

Anatomy II



Recommended textbooks

DRAKE, Richard L., Wayne VOGL a Adam W. M. MITCHELL.

Gray's anatomy for students. 3rd ed. Philadelphia, Pa.: Churchill Livingstone, 2015.
ISBN 9780702051319.

Dubový, Petr. ***Instructions for Anatomical Dissection Course.***

Brno, Muni Press, 2013, 71pp.

ISBN 978-80-210-6202-3.

Dubový, Petr. ***Gross Anatomy and Structure of the Human Nervous System - Part I. Surface Anatomy and Structural Arrangement of the Central Nervous System.***

Brno, Muni Press, 2012, 91pp. ISBN 978-80-210-6125-5.

COMPARTMENTS OF CNS

Brain

Spinal cord

brainstem

medulla oblongata

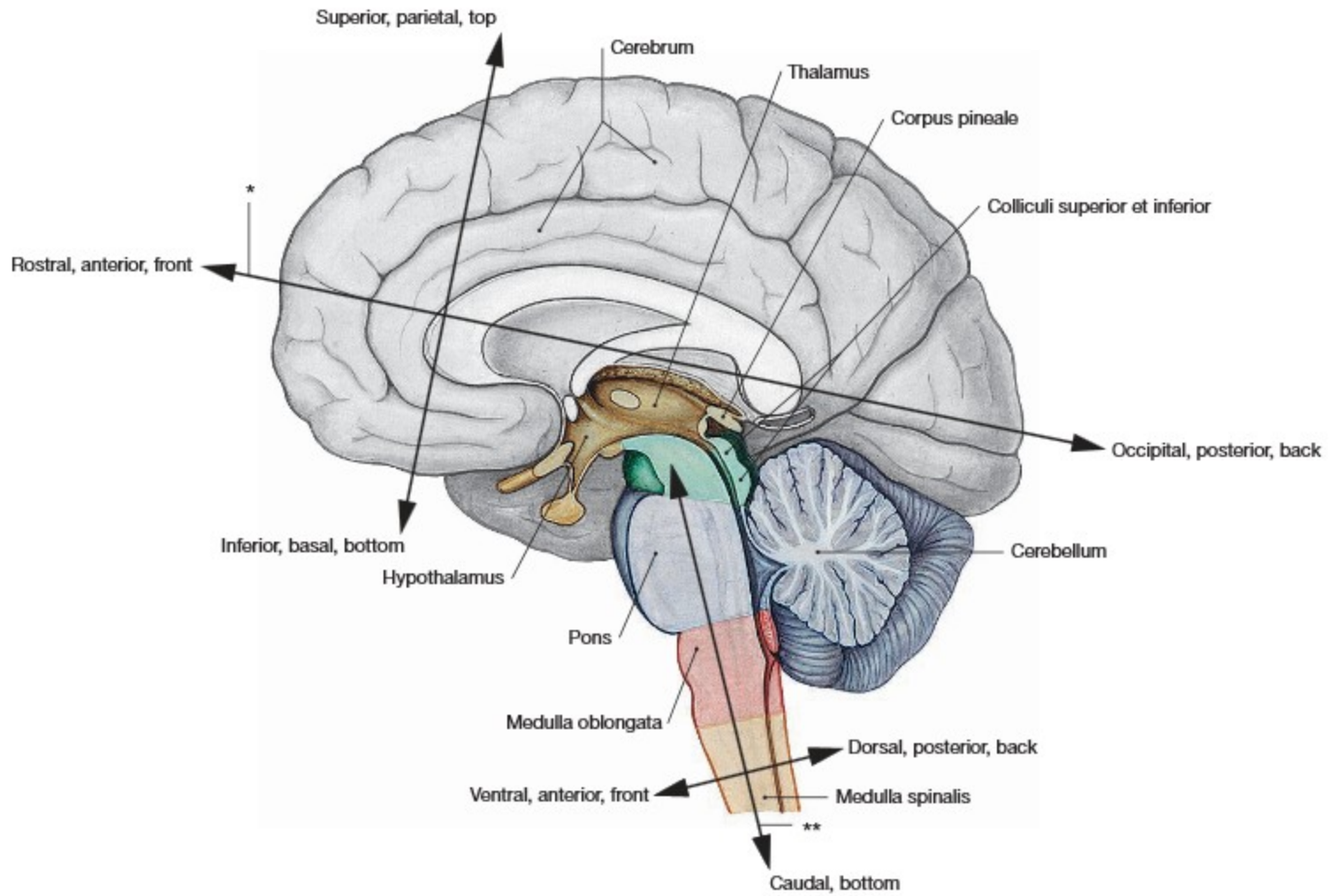
pons

mesencephalon (midbrain)

cerebellum

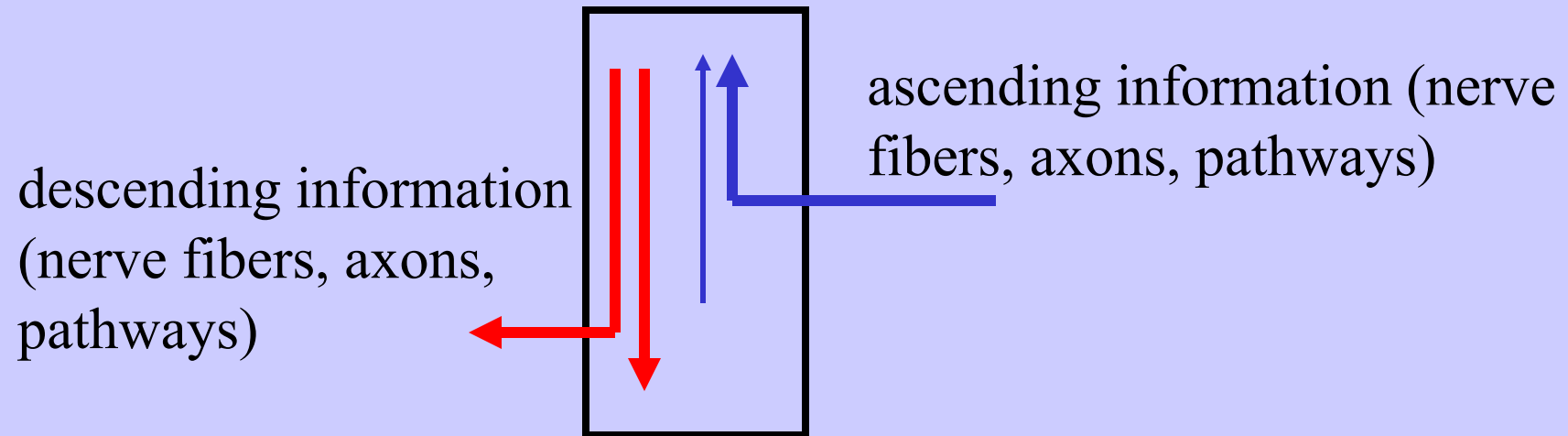
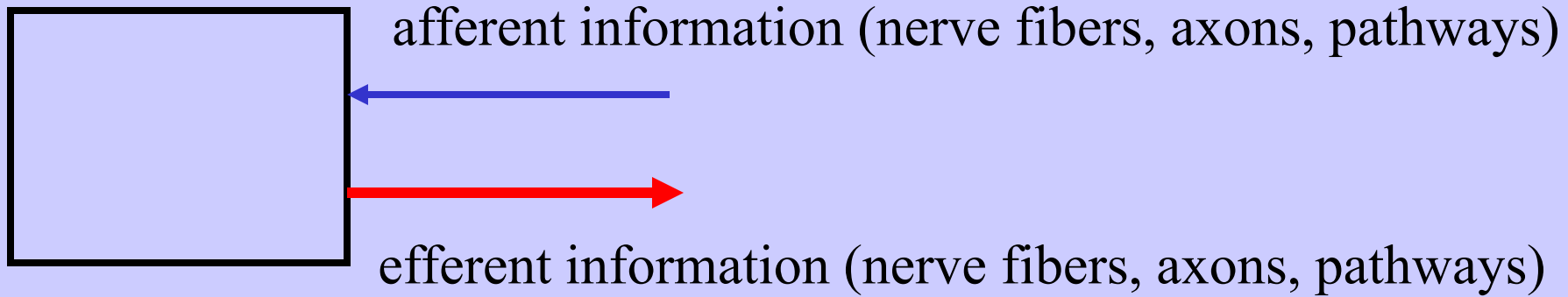
diencephalon

telencephalon (forebrain)



- | | | |
|-----------------|--------------------------|---------------------|
| ■ Telencephaion | ■ Mesencephaion | ■ Medulla oblongata |
| ■ Diencephaion | ■ Metencephaion and Pons | ■ Medulla spinalis |

Basic terms



PARTS OF THE NERVOUS SYSTEM

CNS

PNS

oligodendrocytes
astrocytes

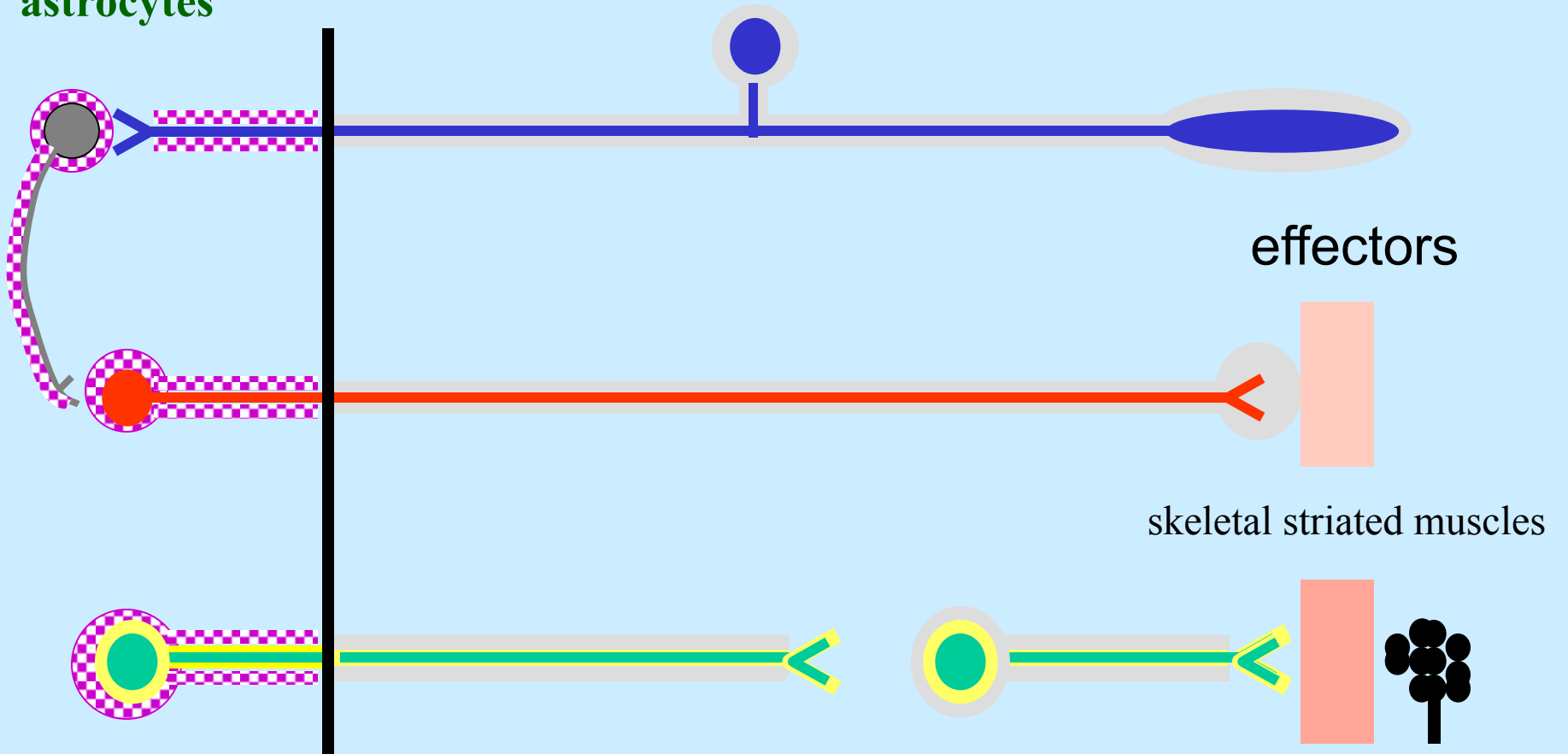
Schwann cells and their derivatives

sensors

effectors

skeletal striated muscles

smooth muscles, myocardium, glands



FUNCTIONAL TYPES OF PNS AXONS

Afferent

somatosensory



skin sense, proprioception, pain

viscerosensory



mechanoreception, pain

sensory

afferentation of taste, hearing, vestib. inform.

somatomotor



striated muscles

branchiomotor



striated muscles

Efferent

visceromotor



smooth muscles

sympathetic



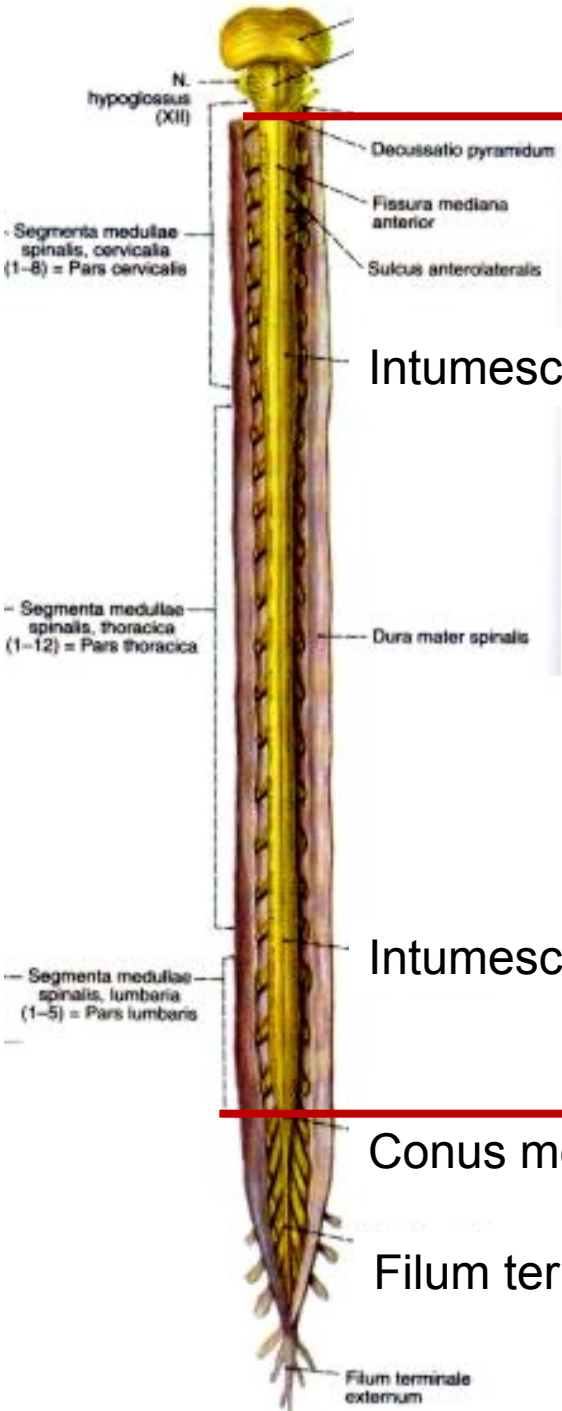
myocardium

parasympathetic

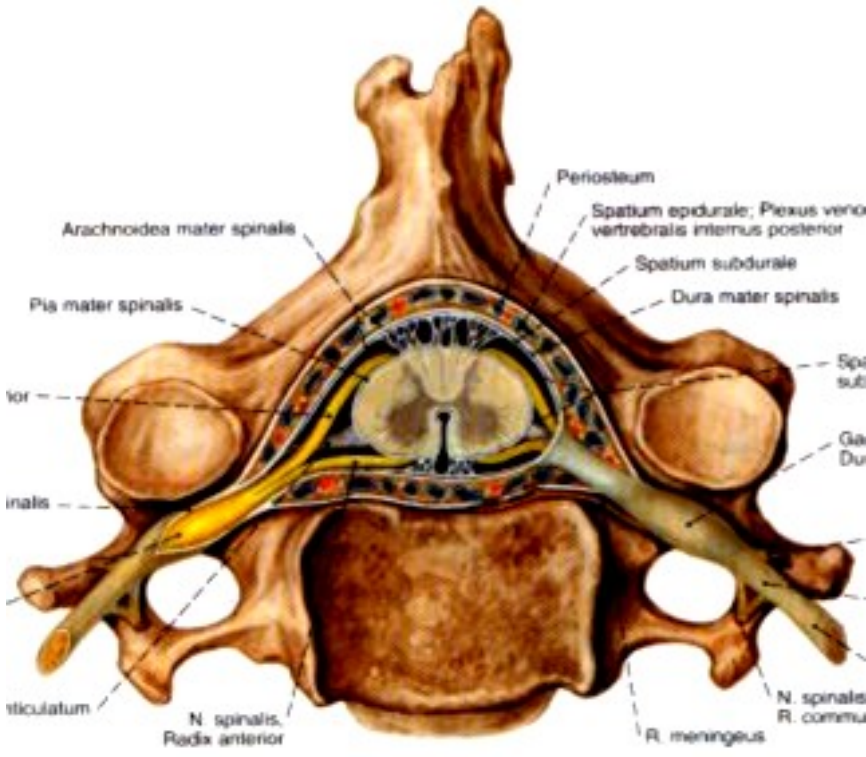


glands

MEDULLA SPINALIS



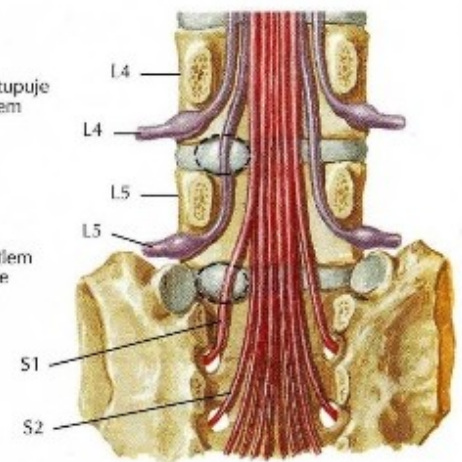
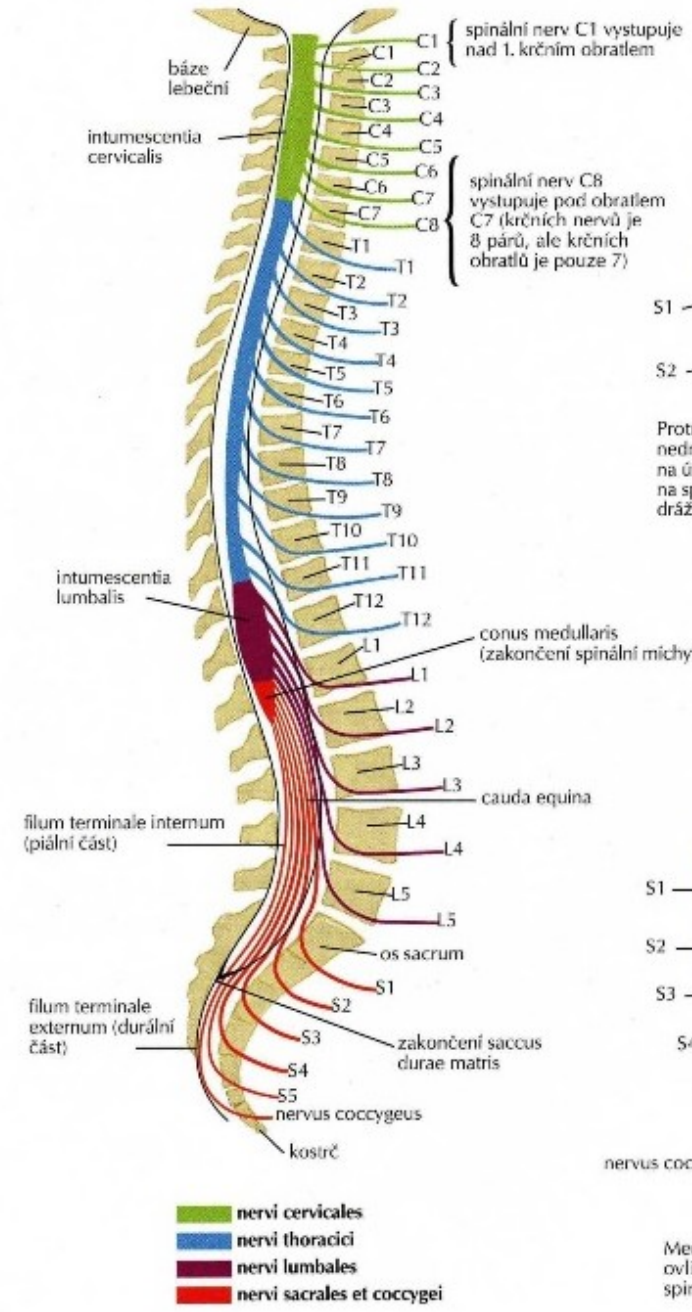
Cranial boundary



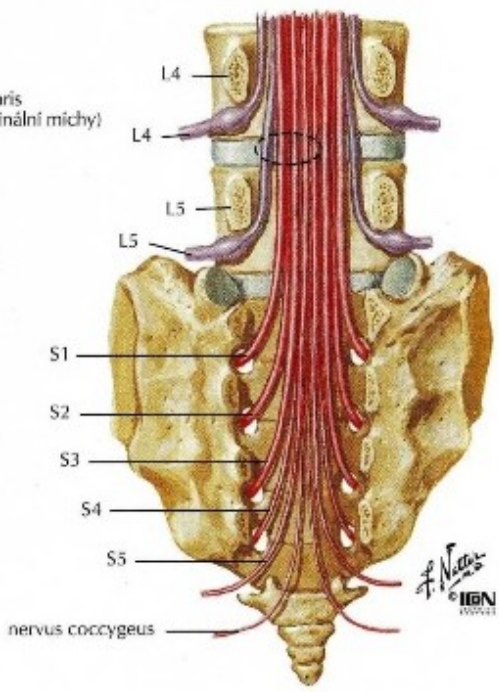
L2 – Caudal boundary

Conus medullaris
Filum terminale

MEDULLA SPINALIS

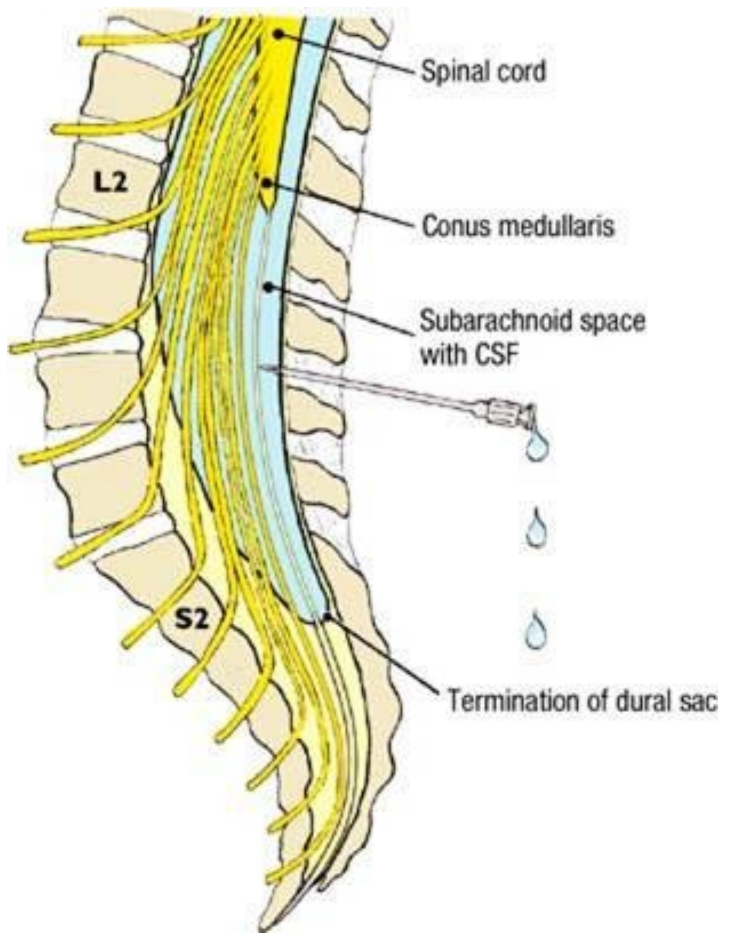
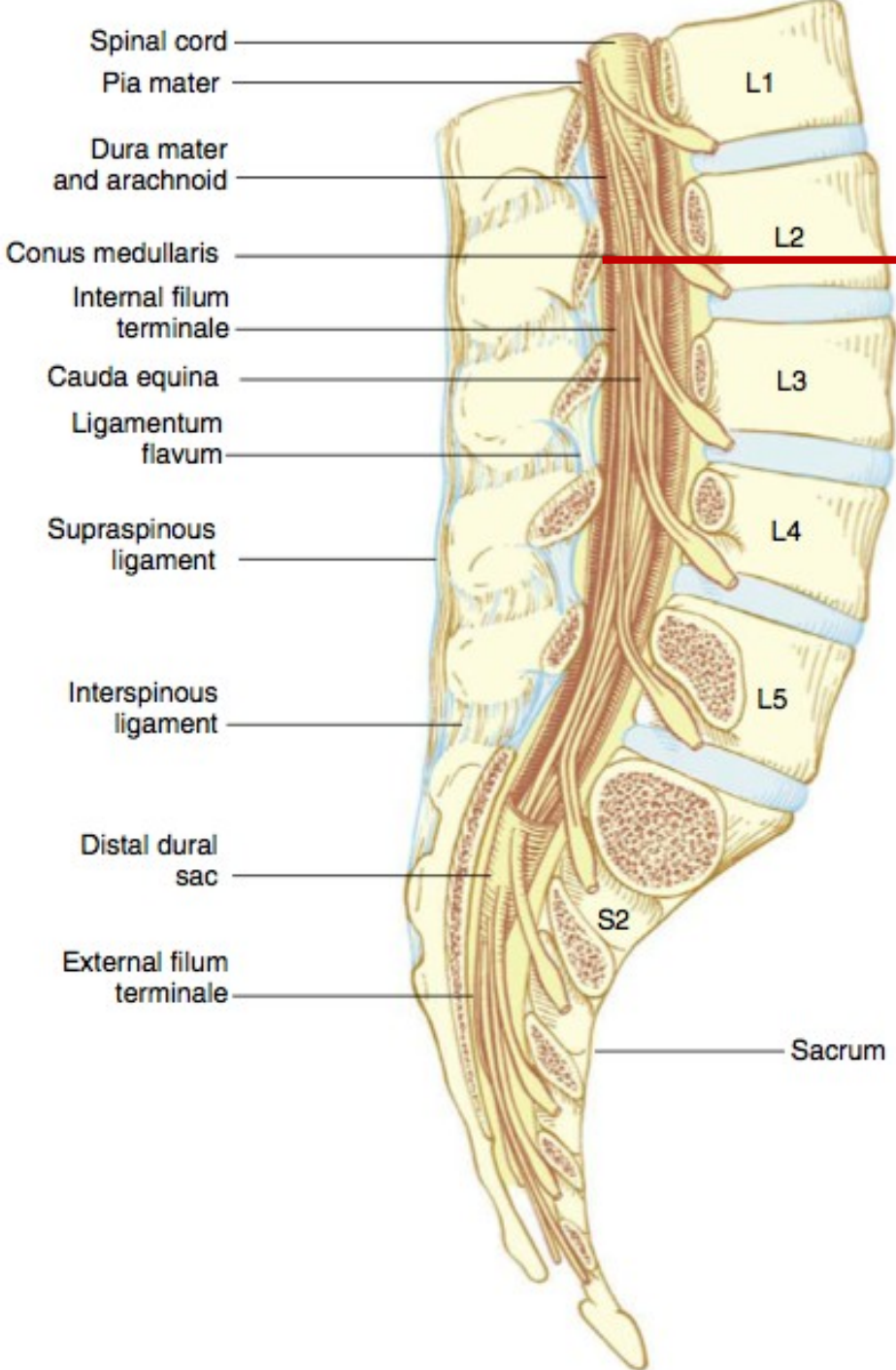


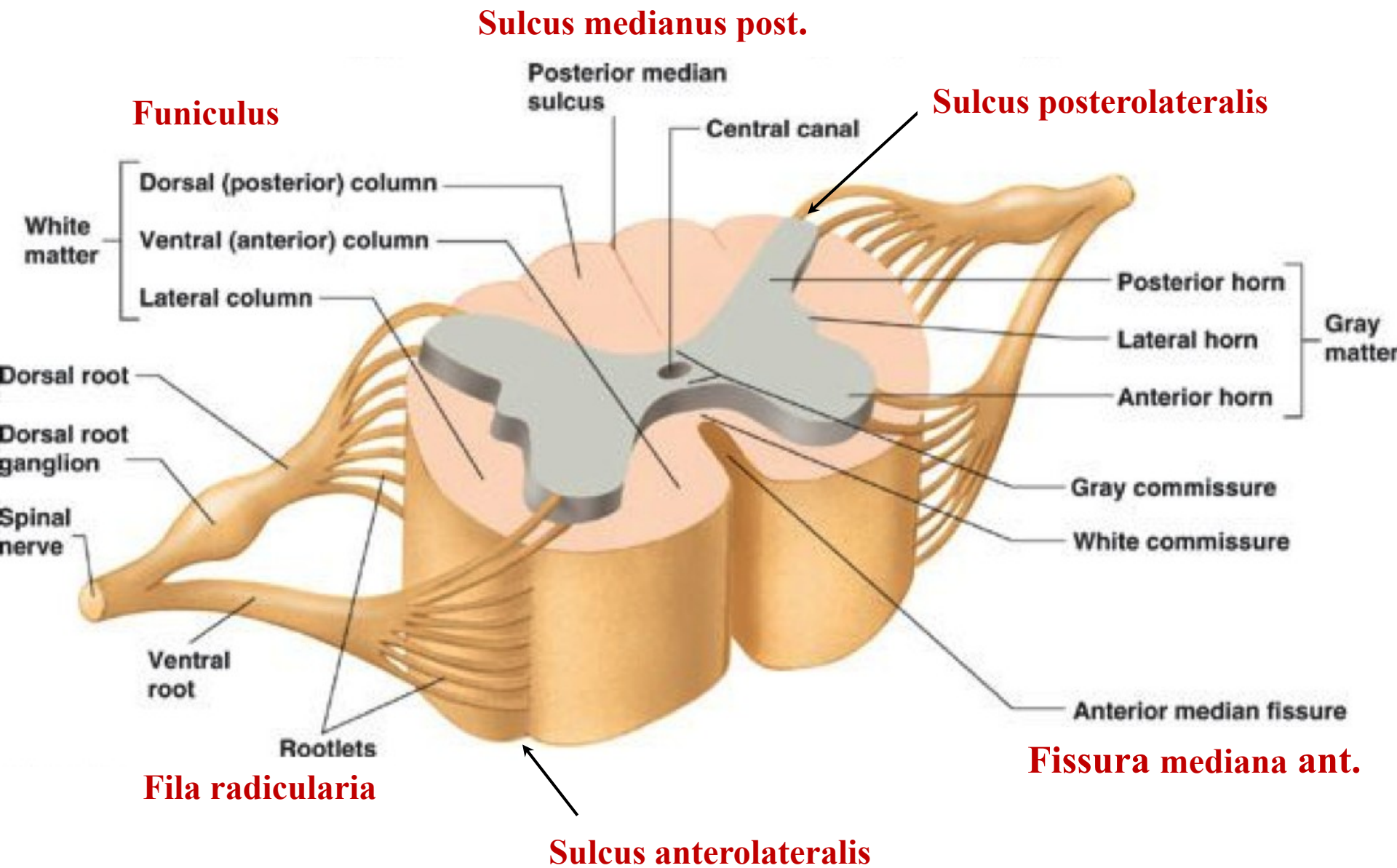
Protruze lumbálního meziobratlového disku obvykle nedráždí nerv nad diskem. Laterální protruze disku na úrovni L4-5 má vliv na spinální nerv L5, ne však na spinální nerv L4. Protruze disku na úrovni L5-S1 dráždí spinální nerv S1, ne však spinální nerv L5.

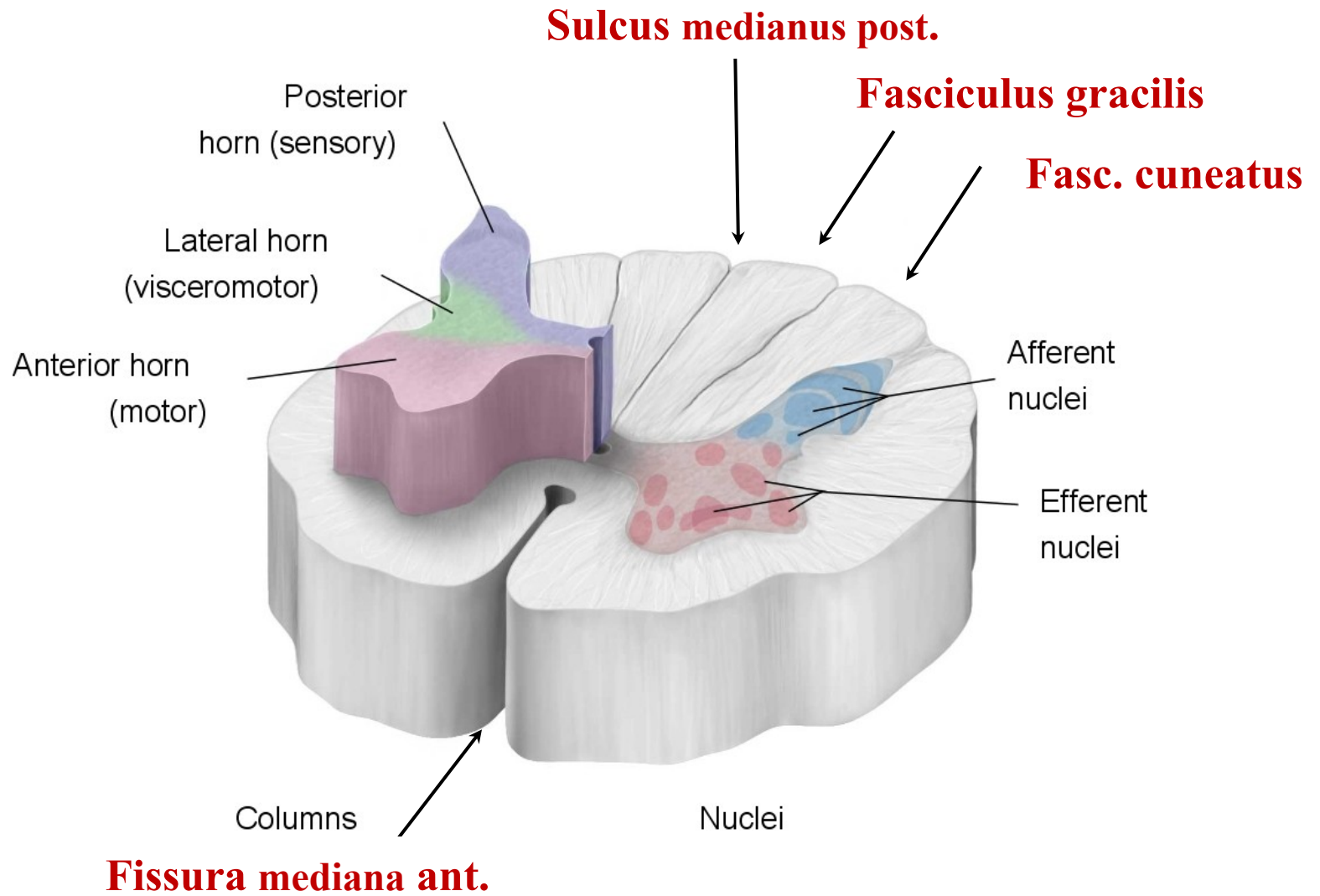


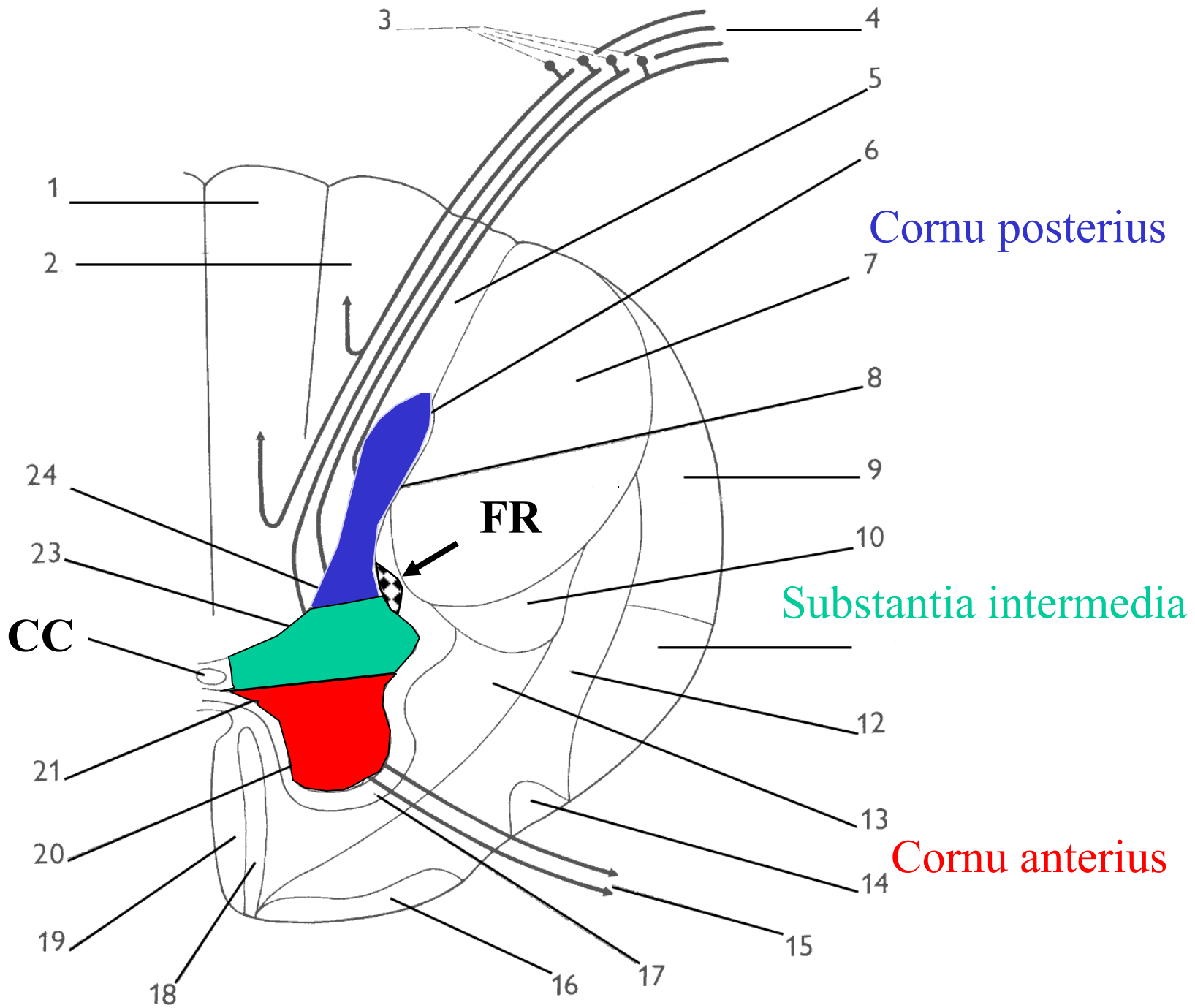
Mediální protruze disku na úrovni L4-5 zřídka ovlivňuje spinální nerv L4, ale může mít vliv na spinální nerv L5 a někdy i na spinální nervy S1-4.

MEDULLA SPINALIS

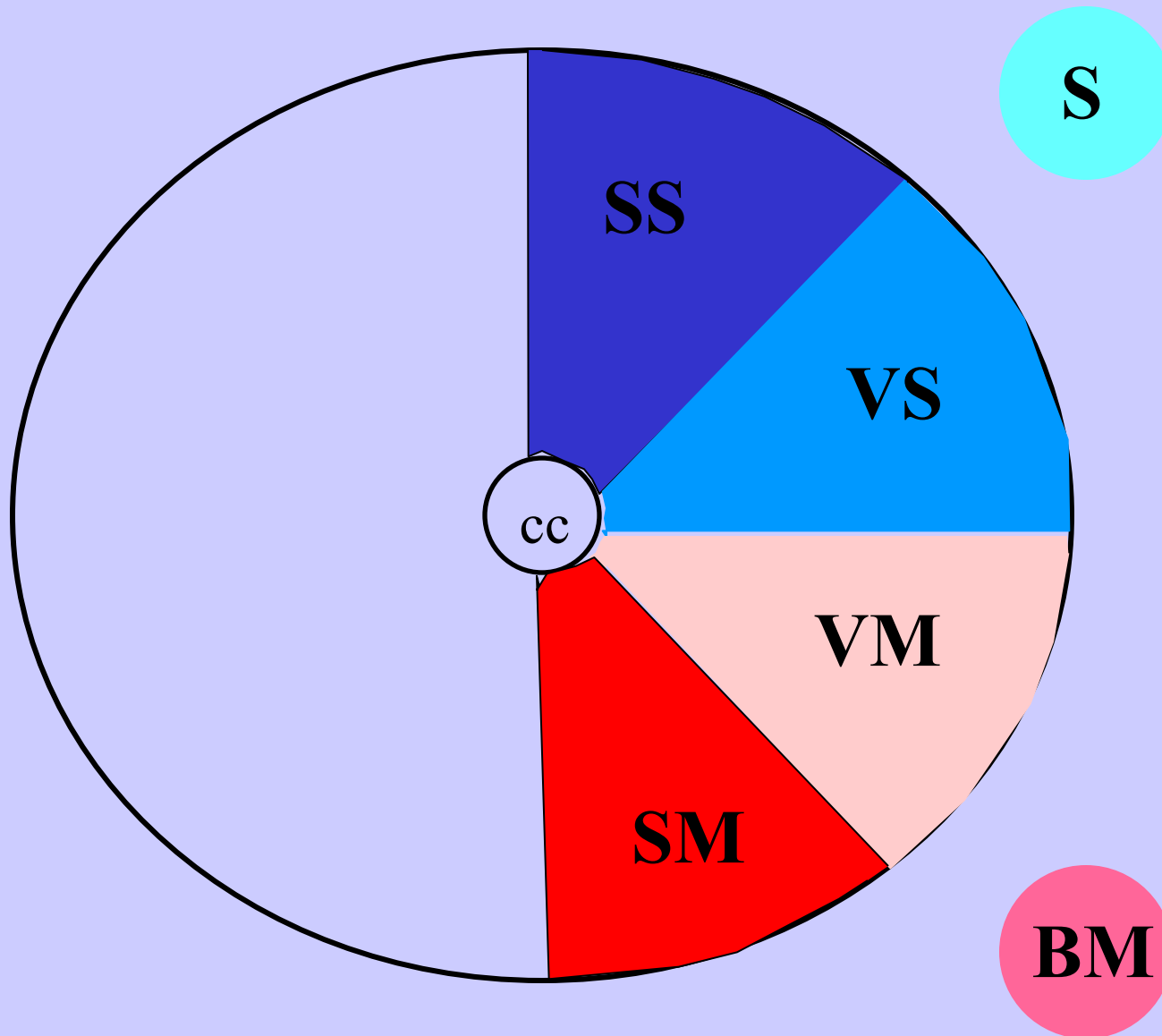






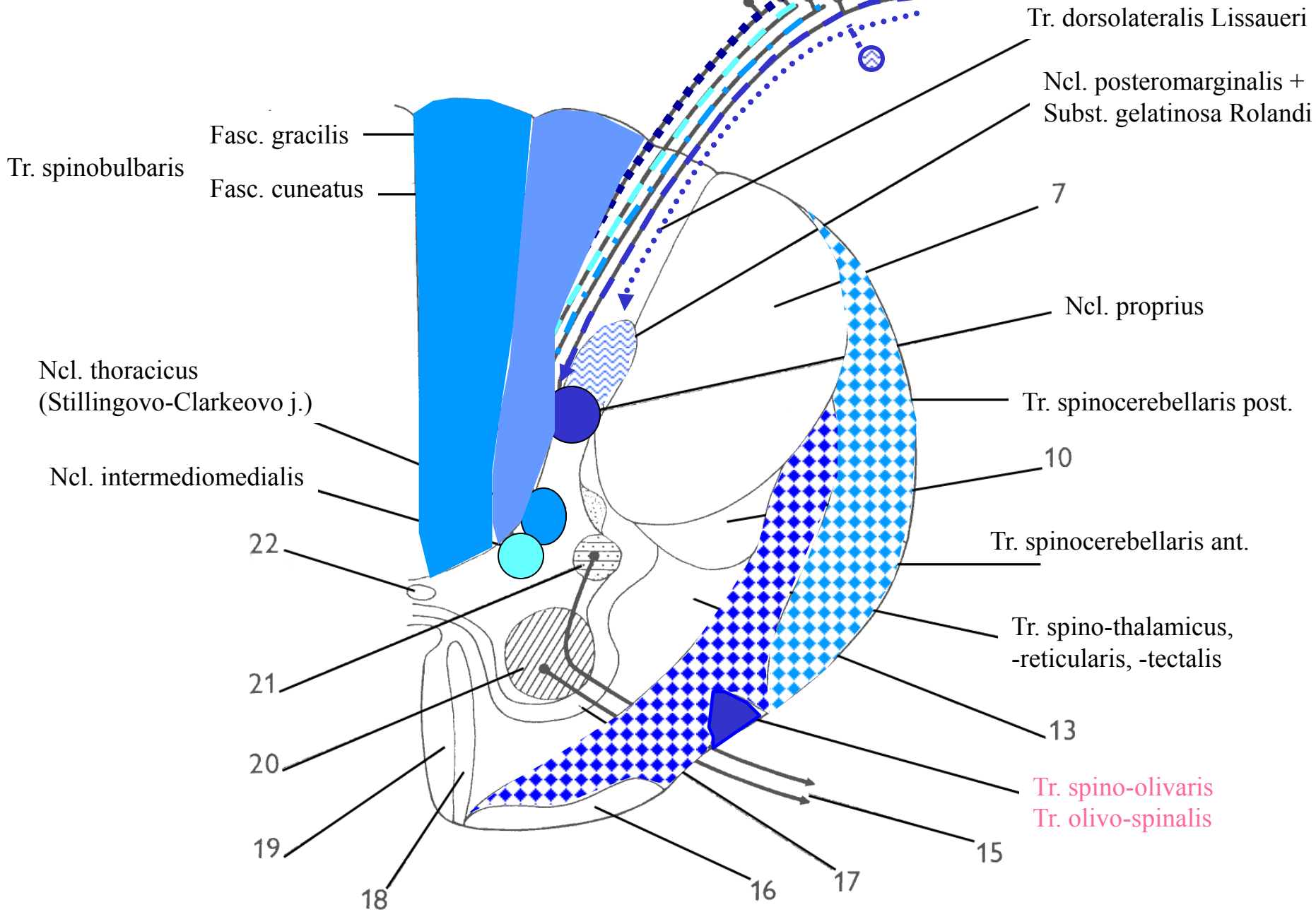


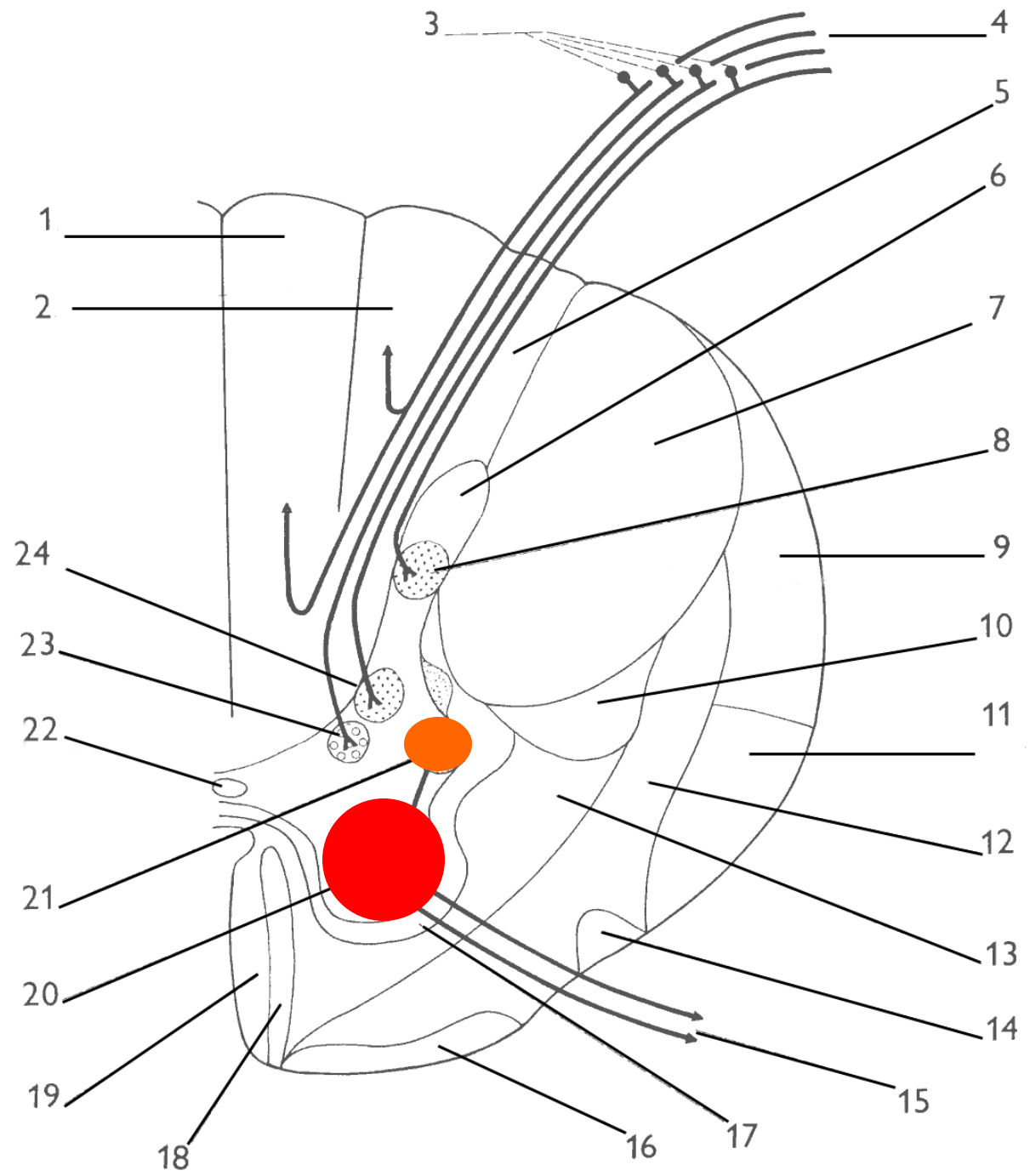
FUNTIONAL ZONES OF NEURONS IN CNS

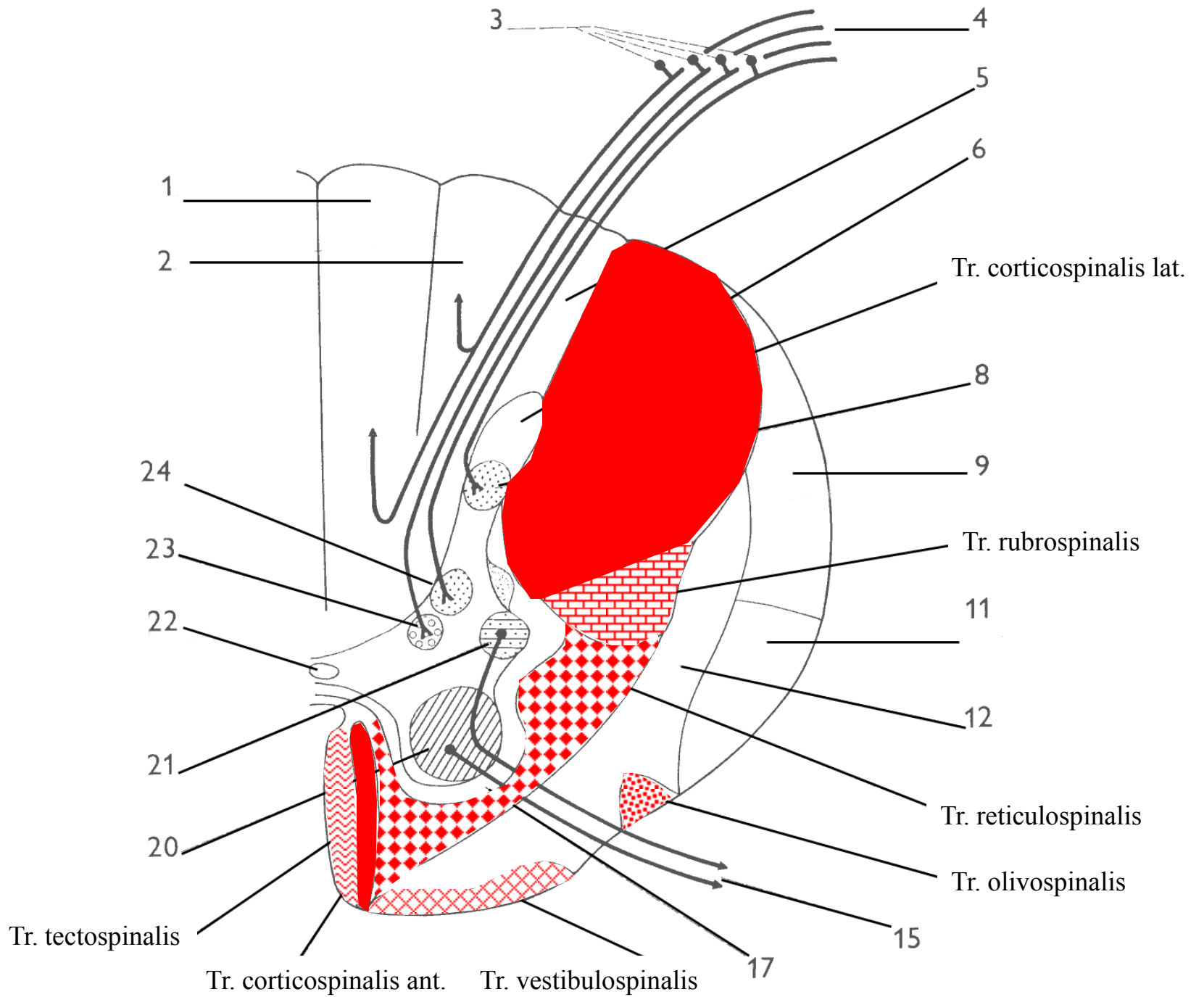


Pseudounipolar neurons in SG (DRG)

Radix dorsalis







Cortical neurons



Tractus cortico-spinalis

Ncl ruber, red nucleus

Tectum

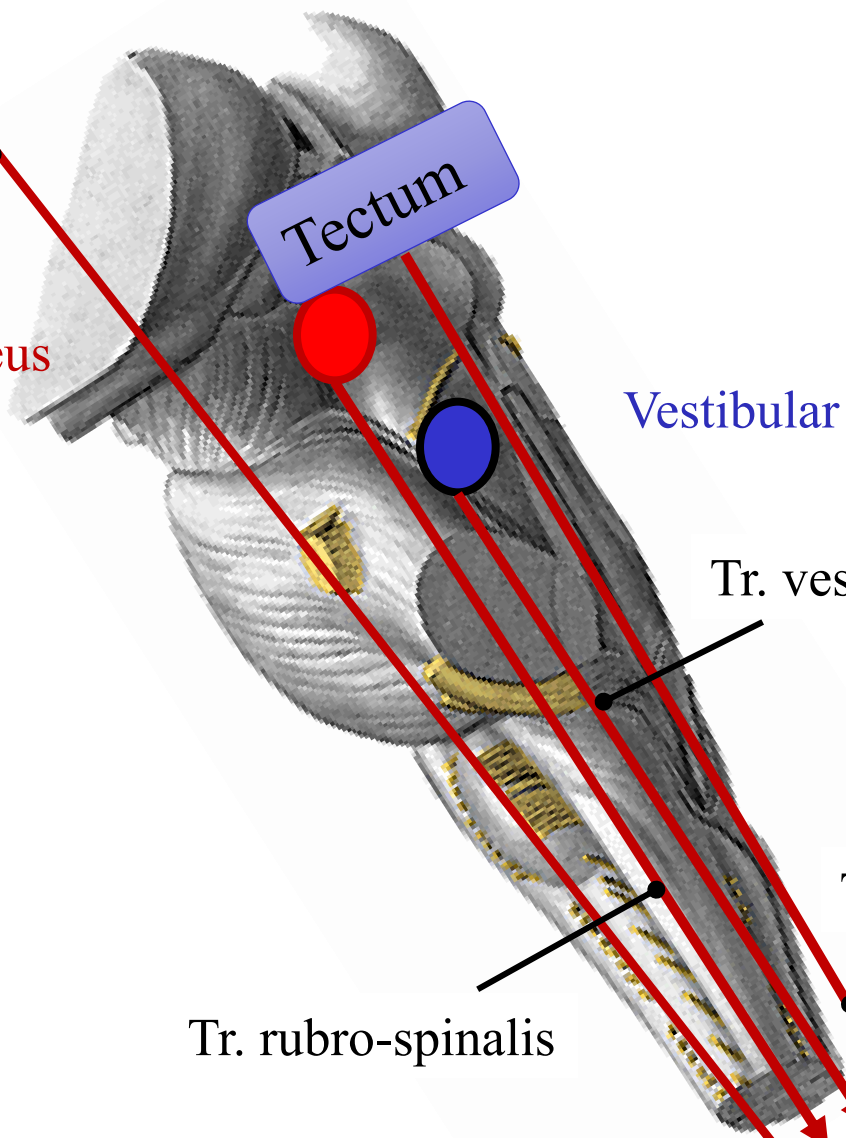
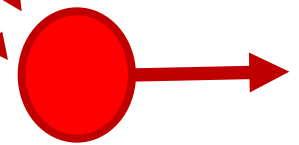
Vestibular nuclei

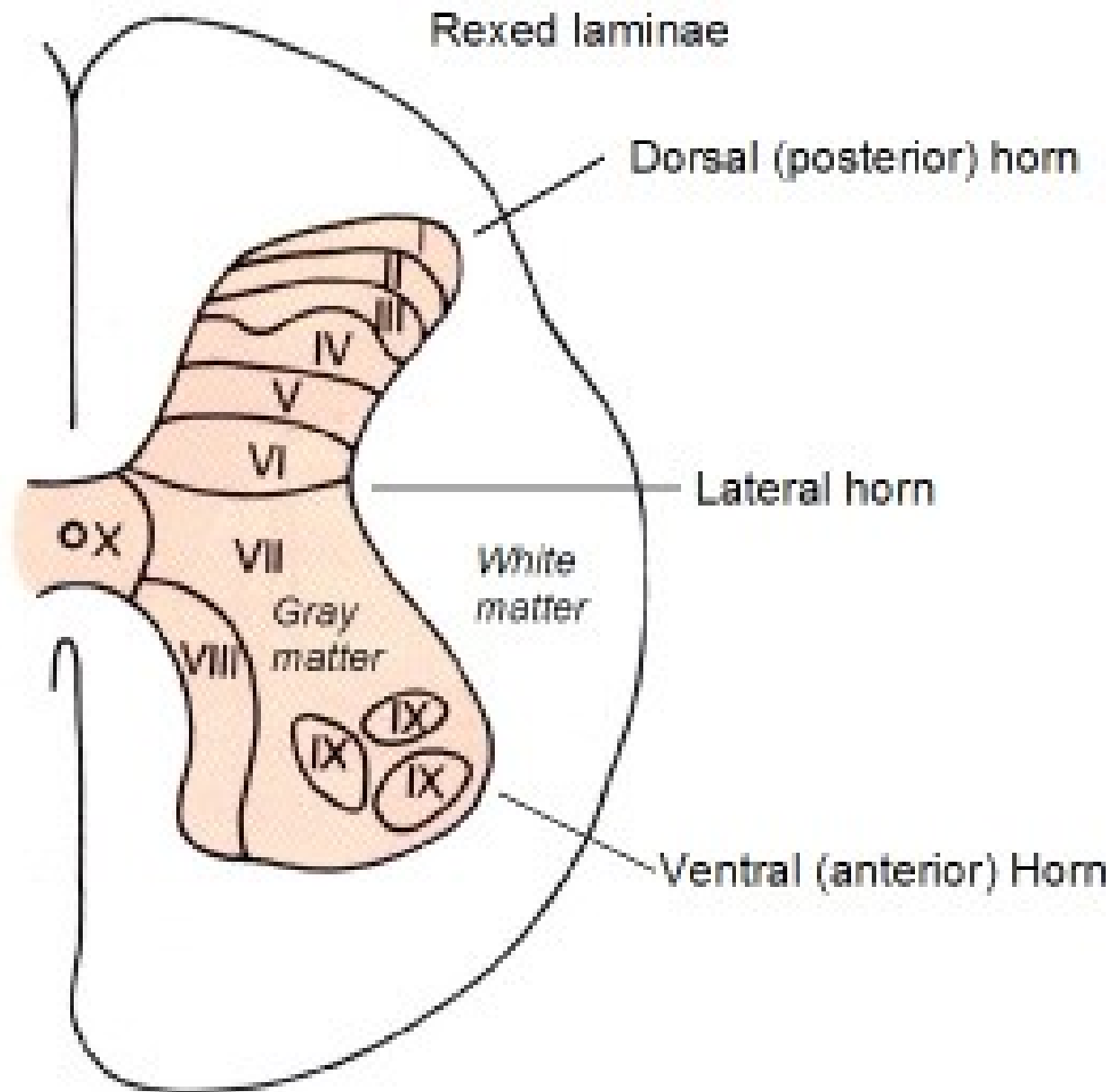
Tr. vestibulo-spinalis

Tr. tecto-spinalis

Tr. rubro-spinalis

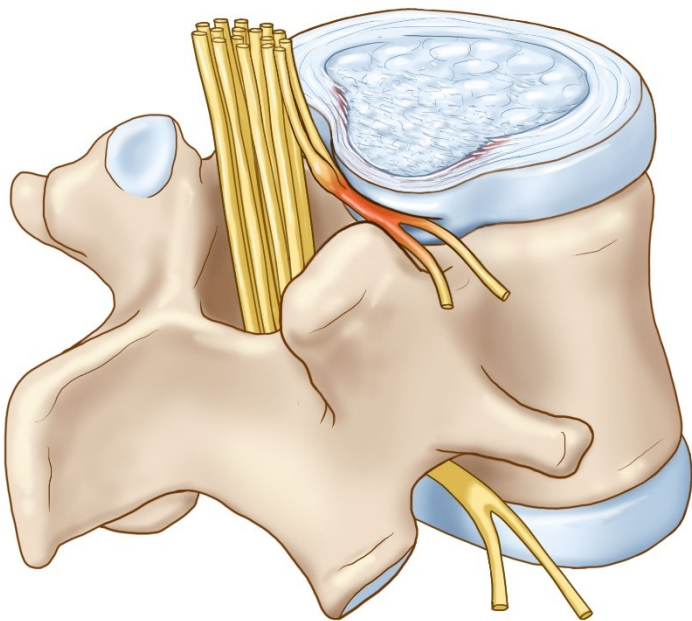
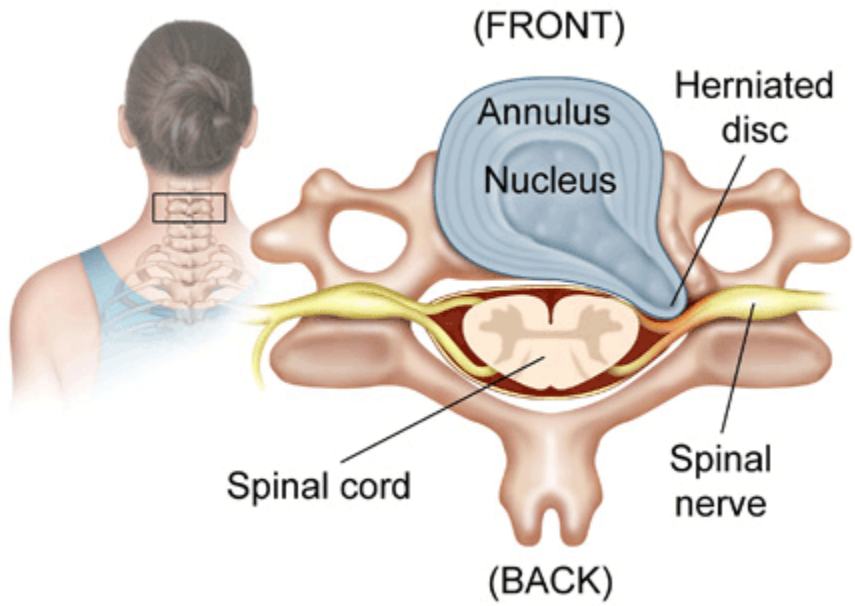
Spinal cord motor neurons





lamina (Rexed 1952)	Nuclei
I	ncl. apicalis (apical nucleus)
II + III	substantia gelatinosa Rollandi
IV + V	ncl. proprius (proper nucleus)
VI	ncl. thoracicus (Stilling – Clarke’s nucleus) C8-L3
VII	interneurons in the cornu anterius
VIII	medial group of motoneurons
IX	lateral group of motoneurons
X	zona centralis, gray mater around canalis centralis

MEDULLA SPINALIS



MEDULLA SPINALIS

