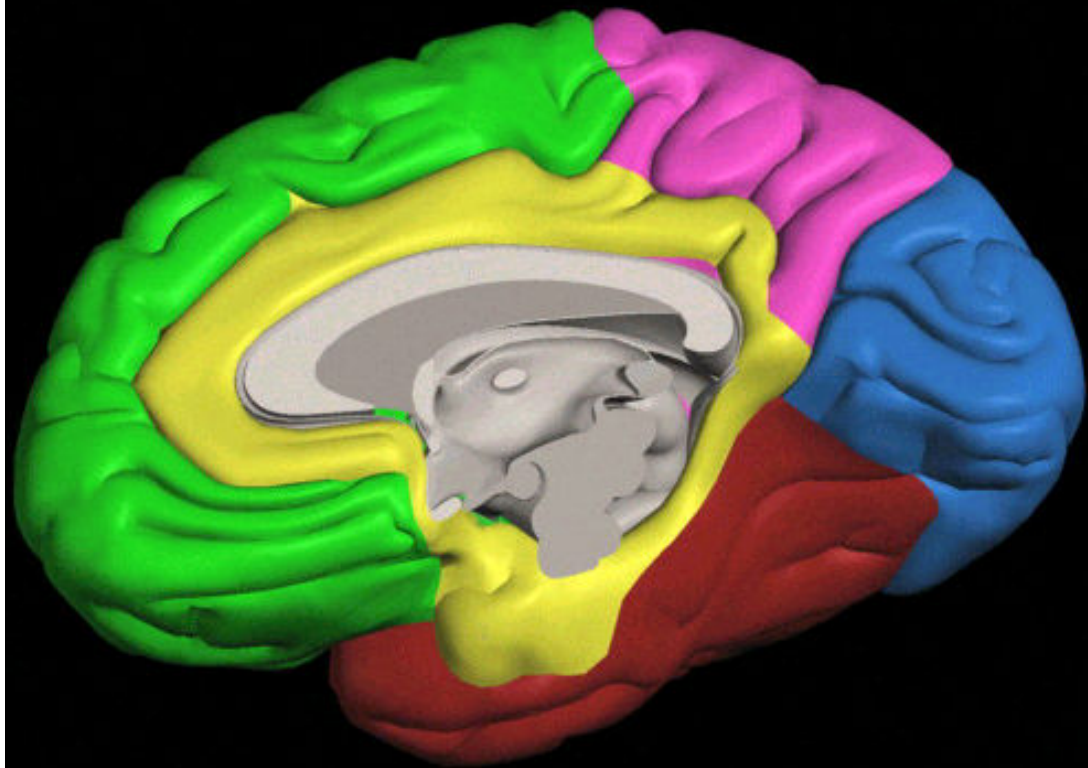




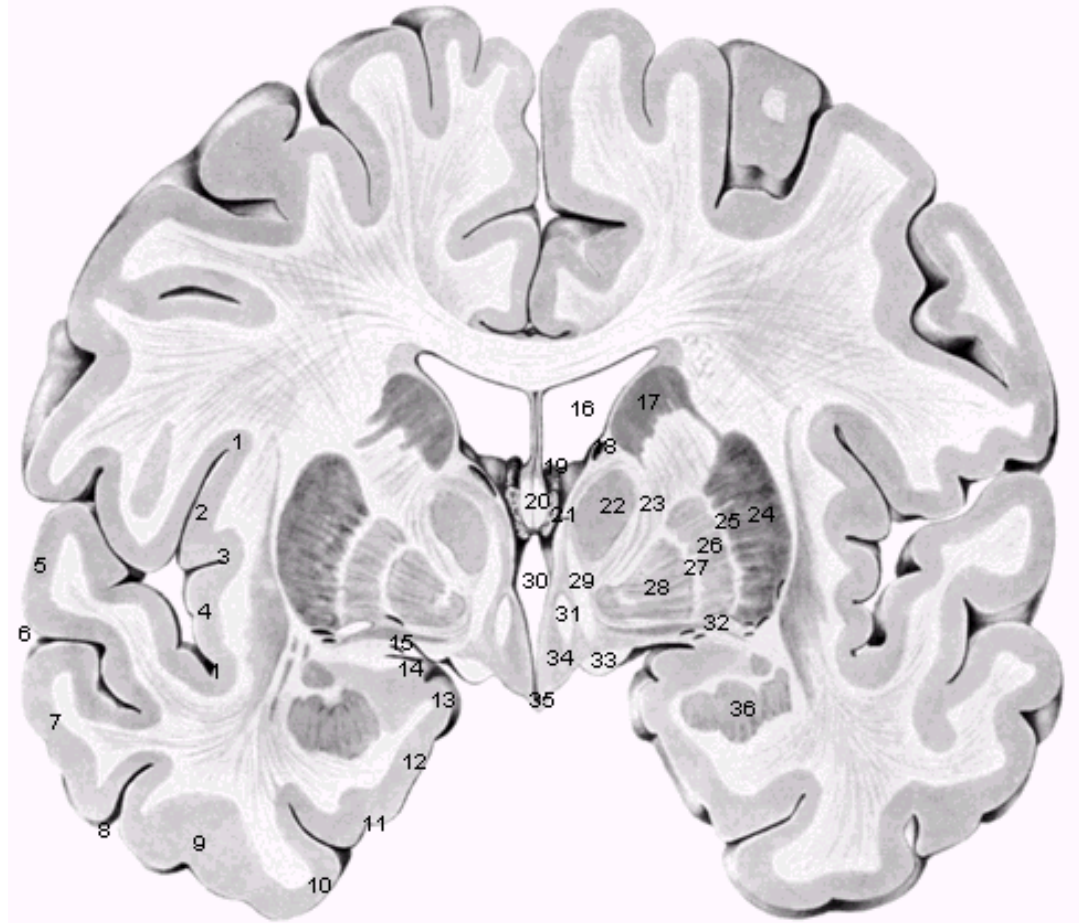
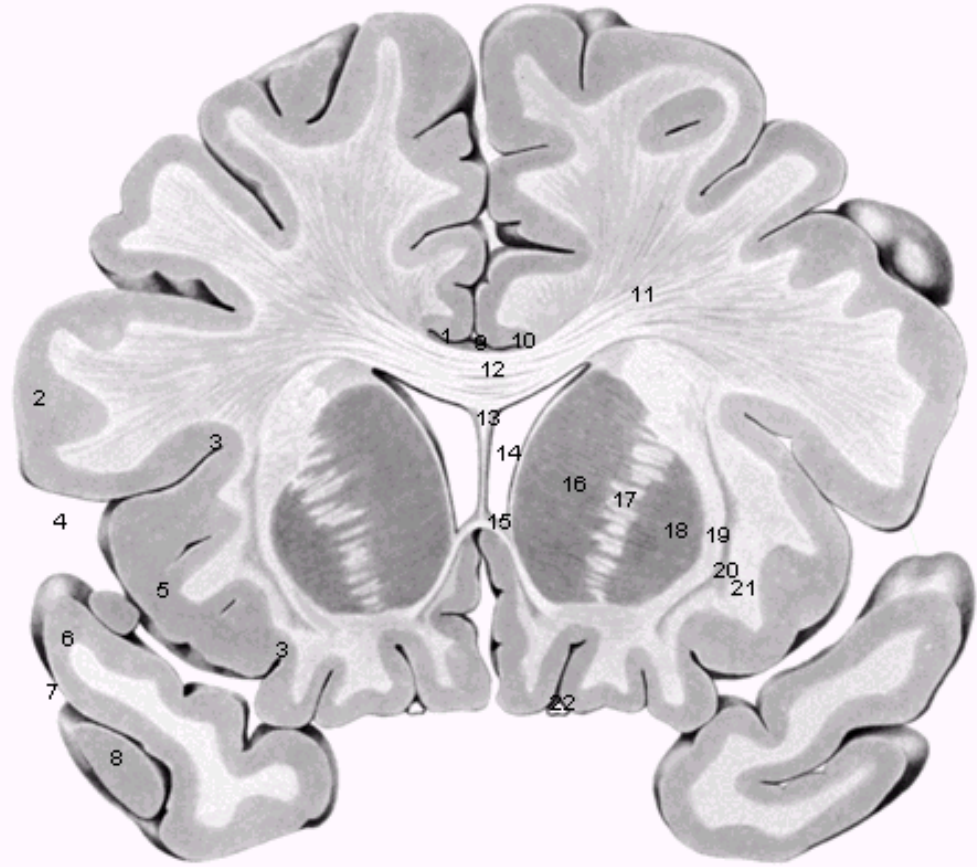
A

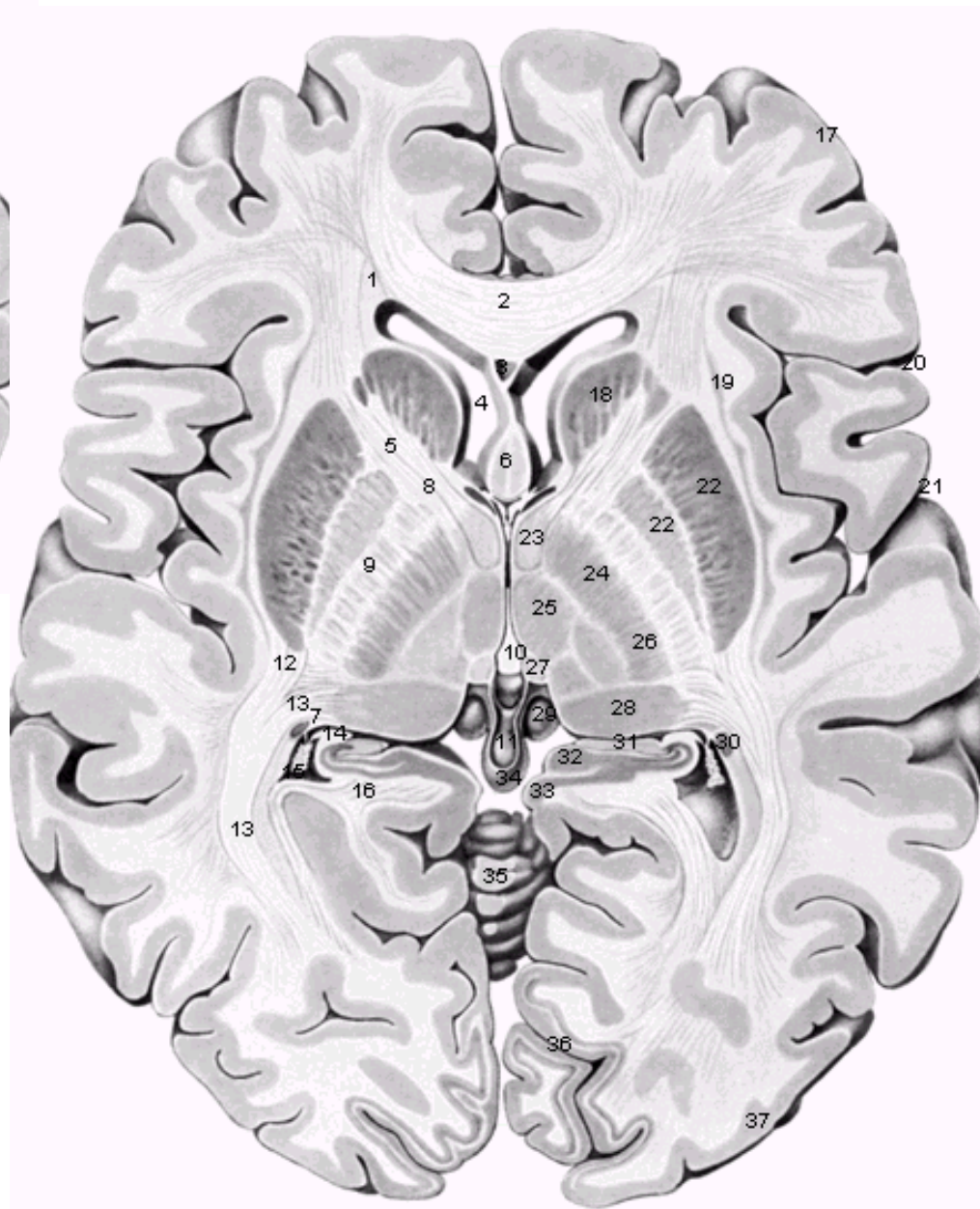
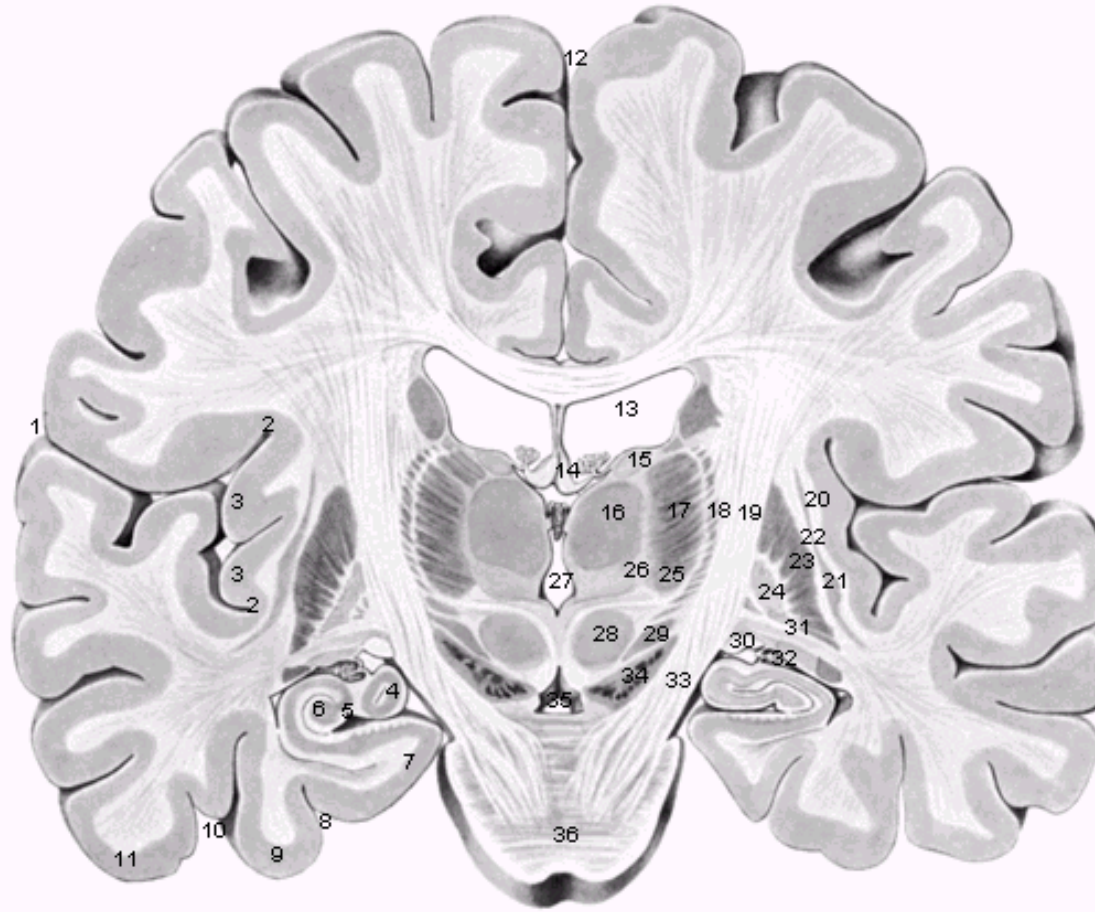


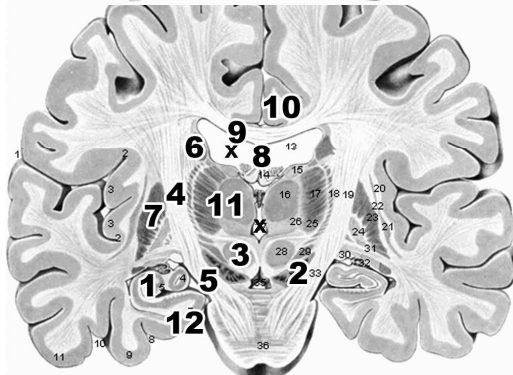
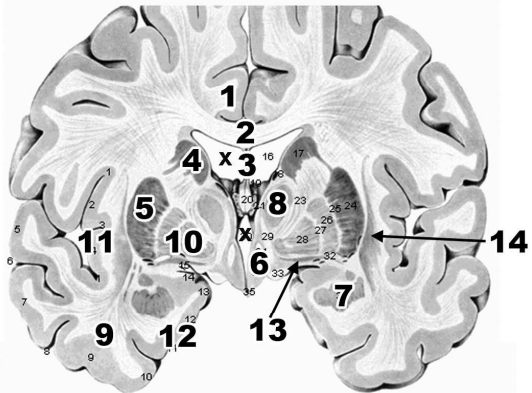
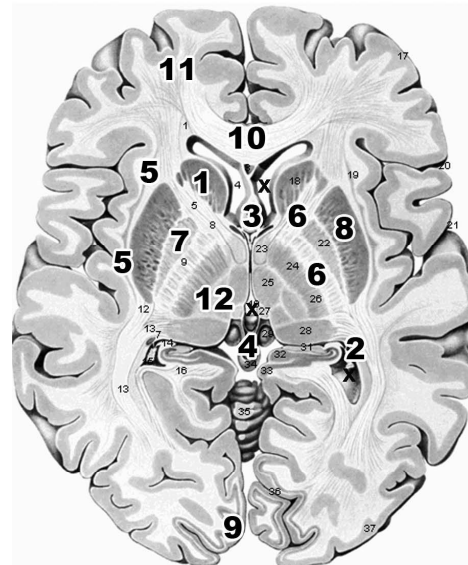
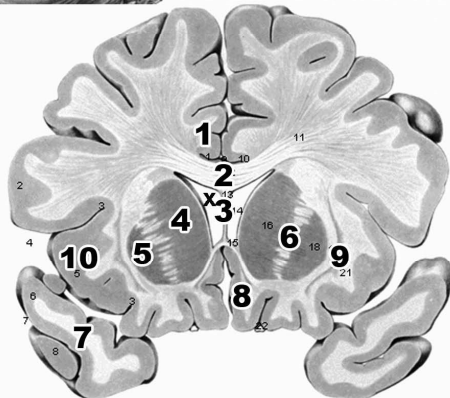
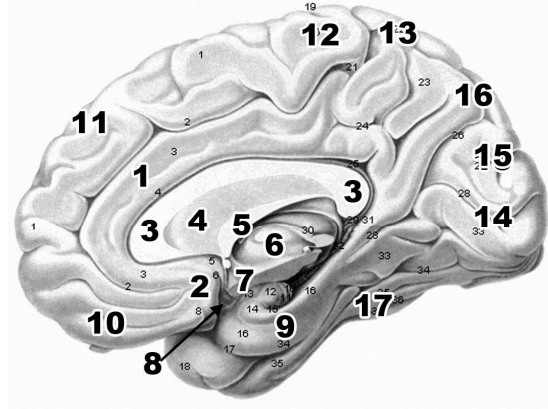
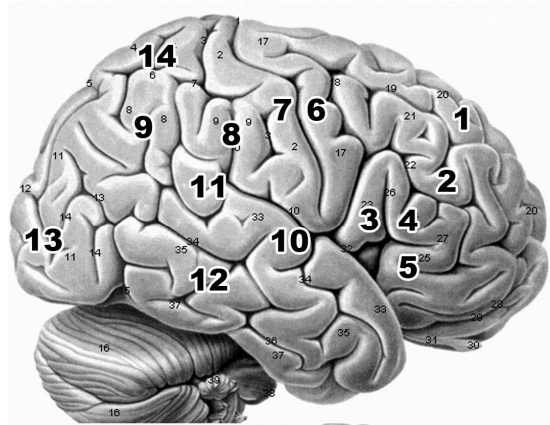
B

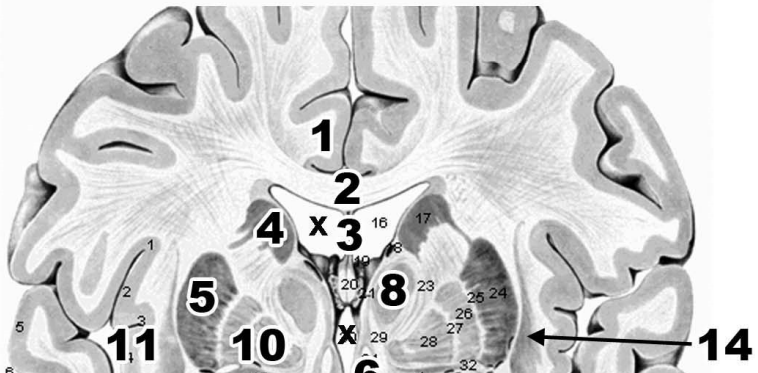
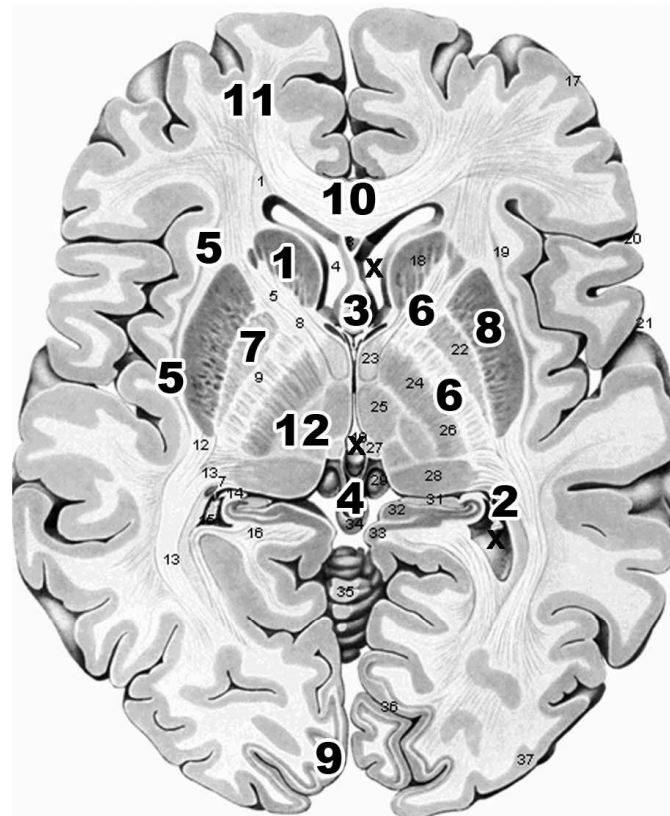
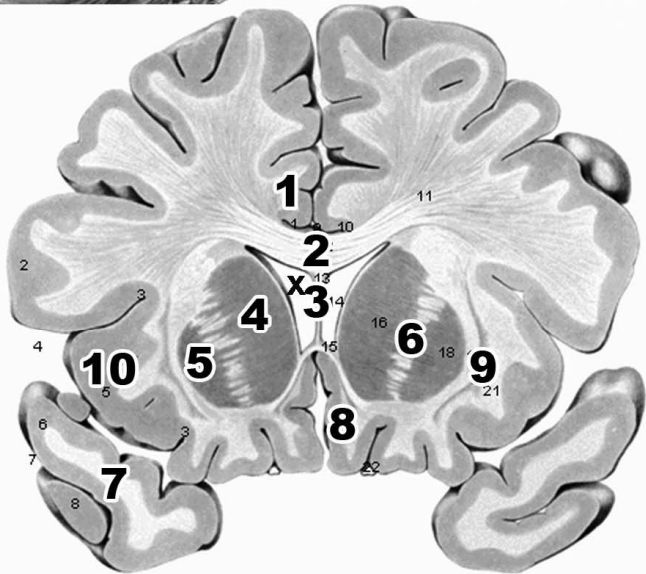
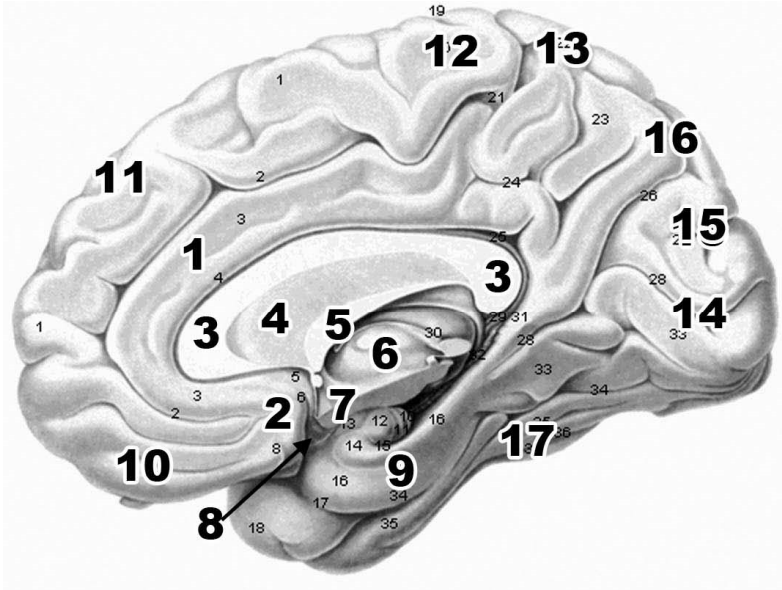
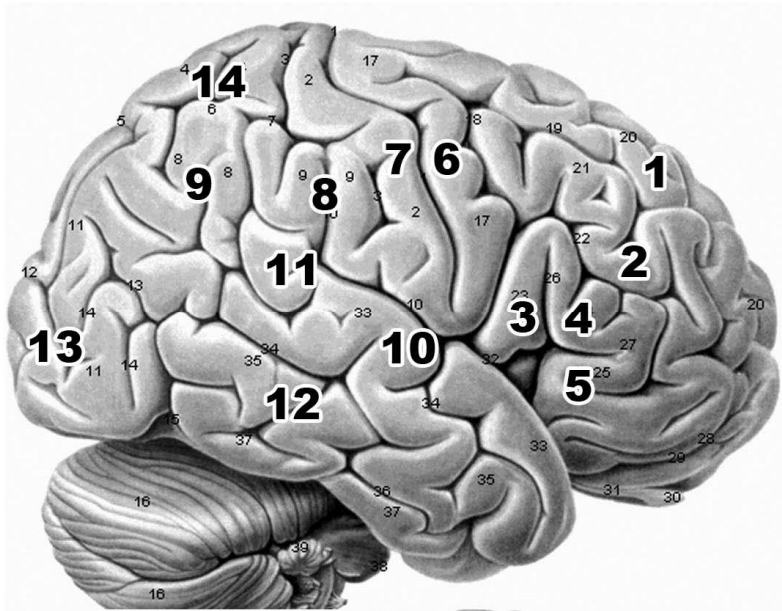


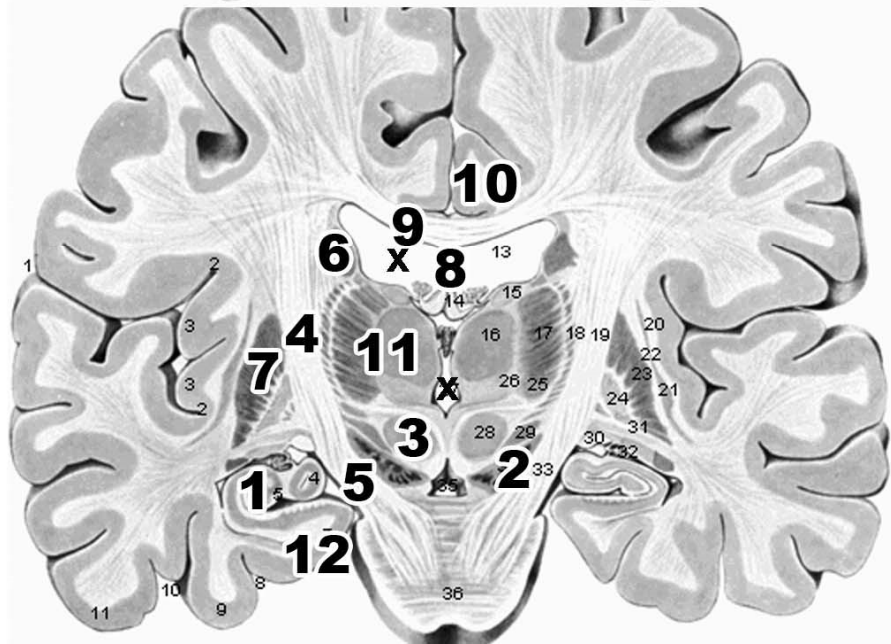
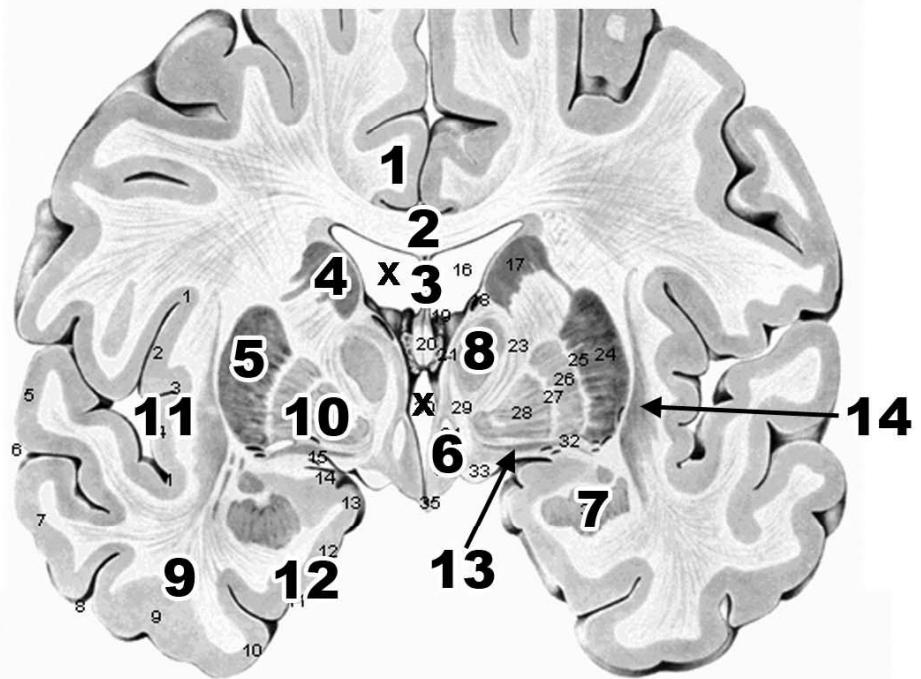
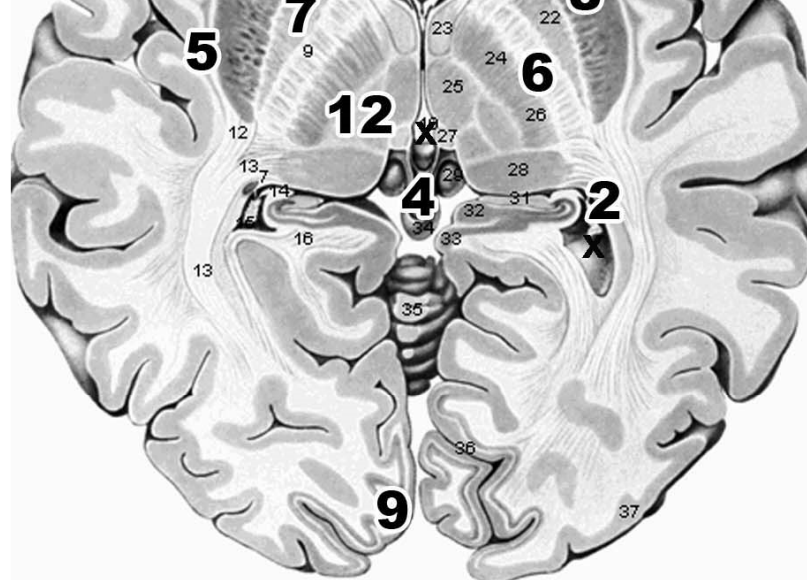




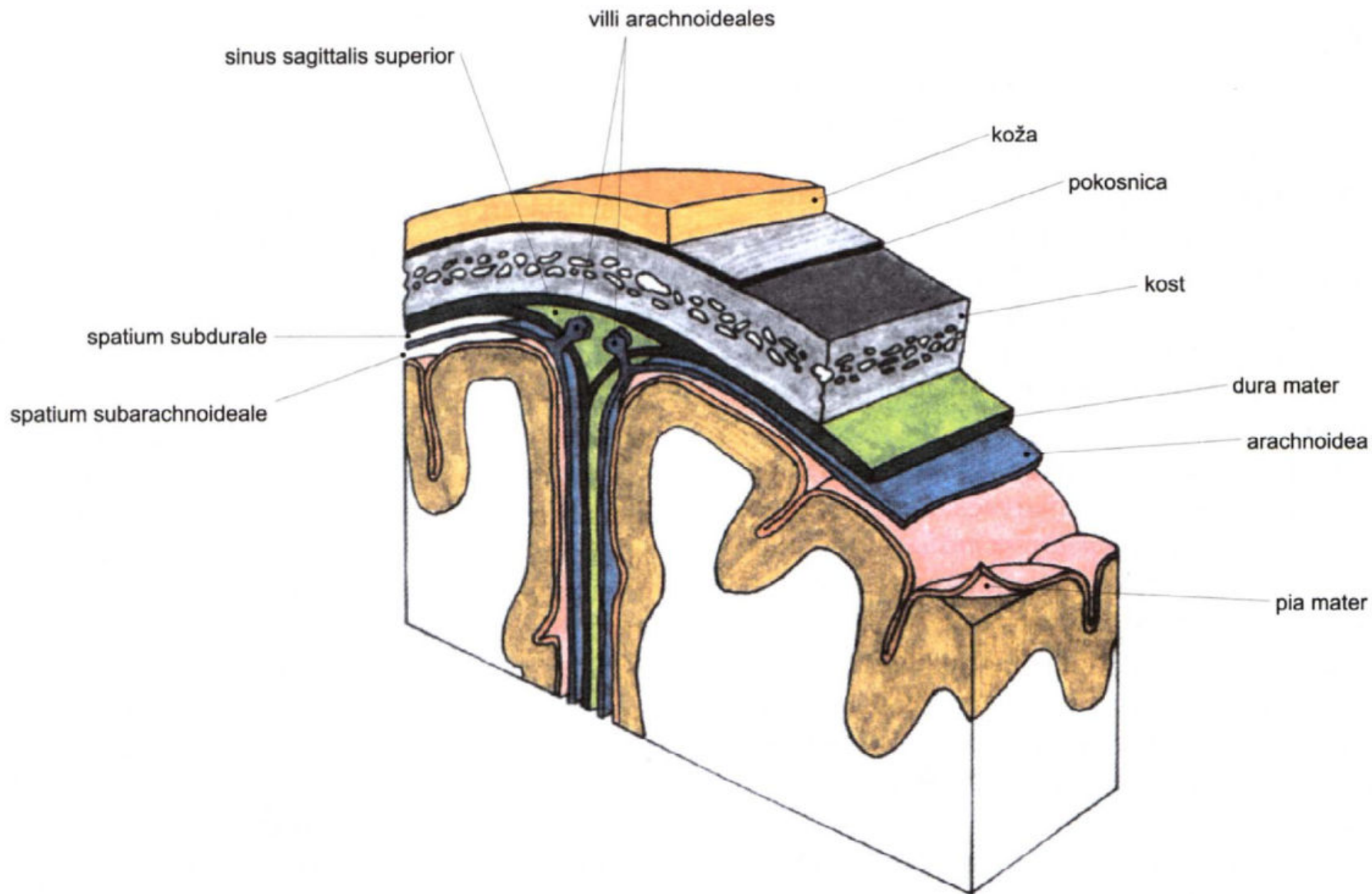




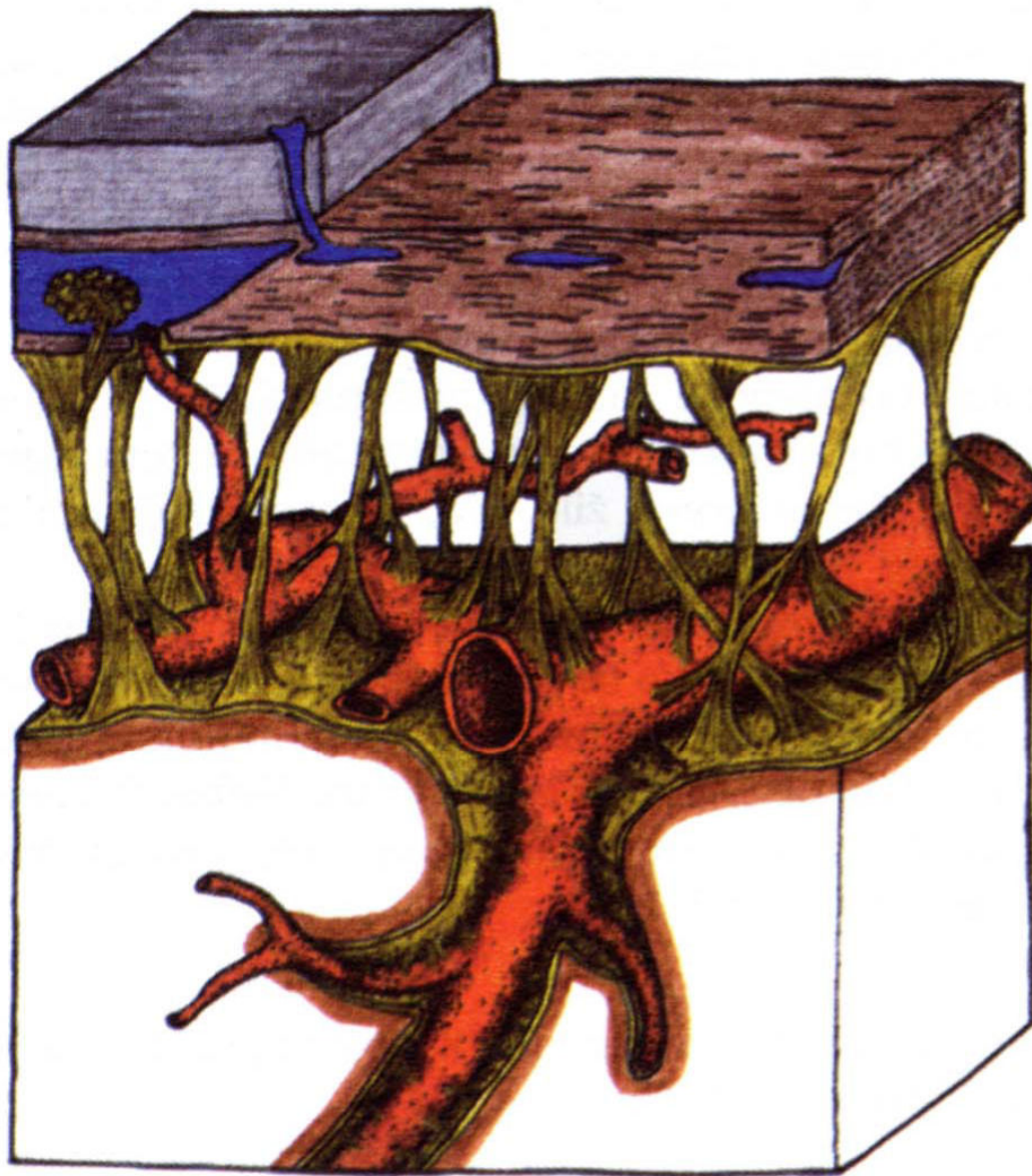




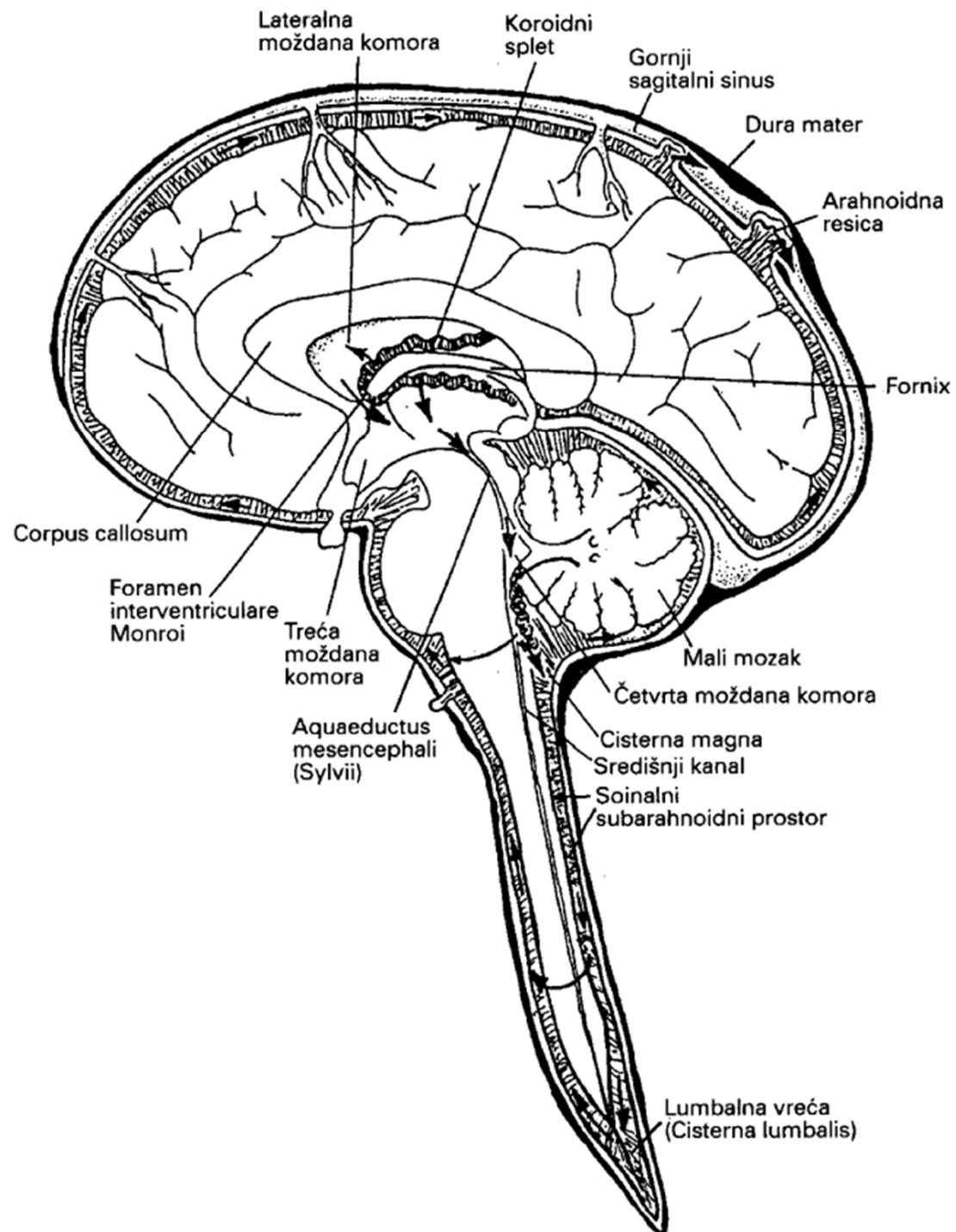
**ANATOMIJA 1B -
VASKULARIZACIJA I
CIRKULACIJA LIKVORA**



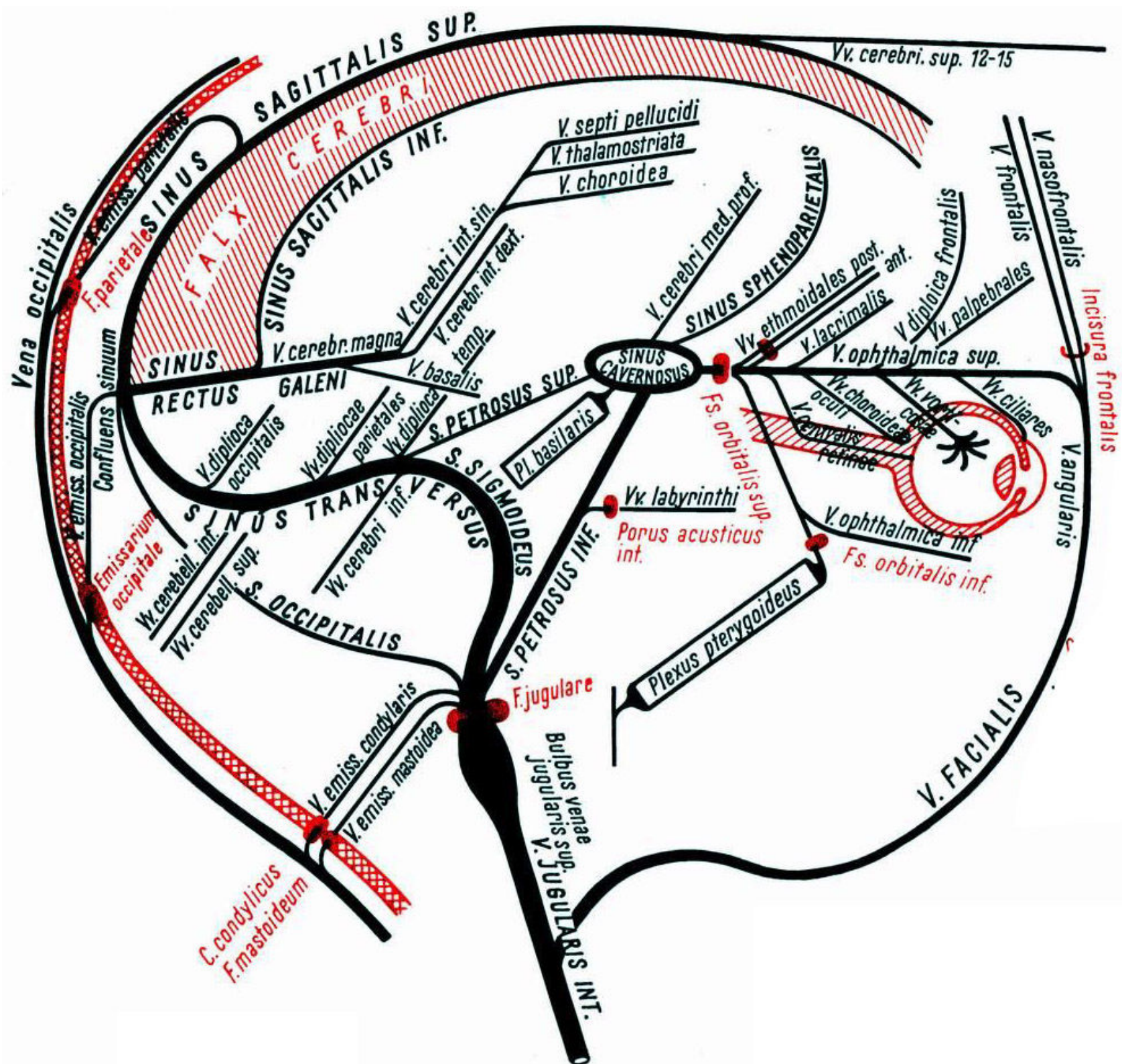
Slika 20-1. Tri moždane ovojnice su dura mater, arachnoidea mater i pia mater. Za pojedinosti vidi tekst. Nacrtno, uz izmjene, prema Hickey (1986).

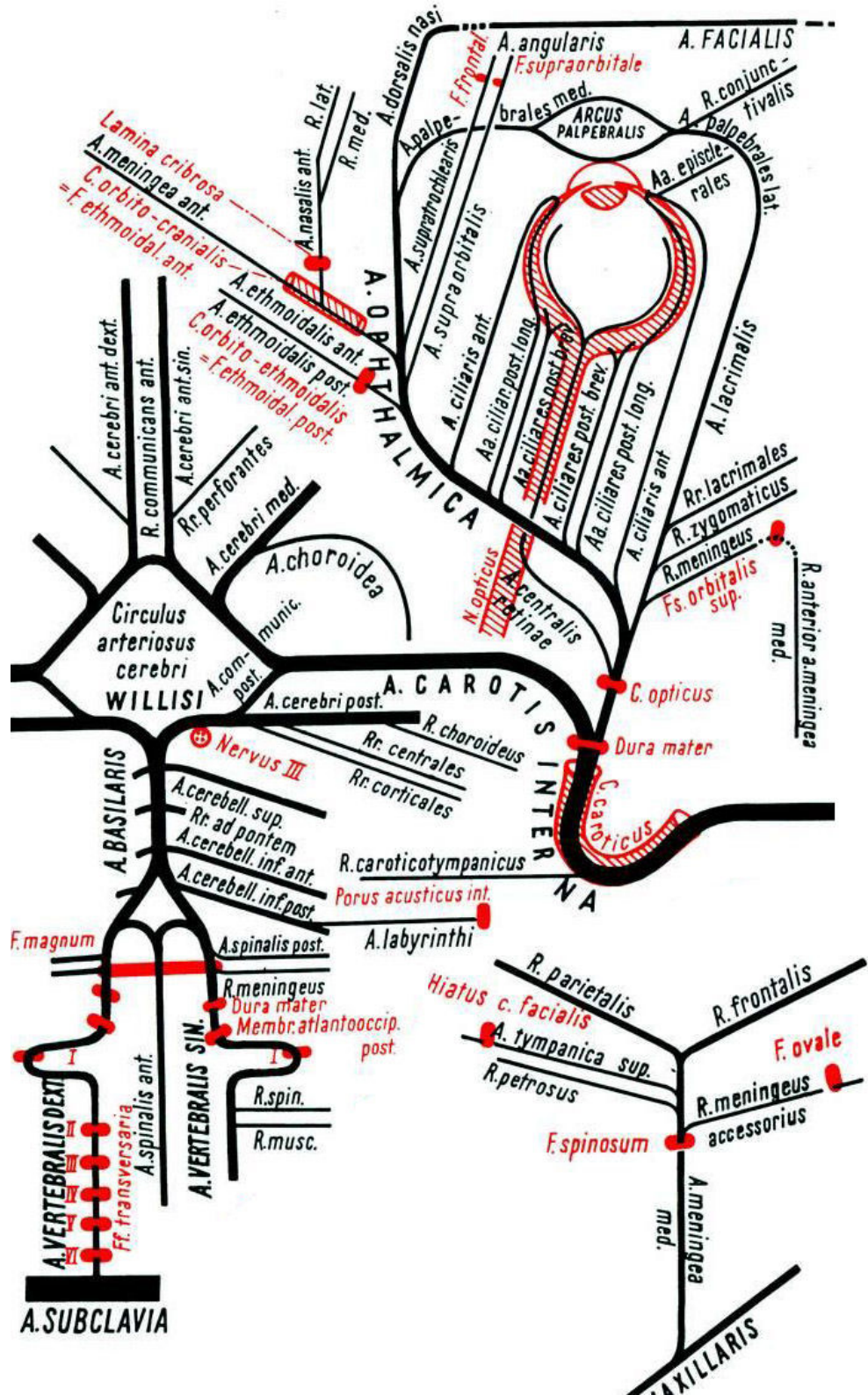


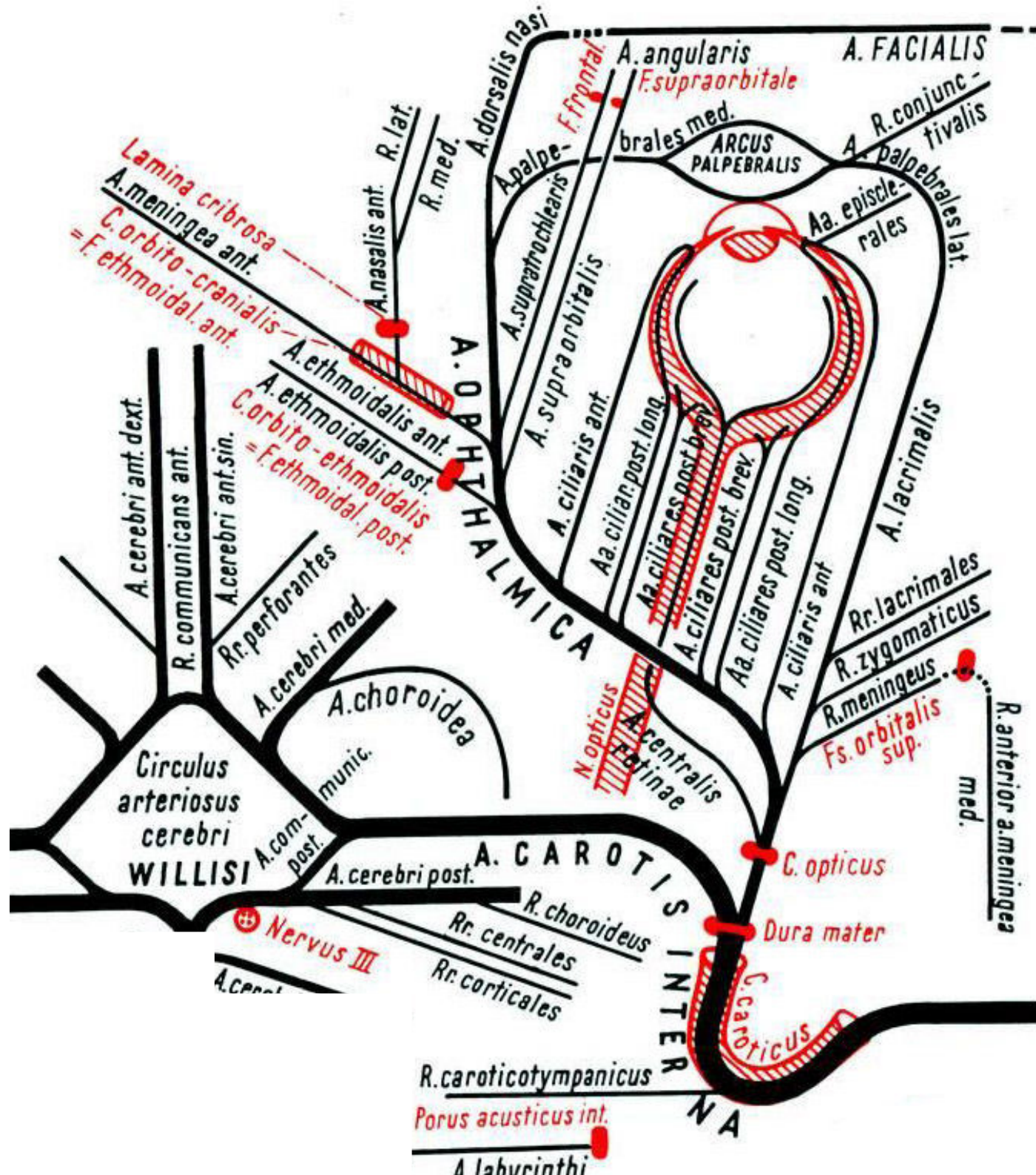
Slika 20-2. Arahnoideja i pija spojene su vezivnim mostićima, a između njih je subarahnoidni prostor u kojem su smještene krvne žile. Pija prati sve pregibe moždane površine i prati krvne žile dok poniru u moždano tkivo – tako nastaje Virchow-Robinov prostor (*spatium leptomeningicum*). Prema Benninghoff i Goerttler (1964), uz manje izmjene.

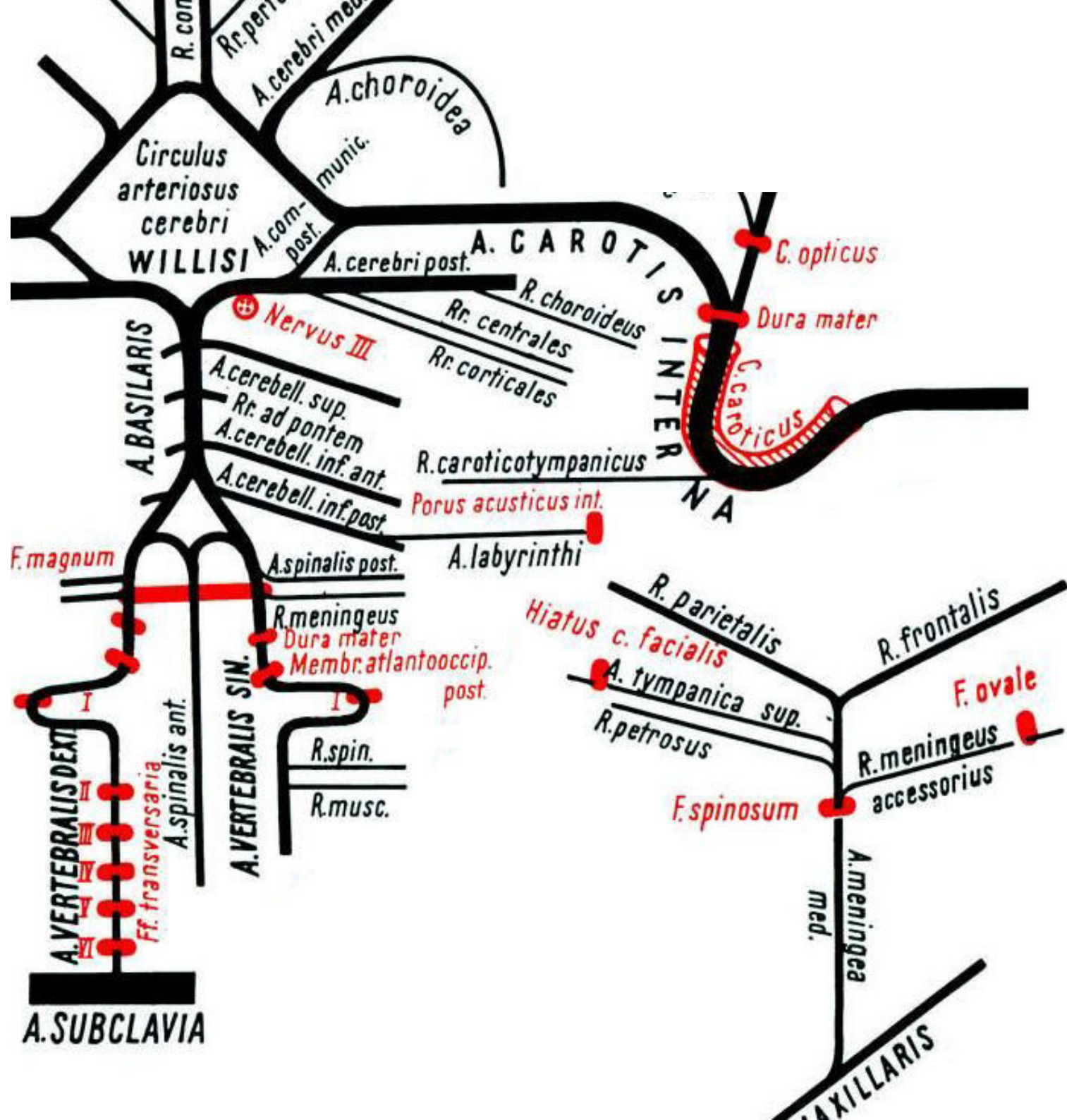


Slika 21-2. Shema cirkulacije likvora. Za pojedinosti vidi tekst.

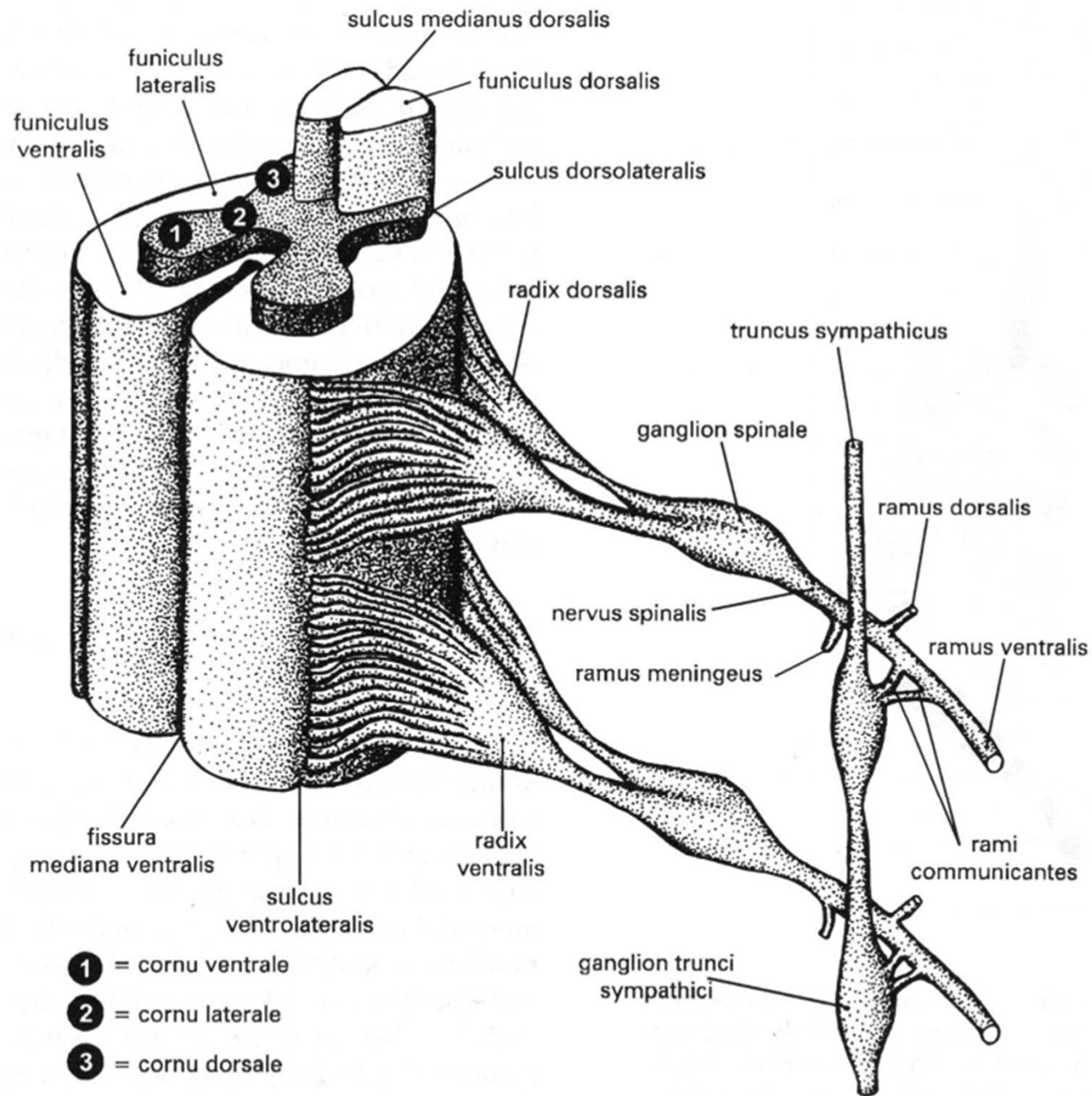




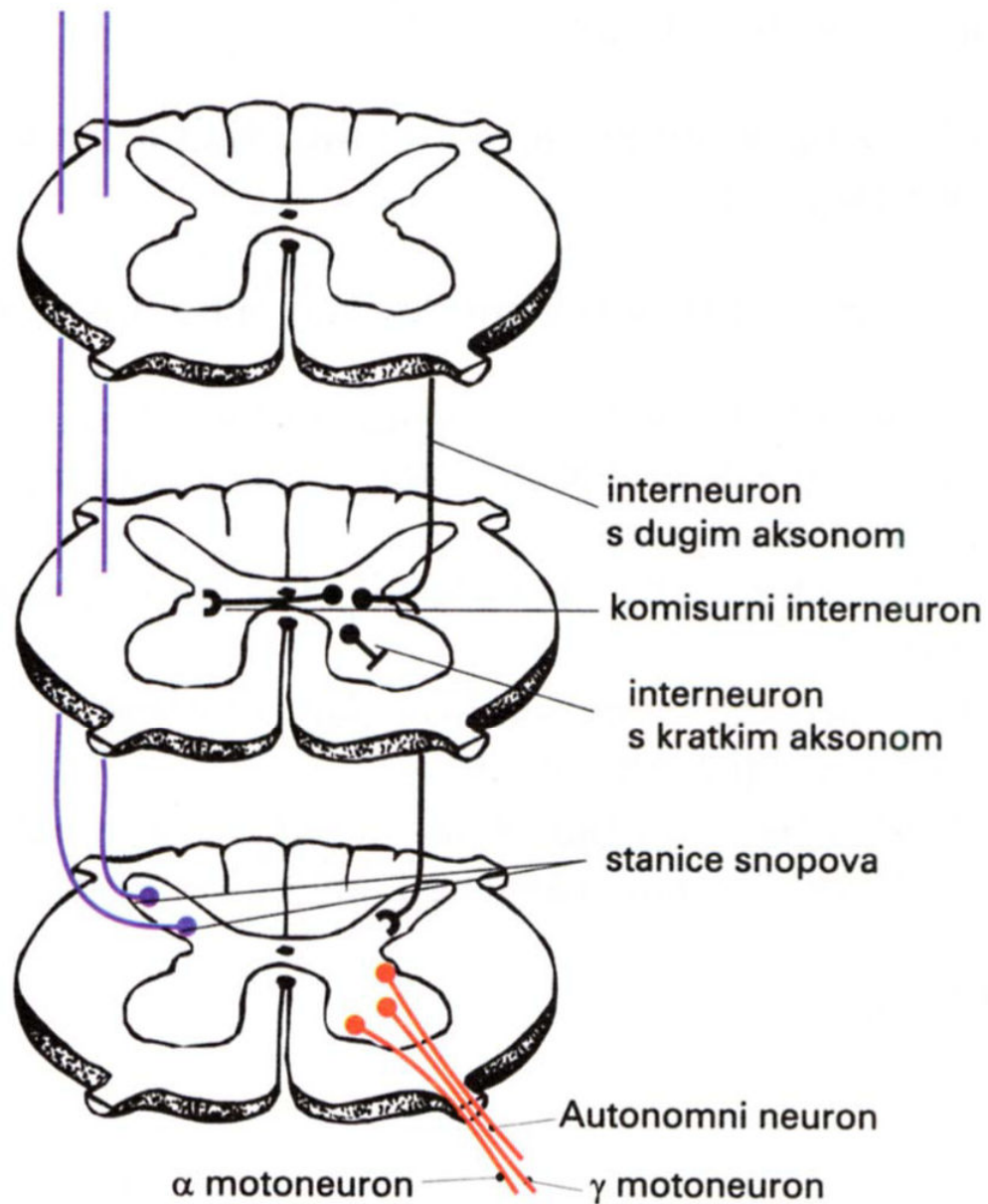
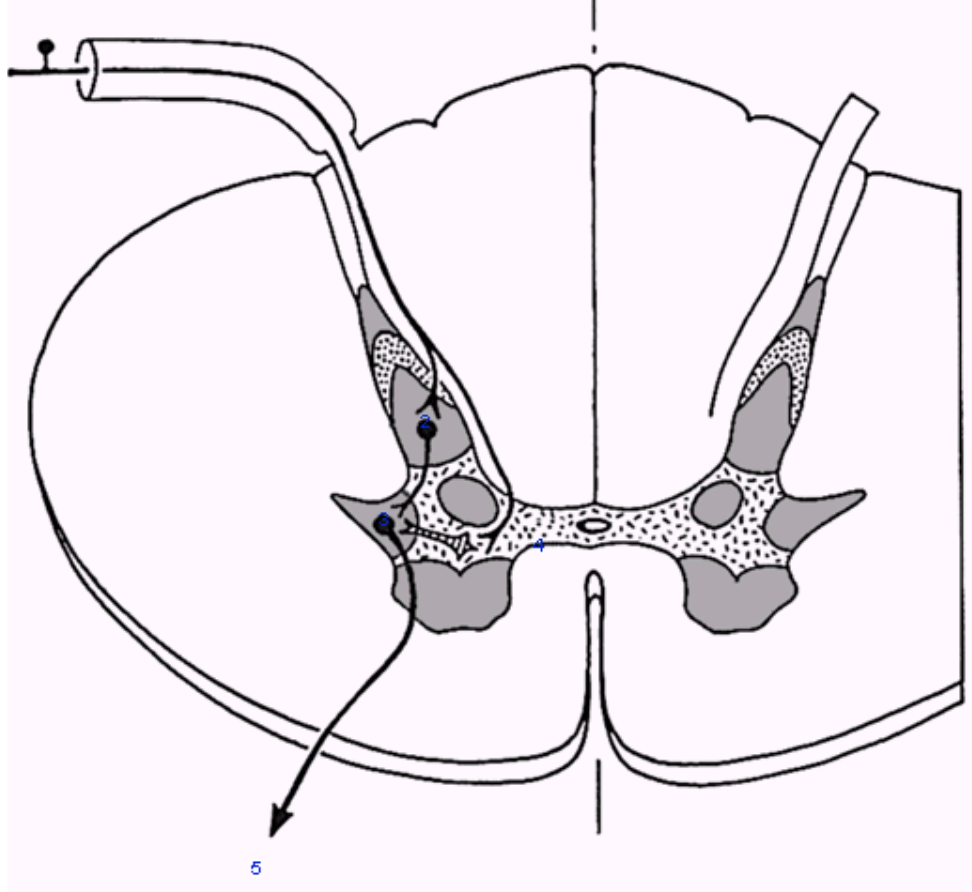




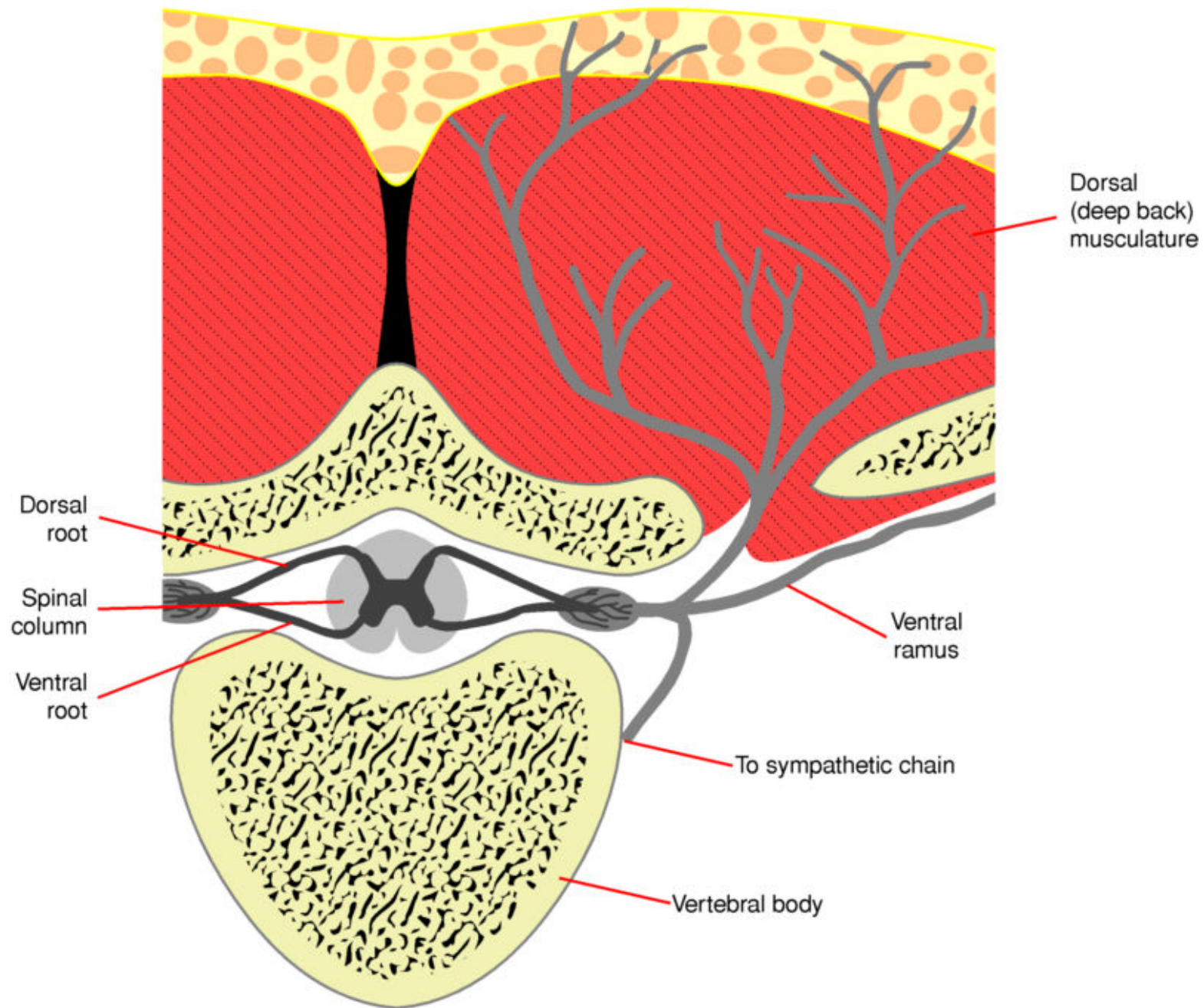
**ANATOMIJA 2 -
FUNKCIONALNA
ORGANIZACIJA PERIFERNOG
ŽIVČANOG SUSTAVA**

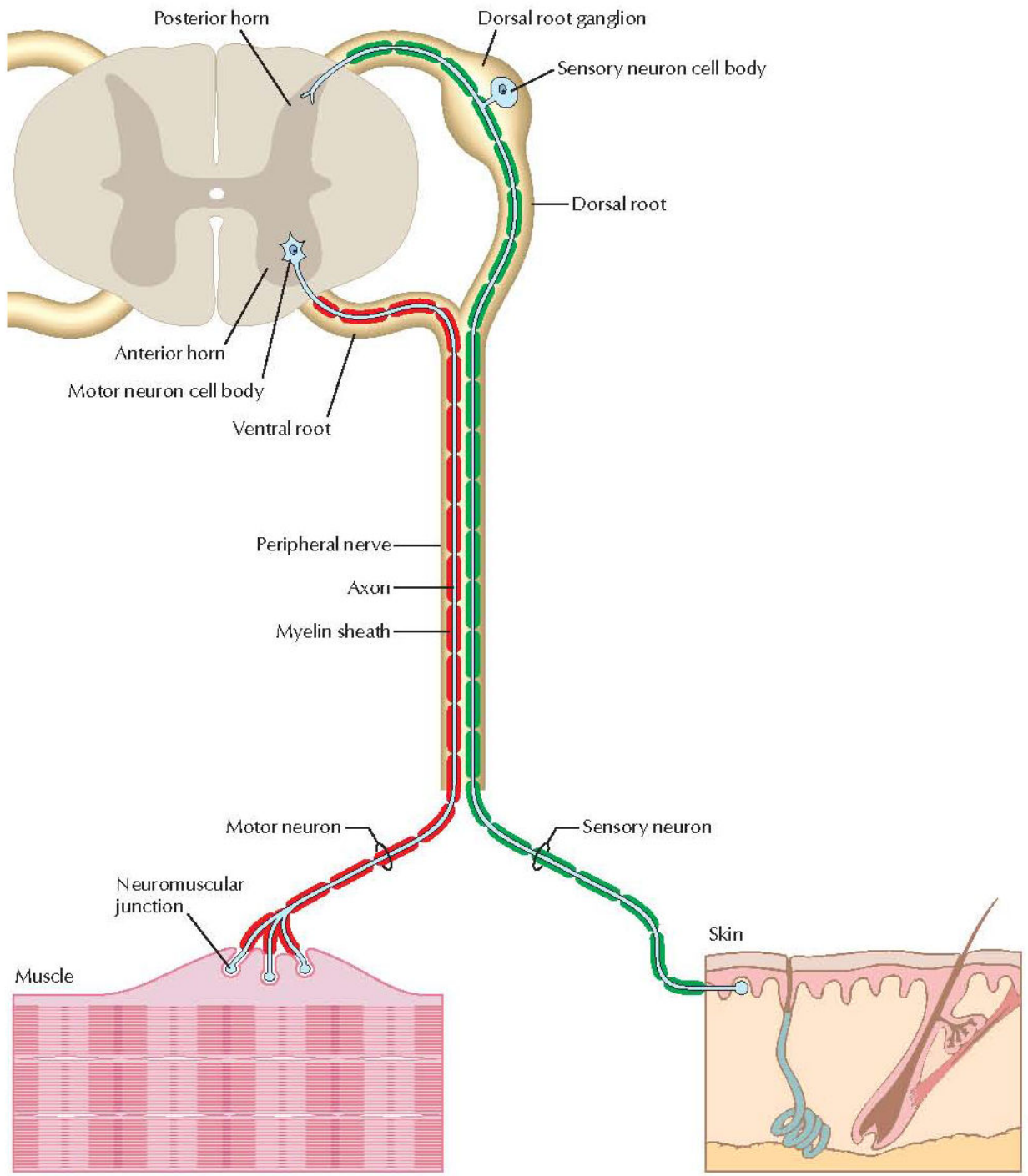


Slika 4-2. Temeljni dijelovi sive i bijele tvari kralježnične moždine. Za pojedinosti vidi tekst.

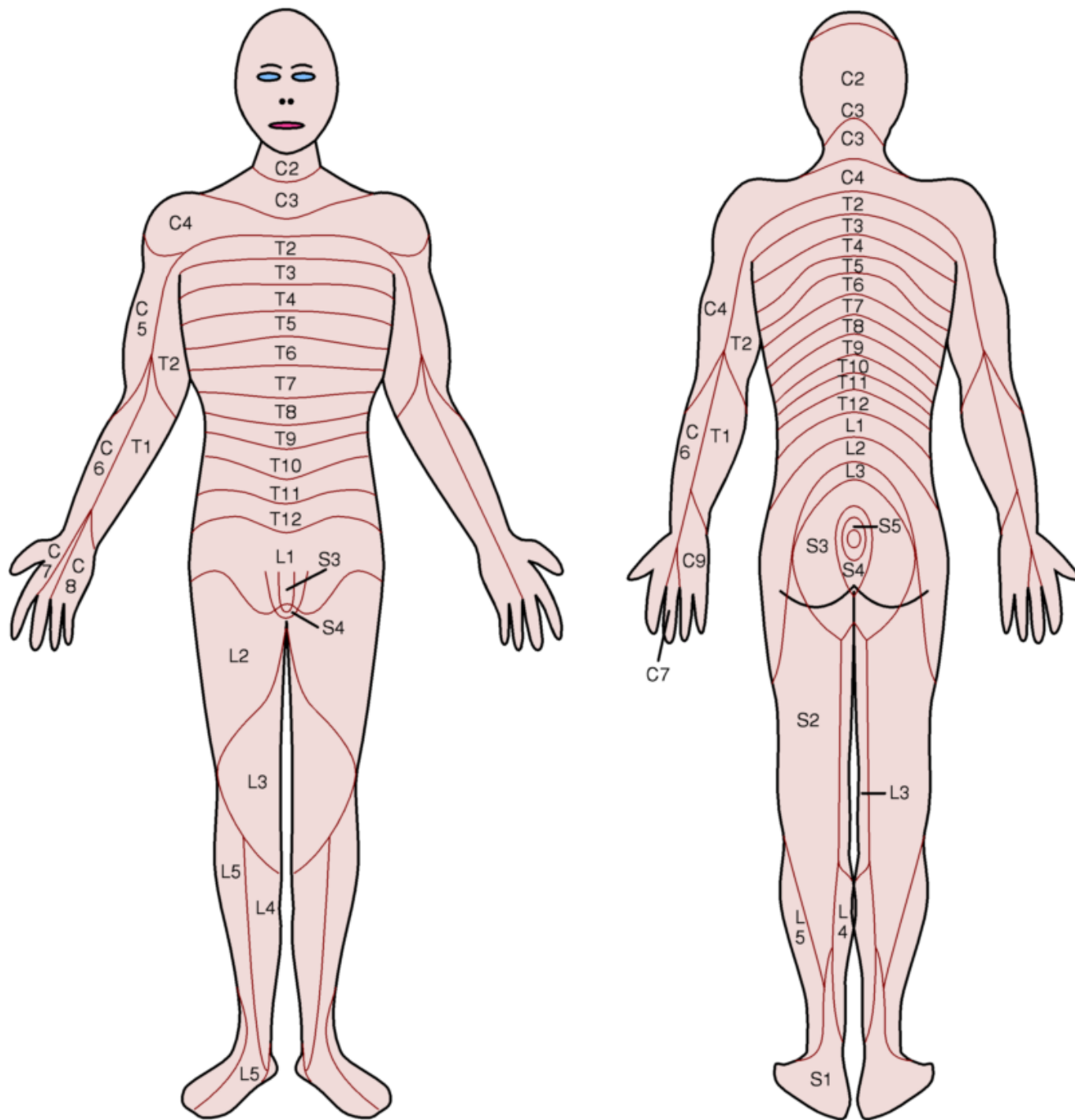


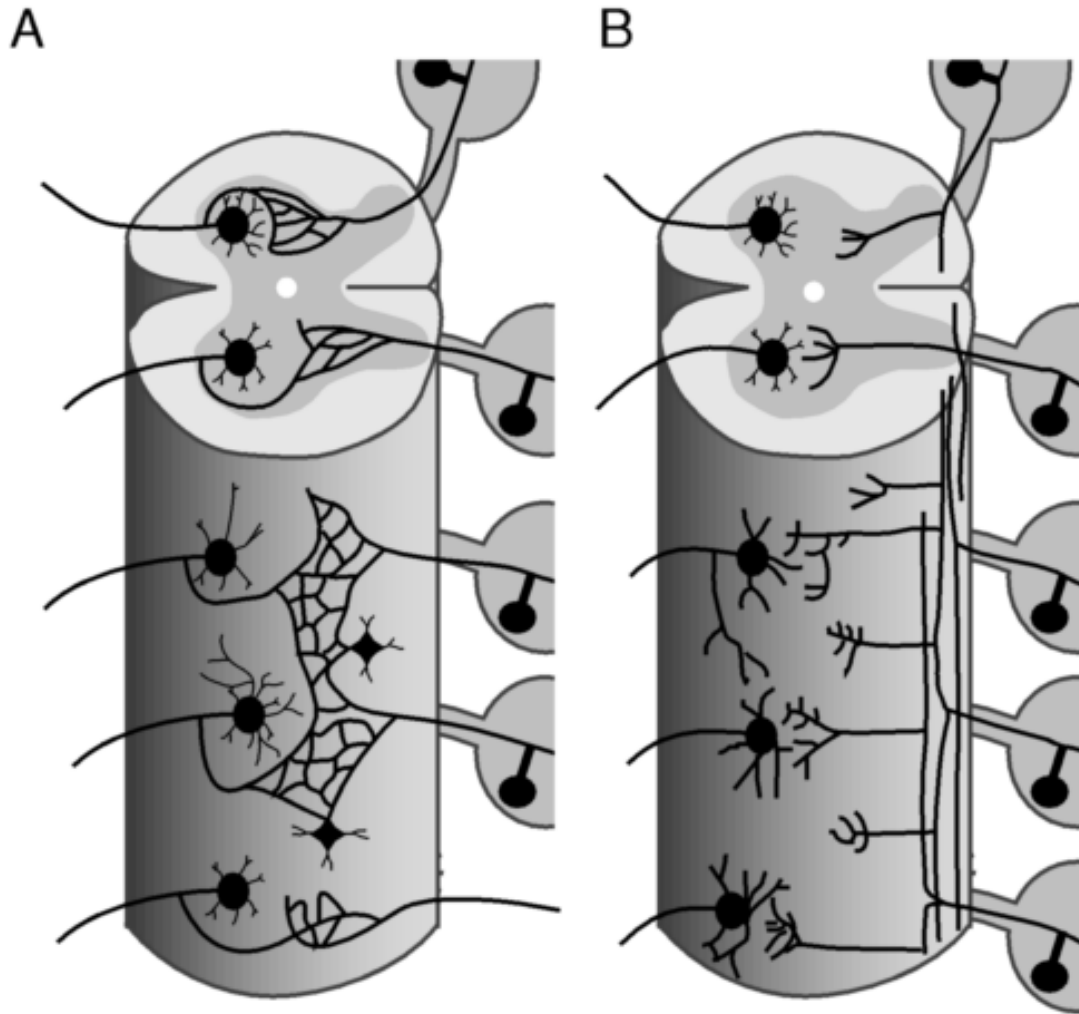
Slika 14-3. Tri glavne vrste neurona u sivoj tvari kralježnične moždine su: a) motoneuroni (α , γ , i autonomni), b) stanice snopova, čiji aksoni uzlaze kroz bijelu tvar i c) interneuroni. Za pojedinosti vidi tekst.



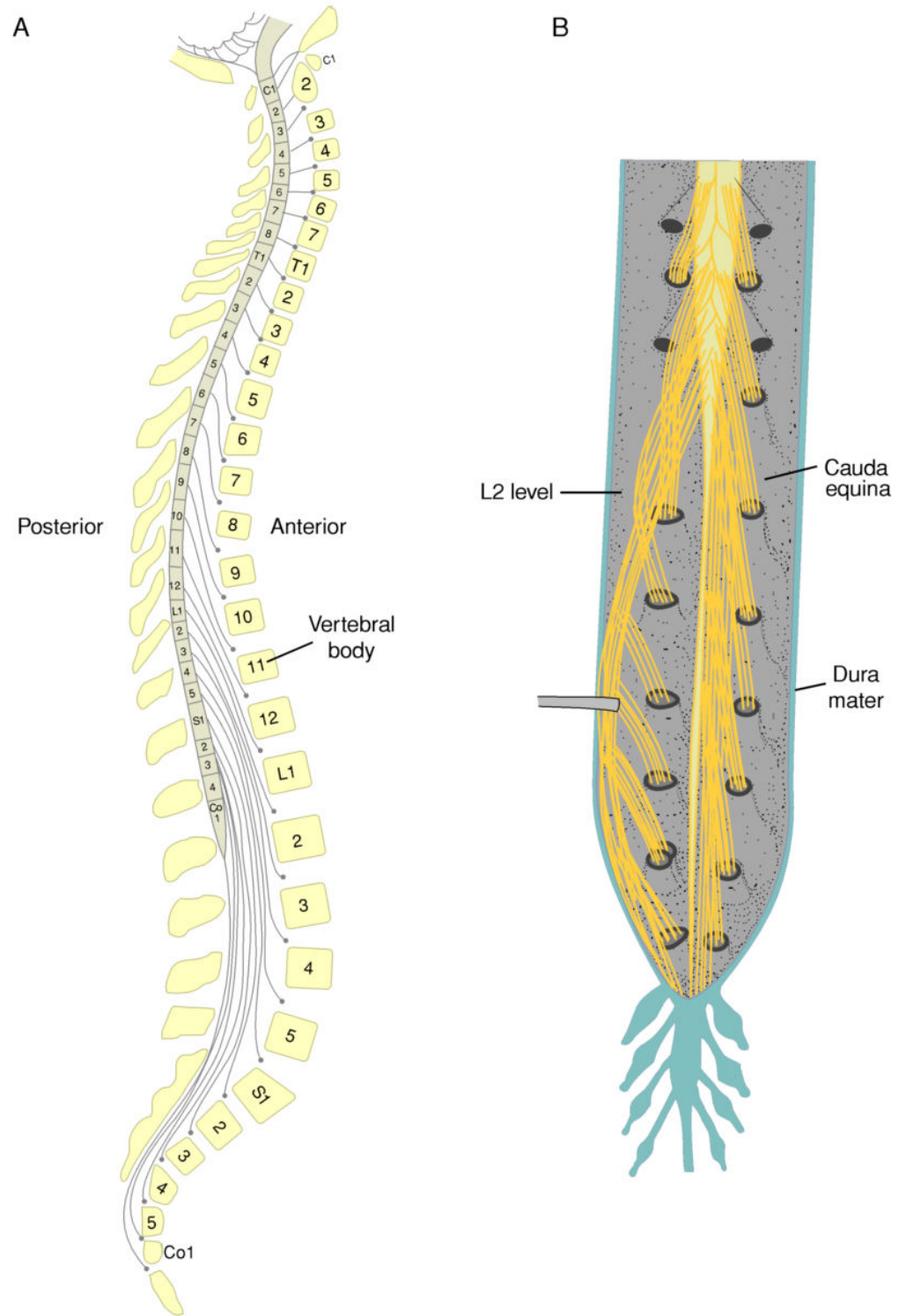


F. Netter
 with
 J. Parichas
 MD, MEd
 © 2001

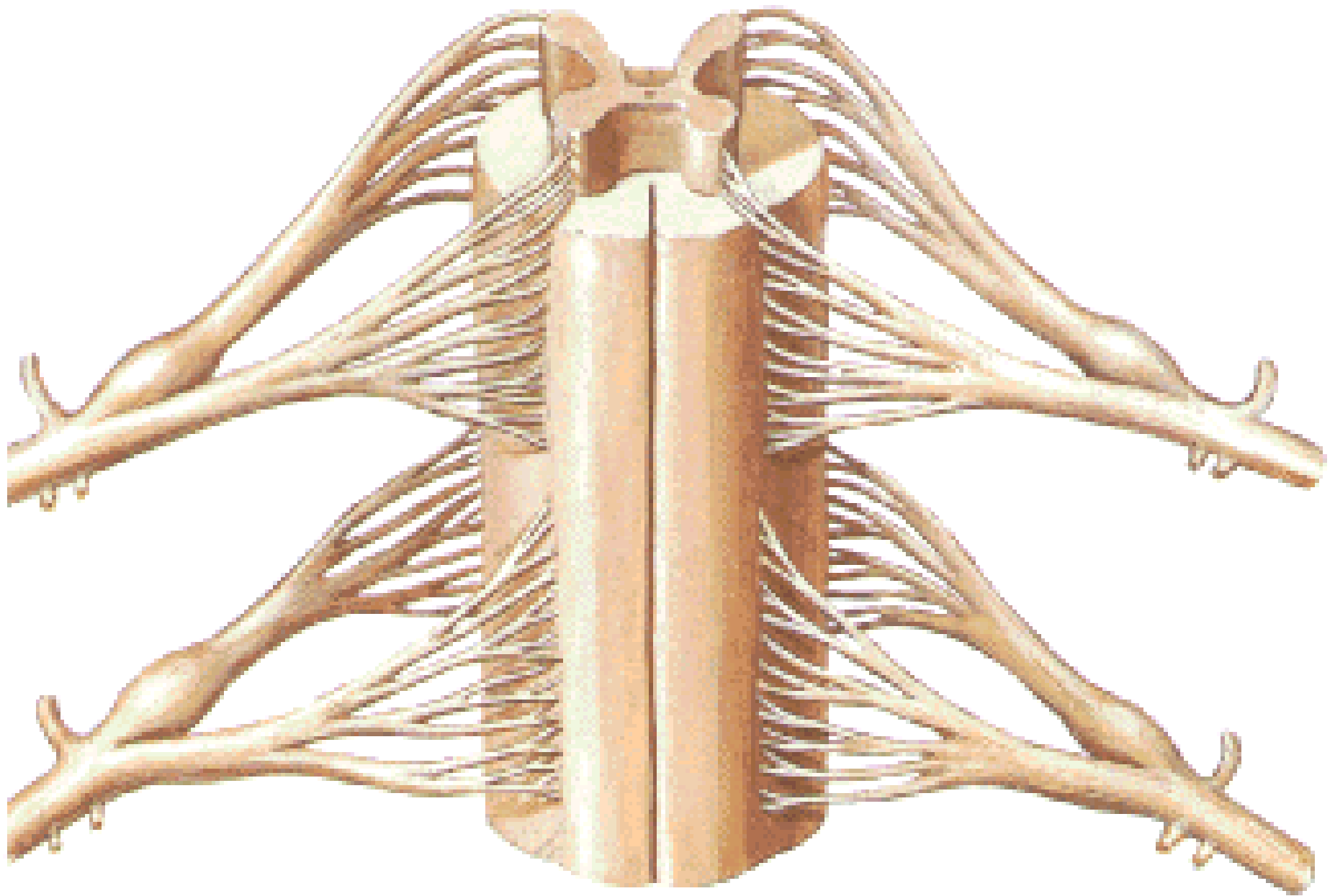


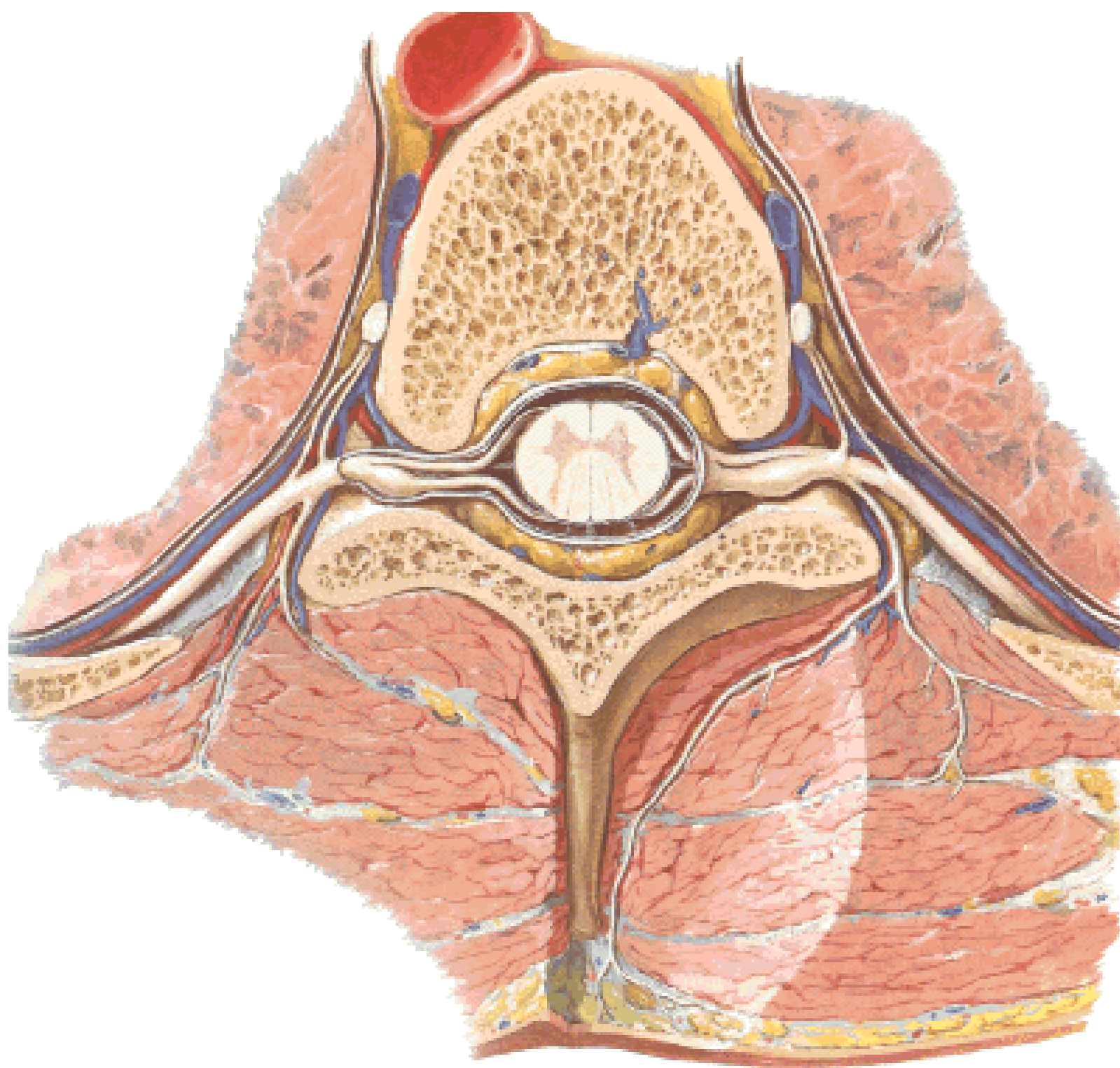


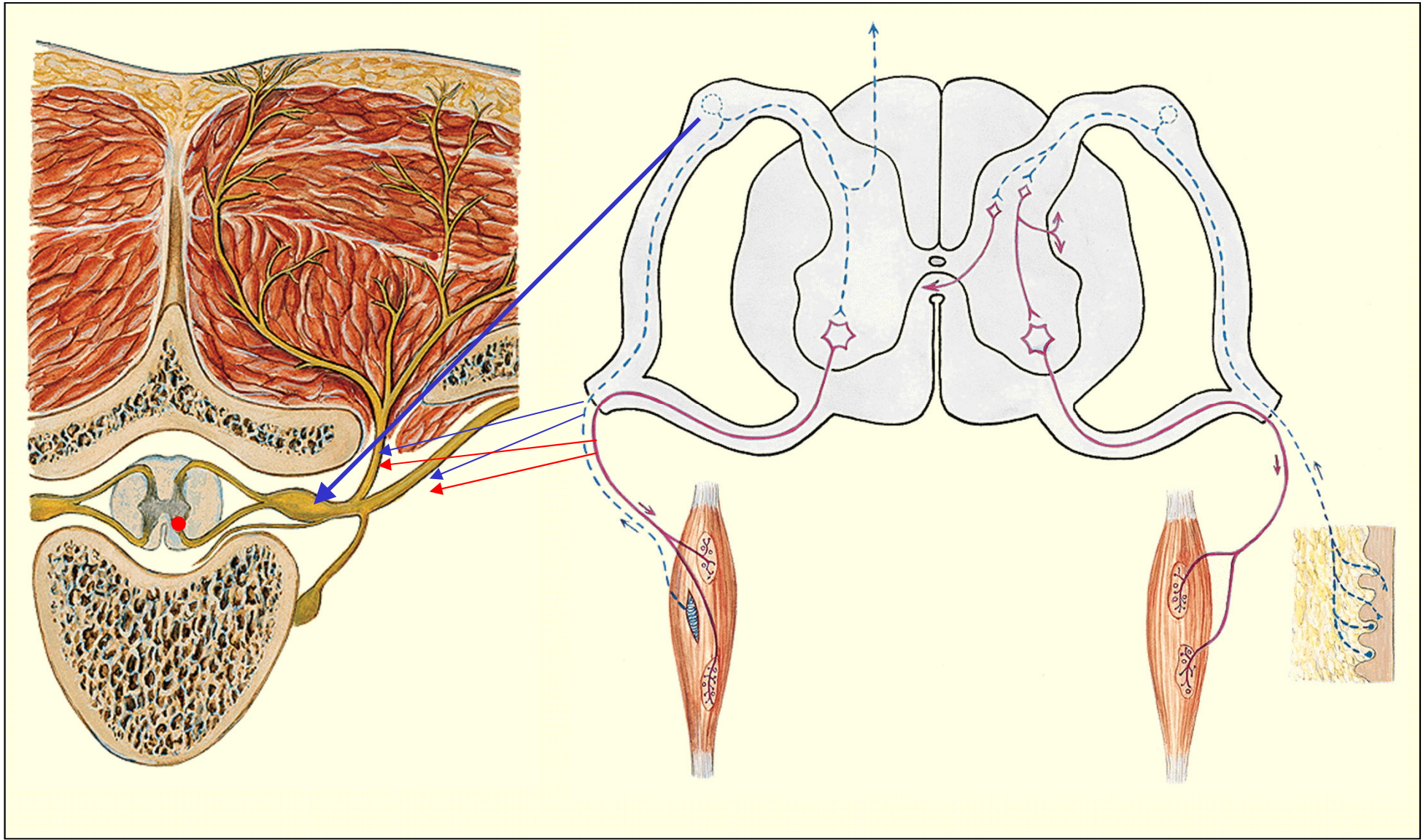
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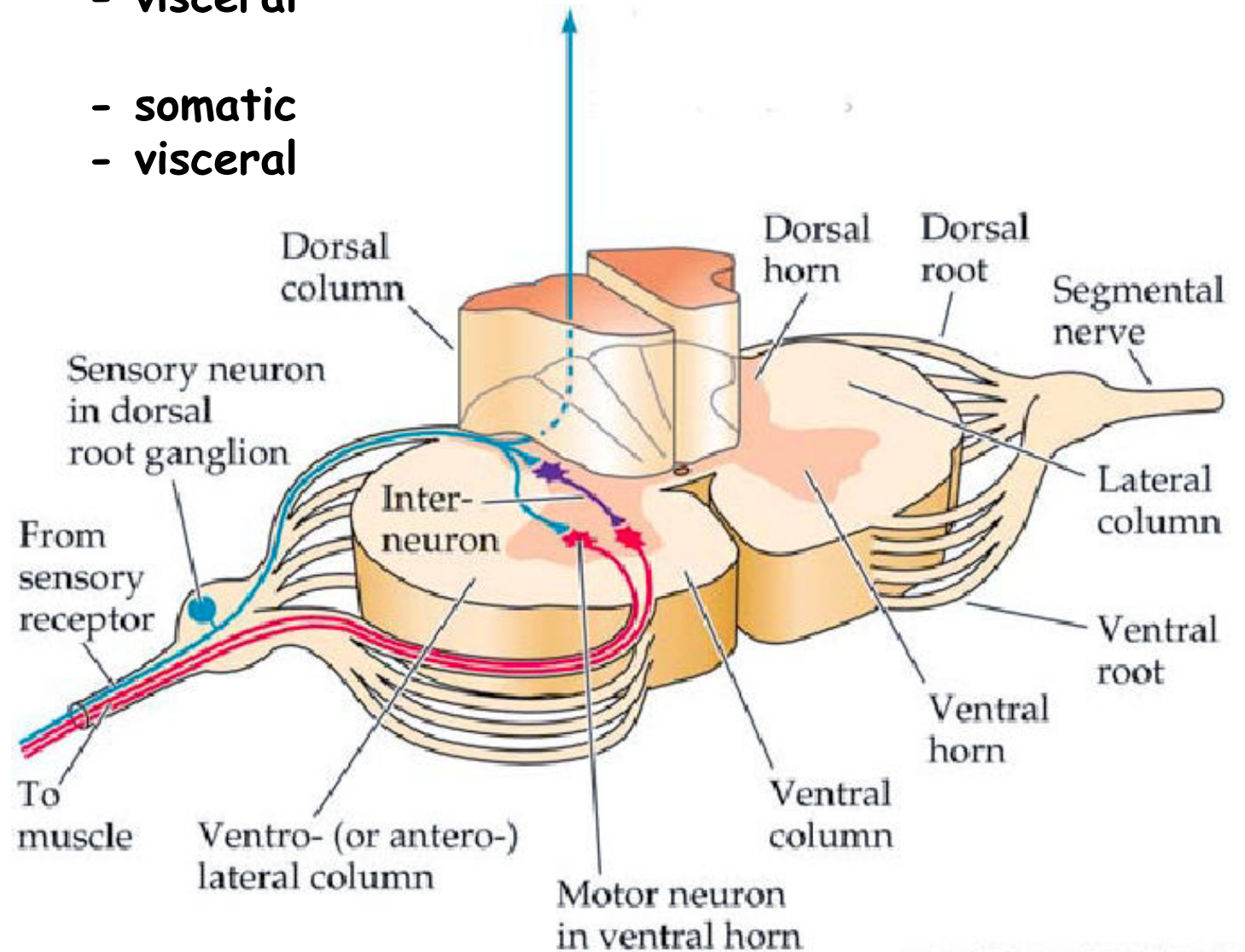


EFFERENT/motor

- somatic
- visceral

AFFERENT/sensory

- somatic
- visceral



Somatic - ectoderm (superficial mesoderm)

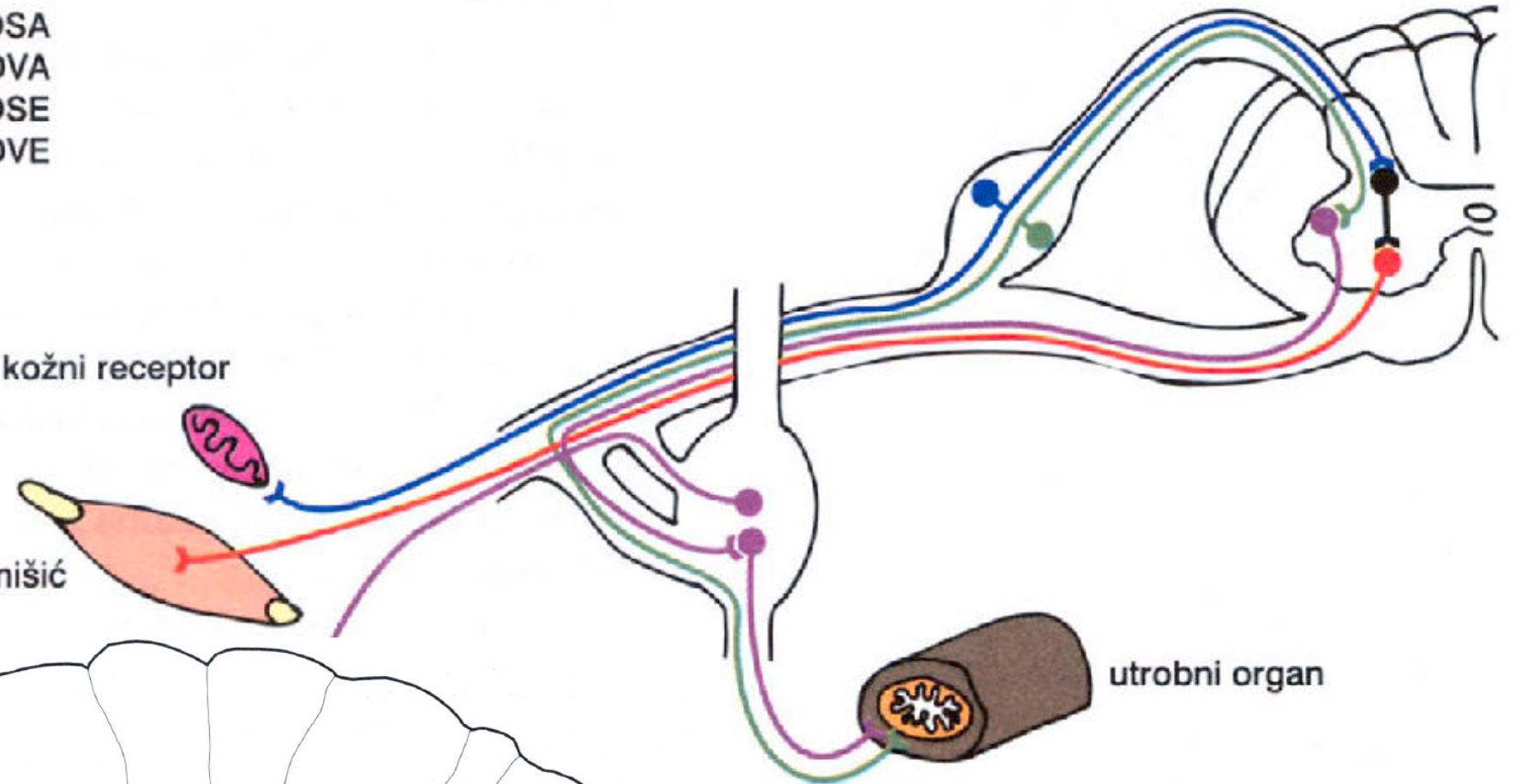
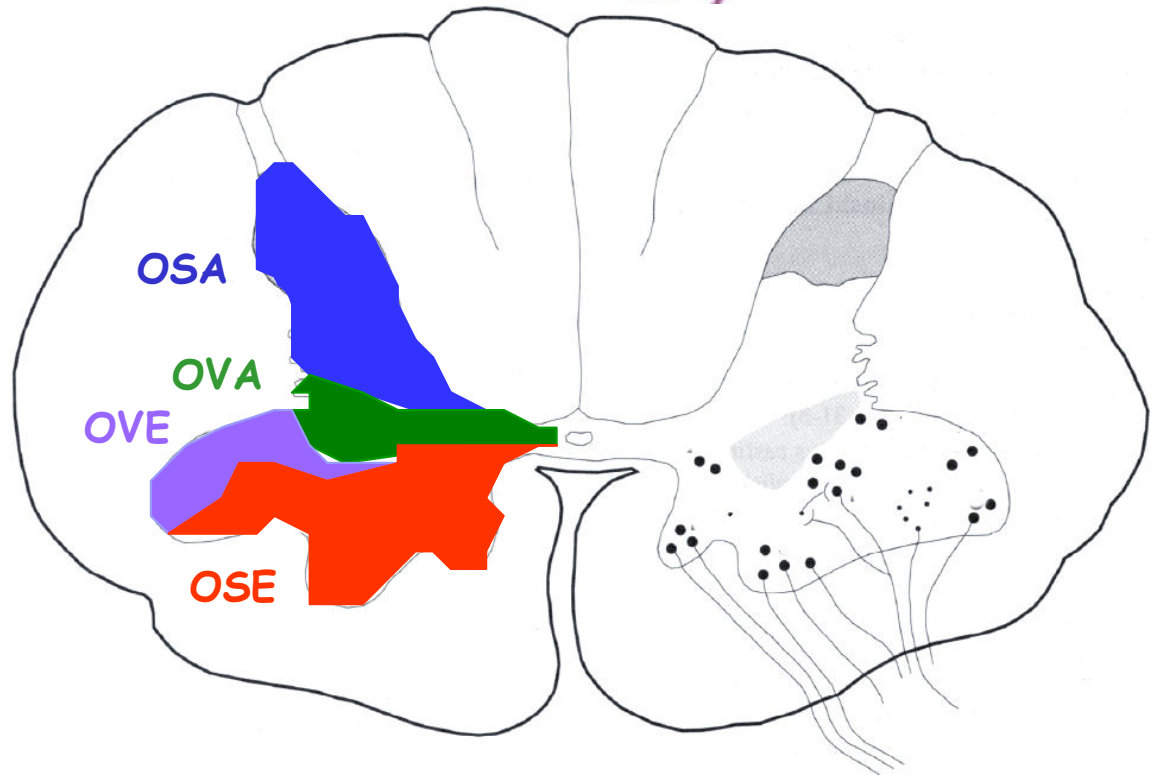
Visceral - endoderm (deep mesoderm)

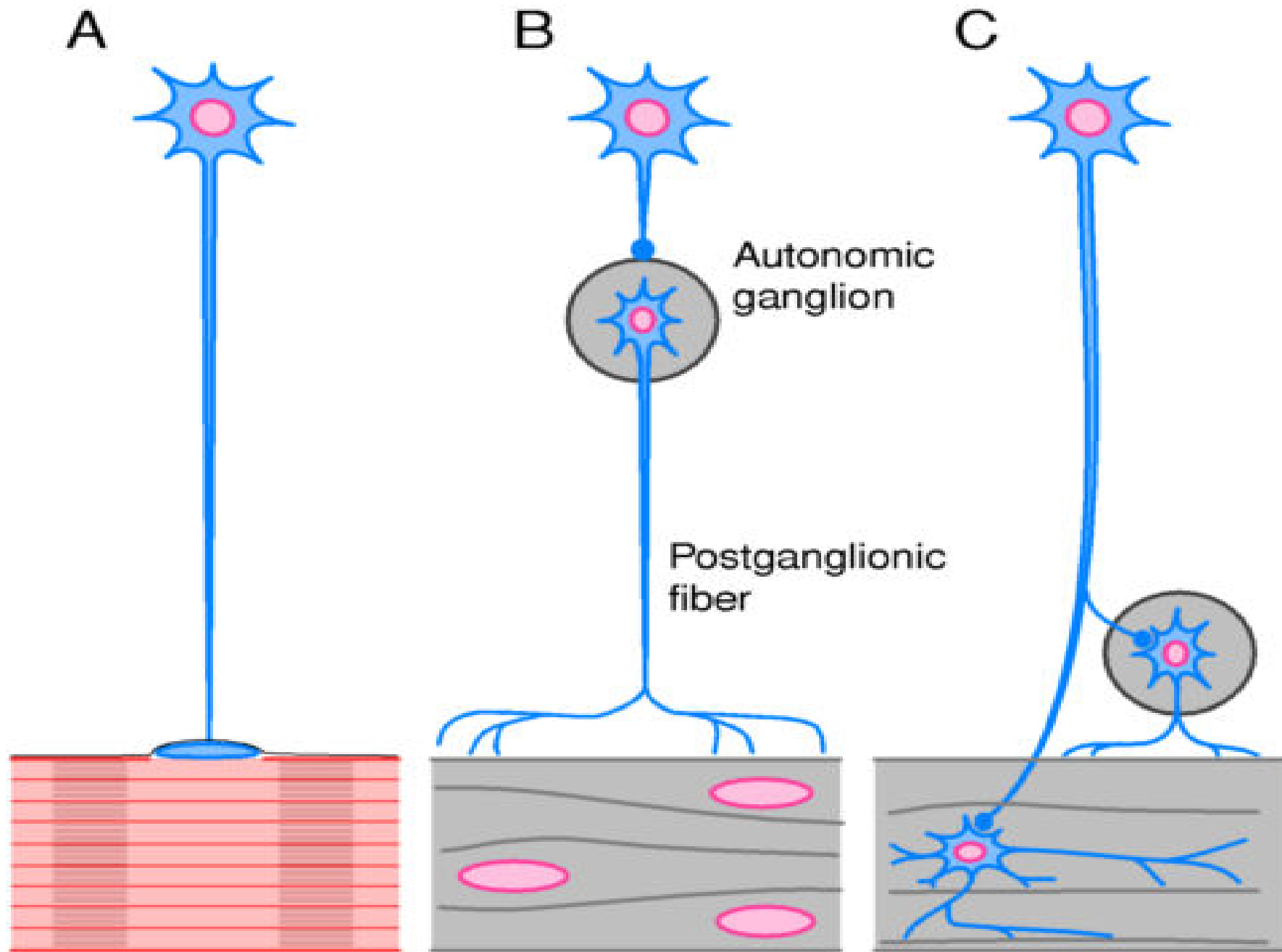
- OSA
- OVA
- OSE
- OVE

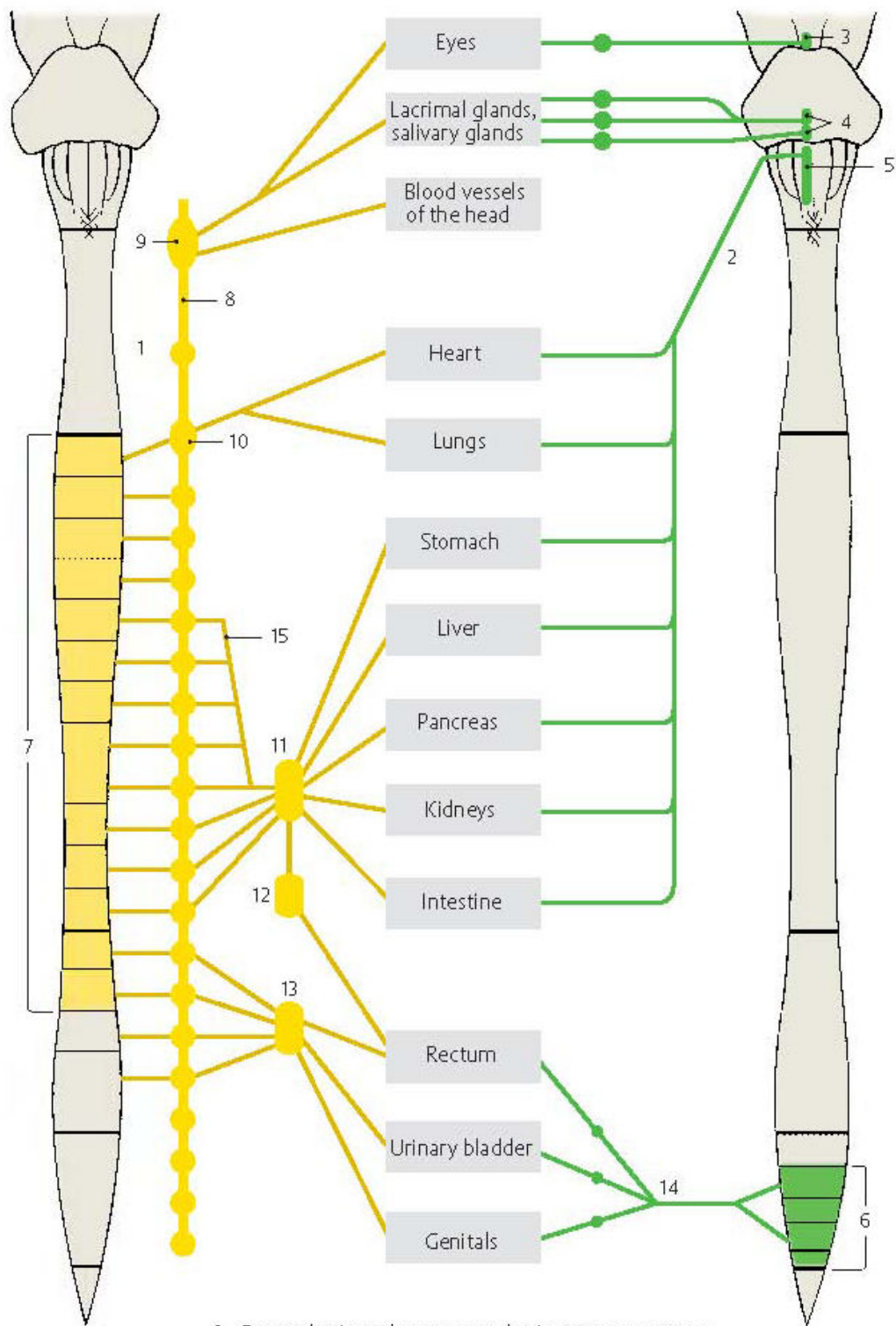
kožni receptor

skeletni mišić

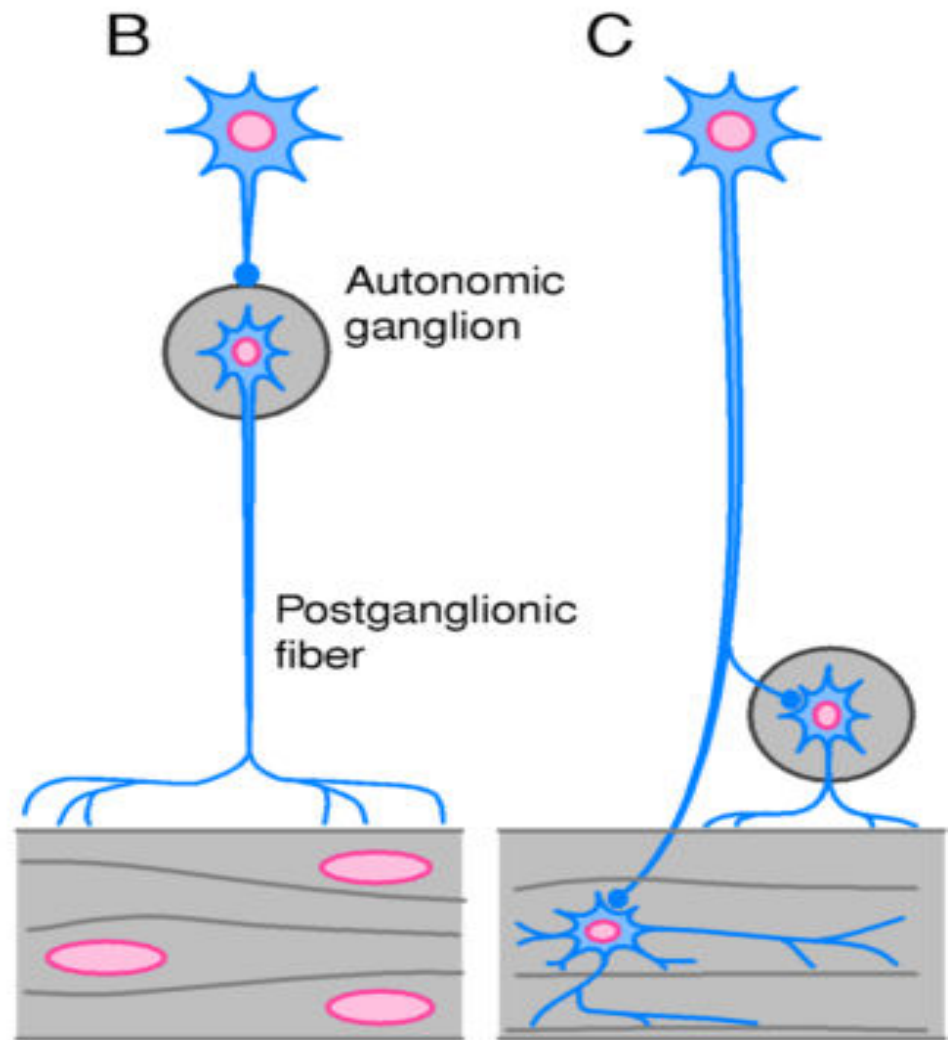
utrobni organ



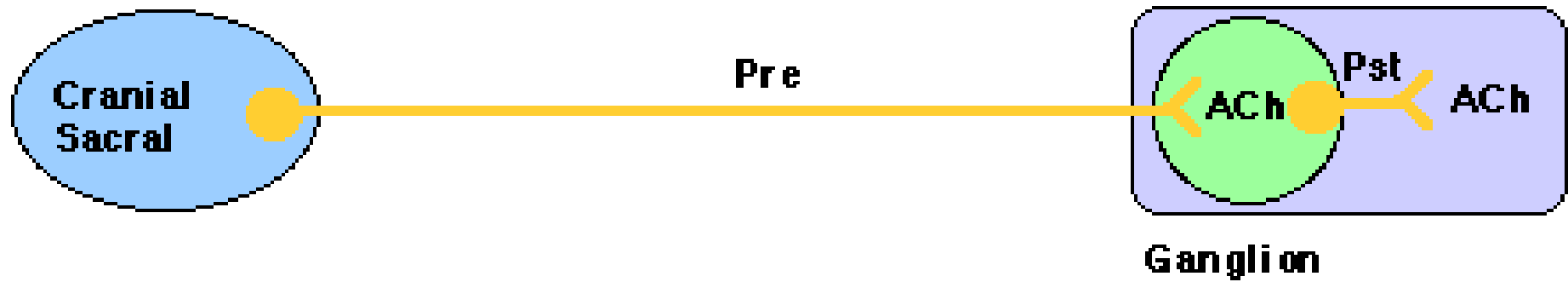




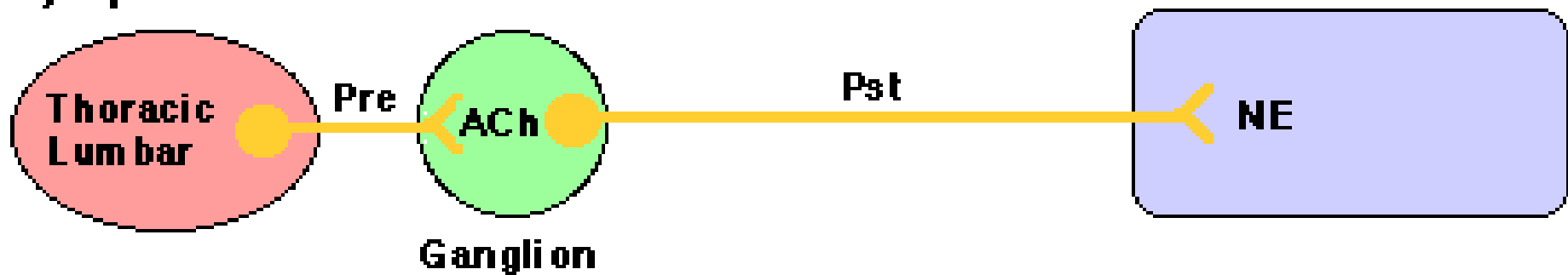
A Sympathetic and parasympathetic nervous systems (adapted from *Villiger and Ludwig*)



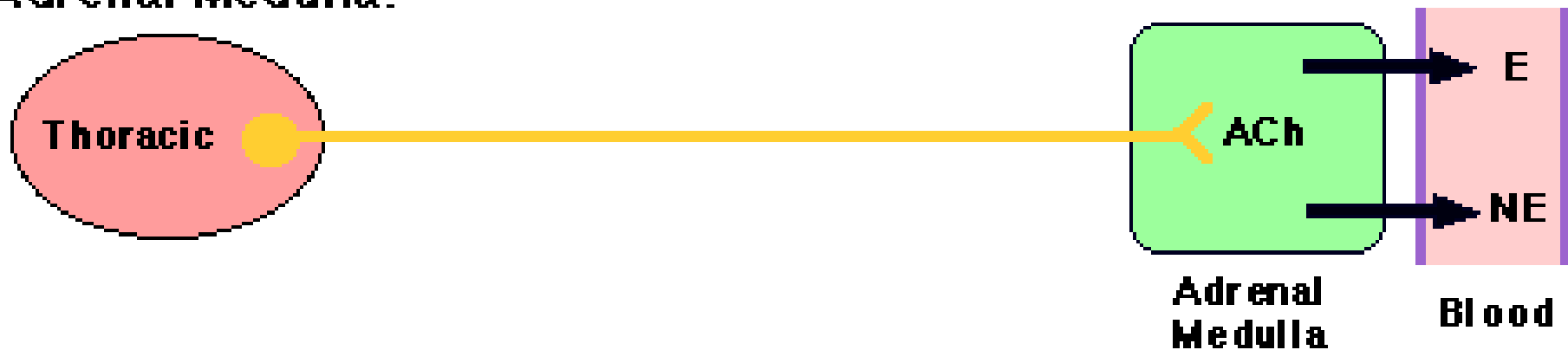
Parasympathetic:

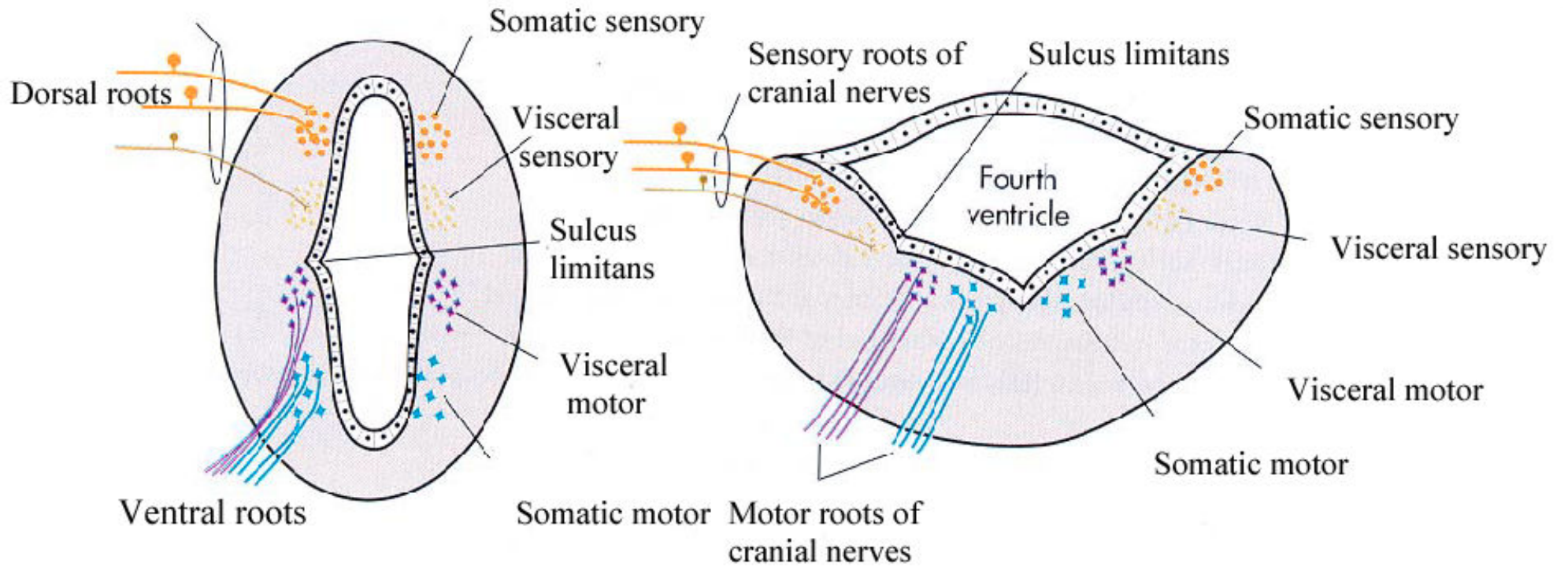
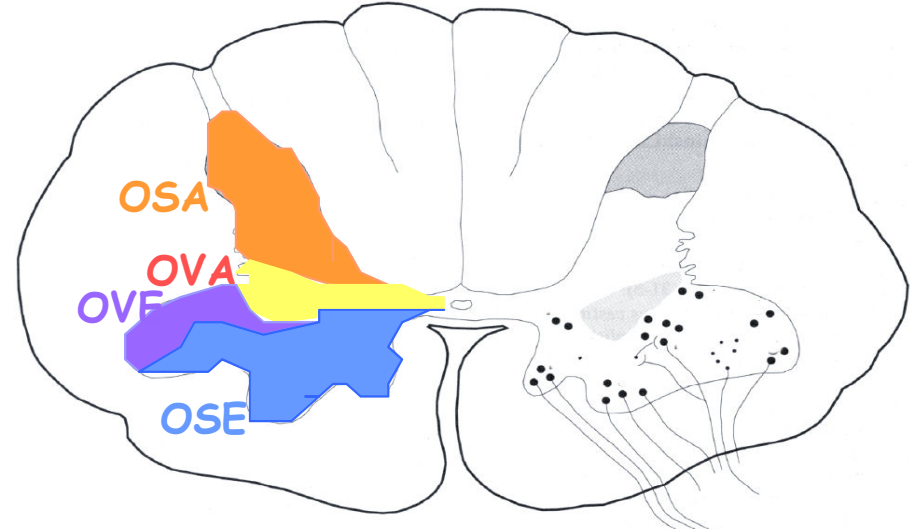


Sympathetic:



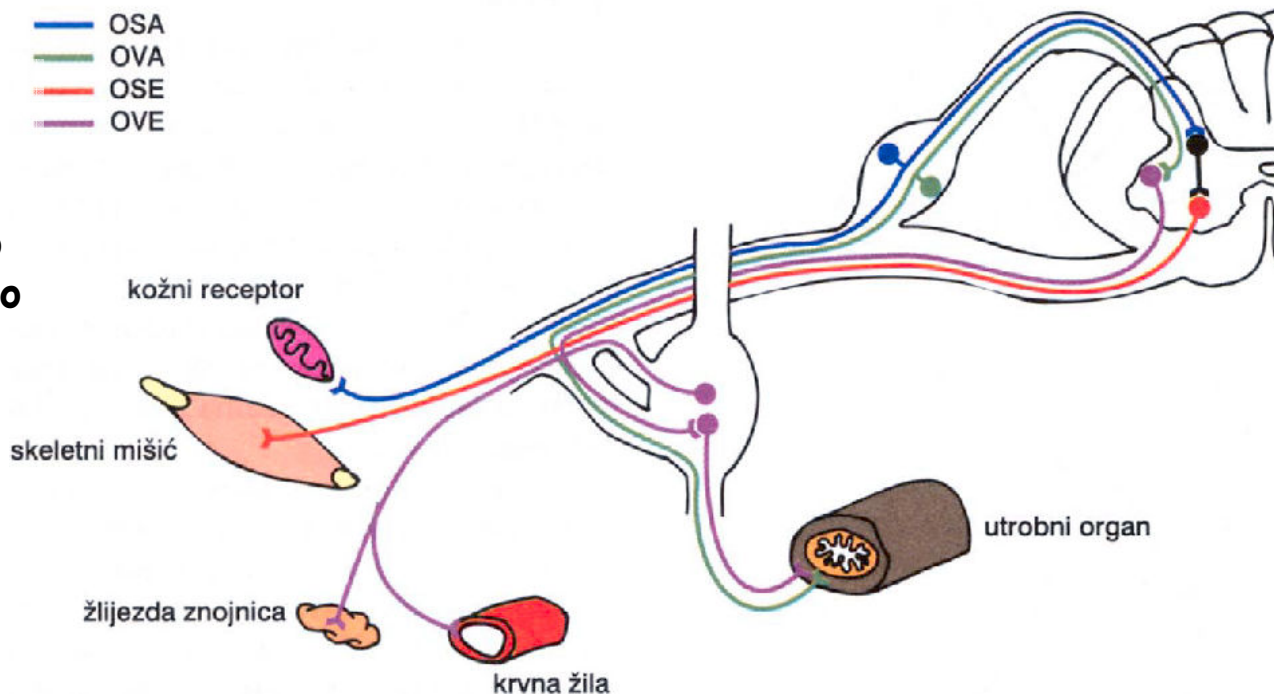
Adrenal Medulla:





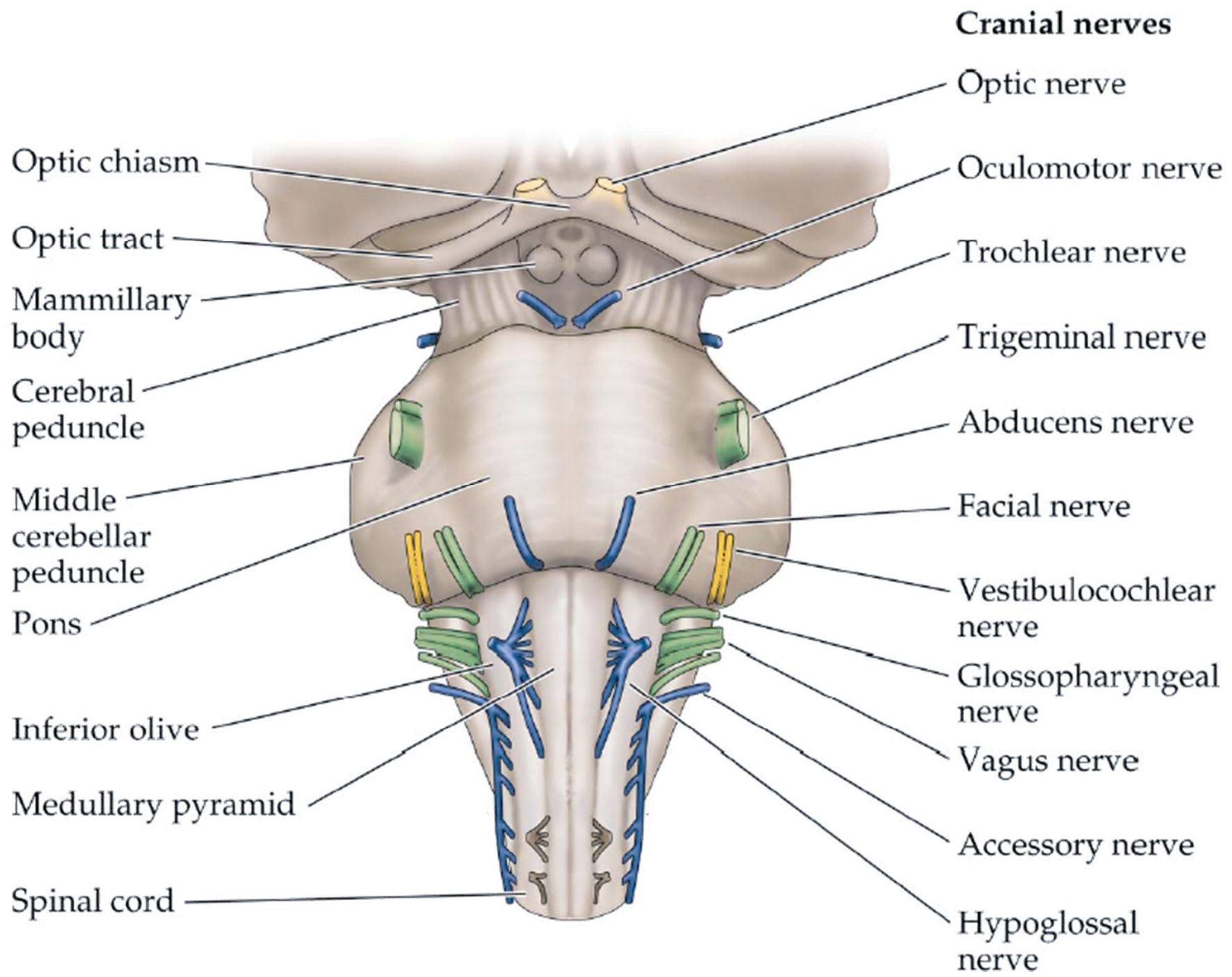
EFERENTNO/motorno - somatsko
- visceralno

AFERENTNO/senzibilno - somatsko
- visceralno



Funkcije moždanih živaca

(OSE)	Opća somatska eferentna: inervacija skeletnih mišića trupa i ekstremiteta (III,IV,VI,XII)
(OVE)	Opća visceralna eferentna: inervacija glatkih mišića, žlijezda i organa (III,VII,IX,X)*
(PVE)	Posebna visceralna eferentna: inervacija poprečnoprugastih mišića što se razvijaju iz osnove ždrijelnih lukova ; mimični mišići, žvačni mišići, mišići ždrijela i grkljana, poprečnoprugasti mišići jednjaka, m. sternocleidomastoideus i m. trapezius (V,VII,IX,X,XI)
(OVA)	Opća visceralna aferentna: informacija iz organa i krvnih žila (IX,X)
(PVA)	Posebna visceralna aferentna: njuh i okus (I,VII,IX,XI)
(OSA)	Opća somatska aferentna: receptori u koži i lokomotornom sustavu (V,VII,IX,X)
(PSA)	Posebna somatska aferentna: vid, sluh, ravnoteža (II,VIII)



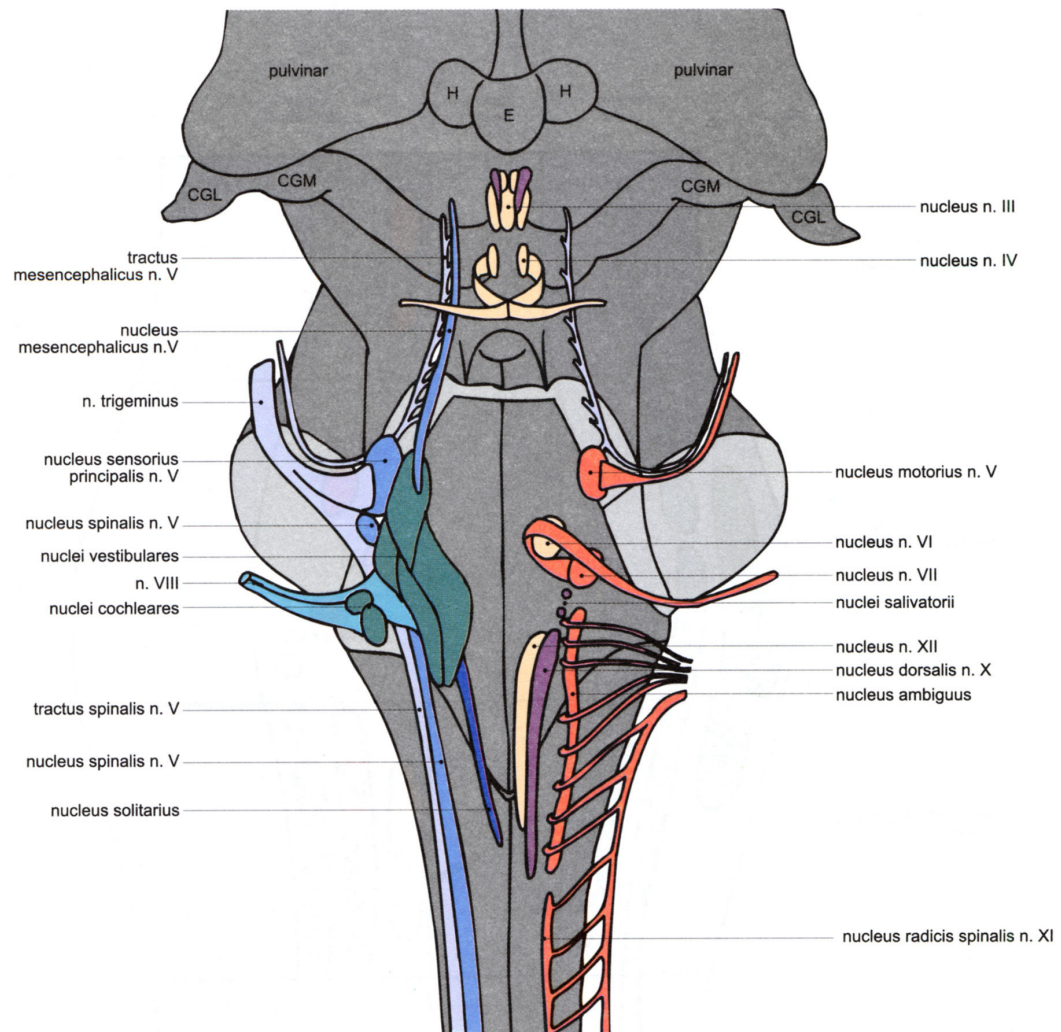
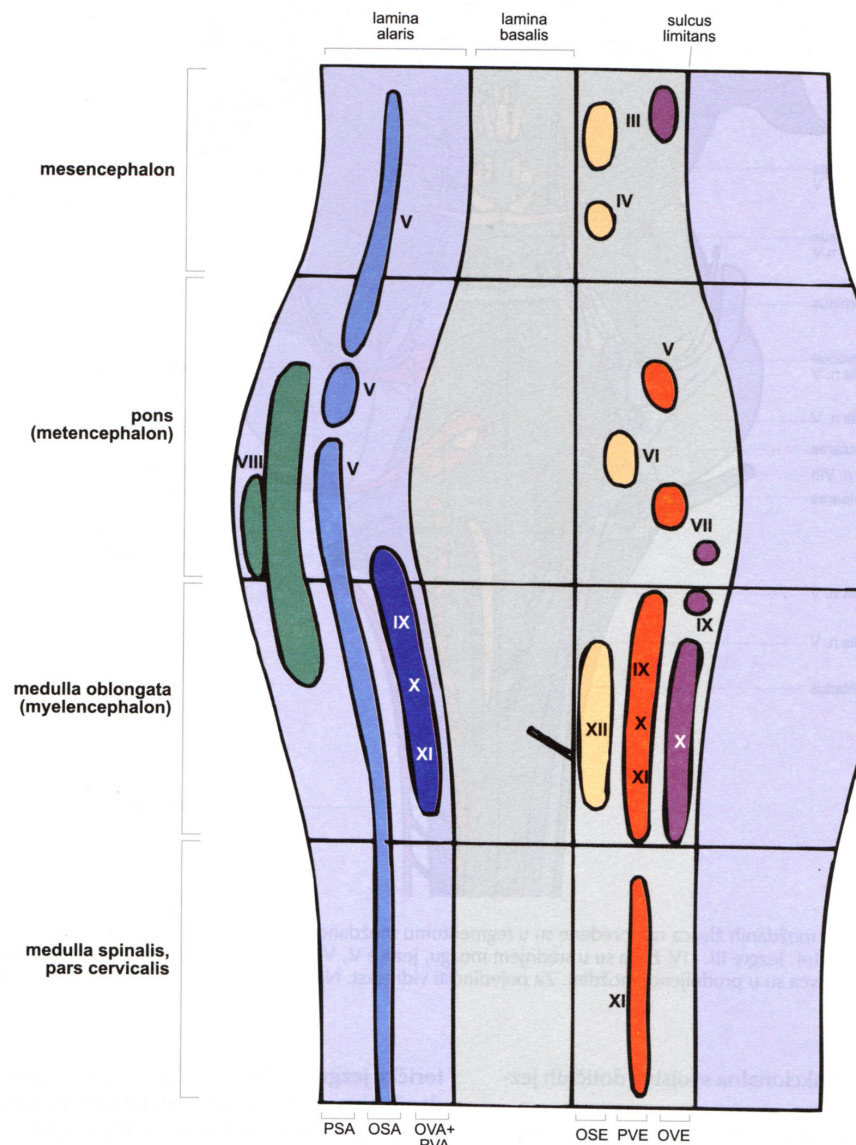
Cranial nerves

- Optic nerve
- Oculomotor nerve
- Trochlear nerve
- Trigeminal nerve
- Abducens nerve
- Facial nerve
- Vestibulocochlear nerve
- Glossopharyngeal nerve
- Vagus nerve
- Accessory nerve
- Hypoglossal nerve

- Optic chiasm
- Optic tract
- Mammillary body
- Cerebral peduncle
- Middle cerebellar peduncle
- Pons
- Inferior olive
- Medullary pyramid
- Spinal cord

Nn. craniales, moždani živci

	Izlazište/ulazište na mozgu
1. Nn. olfactorii [I]	bulbus olfactorius* chiasma opticum* pedunculus cerebri, sulcus oculomotorius dorzalni dio tektuma mezencefalona
2. N. opticus [II]	
3. N. oculomotorius [III]	
4. N. trochlearis [IV]	
5. N. trigeminus [V]	postranično na ponsu
-N. ophthalmicus [V/1]	} ganglion trigeminale
-N. maxillaris [V/2]	
-N. mandibularis [V/3]	
6. N. abducens [VI]	između ponsa i piramide
7. N. facialis [VII]	} pontocerebelarni kut
8. N. vestibulocochlearis [VIII]	
	} horizontalni niz živaca, izlaze na ventralnoj strani, između ponsa i medule oblongate
9. N. glossopharyngeus [IX]	
	} medulla oblongata, sulcus posterolateralis (retroolivaris); vertikalni niz živaca
10. N. vagus [X]	
11. N. accessorius [XI]	
12. N. hypoglossus [XII]	medulla oblongata, sulcus anterolateralis



Slika 15-9. Jezgre deset moždanih živaca rasporedene su u tegmentumu moždanog debla u sedam uzdužnih nizova (vidi i sl. 15-10), te po načelu 2:4:4. Jezgre III. i IV. živca su u srednjem mozgu, jezgre V., VI., VII. i VIII. živca su uglavnom u mostu, a jezgre IX., X., XI. i XII. živca su u produljenoj moždini. Za pojedinosti vidi tekst. Nacrtano, uz izmjene, prema Nieuwenhuys i sur. (1988).

PSA (n. VIII)

nuclei cochleares:
nucleus cochlearis dorsalis
nucleus cochlearis ventralis

nuclei vestibulares:
nucleus vestibularis medialis
nucleus vestibularis lateralis
nucleus vestibularis superior
nucleus vestibularis inferior

OSA

nucleus mesencephalicus nervi trigemini
nucleus sensorius principalis n. trigemini
nucleus spinalis n. trigemini (n. V, VII, IX, X)

OVA + PVA

nucleus solitarius (n. V, VII, IX, X)

OSE

nucleus nervi oculomotorii
nucleus nervi trochlearis
nucleus nervi abducentis
nucleus nervi hypoglossi

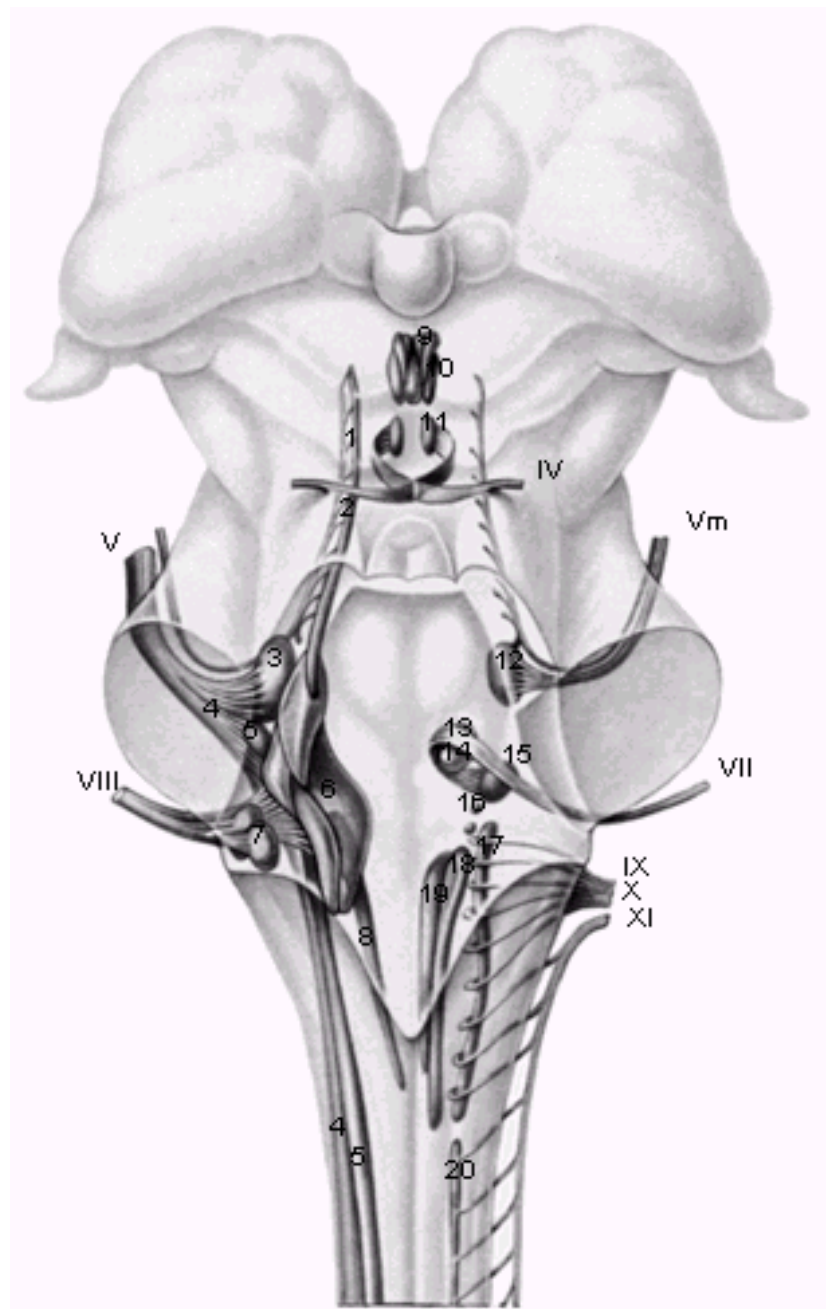
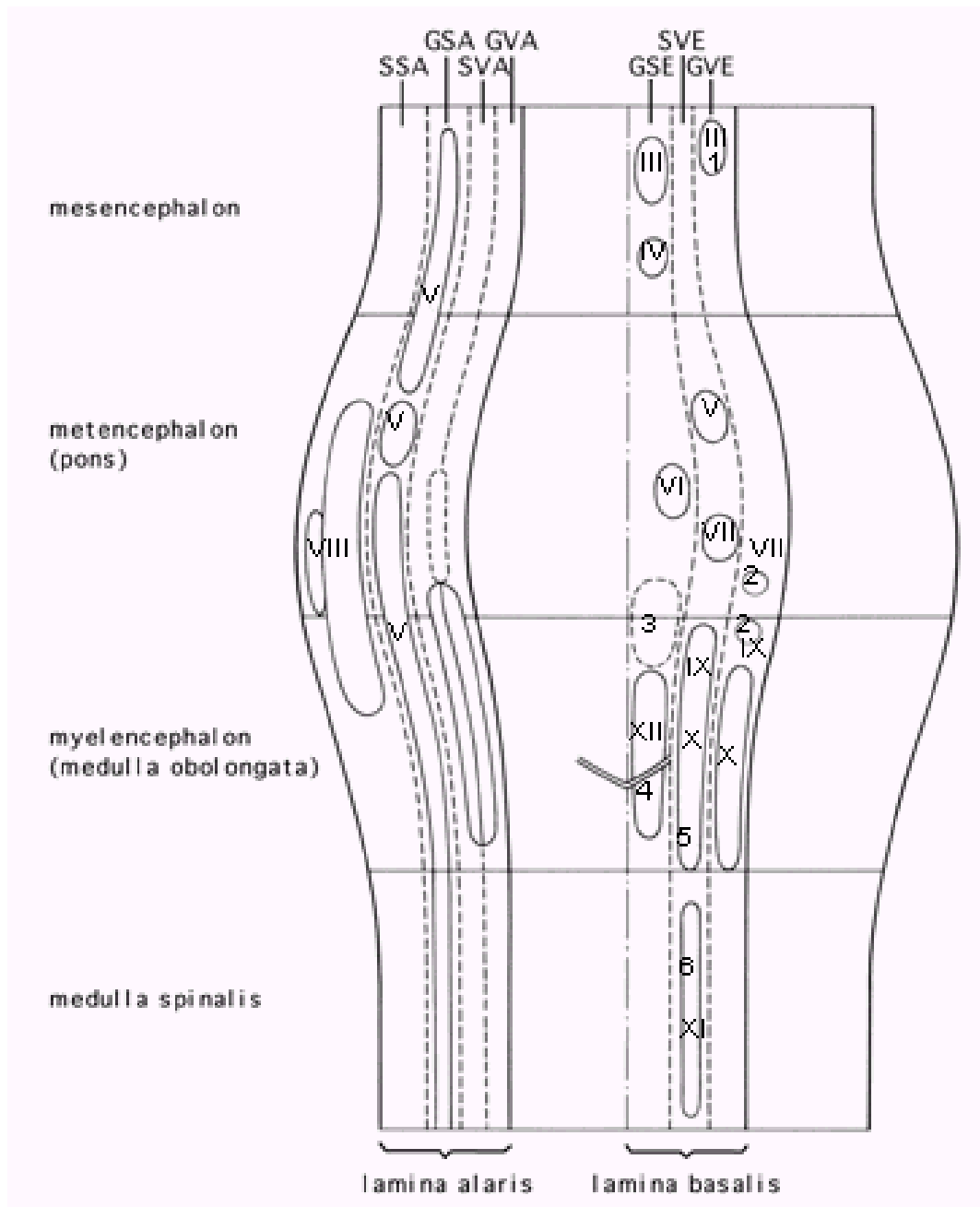
PVE

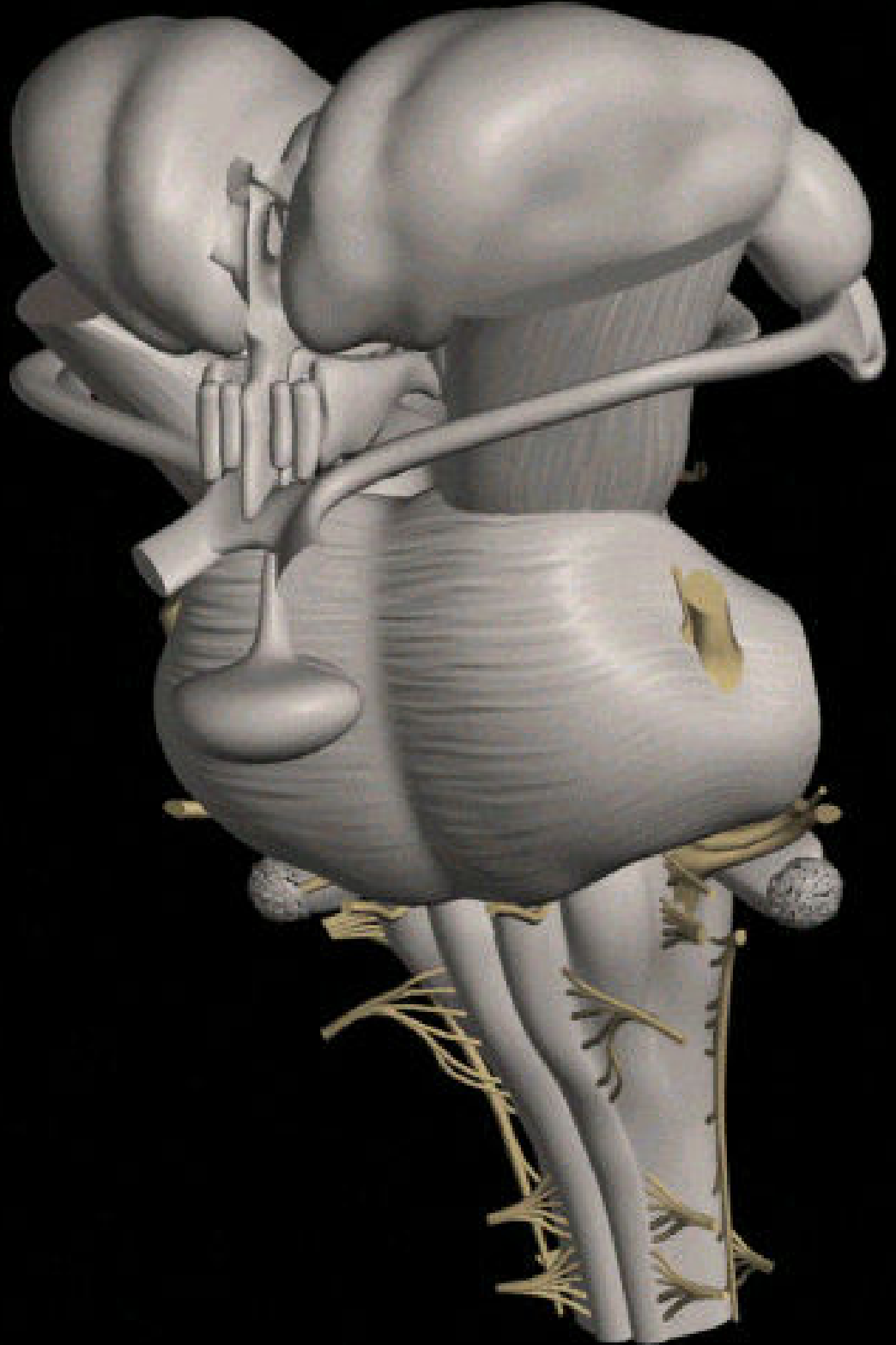
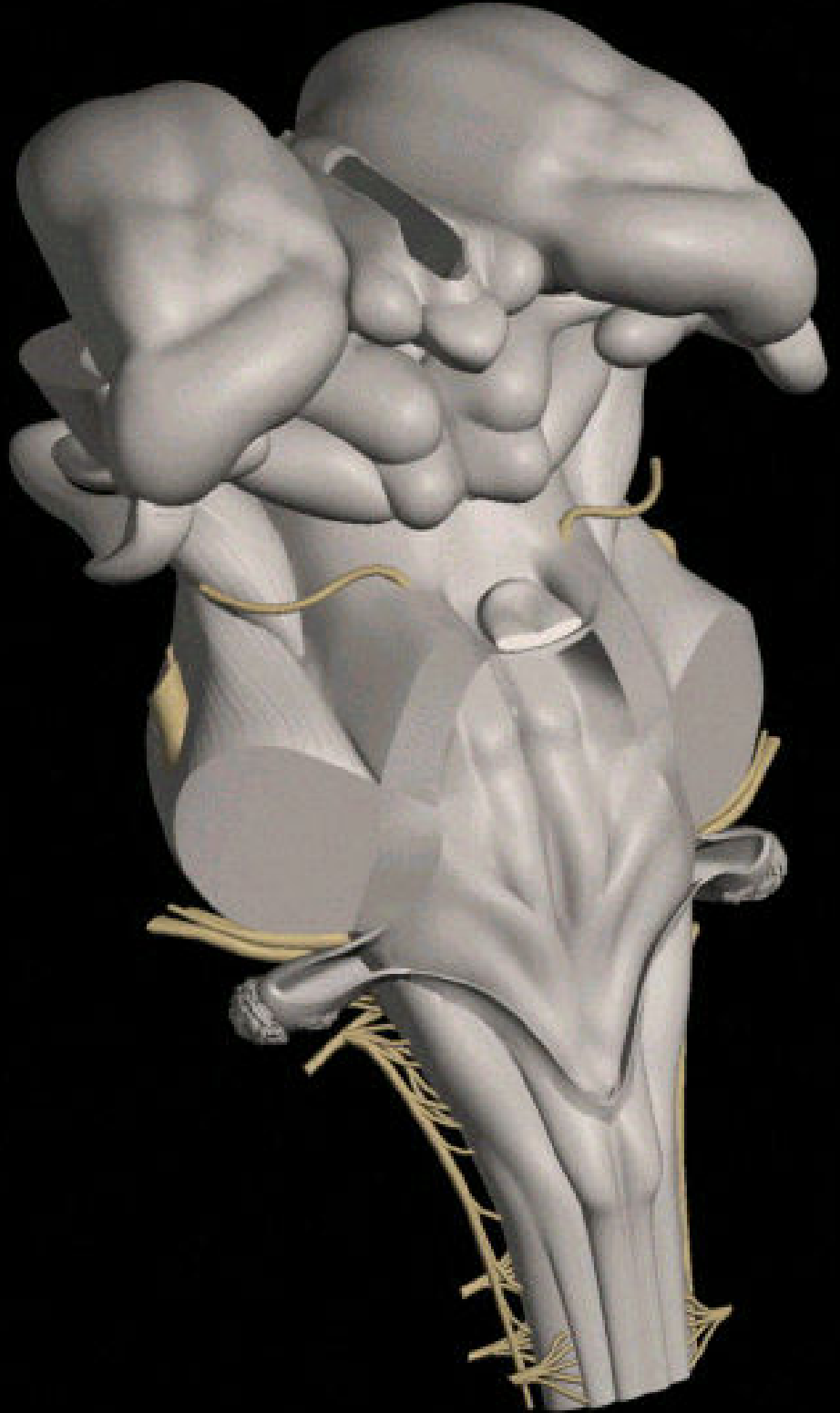
nucleus motorius nervi trigemini
nucleus nervi facialis
nucleus ambiguus (n. IX, X, XI)

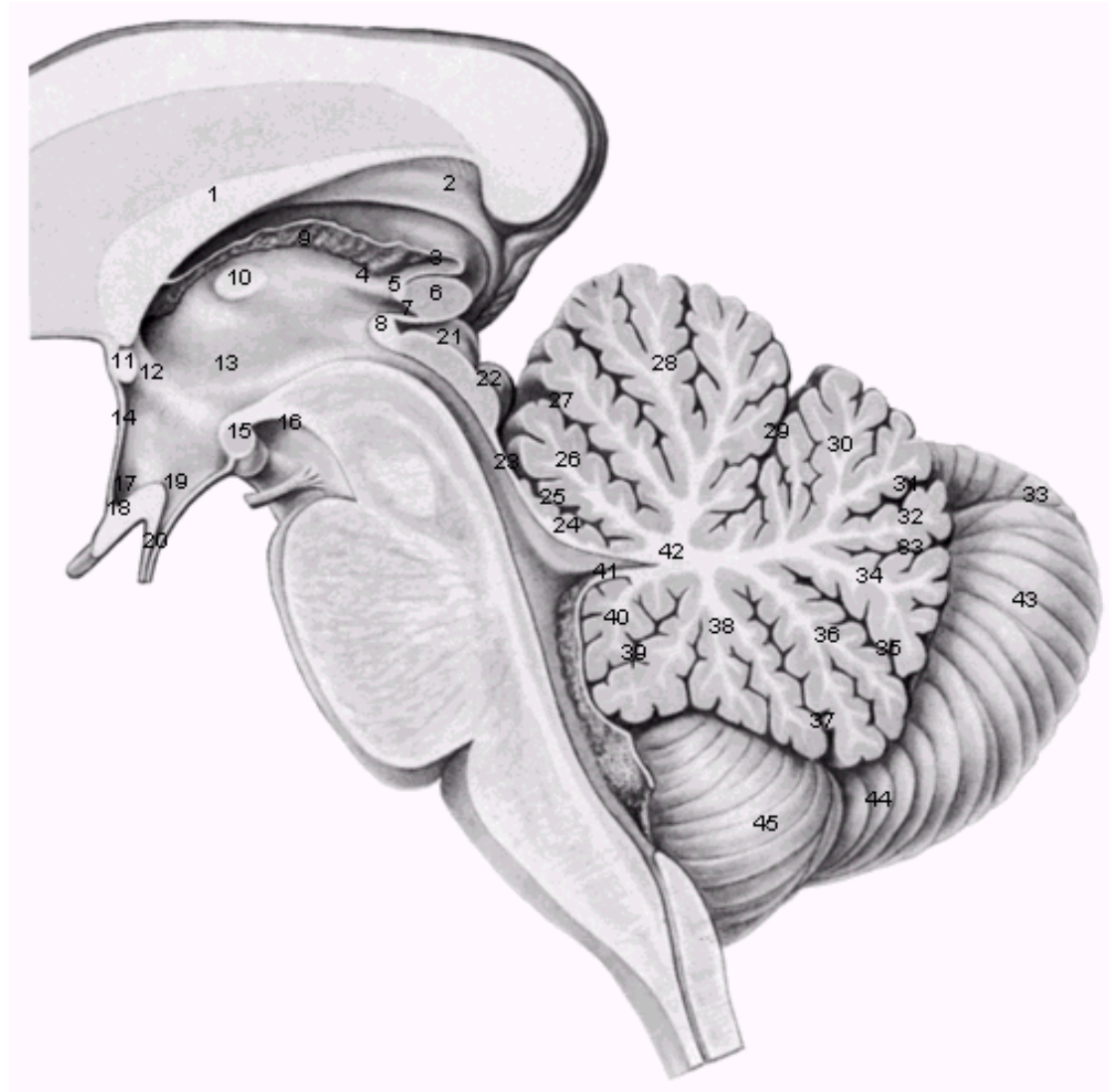
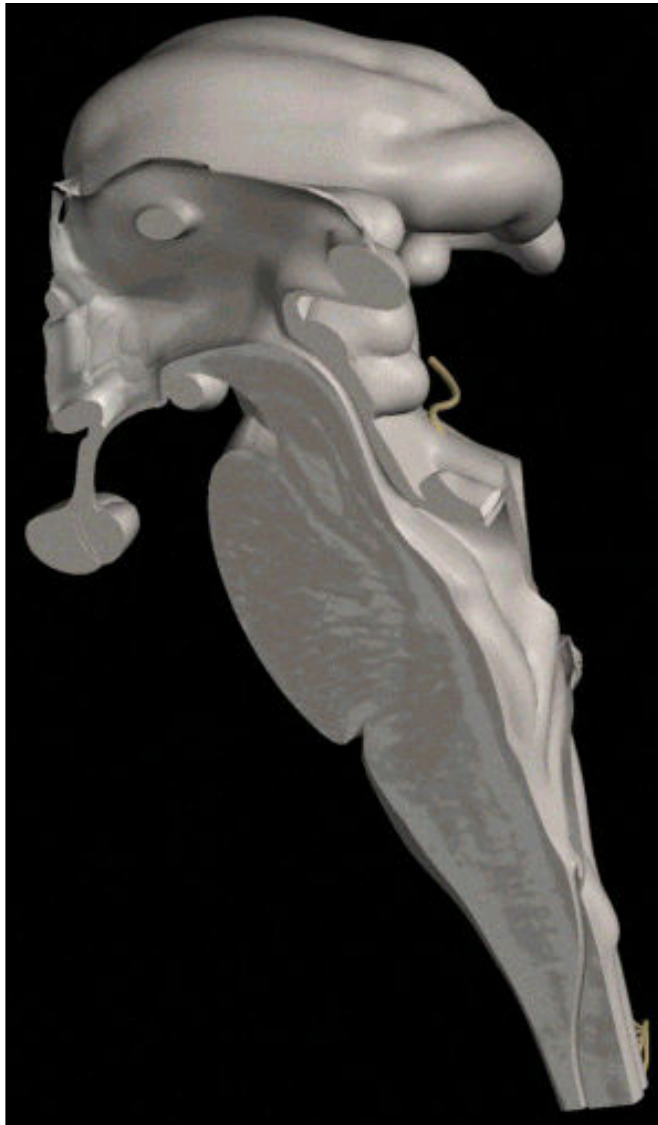
OVE

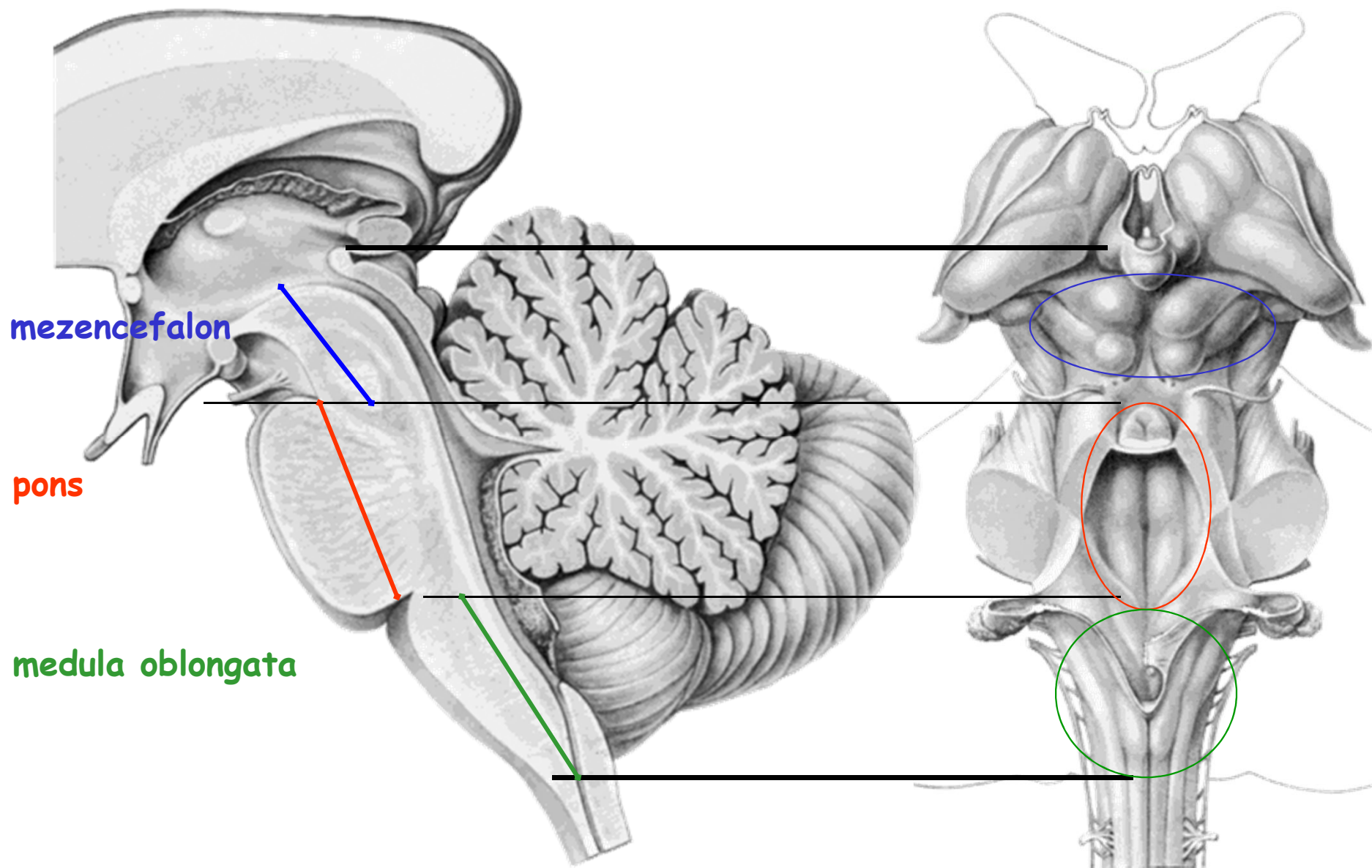
nucleus accessorius n. oculomotorii
nucleus salivatorius superior (n. VII)
nucleus salivatorius inferior (n. IX)
nucleus dorsalis nervi vagi

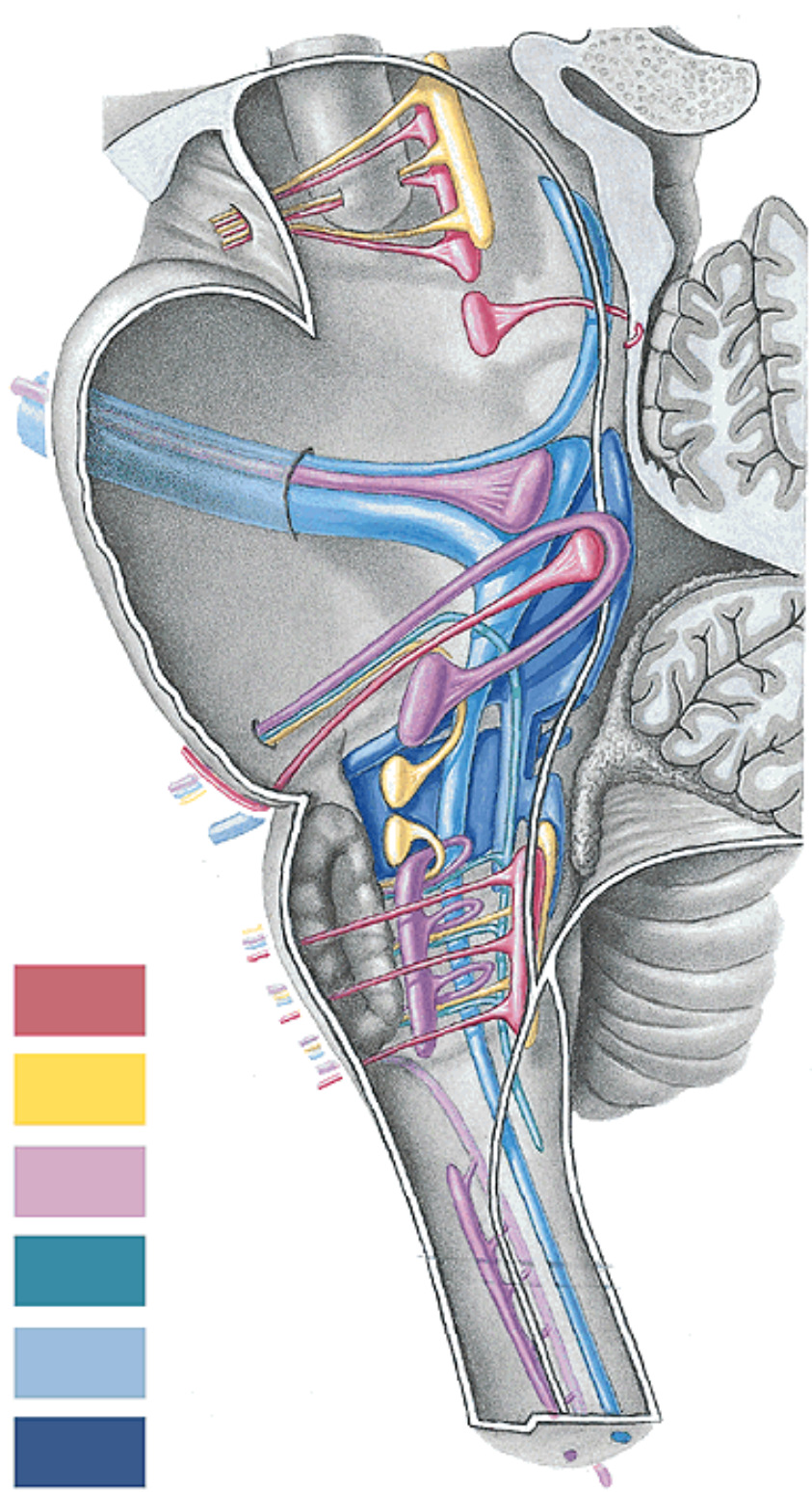
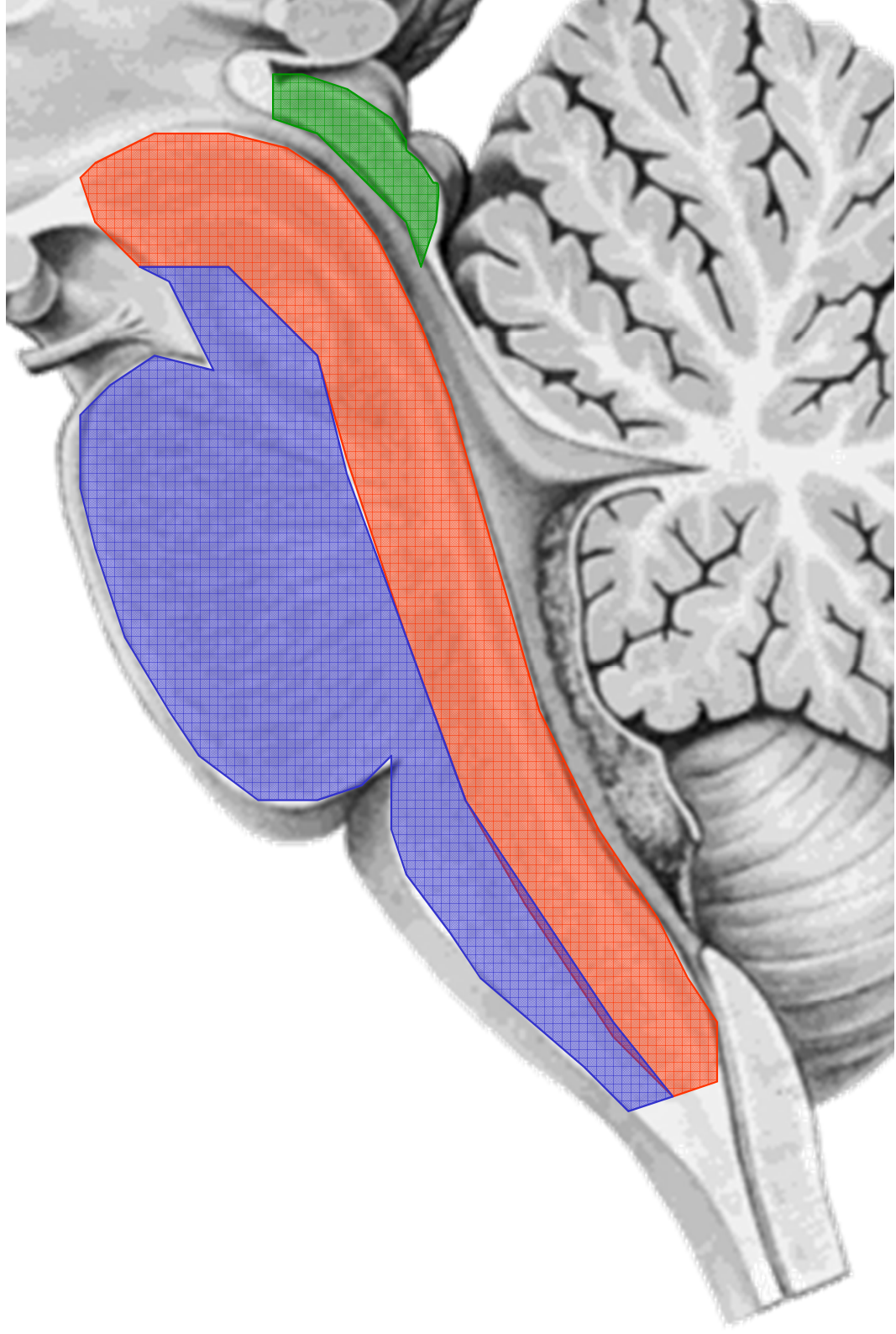
Slika 15-10. Jezgre moždanih živaca i vlakna koja iz njih polaze ili u njima završavaju. Za pojedinosti vidi tekst.



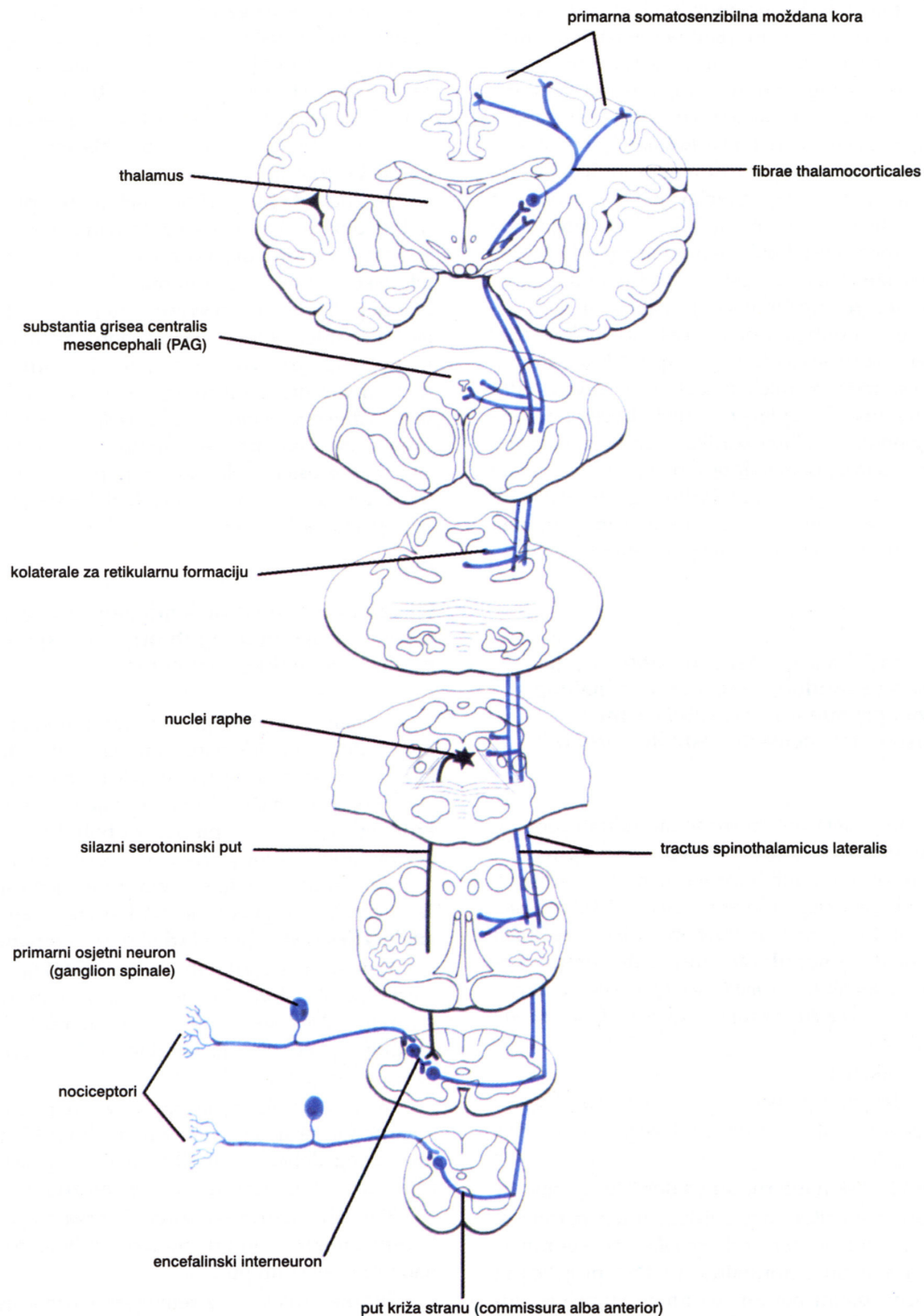




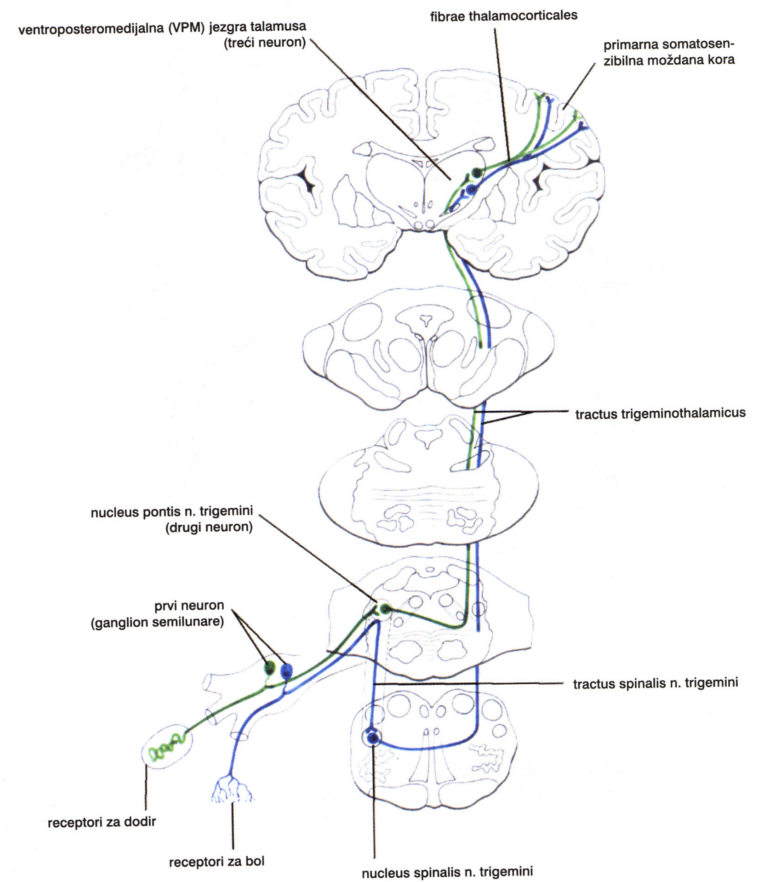




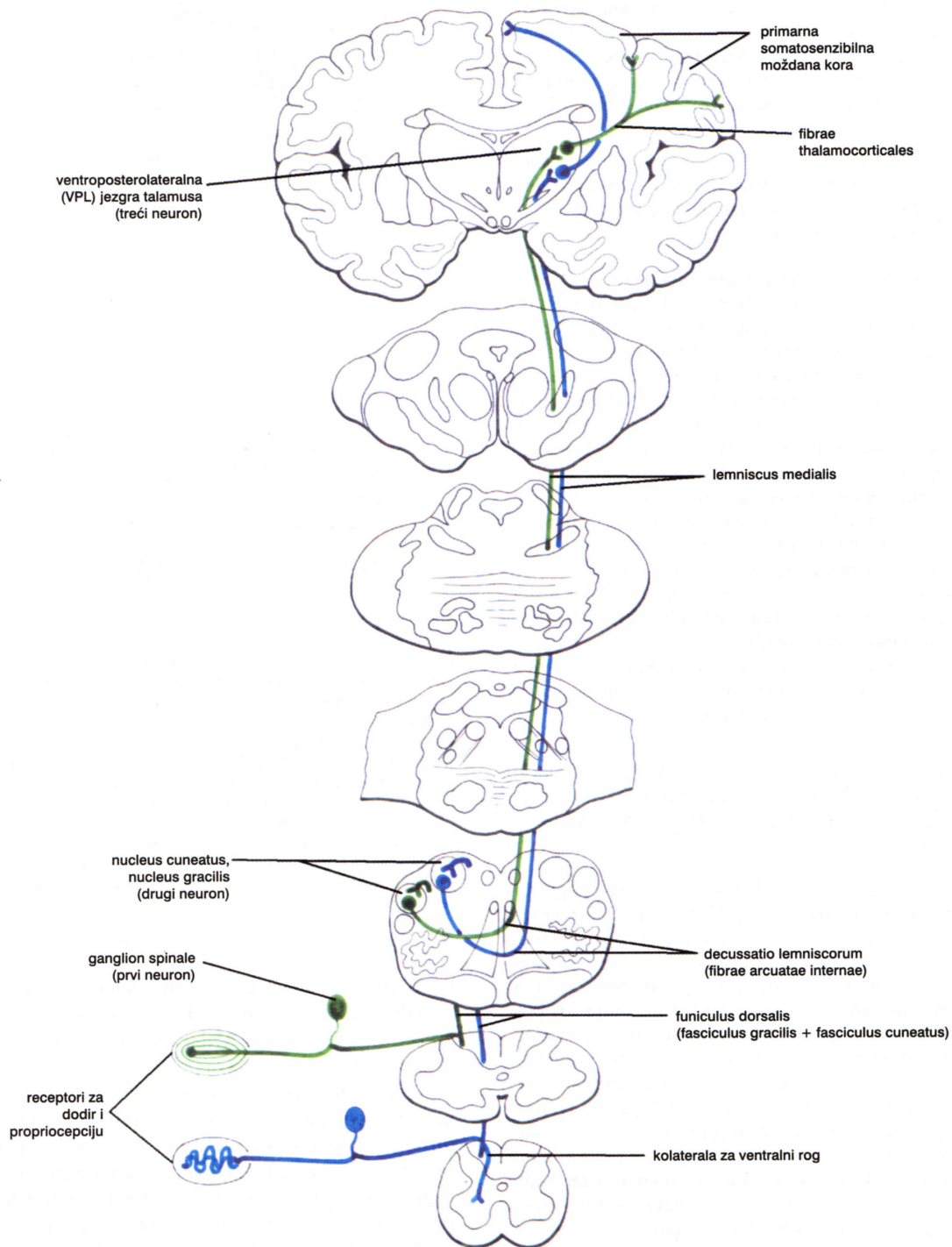
**ANATOMIJA 3 -
FUNKCIONALNA ANATOMIJA
OSJETNIH I MOTORNIH
SUSTAVA**



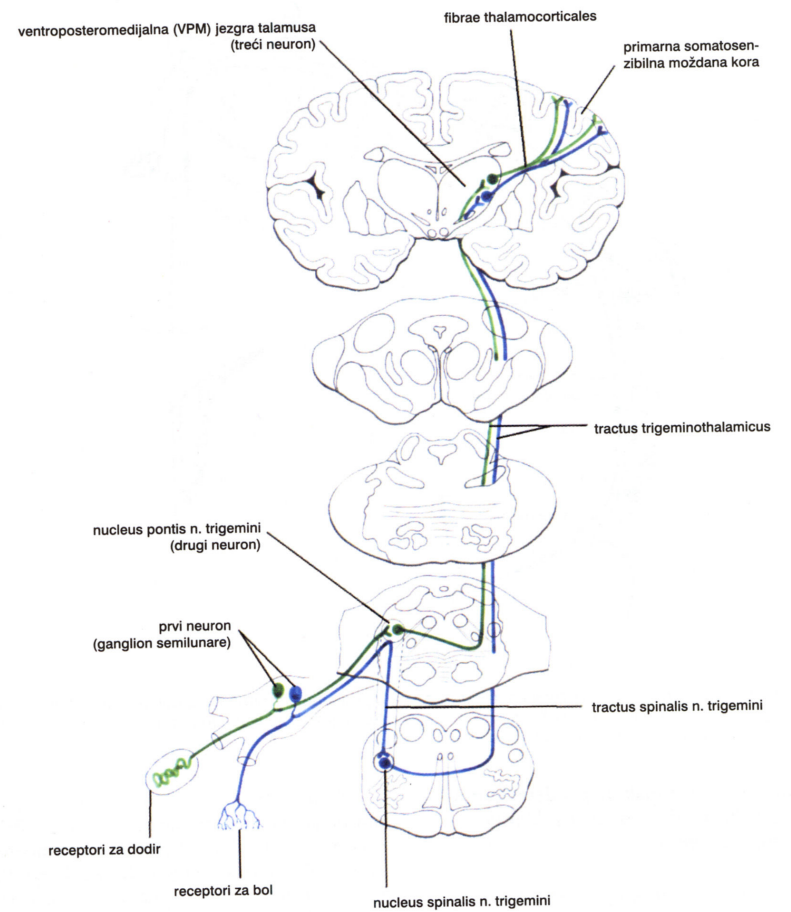
Slika 23-5. Tractus spinothalamicus lateralis je dugi uzlazni osjetni put za prijenos svjesnog osjeta boli. Za pojedinosti vidi tekst; uočite i silaznu projekciju iz *nuclei raphes*.



Slika 24-6. Trigeminothalamički put prenosi osjet dodira i kinestezije iz područja lica. Prvi neuron osjetnog puta je pseudounipolarni neuron polumjesečastog ganglija (*ganglion semilunare*). Tijelo drugog neurona smješteno je u *nucleus pontis n. trigemini* (uočite da je tijelo drugog neurona za prijenos osjeta boli i temperature iz područja lica smješteno u spinalnoj jezgri, *nucleus spinalis n. trigemini* – za pojedinosti vidi 23. poglavlje!). Aksoni drugog neurona oblikuju *tractus trigeminothalamicus*, što završava u ventroposteromedijalnoj (VPM) jezgri talamusa. Odatle talamokortikalni aksoni (*fibrae thalamocorticales*) odlaze u primarnu somatosenzibilnu koru postcentralne vijuge.

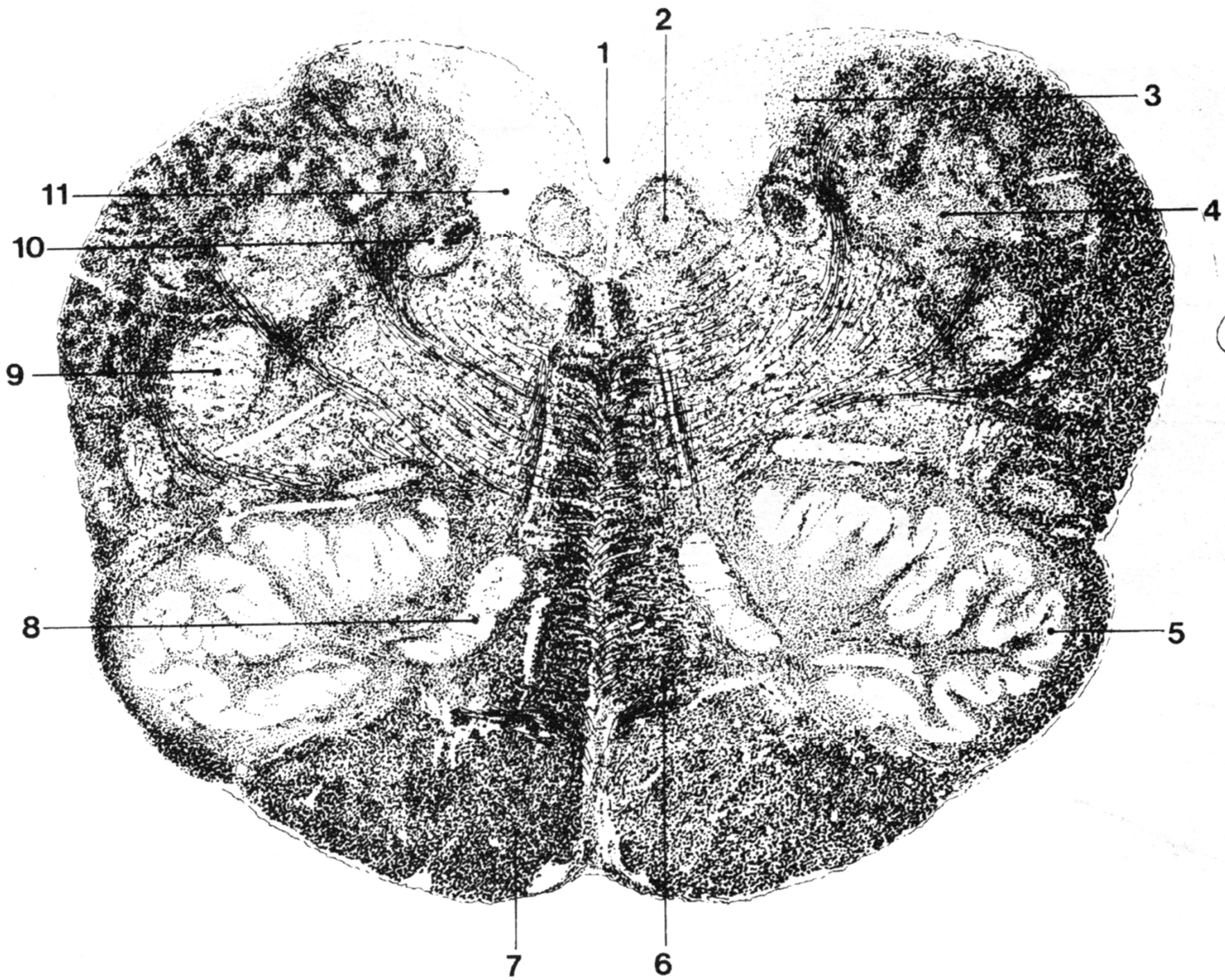


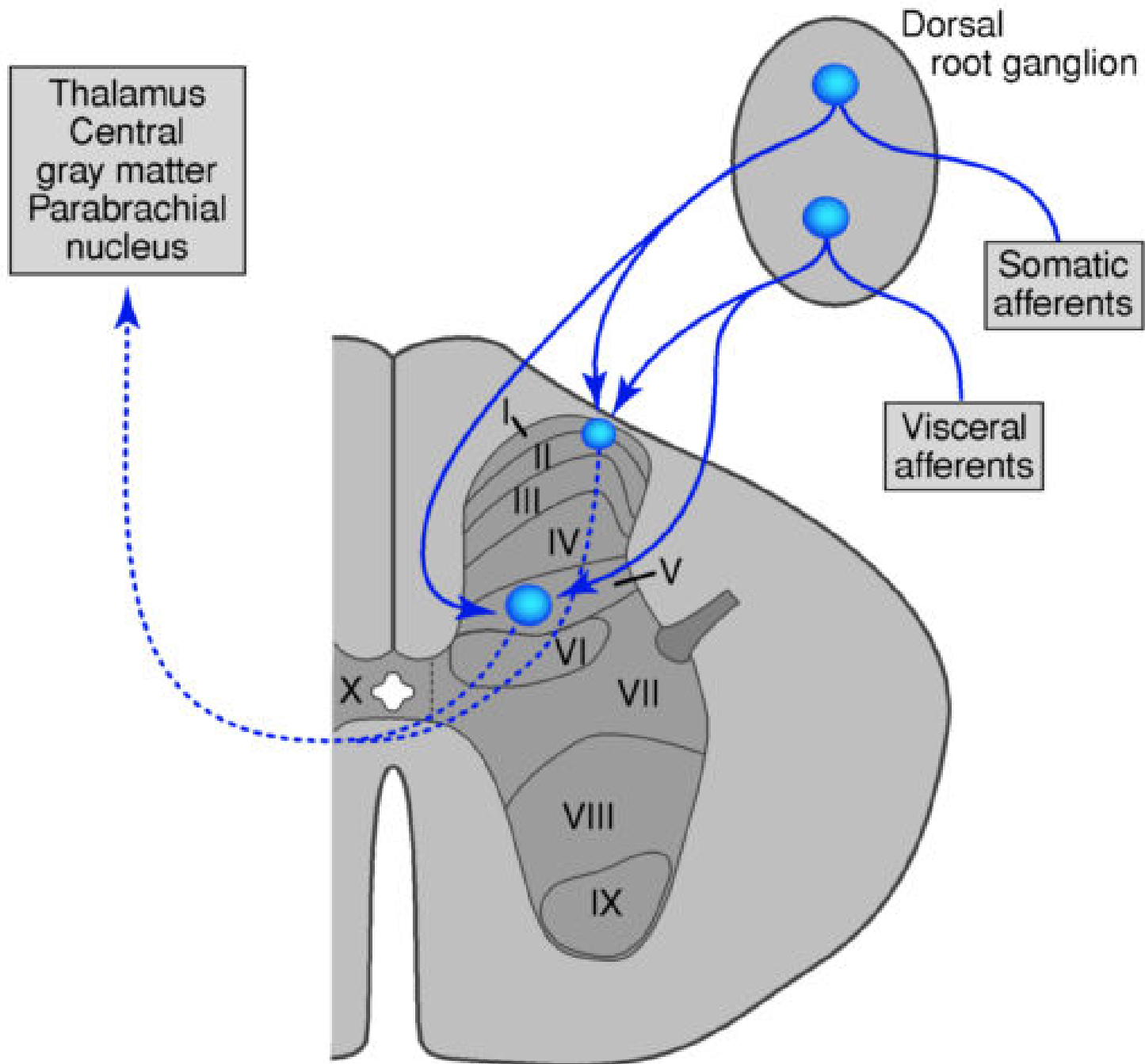
Slika 24-3. Put za svjesni osjet dodira, pritiska, vibracije i kinestezije iz područja trupa i udova. Za pojediniosti vidi tekst.

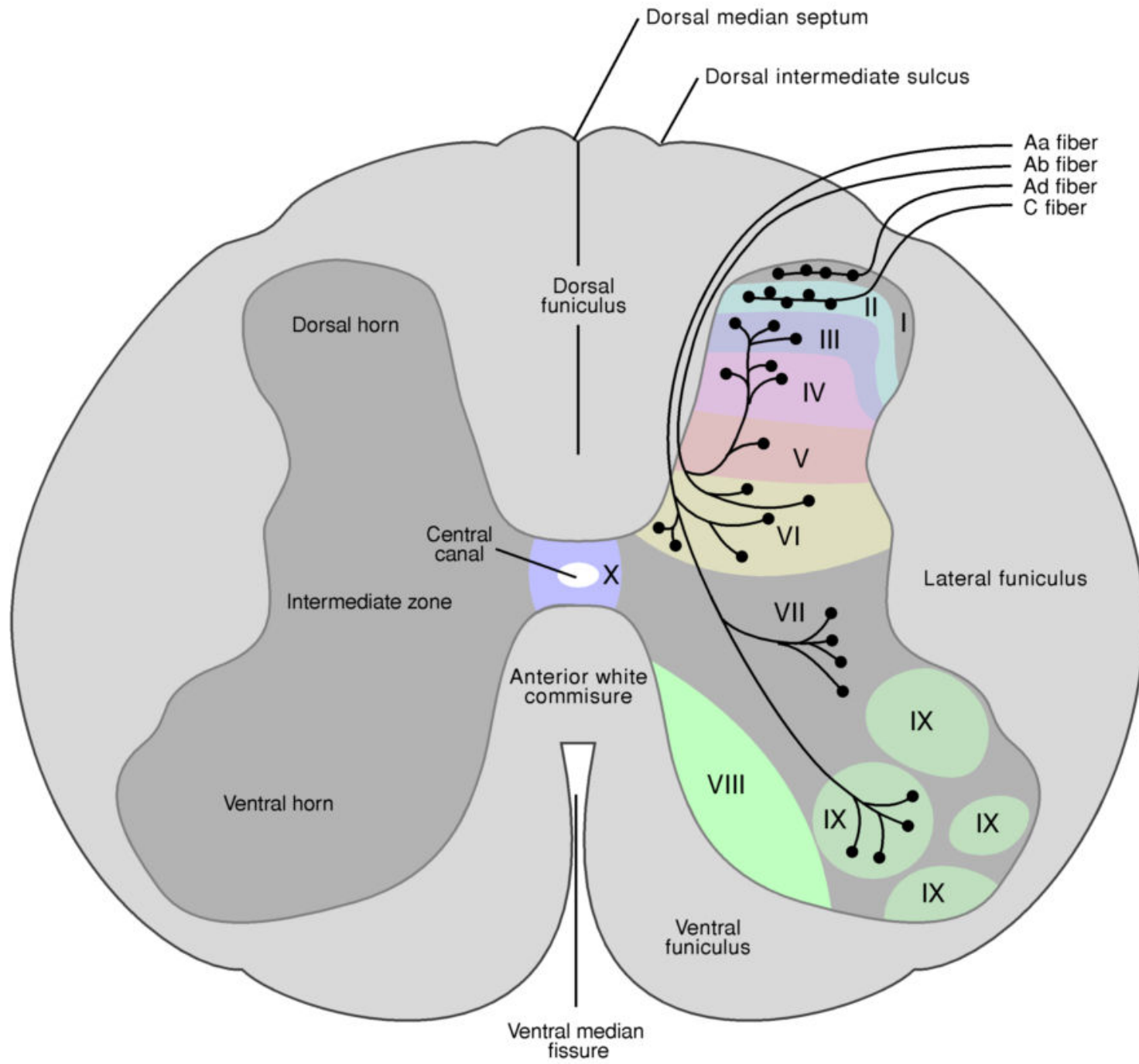


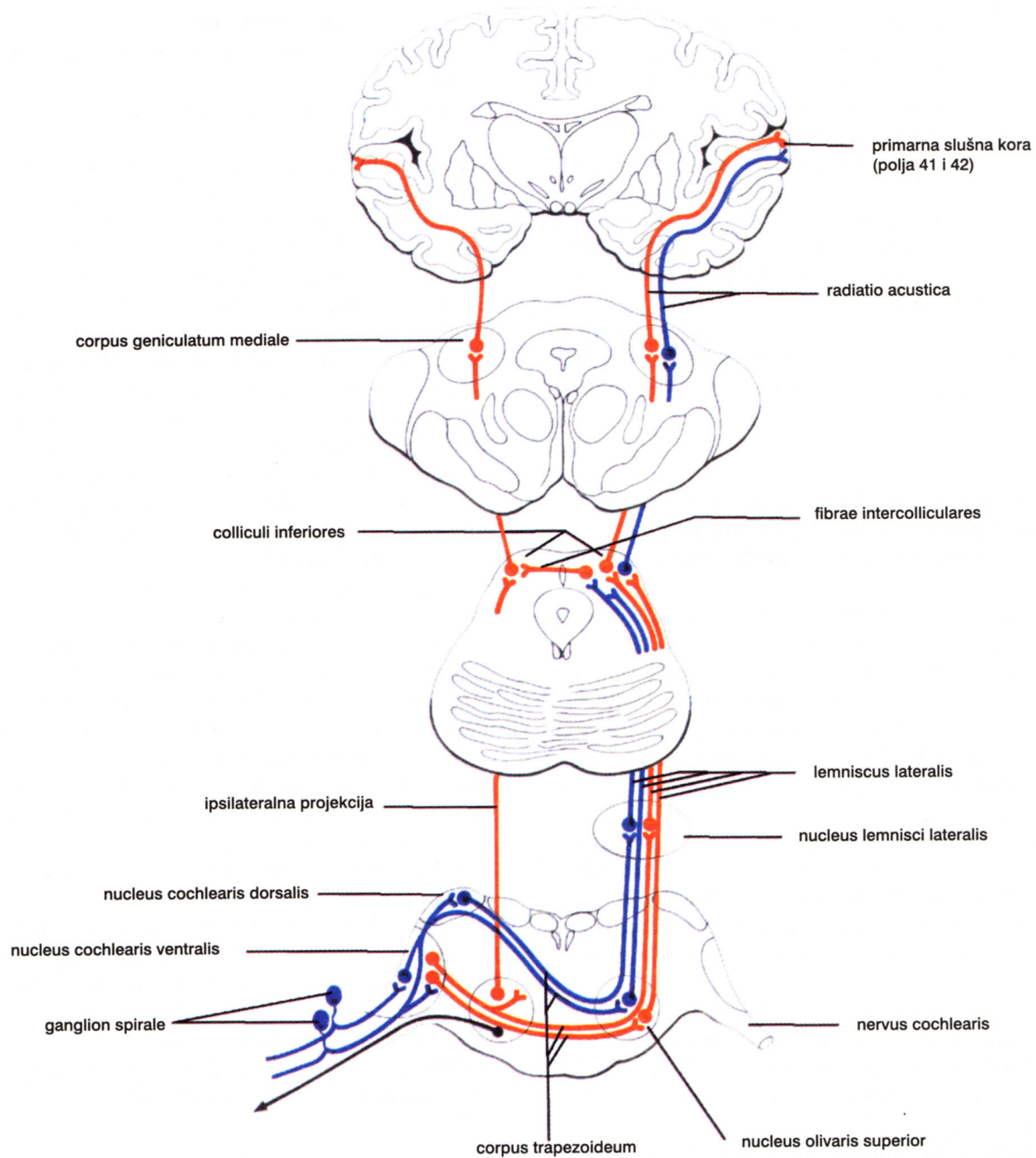
Slika 24-6. Trigeminalotalamički put prenosi osjet dodira i kinestezije iz područja lica. Prvi neuron osjetnog puta je pseudounipolarni neuron polumjesečastog ganglija (*ganglion semilunare*). Tijelo drugog neurona smješteno je u *nucleus pontis n. trigemini* (uočite da je tijelo drugog neurona za prijenos osjeta boli i temperature iz područja lica smješteno u spinalnoj jezgri, *nucleus spinalis n. trigemini* – za pojediniosti vidi 23. poglavlje!). Aksoni drugog neurona oblikuju *tractus trigeminothalamicus*, što završava u ventroposteromedijalnoj (VPM) jezgri talamusa. Odatle talamokortikalni aksoni (*fibrae thalamocorticales*) odlaze u primarnu somatosenzibilnu koru postcentralne vijuge.



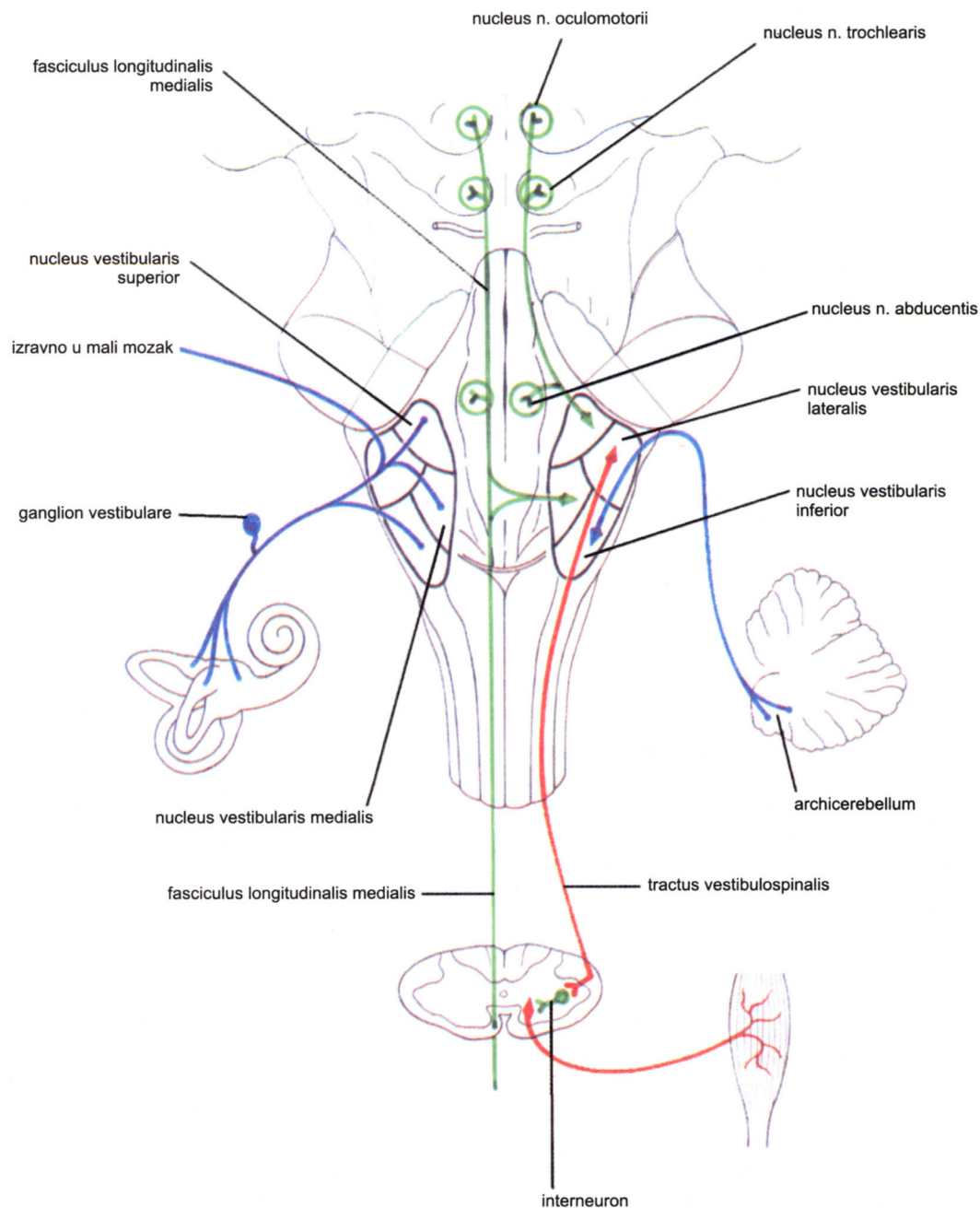




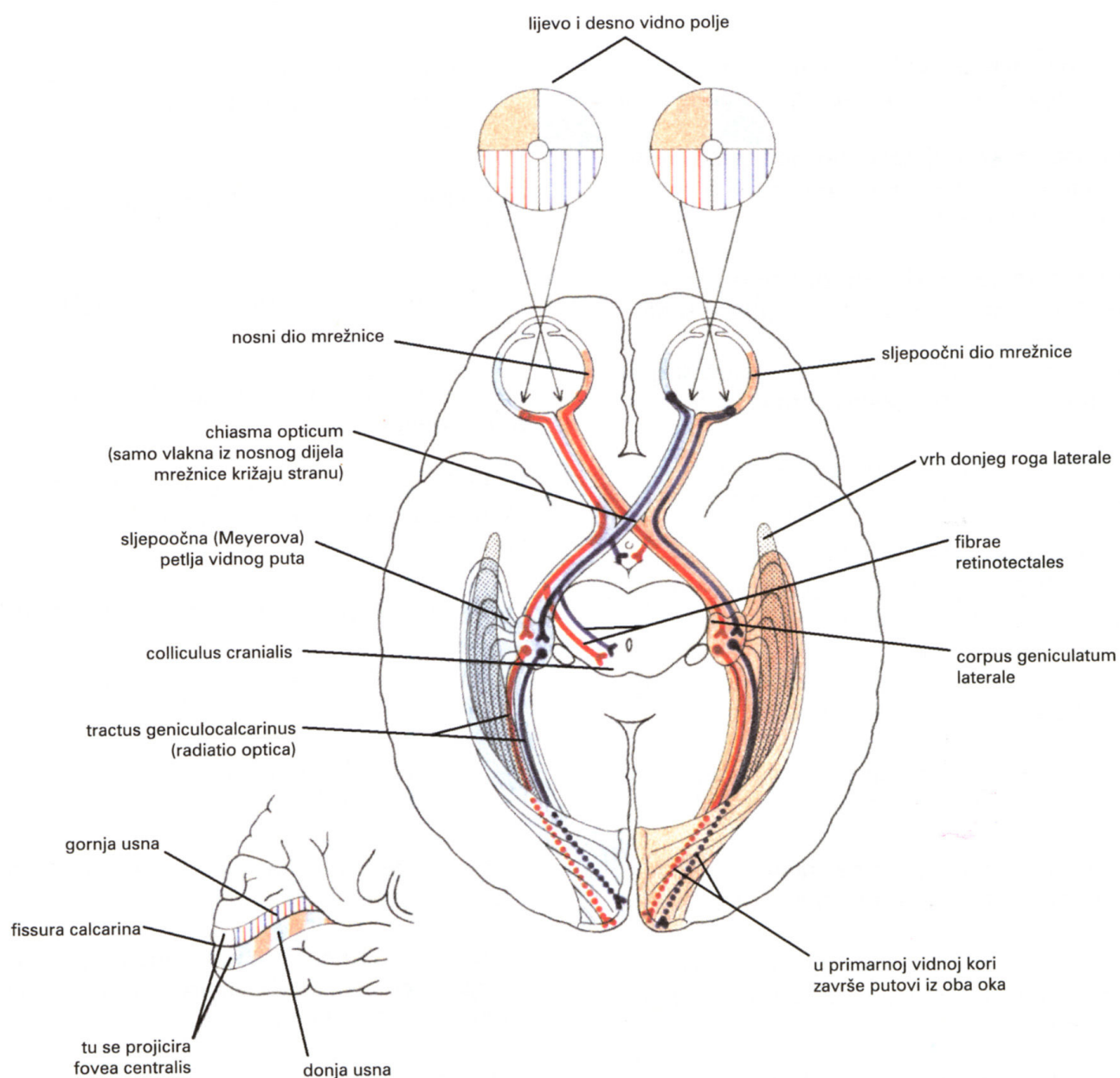




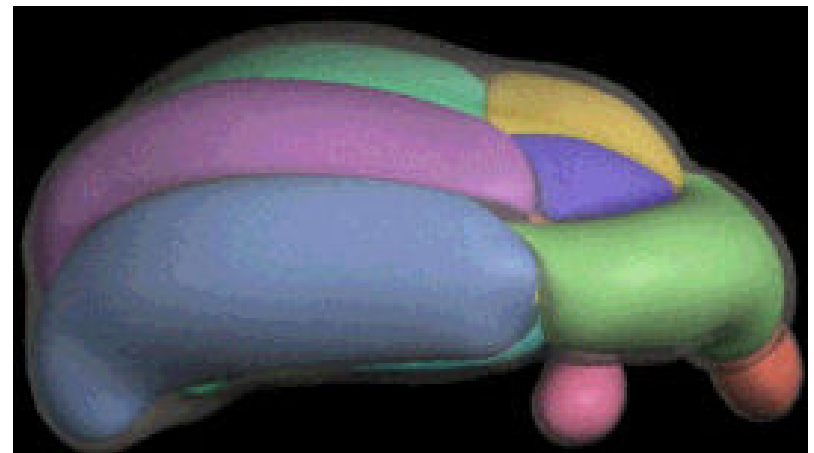
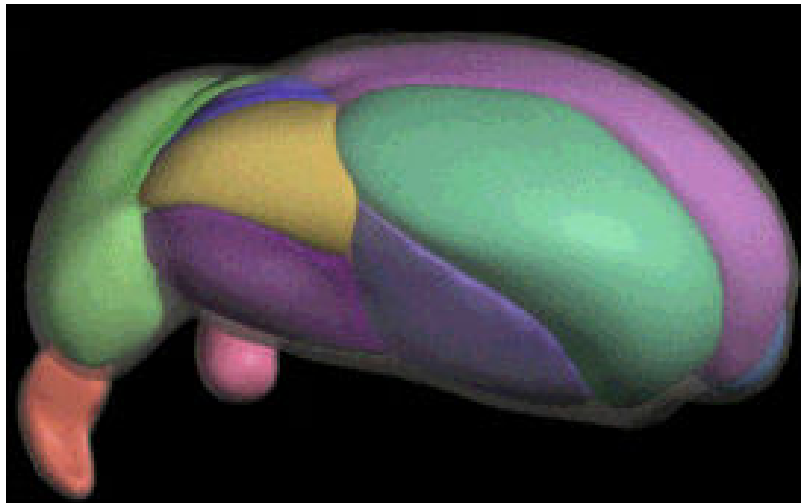
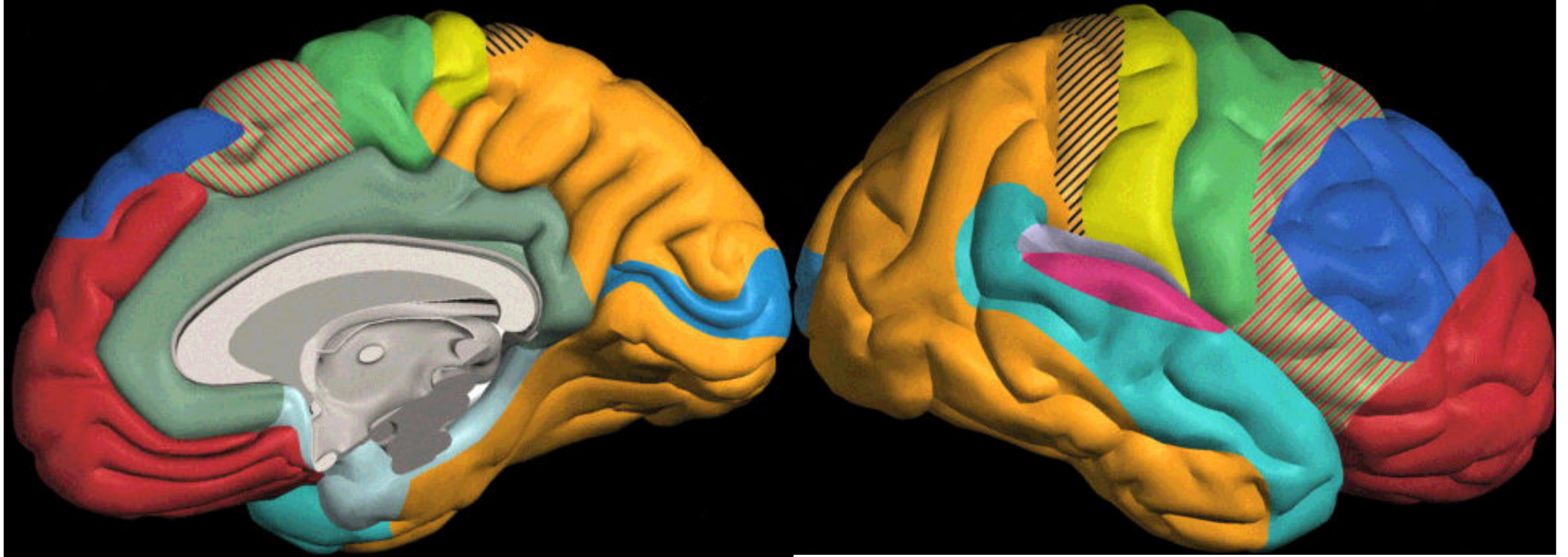
Slika 26.5. Slušni sustav. Prvi neuron slušnog puta su bipolarni neuroni spiralnog ganglija (*ganglion spirale*). Centralni nastavci

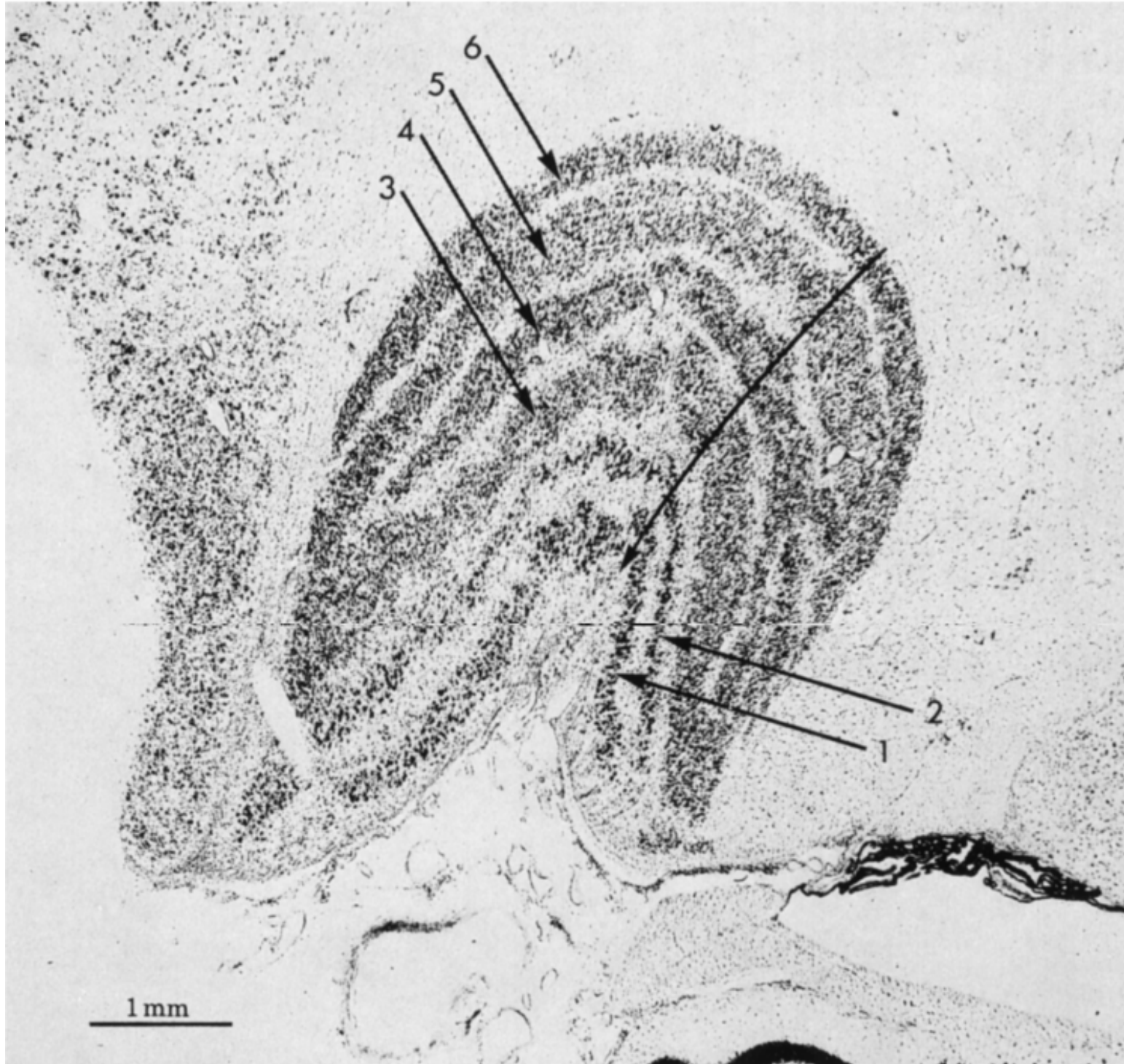


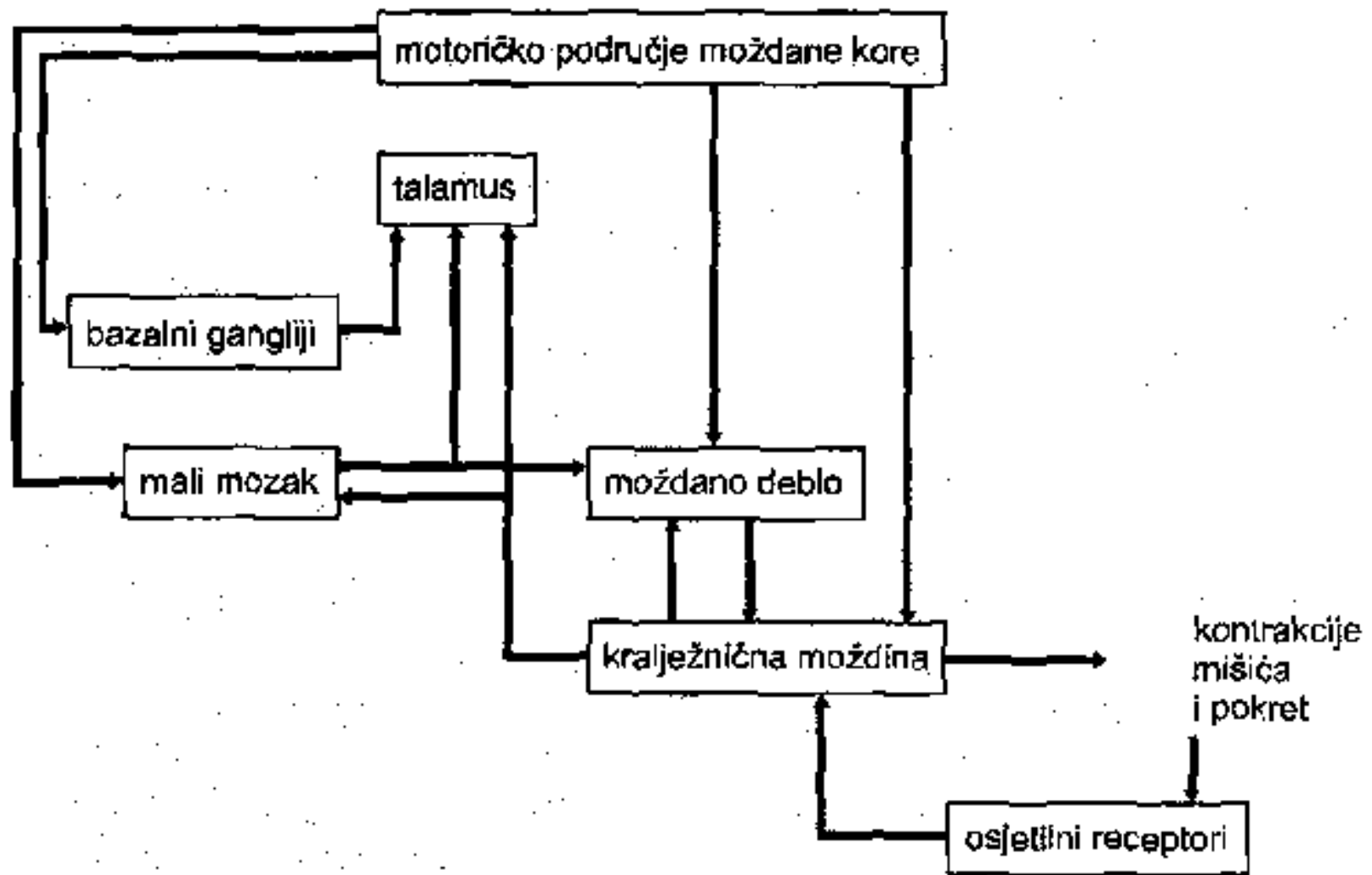
Slika 26-12. Vestibularni sustav. Prvi neuron vestibularnog puta su bipolarni neuroni vestibularnog ganglija (*ganglion vestibulare*), a njihovi centralni nastavci završavaju u četiri vestibularne jezgre u moždanom deblu. No, dio primarnih aksona odlazi izravno u mali mozak. Od lateralne vestibularne jezgre polazi silazni *tractus vestibulospinalis lateralis*, što preko interneurona snažno facilitira motoneurone prednjeg roga za inervaciju »antigravitacijskih« mišića (fleksora ruku i ekstenzora nogu). Ostale tri vestibularne jezgre su dvosmjerno povezane s malim mozgom i sustavom okulomotoričkih jezgara (*nucleus n. oculomotorii*, *nucleus n. trochlearis*, *nucleus n. abducentis*) a snop što povezuje vestibularne s okulomotoričkim jezgrama je *fasciculus longitudinalis medialis* (FLM).

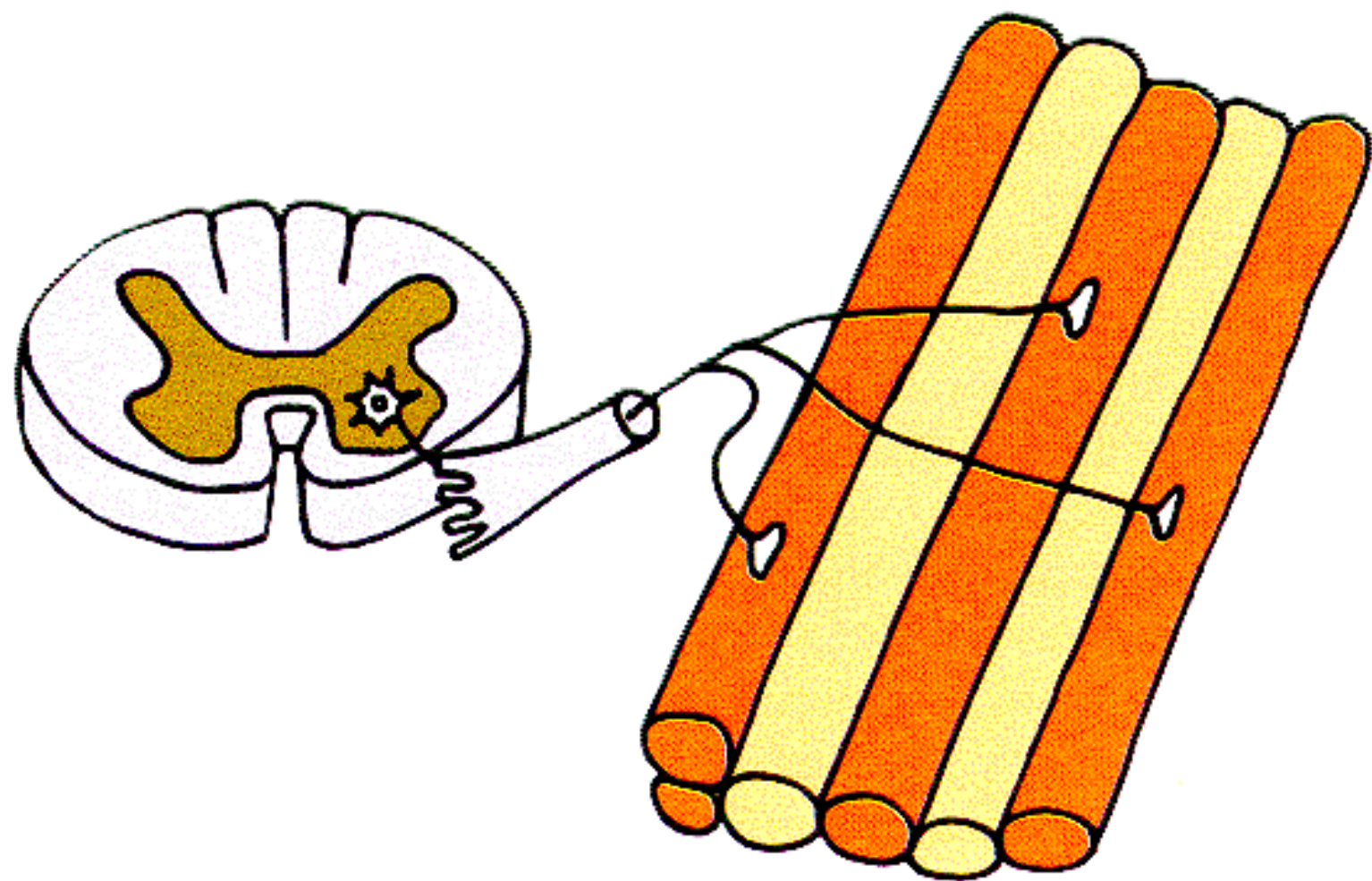


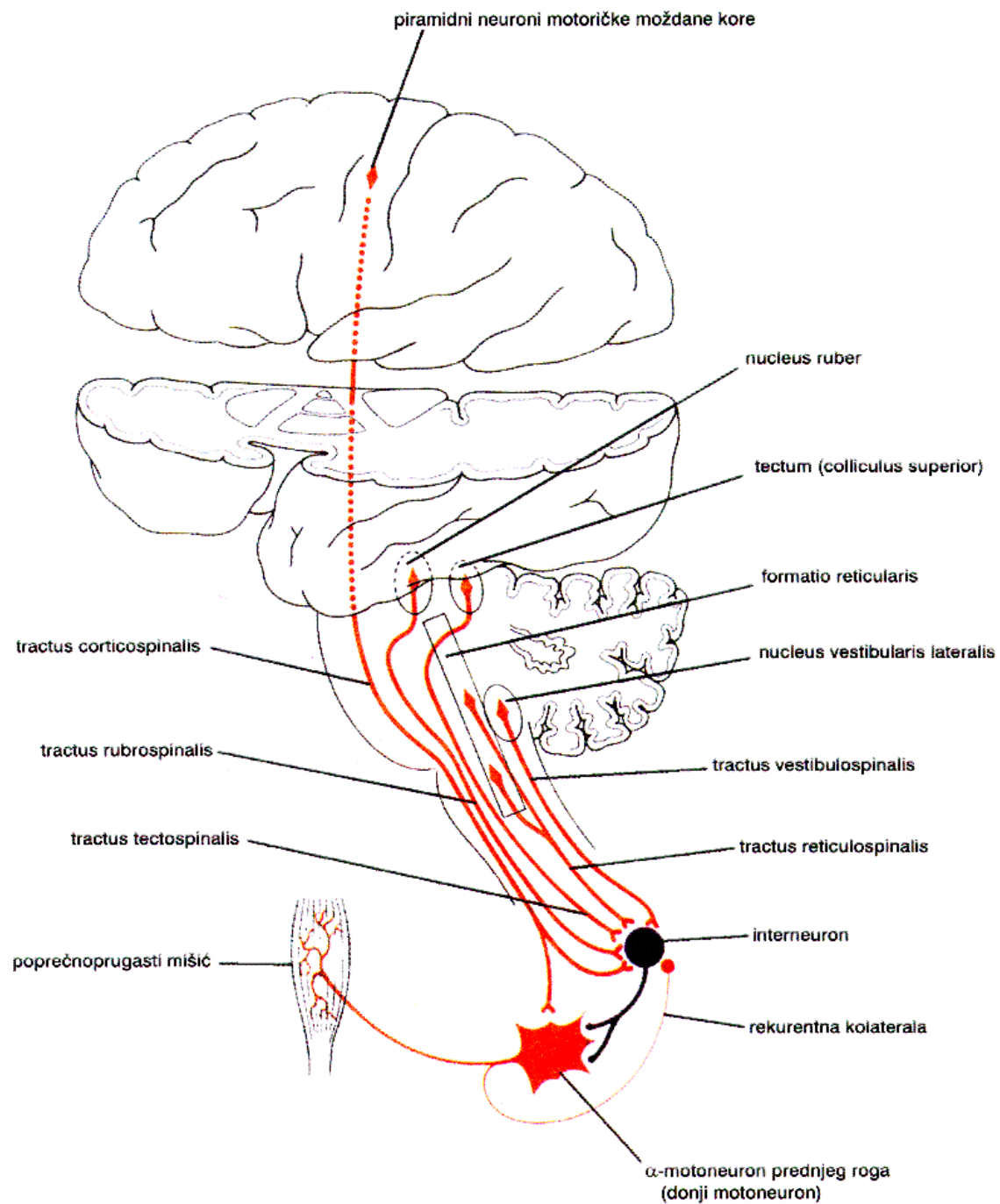
Slika 28-1. Dijagram tri temeljna dijela i ustrojstva primarnog vidnog puta. **Infranuklearni dio primarnog vidnog puta čine:** retina, nervus opticus, chiasma opticum i tractus opticus; **nuklearni dio primarnog vidnog puta čine:** colliculi superiores, corpus geniculatum laterale, nucleus praegeniculatus i pulvinar; **supranuklearni dio primarnog vidnog puta čine:** radiatio optica i area striata. Nosni (nazalni) dijelovi mrežnice gledaju sljepoočne (temporalne) dijelove vidnog polja, i obrnuto. Nadalje, vlakna iz sljepoočnog dijela mrežnice završavaju u istostranom CGLd (corpus geniculatum laterale), dok vlakna iz nosnog dijela mrežnice kroz hijazmu odlaze u CGLd suprotne strane. Stoga primarna vidna moždana kora (area striata, polje 17, polje V1) gleda desnu polovicu vidnog polja (a obrnuto vrijedi za desnu moždanu polutku). Gornja usna fisure kalkarine gleda donji dio vidnog polja, dok donja usna fisure kalkarine gleda gornji dio vidnog polja. Mjesto najoštrijeg vida (fovea centralis) projicira se u dio primarne vidne moždane kore što je smješten u vrhu zatiljnog režnja.

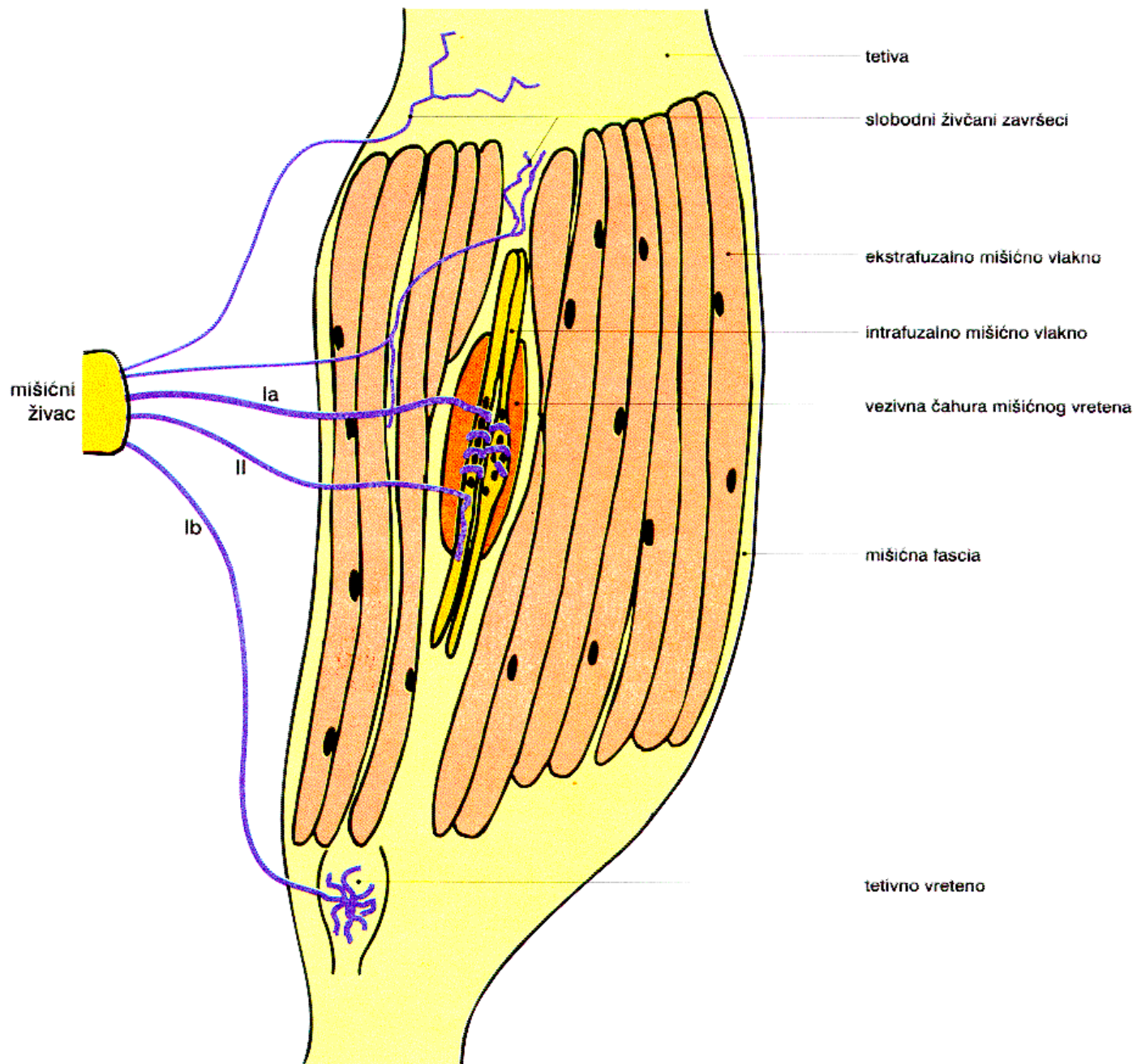


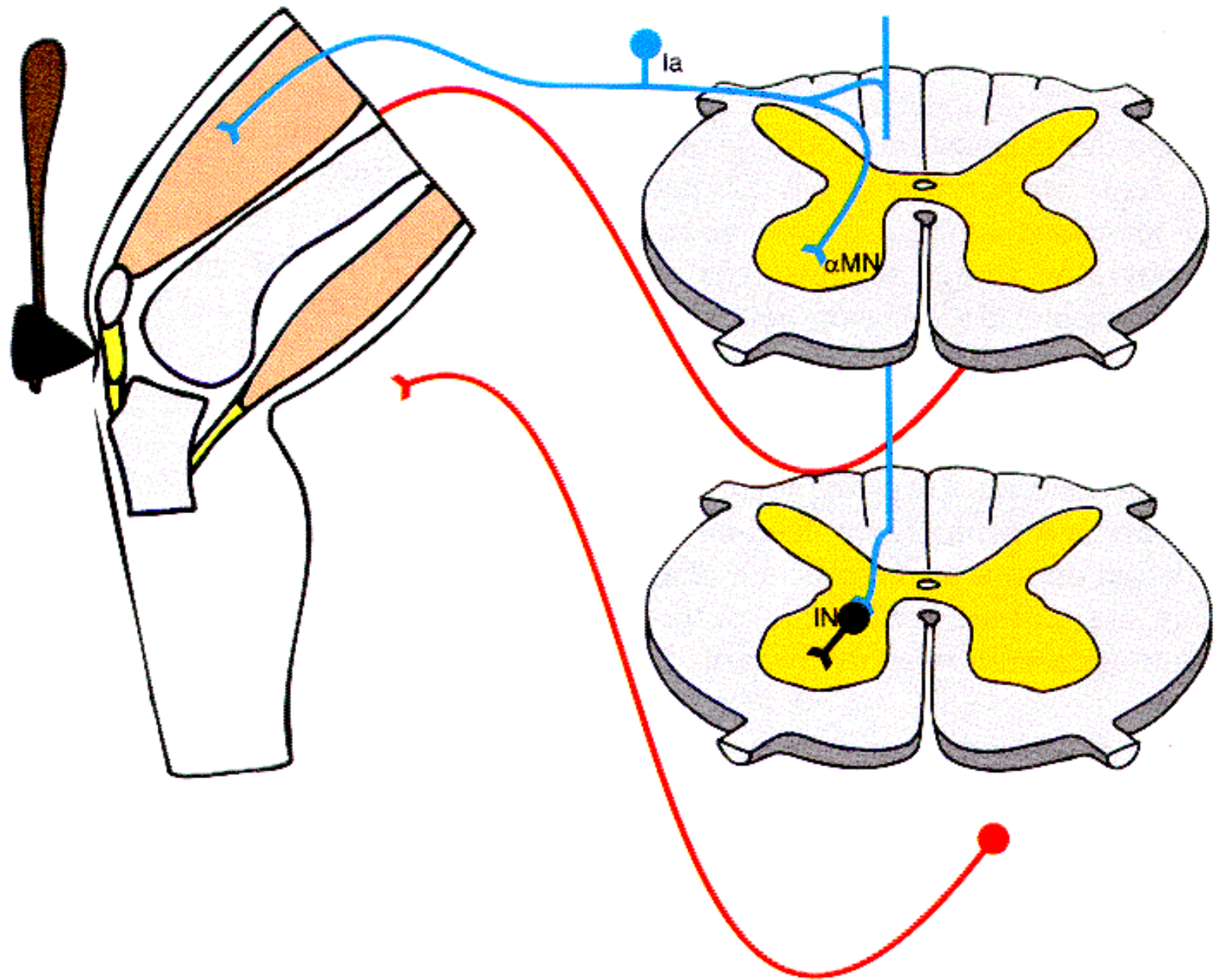


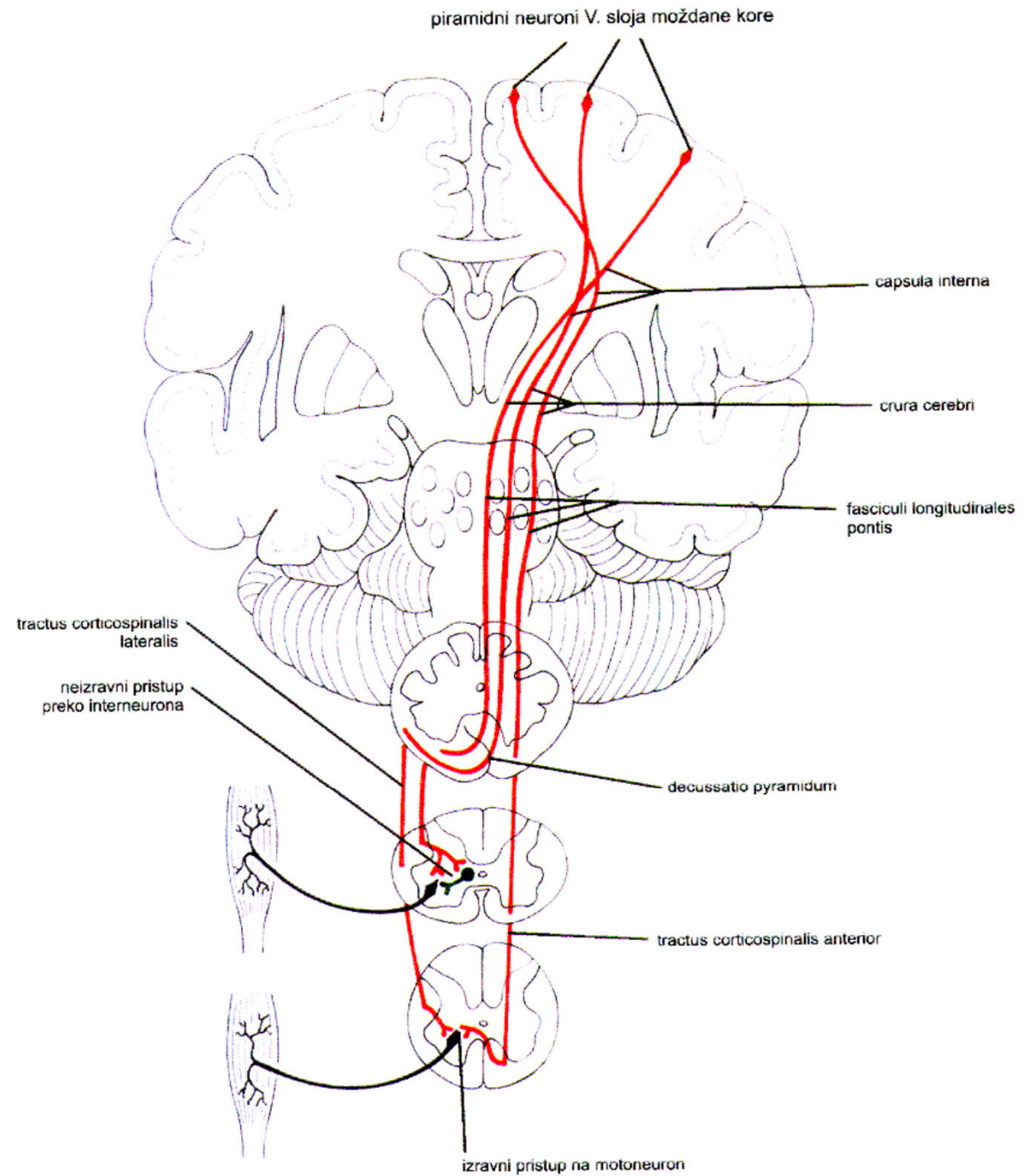
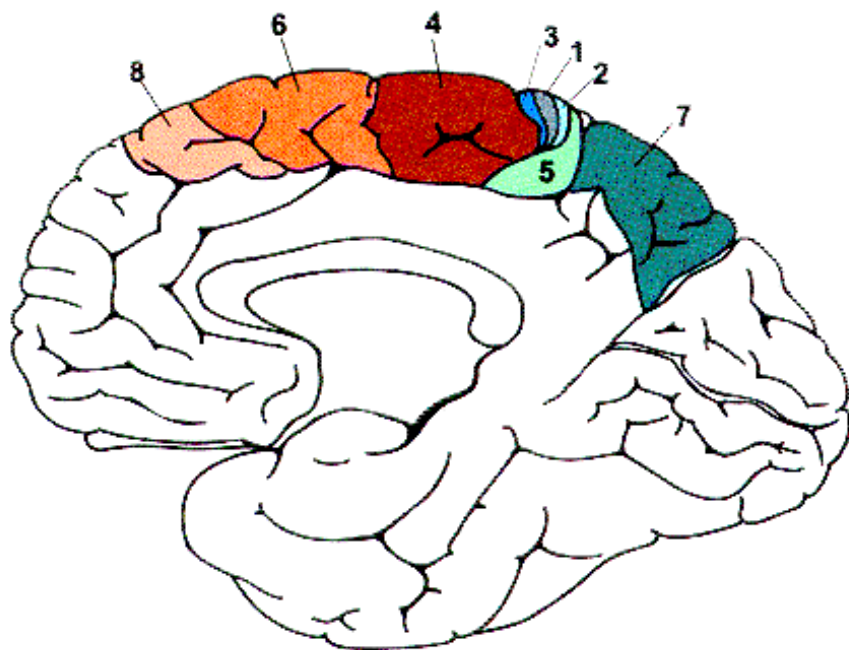
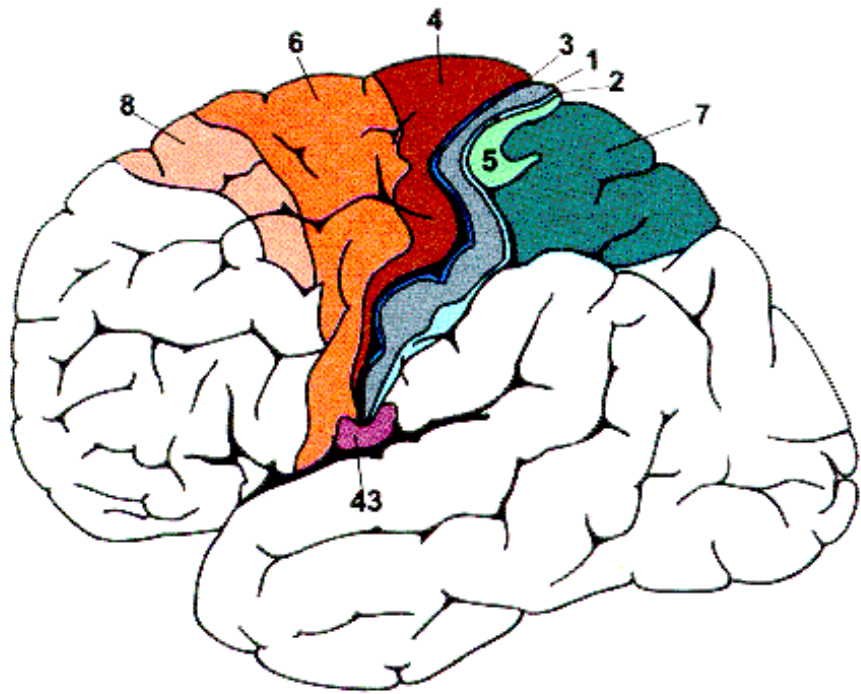


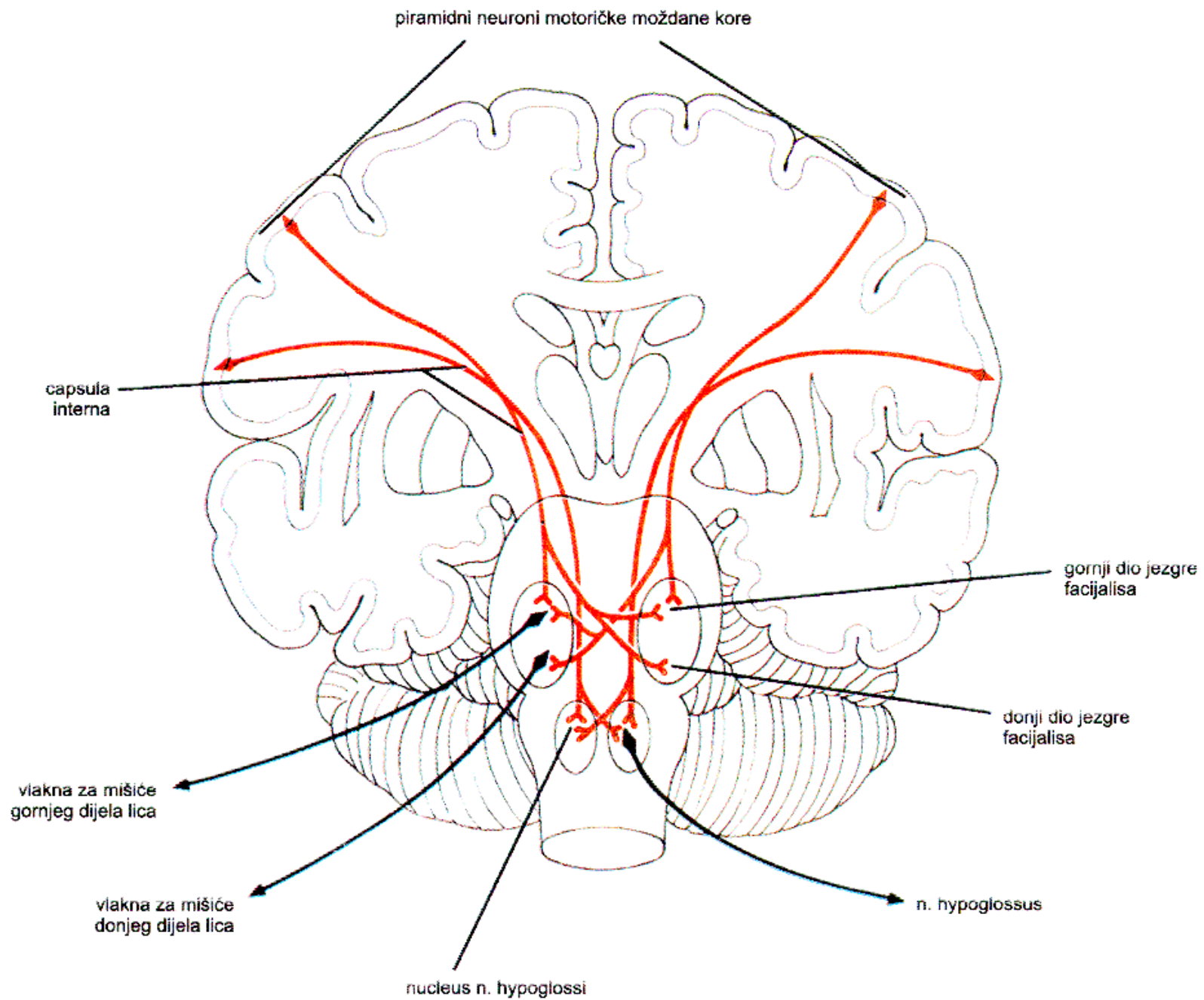




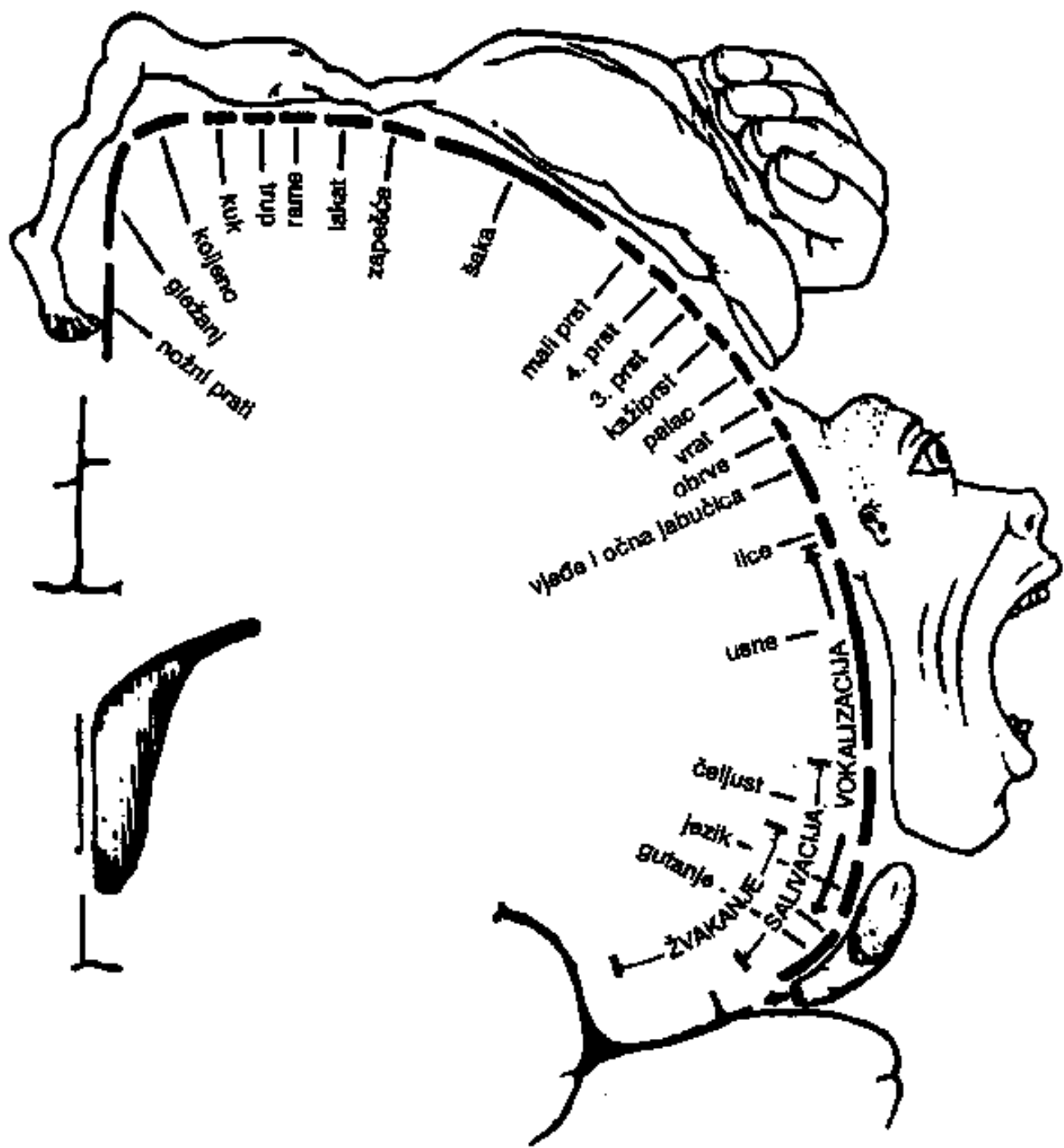


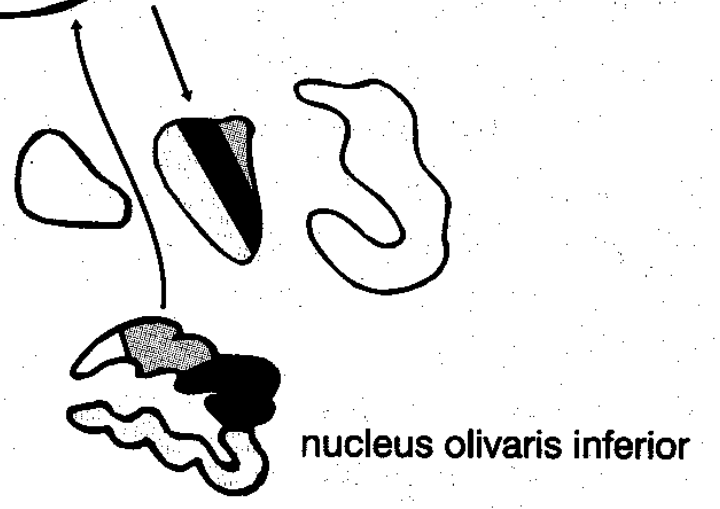
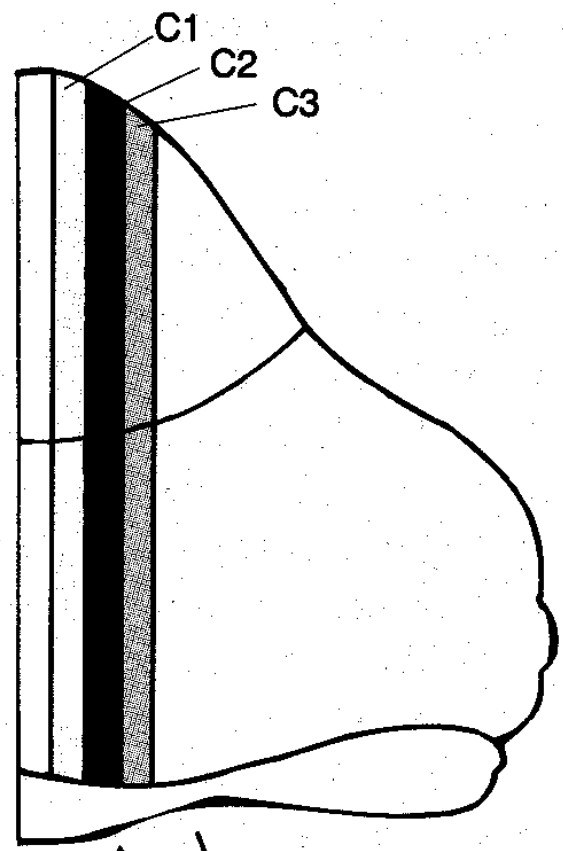
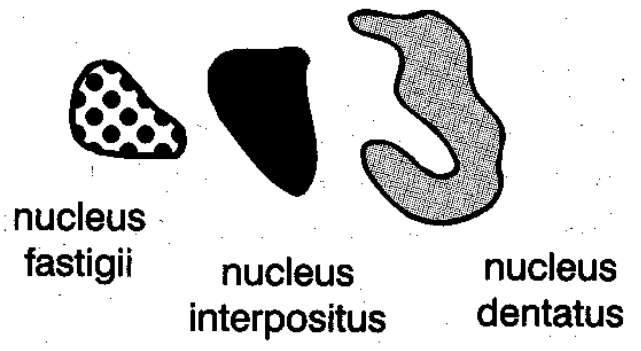
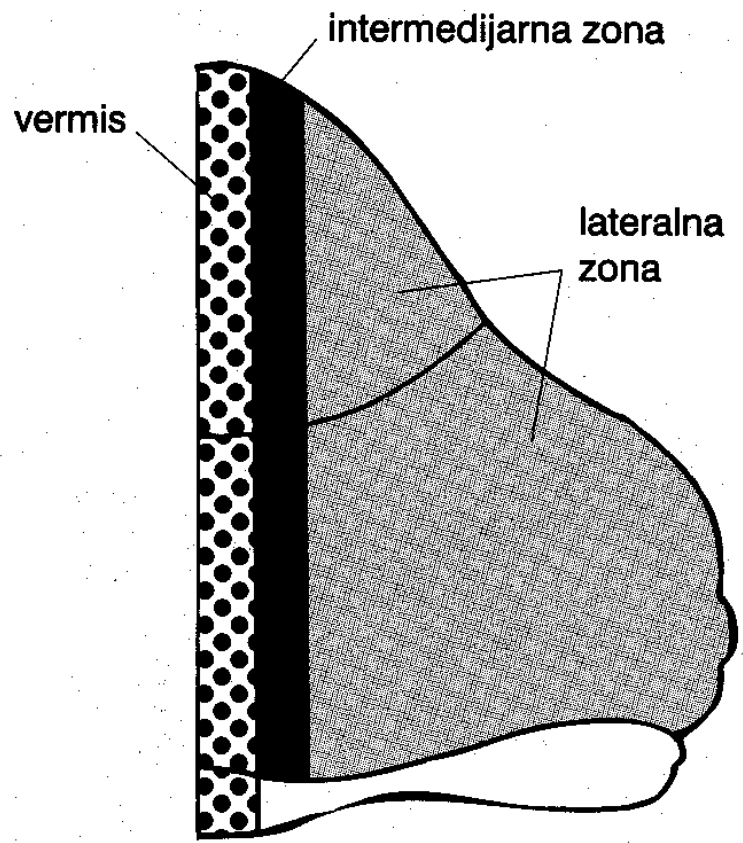


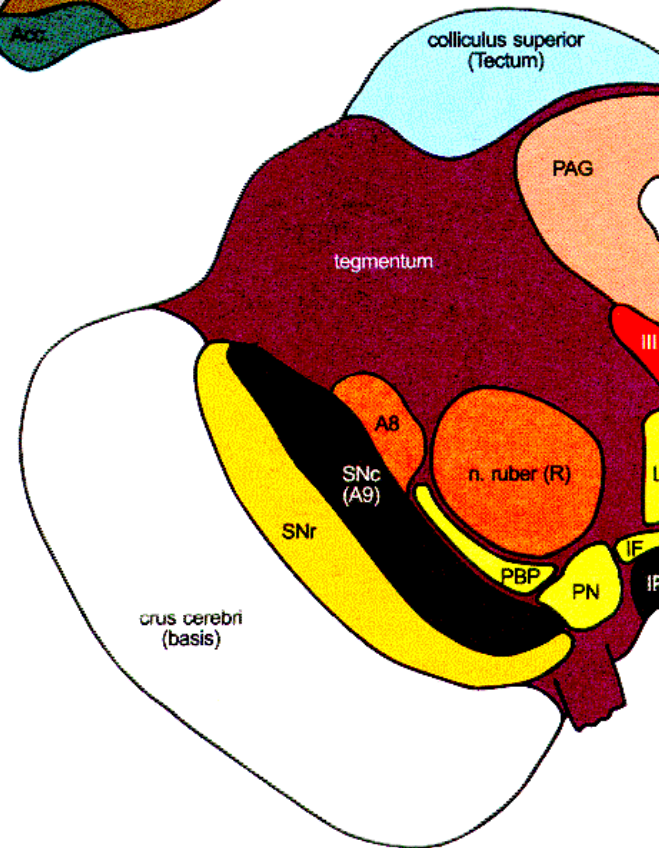
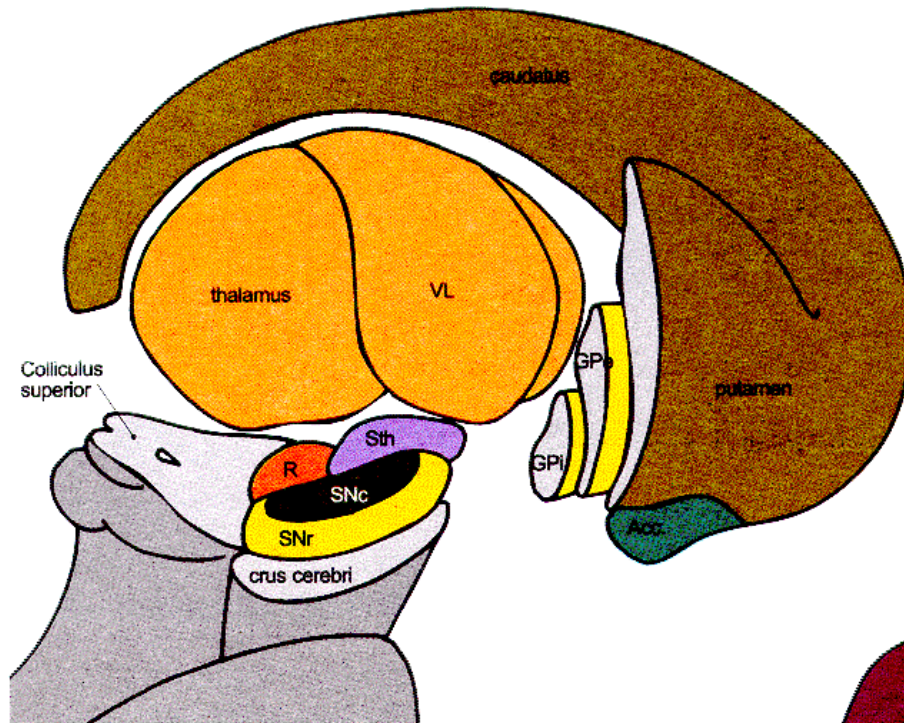




34.3 Tractus corticobulbaris je voljni motorički put za mišiće lica, jezika, arkljana i ždrijela. Ova slika pokazuje da su te







- Acc. = nucleus accumbens septi
- GPe = globus pallidus, pars externa
- GPI = globus pallidus, pars interna
- Sth = nucleus subthalamicus
- SNc = substantia nigra, pars compacta (A9)
- SNr = substantia nigra, pars reticulata
- PAG = periaqueductalna griseja
- PBP = nucleus parabrachialis pigmentosus
- PN = nucleus paranigralis
- IF = nucleus interfascicularis
- L = nucleus linearis rostralis et caudalis
- IP = nucleus interpeduncularis
- A8 = area retrorubralis
- VL = nucleus ventrolateralis thalami
- VTA = area tegmentalis ventralis (A10)

VTA

