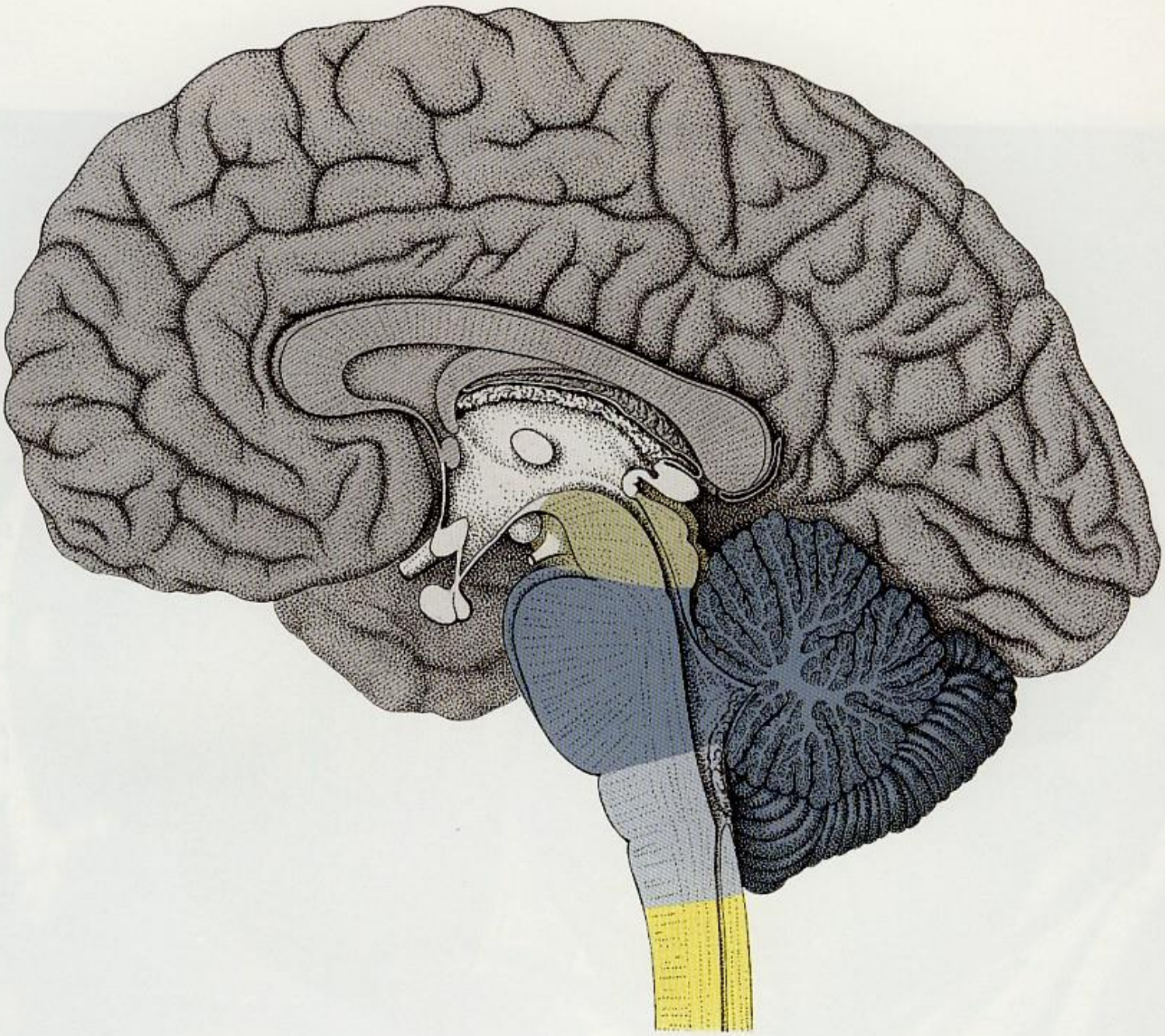
TRUNCUS ENCEPHALI

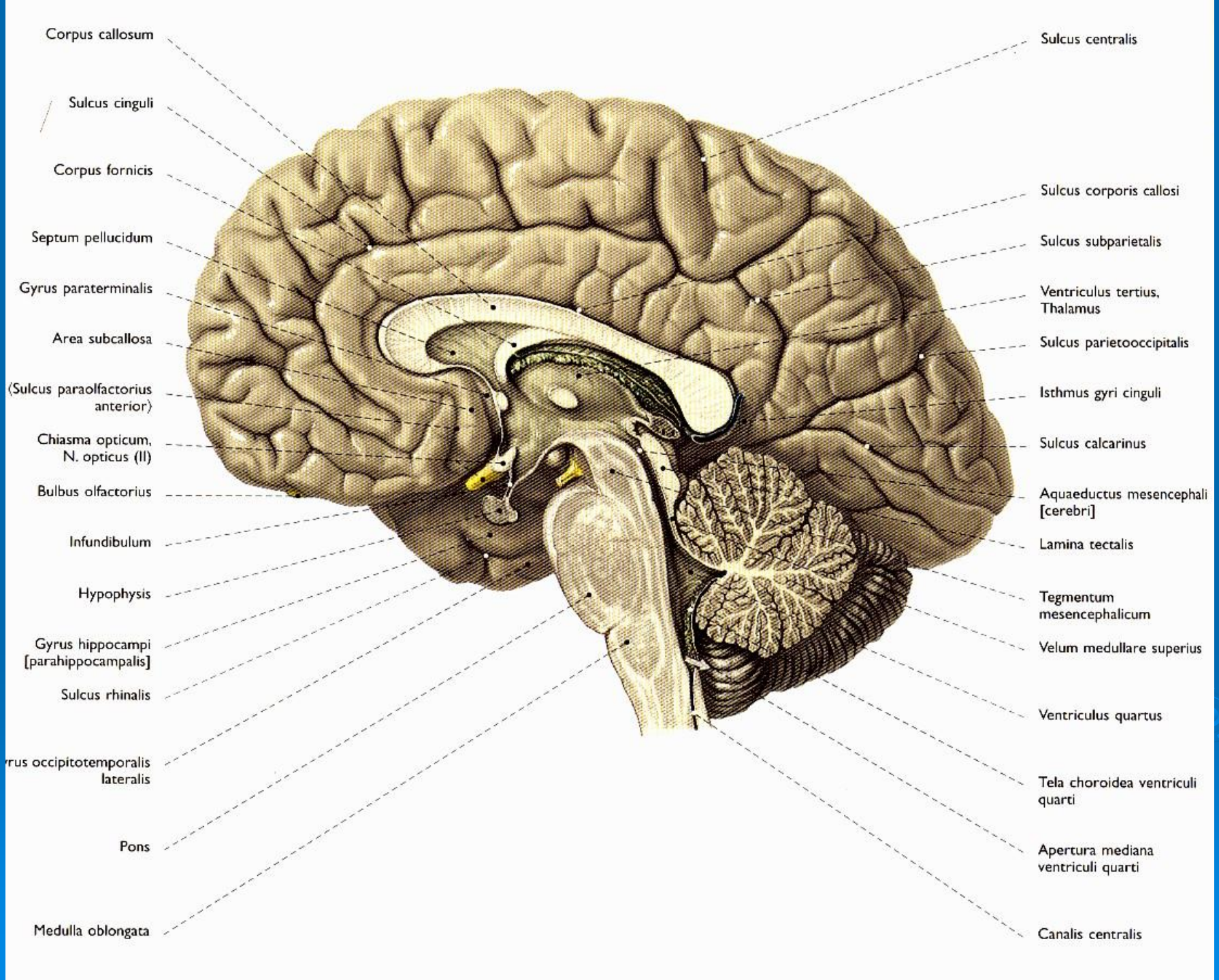
Ústav anatomie 2. LF

R. Druga

Truncus encephali

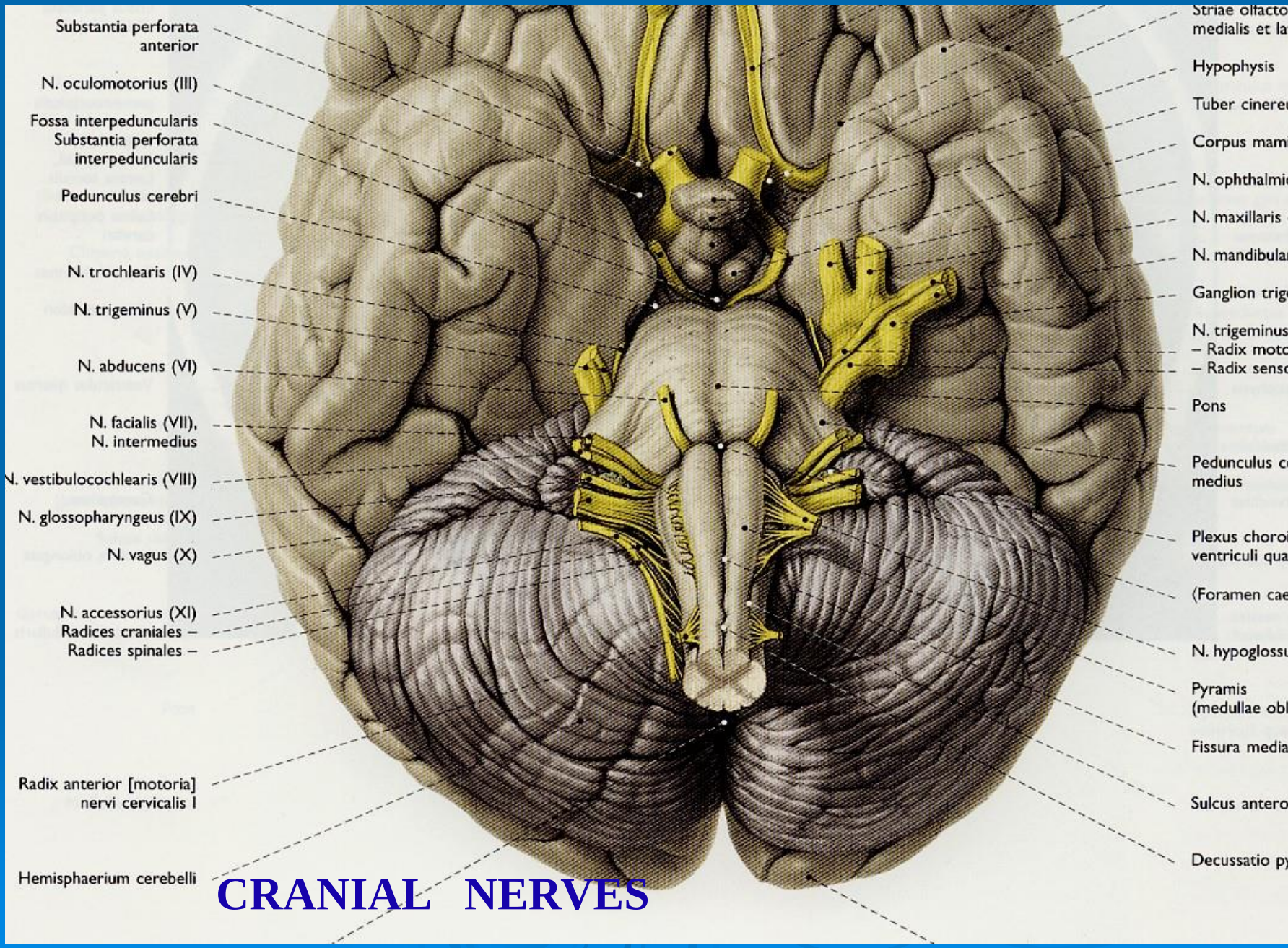
- Medulla oblongata
- Pons
- Mesencephalon




Corpus callosum
Sulcus cinguli
Corpus fornicis
Septum pellucidum
Gyrus paraterminalis
Area subcallosa
⟨Sulcus paraolfactorius anterior⟩
Chiasma opticum, N. opticus (II)
Bulbus olfactorius
Infundibulum
Hypophysis
Gyrus hippocampi [parahippocampalis]
Sulcus rhinalis
rus occipitotemporalis lateralis
Pons
Medulla oblongata
Sulcus centralis
Sulcus corporis callosi
Sulcus subparietalis
Ventriculus tertius, Thalamus
Sulcus parietooccipitalis
Isthmus gyri cinguli
Sulcus calcarinus
Aquaeductus mesencephali [cerebri]
Lamina tectalis
Tegmentum mesencephalicum
Velum medullare superius
Ventriculus quartus
Tela choroidea ventriculi quarti
Apertura mediana ventriculi quarti
Canalis centralis

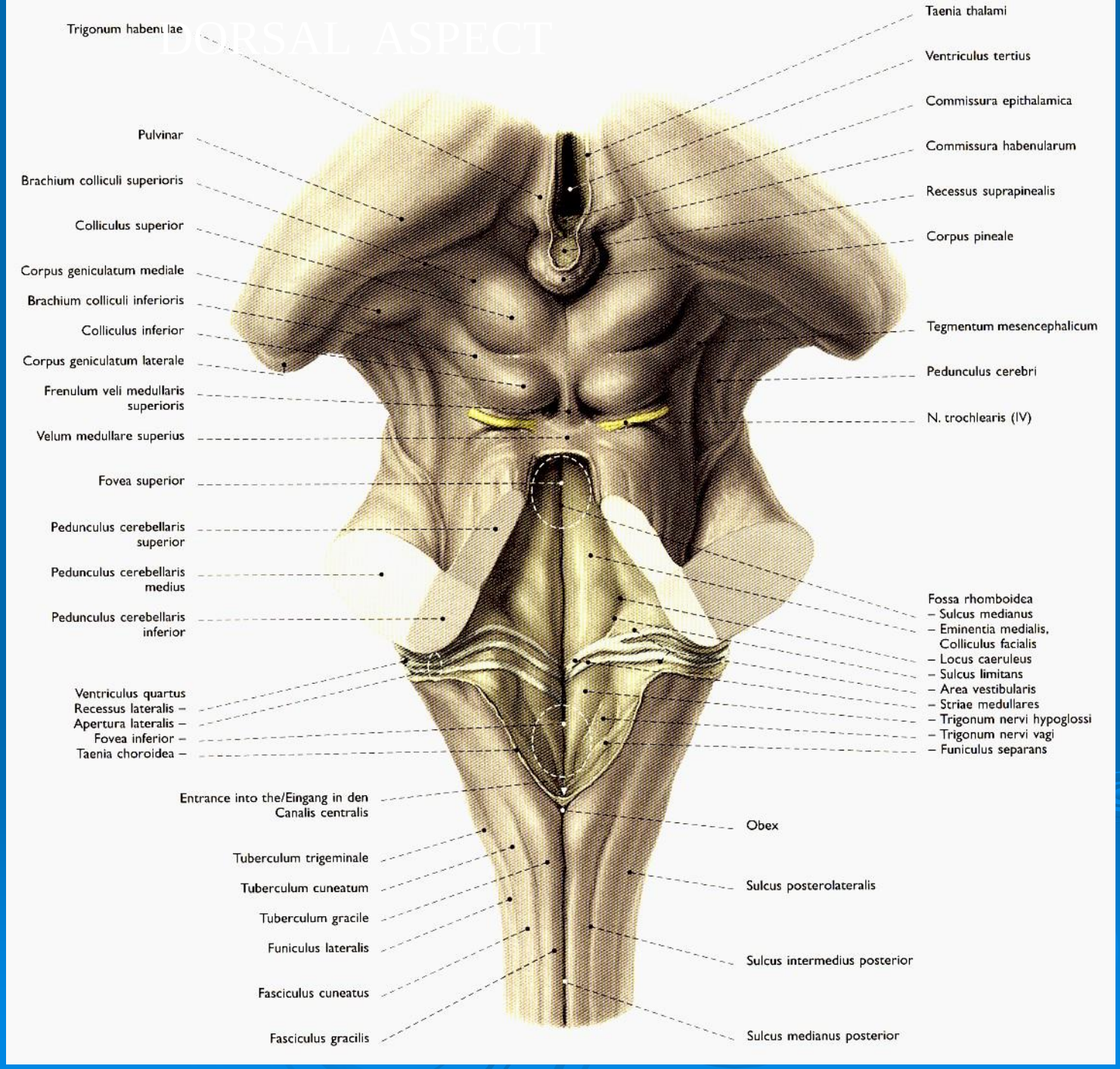

Lobus frontalis cerebri
Sulcus cinguli
Corpus callosum
Corpus fornicis
Septum pellucidum
Thalamus Facies medialis
Sinus frontalis
Chiasma opticum
Hypophysis
Sinus sphenoidalis
Sinus ethmoidales
Conchae nasales media et inferior
Sulcus centralis
Lobus parietalis cerebri
Sulcus parietooccipital
Aquaeductus mesencephali, Lamina tectalis
Lobus occipitali cerebri
Sulcus calcarinu
Mesencephalon
Ventriculus qua
Pons
Cerebellum
Medulla oblong
Cisterna

BASAL ASPECT

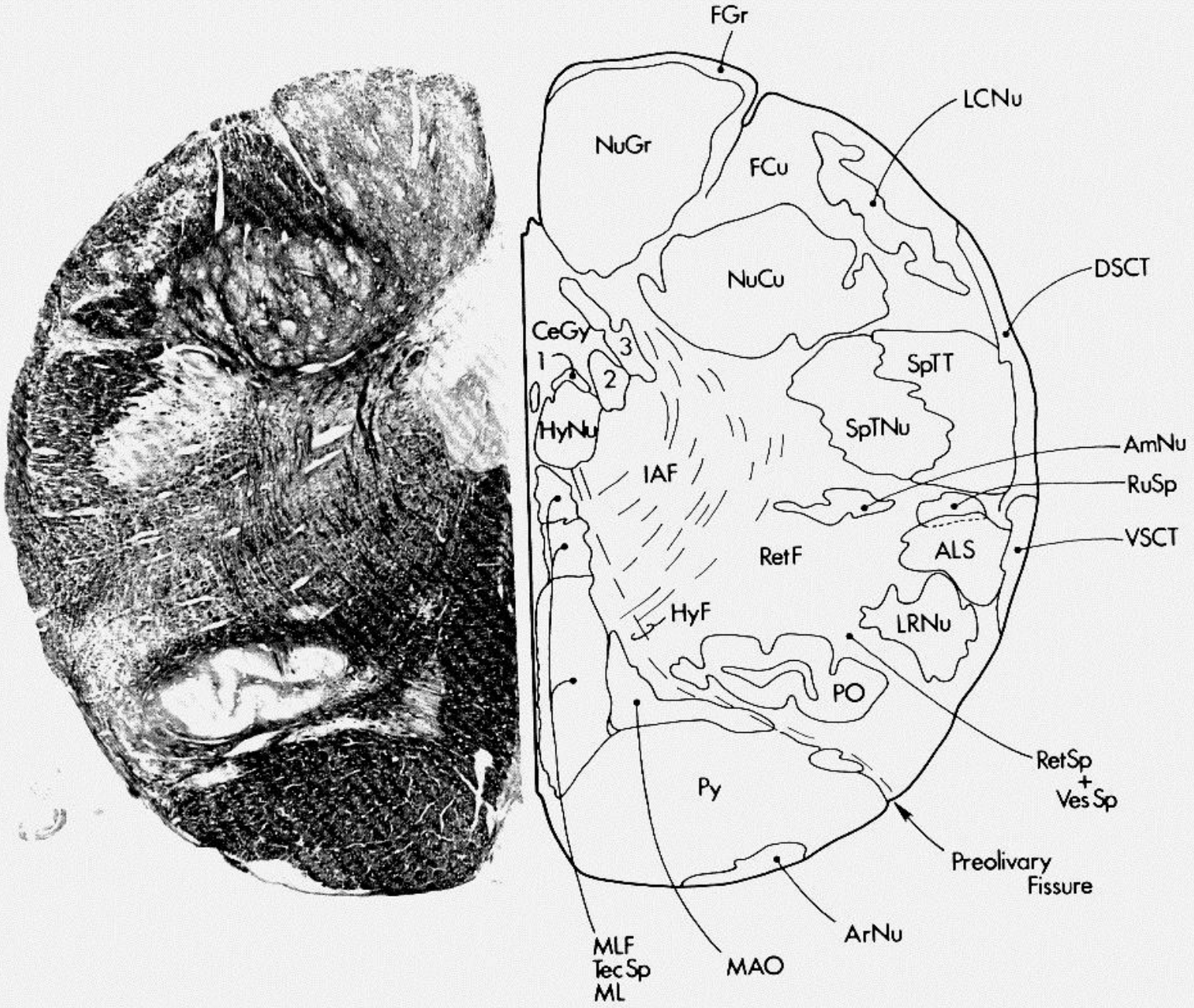


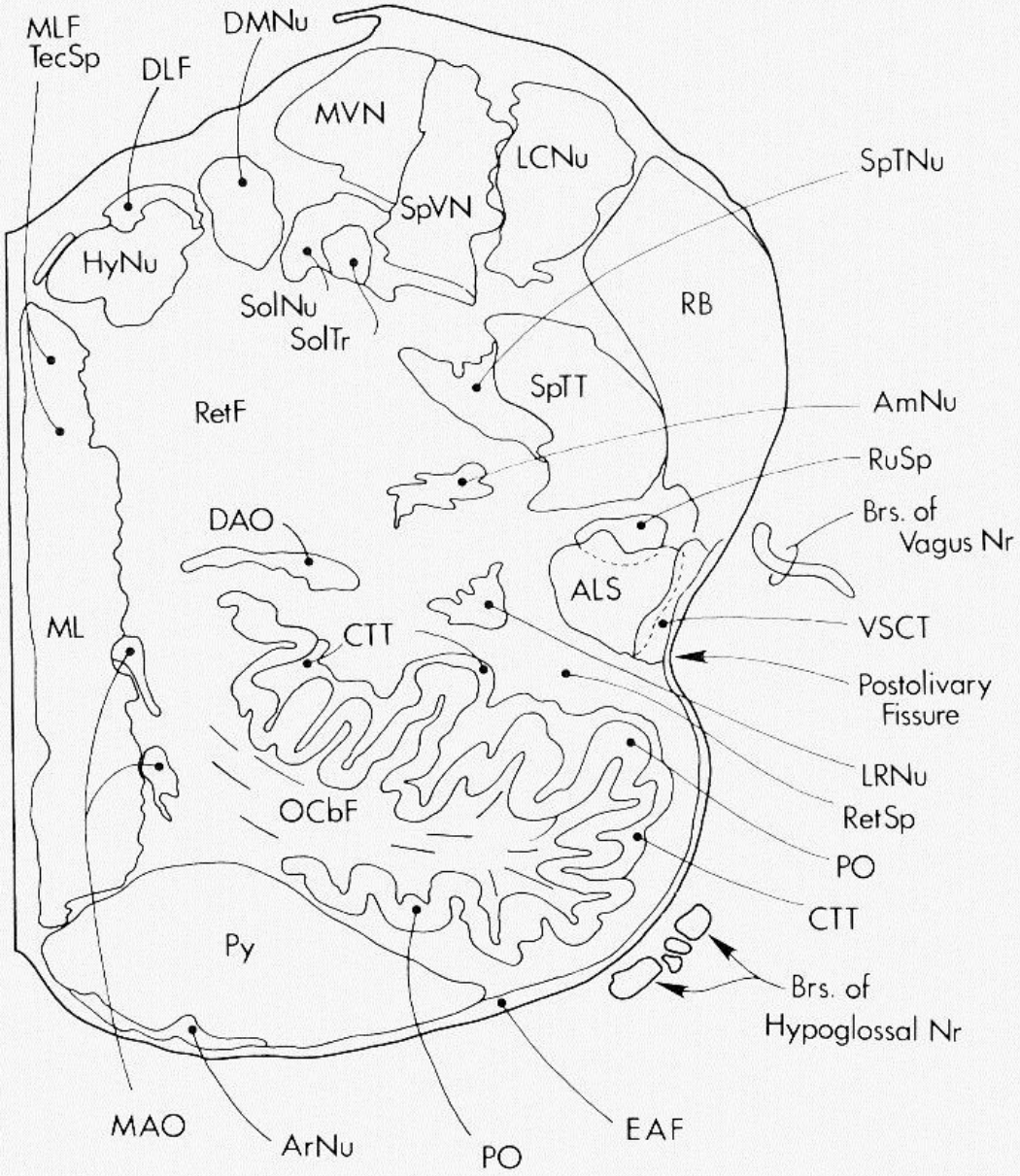
CRANIAL NERVES

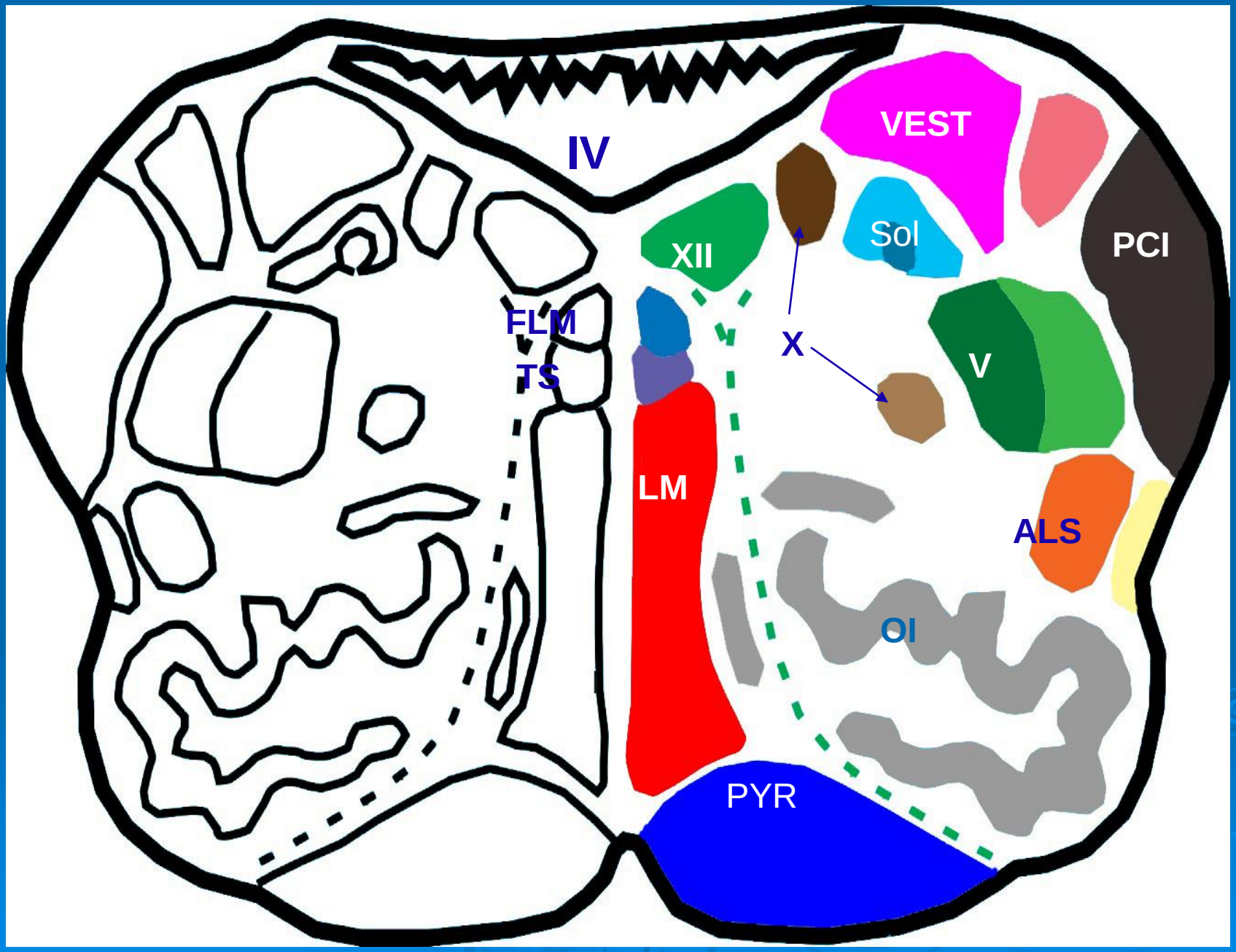
Dorsal aspect of the brain stem

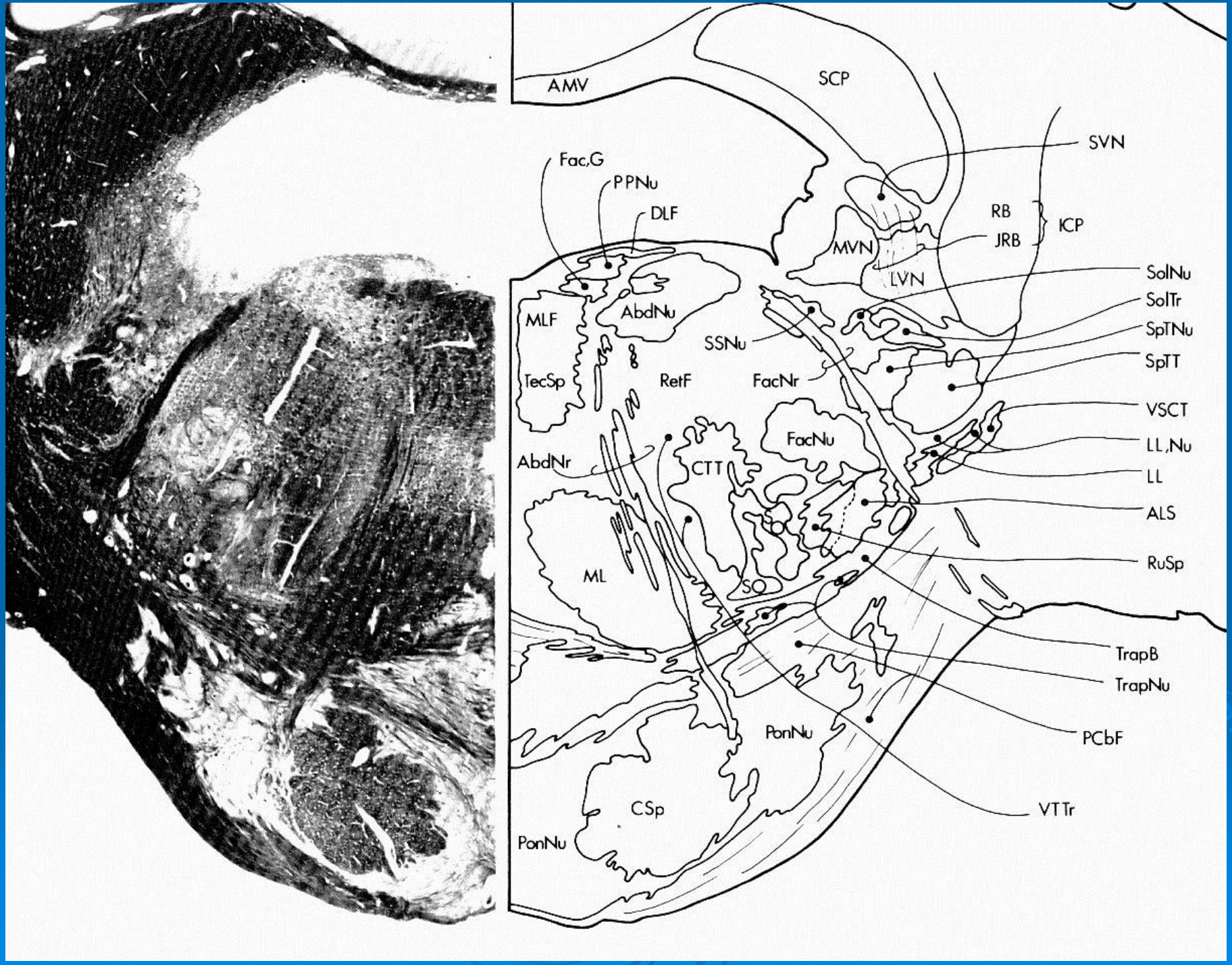


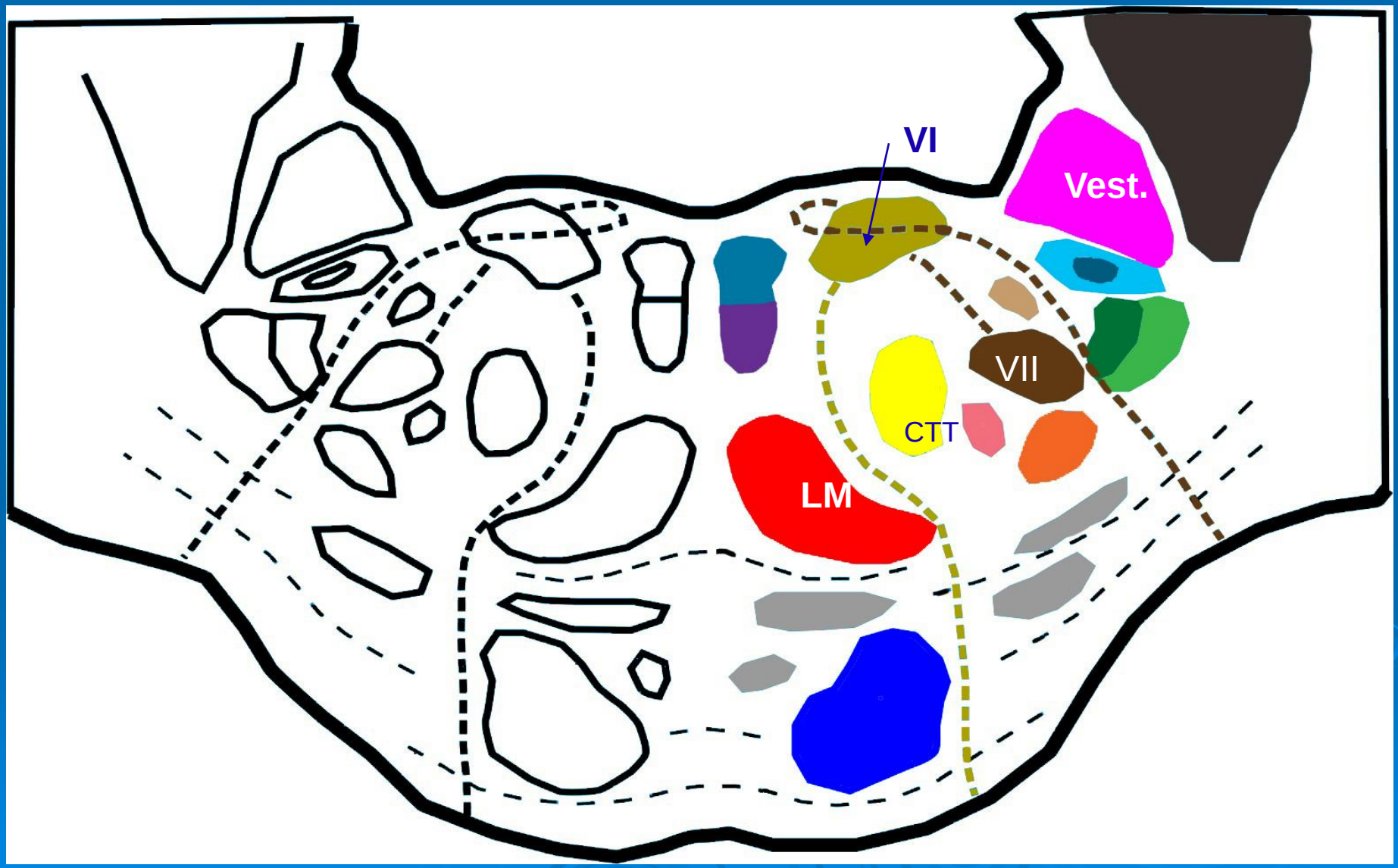
	Jádra hlavových nervů	Retikulární formace	Struktury specifické pro oddíly kmene
Medulla oblongata	IX.,X.,XI., XII., V.(nc. spinalis), VIII. (jádra n. vestibularis, jádra n. cochlearis)	RF oblongáty	Nc. gracilis, nc. cuneatus, oliva inferior
Pons Varoli	V. (nc. pontinus, nc. motorius), VI., VII., VIII. (jádra n. vestibularis)	RF pontu	Ncc. pontis, oliva superior
Mesencephalon	V. (nc.mesencephalicus III., IV.	RF mesencephala	Nc. ruber. Subst. nigra, subst. g centralis, nc. interstitialis, nc. interpeduncularis, collliculus su colliculus inferior

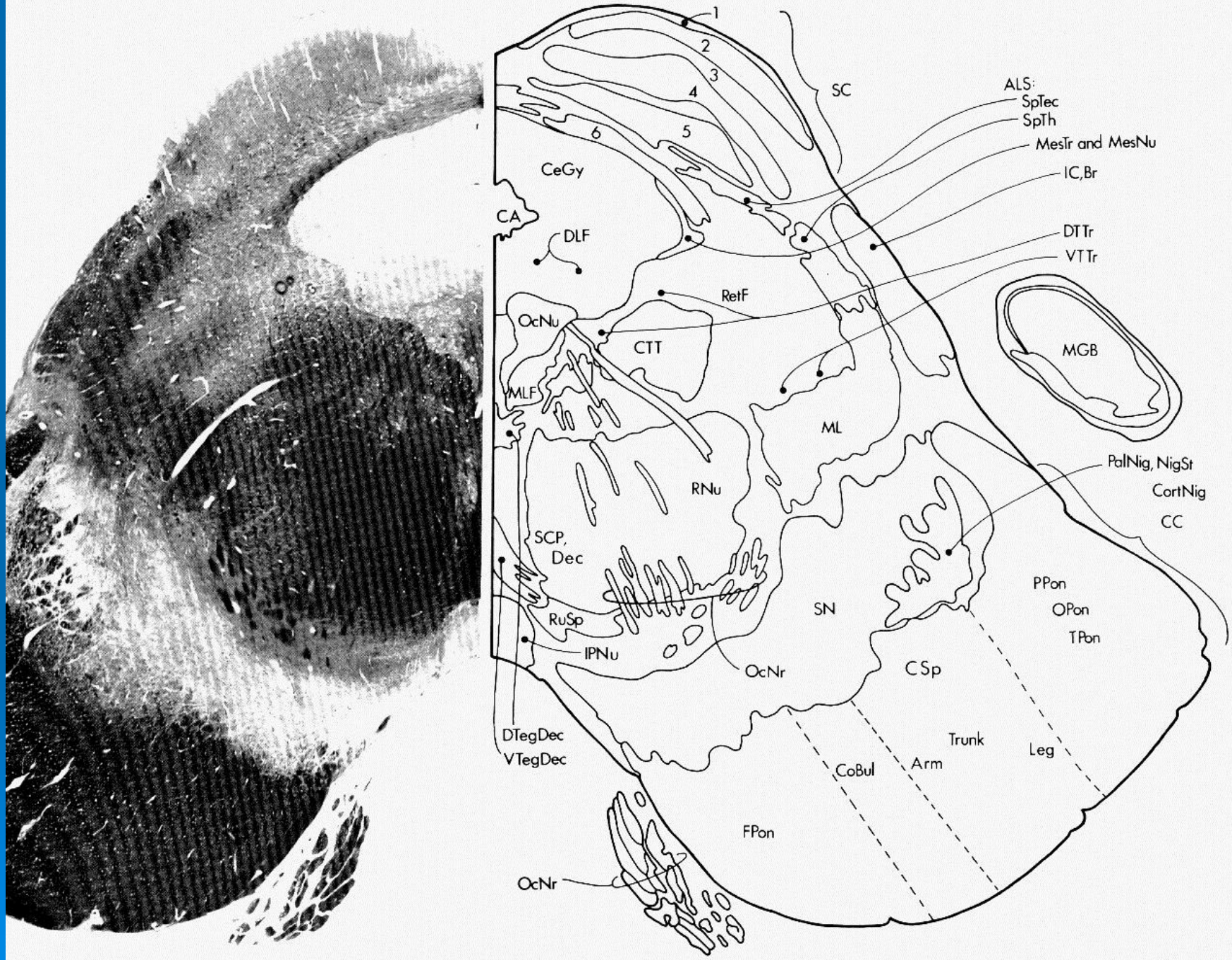

FGr
LCNu
NuGr
FCu
NuCu
DSCT
CeGy
1
2
3
SpTT
SpTNu
HyNu
AmNu
IAF
RuSp
RetF
ALS
VSCT
HyF
LRNu
PO
RetSp
+
Ves Sp
Py
Preolivary
Fissure
ArNu
MLF
Tec Sp
ML
MAO

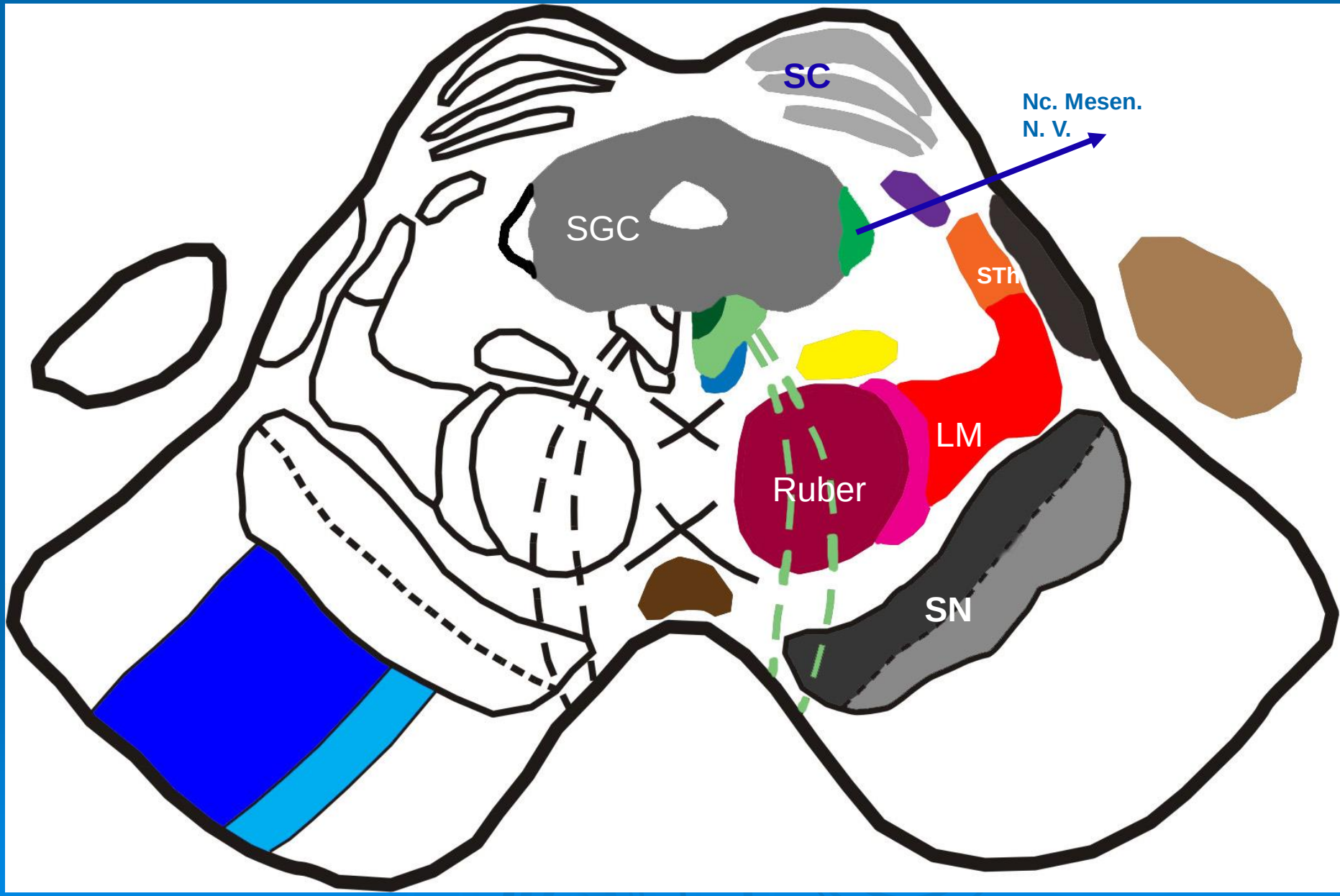

MLF
TecSp
DLF
DMNu
MVN
LCNu
SpTNu
SpVN
HyNu
SolNu
SolTr
RB
SpTT
RetF
AmNu
RuSp
Brs. of
Vagus Nr
DAO
ALS
ML
CTT
VSCT
Postolivary
Fissure
LRNu
RetSp
OCbF
PO
CTT
Py
Brs. of
Hypoglossal Nr
MAO
ArNu
PO
EAF


IV
VEST
Sol
PCI
XII
X
V
FLM
TS
LM
ALS
OI
PYR


AMV
SCP
SVN
Fac,G
PPNu
DLF
RB
ICP
JRB
MVN
LVN
SolNu
SolTr
SpTNu
SpTT
MLF
AbdNu
SSNu
TecSp
RetF
FacNr
VSCT
FacNu
LL,Nu
AbdNr
CTT
LL
ALS
RuSp
ML
SO
TrapB
TrapNu
PCbF
PonNu
CSp
VTTr
PonNu


VI
Vest.
VII
CTT
LM


1
2
3
4
5
6
SC
ALS:
SpTec
SpTh
MesTr and MesNu
IC,Br
CeGy
CA
DLF
DTTr
VTTr
RetF
OcNu
CTT
MGB
MLF
ML
PalNig, NigSt
CortNig
CC
RNu
SCP,
Dec
PPon
OPon
TPon
SN
RuSp
IPNu
OcNr
CSp
DTegDec
VTegDec
Trunk
Leg
Arm
CoBul
FPon
OcNr


SC
Nc. Mesen.
N. V.
SGC
STh
LM
Ruber
SN

The nuclei of cranial nerves

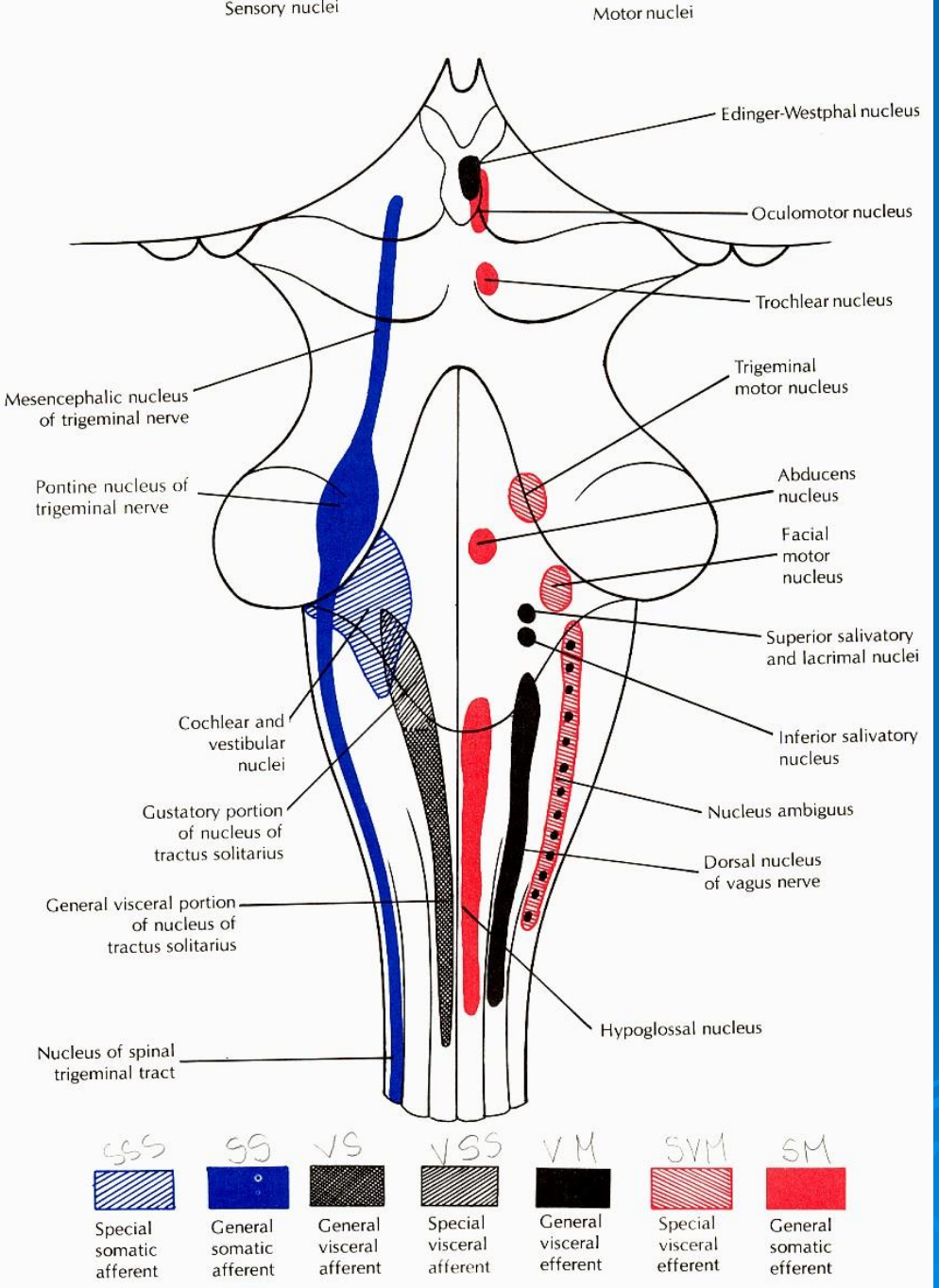
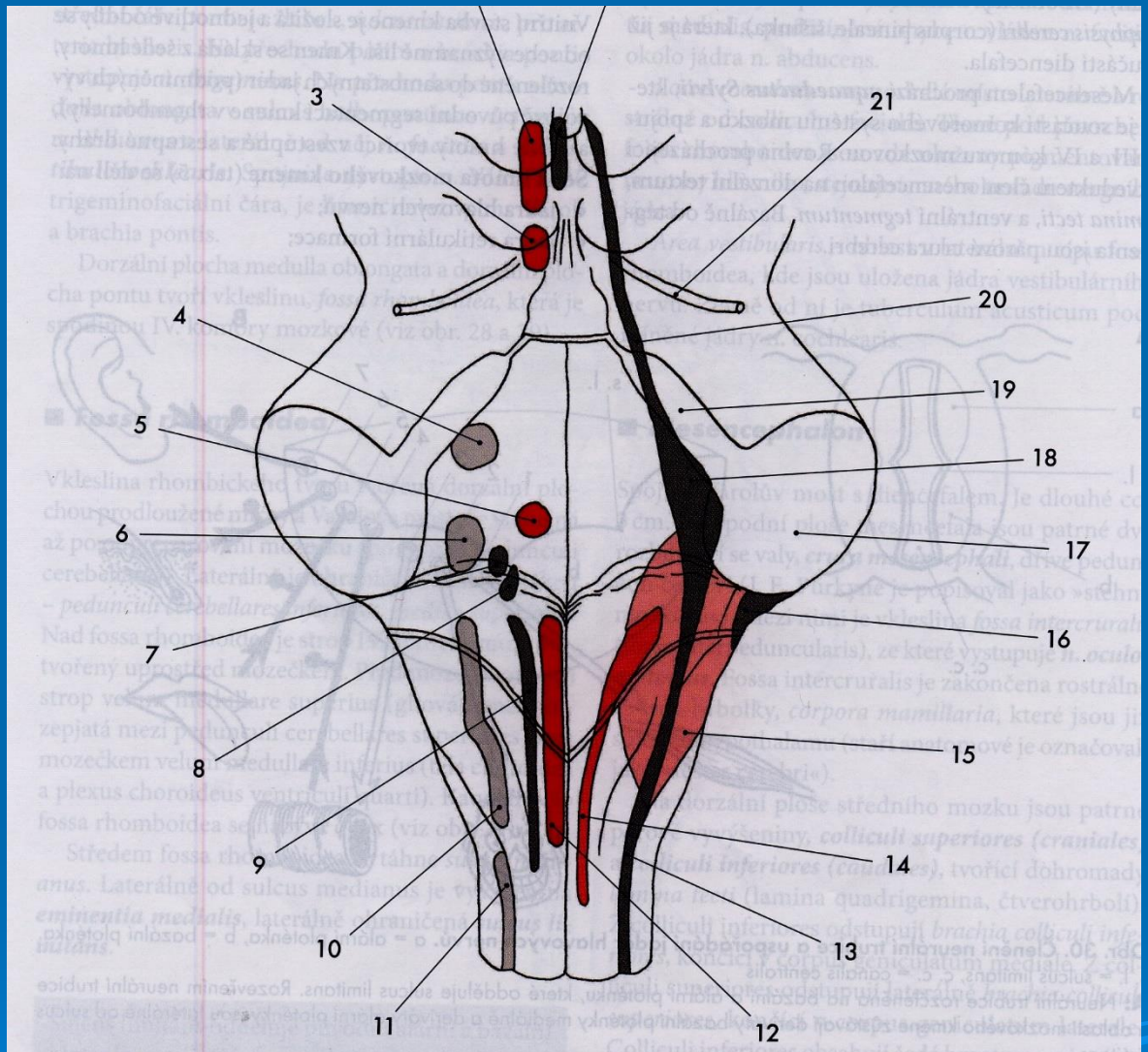


Figure 8-15. Classification of the nuclei of cranial nerves.



Obr. 31. Projekce jader hlavových nervů na spodinu IV. mozkové komory. 1 – nc. Edinger-Westphal, 2 – nc. nervi oculomotorii, 3 – nc. nervi trochlearis, 4 – nc. motorius n. trigemini (nc. masticatorius), 5 – nc. nervi abducentis, 6 – nc. nervi facialis, 7 – nc. salivatorius superior, 8 – nc. salivatorius inferior, 9 – nc. dorsalis n. vagi, 10 – nc. ambiguus, 11 – nc. spinalis n. accessorii, 12 – nc. nervi hypoglossi, 13 – nc. spinalis n. trigemini, 14 – nc. solitarius, 15 – ncc. nervi vestibularis, 16 – ncc. nervi cochlearis, 17 – pedunculus cerebellaris medius, 18 – nc. pontinus n. trigemini, 19 – pedunculus cerebellaris superior, 20 – nc. mesencephalicus n. trigemini, 21 – n. trochlearis

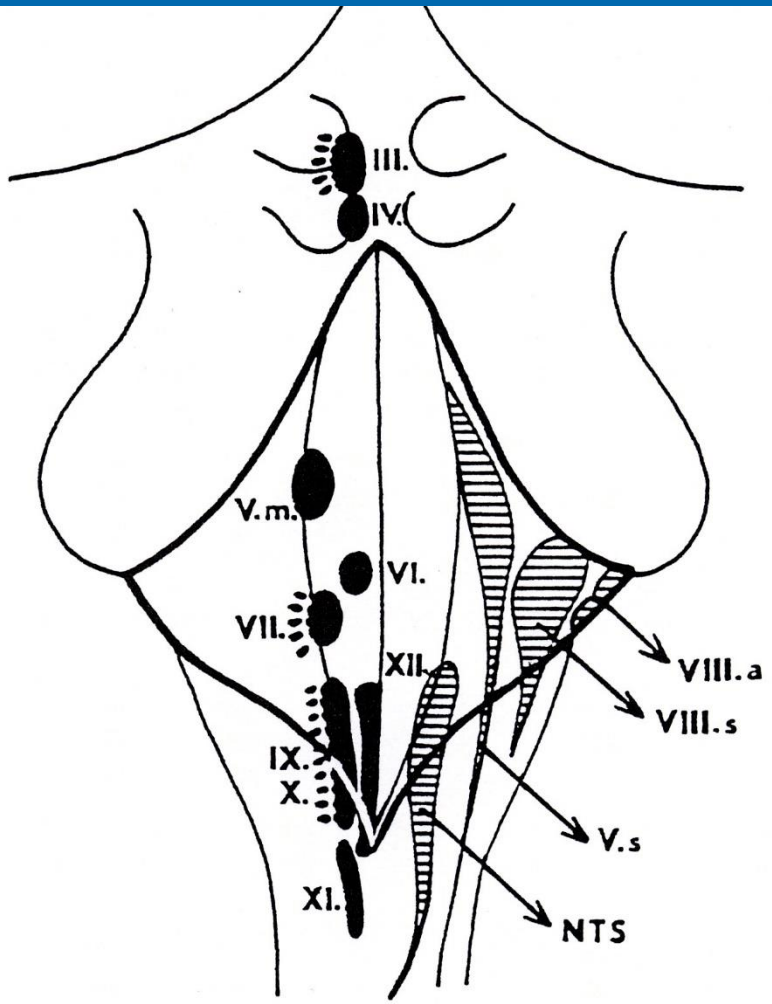


Fig. 25: Projection of cranial nerve nuclei on the fourth ventricle floor (compare with Fig. 17).

Black – somatic motor nuclei,
dotted – visceral motor nuclei,
hatched – sensory nuclei.
III.–XII. – cranial nerve nuclei,
V.m. – ncl. motorius n.V.,
V.s. – ncl. spinalis n.V.,
VII.a – nuclei of pars acustica n.VIII.,
VIII.s – nuclei of pars statica n.VIII.,
NTS – ncl. solitarius (ncl. tractus solitarii).

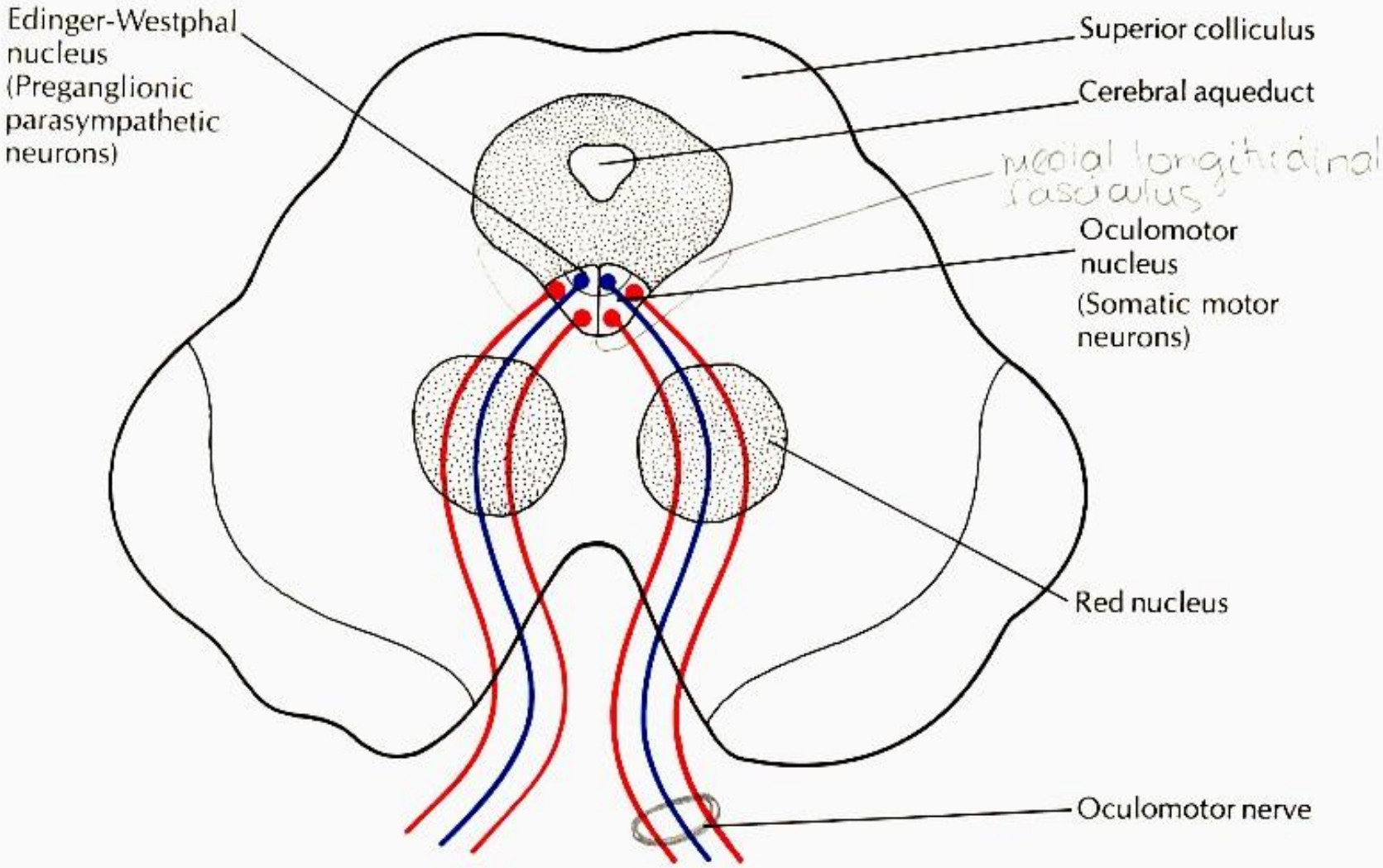


Figure 8-1. Origin of the oculomotor nerve in the midbrain. (Motor neurons are red; preganglionic parasympathetic neurons are blue.)

Facial nerve

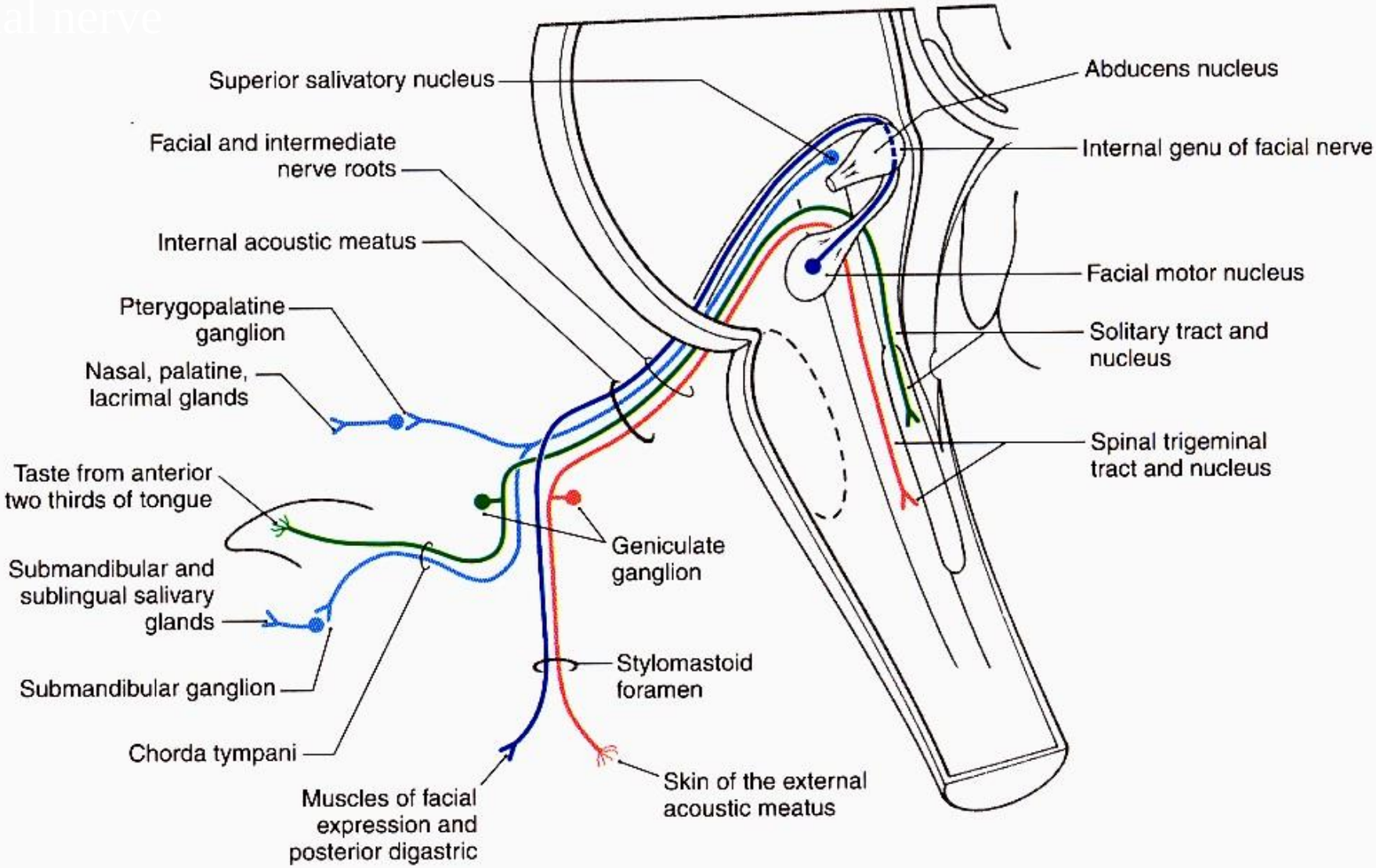
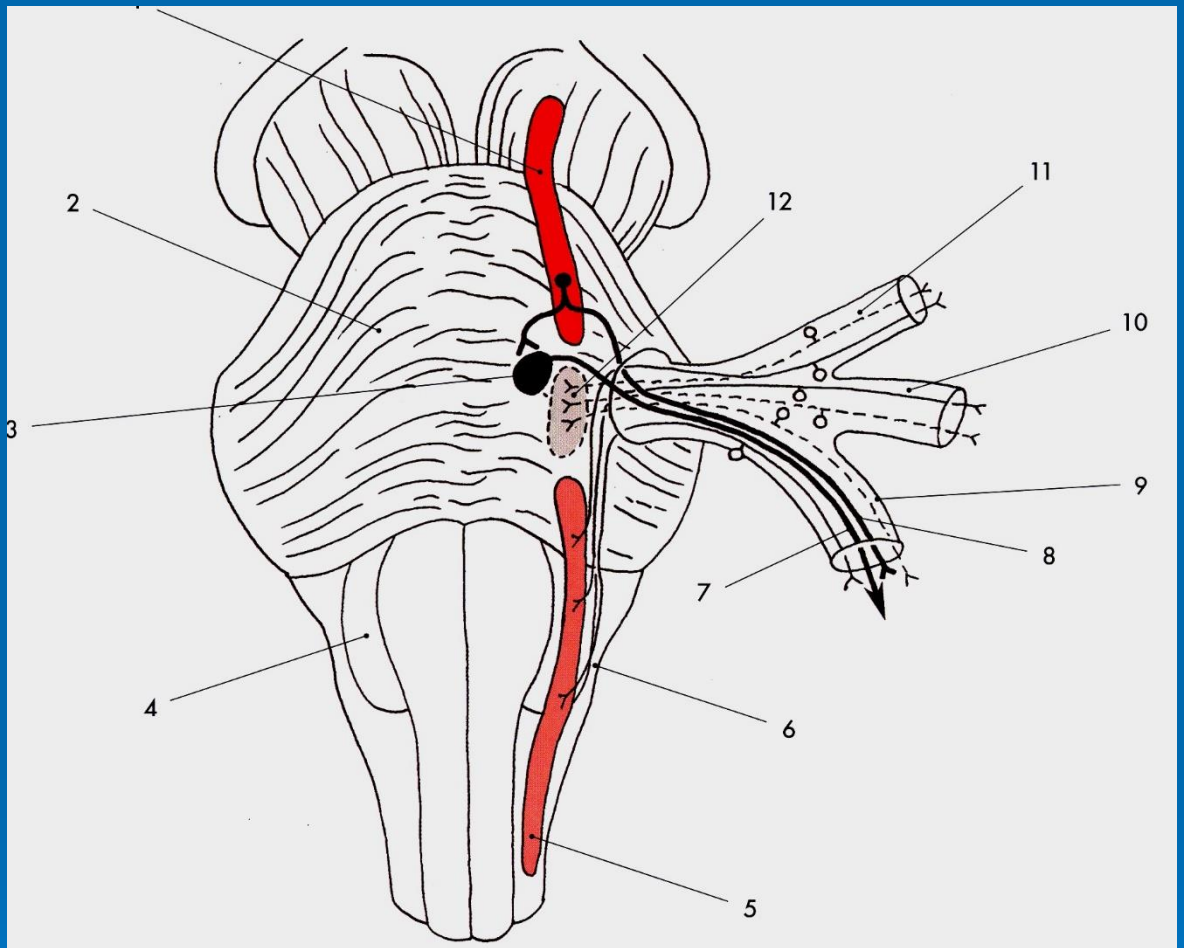


Figure 14–10. The central nuclei and peripheral distribution of fibers of the facial nerve (cranial nerve VII). The few GV fibers from the nasopharynx, palate, and submandibular and sublingual salivary glands are not shown here; they have cell bodi of origin in the geniculate ganglion and project to more caudal regions of the solitary nucleus.



Obr. 39. Ganglion trigeminale a projekce jader n. trigeminus na ventrální plochu mozkového kmene. 1 – nc. mesencephalicus n. trigemini, 2 – pons Varoli, 3 – nc. motorius n. trigemini, 4 – oliva inferior, 5 – nc. spinalis n. trigemini, 6 – tr. spinalis n. trigemini, 7 – motorická vlákna n. trigeminus, 8 – proprioceptivní vlákna n. trigeminus, 9 – n. mandibularis, 10 – n. maxillaris, 11 – n. ophthalmicus, 12 – nc. pontinus n. trigemini. Tenké souvislé čáry označují vlákna vedoucí signály bolesti a tepla, tenké přerušované čáry označují vlákna vedoucí signály dotykového čití

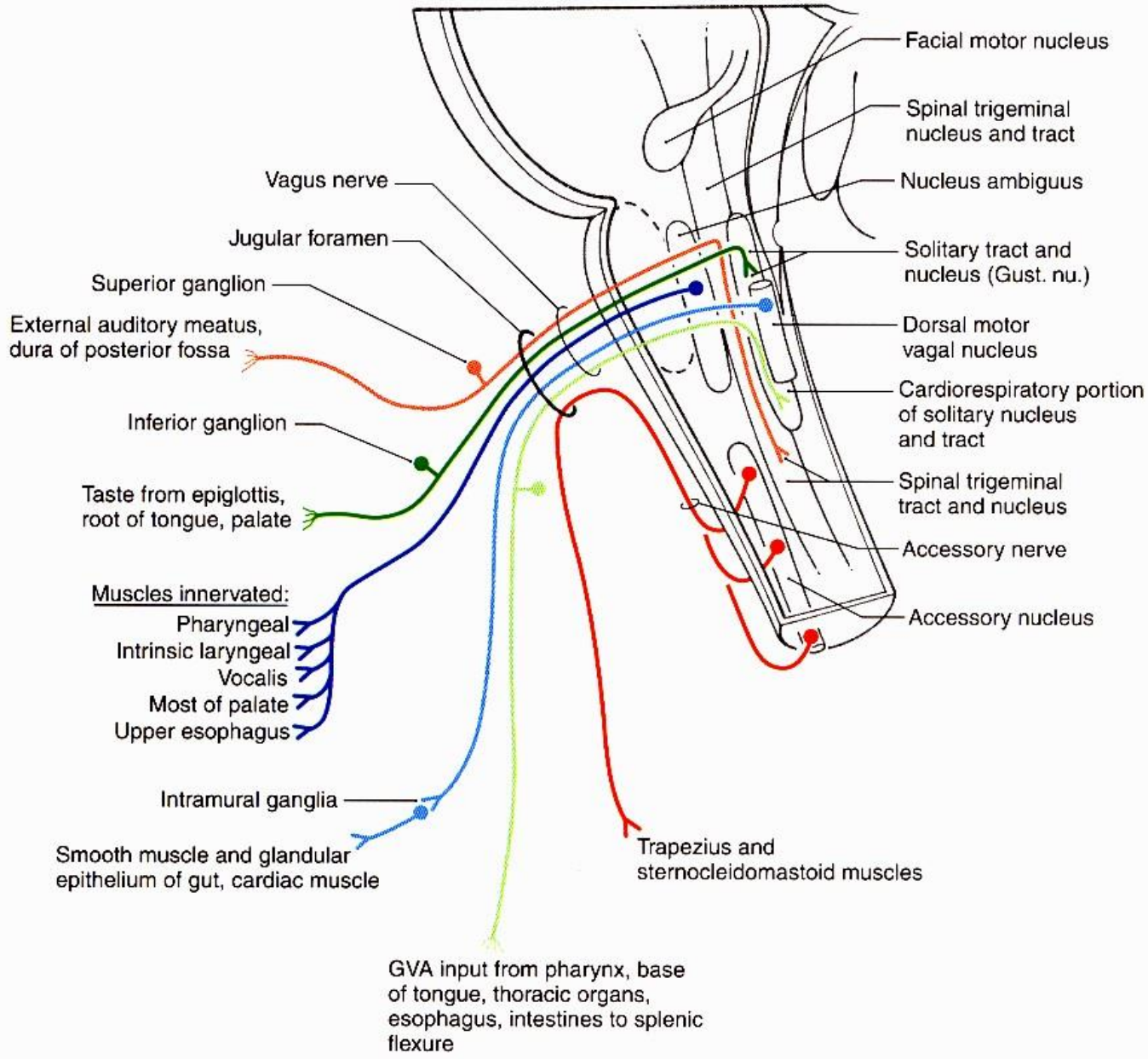


Figure 14–6. The central nuclei and peripheral distribution of fibers of the accessory nerve (cranial nerve XI) and the vagu nerve (cranial nerve X). Visceral afferent cell bodies (SVA, GVA) collectively form the inferior ganglion, and GSA cell bodie collectively form the superior ganglion of cranial nerve X. Gust. nu., rostral portions of solitary nucleus–gustatory nucleus.

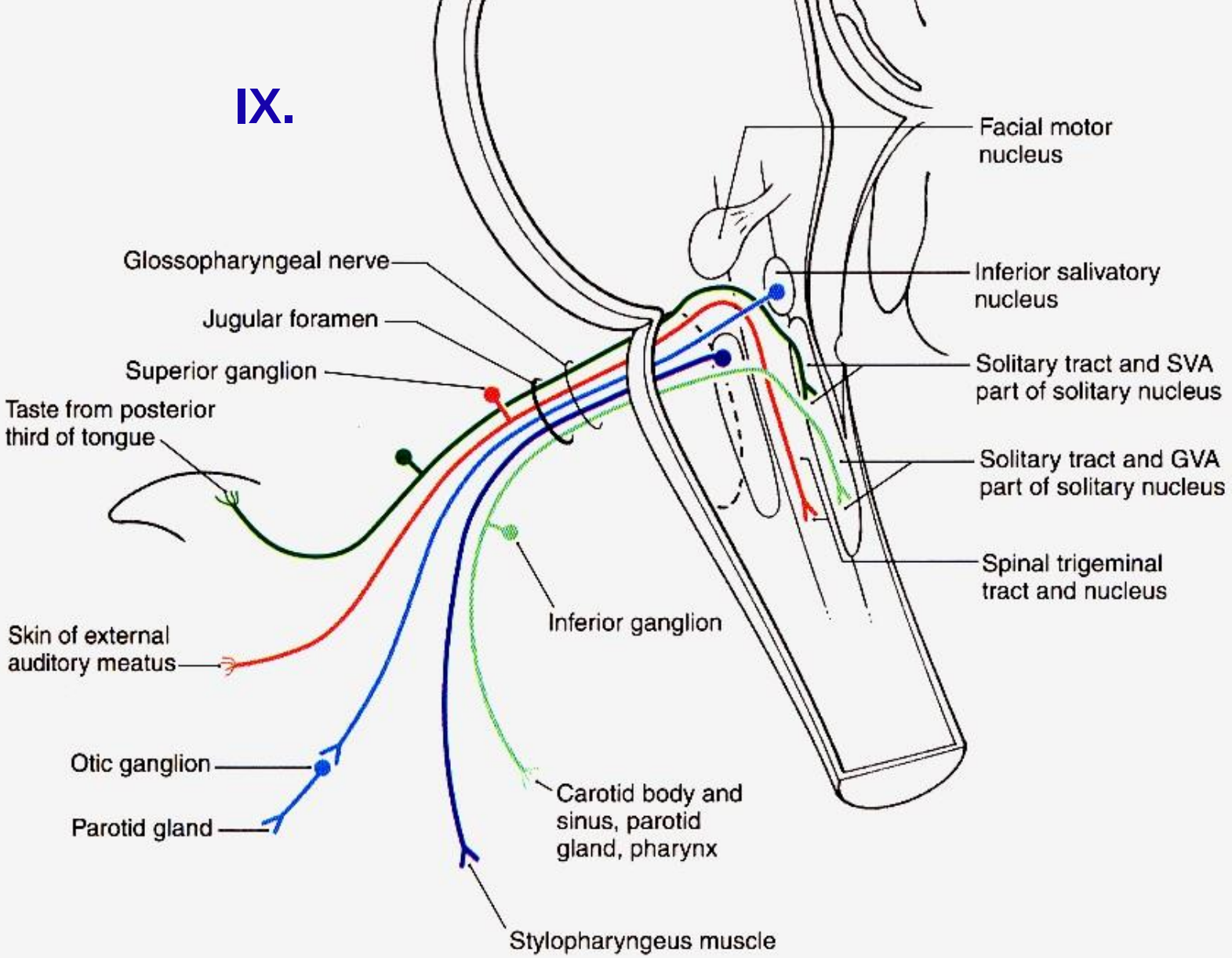
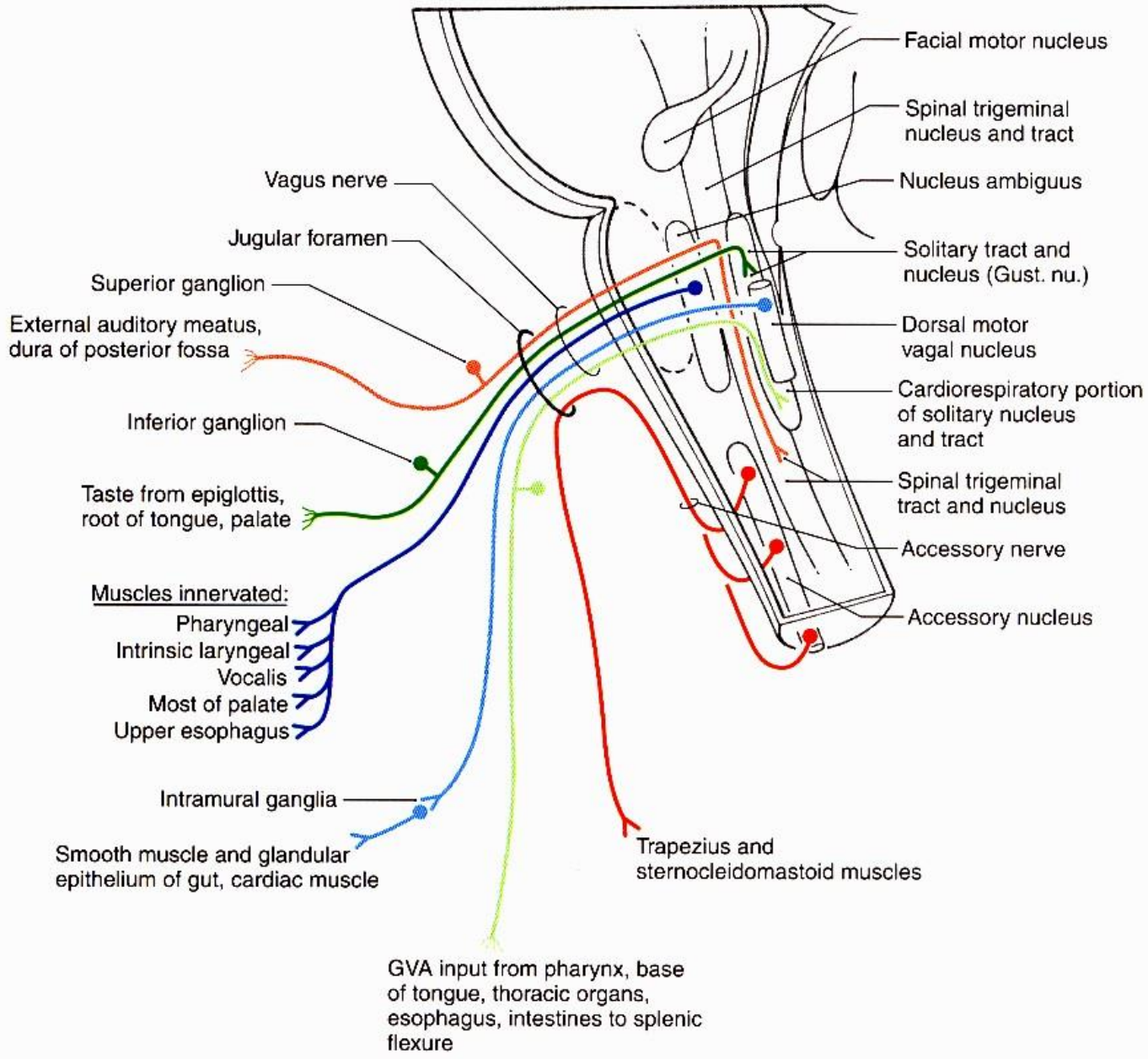


Figure 14–8. The central nuclei and peripheral distribution of fibers of the glossopharyngeal nerve (cranial nerve IX). Visceral afferent cell bodies (SVA, GVA) collectively form the inferior ganglion and GSA cell bodies collectively form the superior ganglion of cranial nerve IX.



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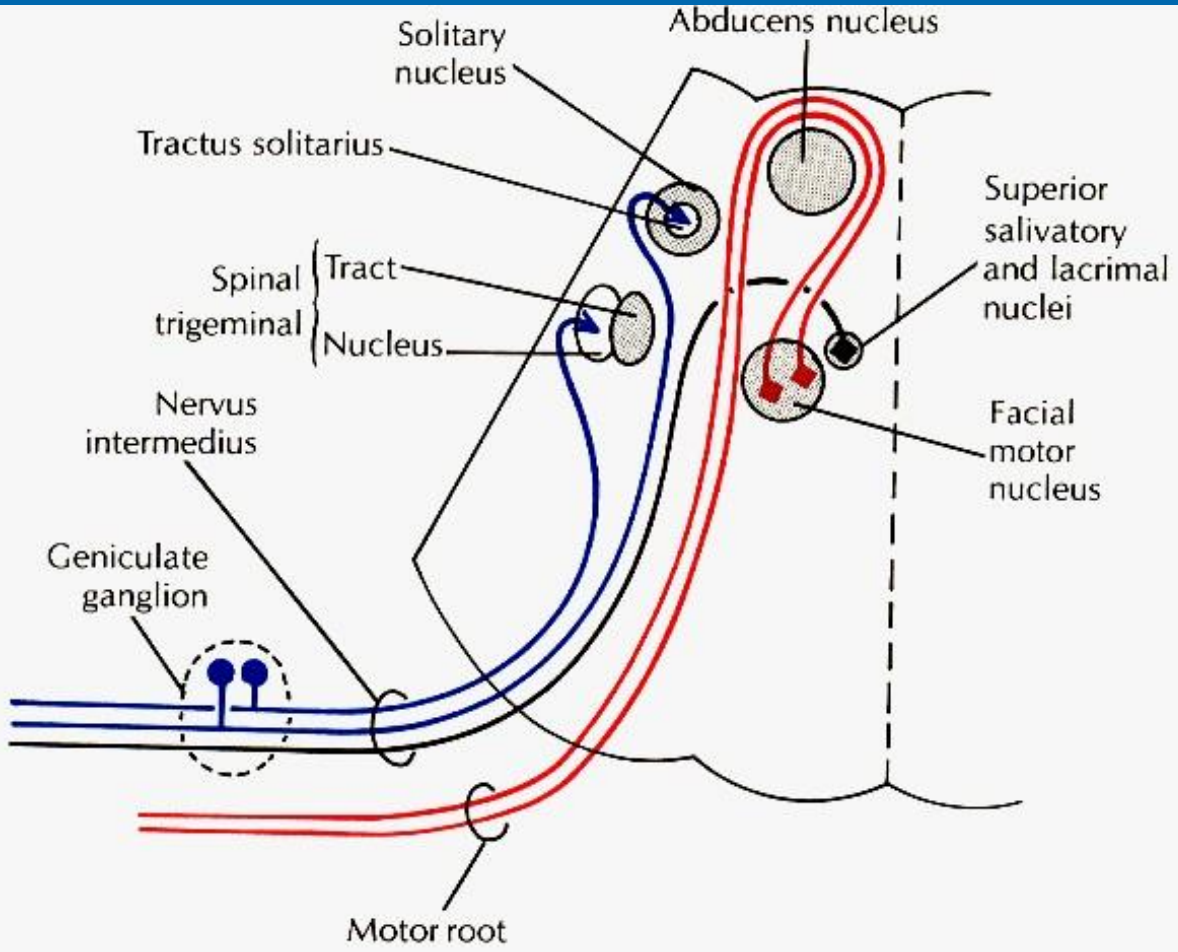
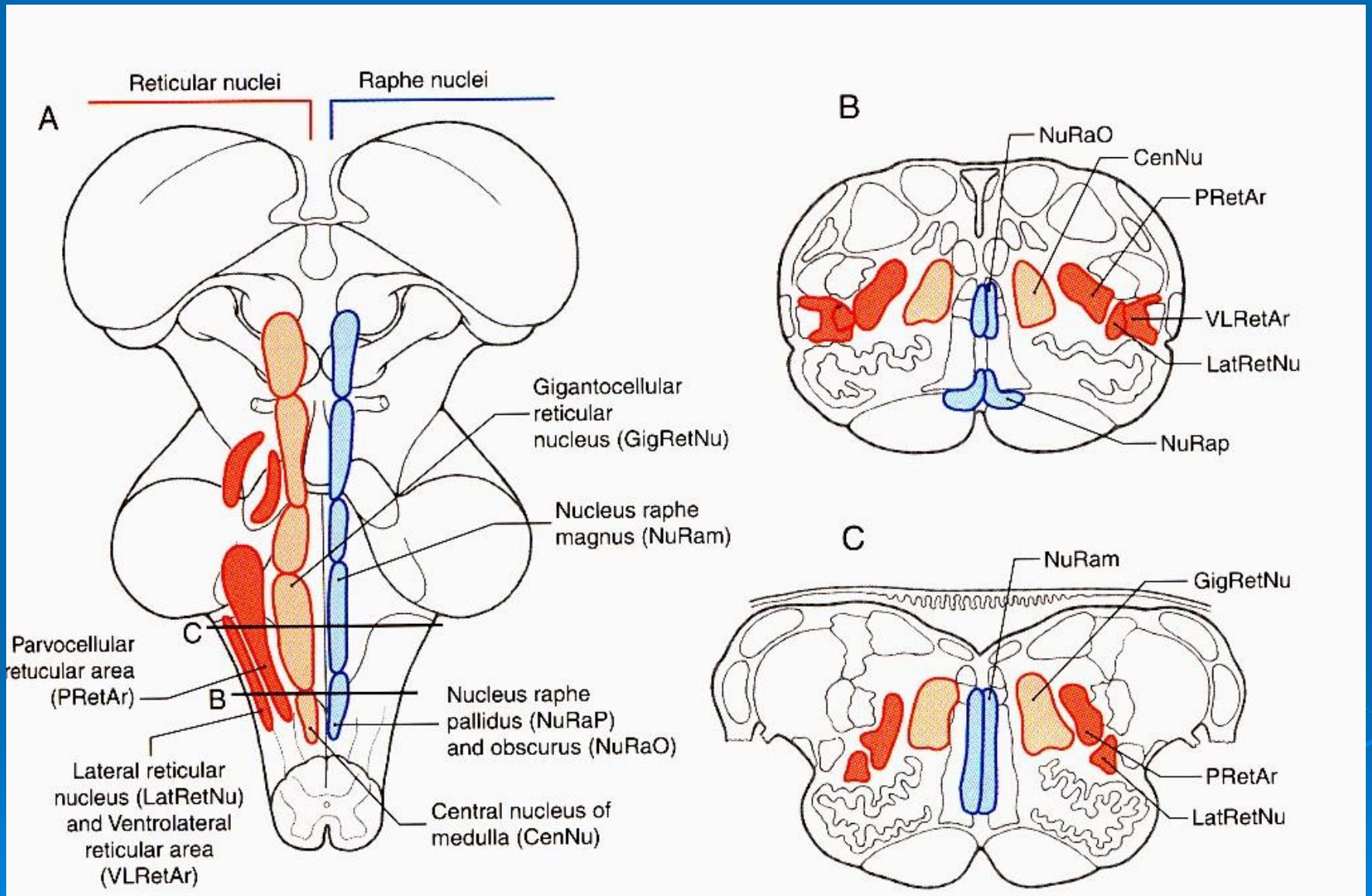


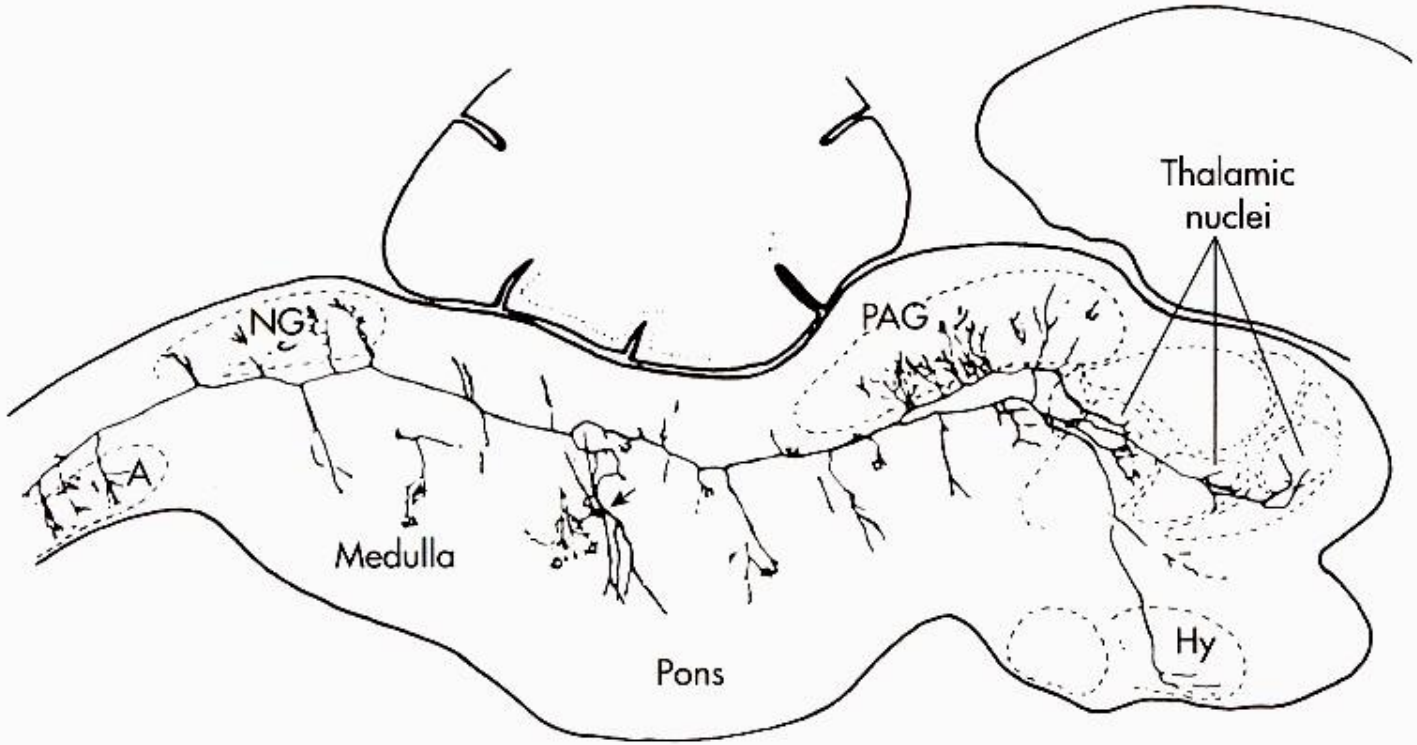
Figure 8-9. Components of the facial nerve in the brain stem. (Primary sensory neurons are blue; motor neurons are red; preganglionic parasympathetic neurons are black.)

FORMATIO RETICULARIS



ure 11–15. Posterior (dorsal) (*A*) view of the brainstem and caudal (*B*) and rostral (*C*) cross sections showing the raphe and cular nuclei of the medulla.

FORMATIO RETICULARIS, neurons of magnocellular part



IGURE 11-15
rawing of a Golgi-stained parasagittal section from the brain of a young rat. The single stained cell *(arrow)* in the pontine reticular formation as an axon that bifurcates and ends in wide areas of the CNS, reaching the anterior horn of the spinal cord *(A)*, nucleus gracilis *(NG)*, peri-queductal gray *(PAG)*, hypothalamus *(Hy)*, thalamus, and multiple levels of the reticular formation. If one cell has projections this extensive, nagine the complexity of the reticular formation as a whole. (From Scheibel ME, Scheibel AB: Structural substrates for integrative patterns in ne brainstem reticular core. In Jasper HH et al, editors: *Reticular formation of the brain,* Boston, 1958, Little, Brown & Co.)

Formatio reticularis

- Aferentní spoje
- **Afferent connections**
- **Tr. spinoreticularis**
- **Tr. nucleoreticularis**
- **Tr. cerebelloreticularis**
- Tr. tectoreticularis
- Tr. nigroreticularis
- **Tr. hypothalamoreticularis**
- **Tr. amygdaloreticularis**
- Tr. pallidoreticularis
- **Tr. corticoreticularis**

- Eferentní spoje
- **Efferent connections**
- Tr. reticulospinalis
- Tr. reticulonuclearis
- Tr. reticulocerebellaris
- **Tr. reticulothalamicus**
- **Tr. reticulohypothalamicus**
- **Ascendentní aktivační systém RF**
- **Ascending activating systém of RF**

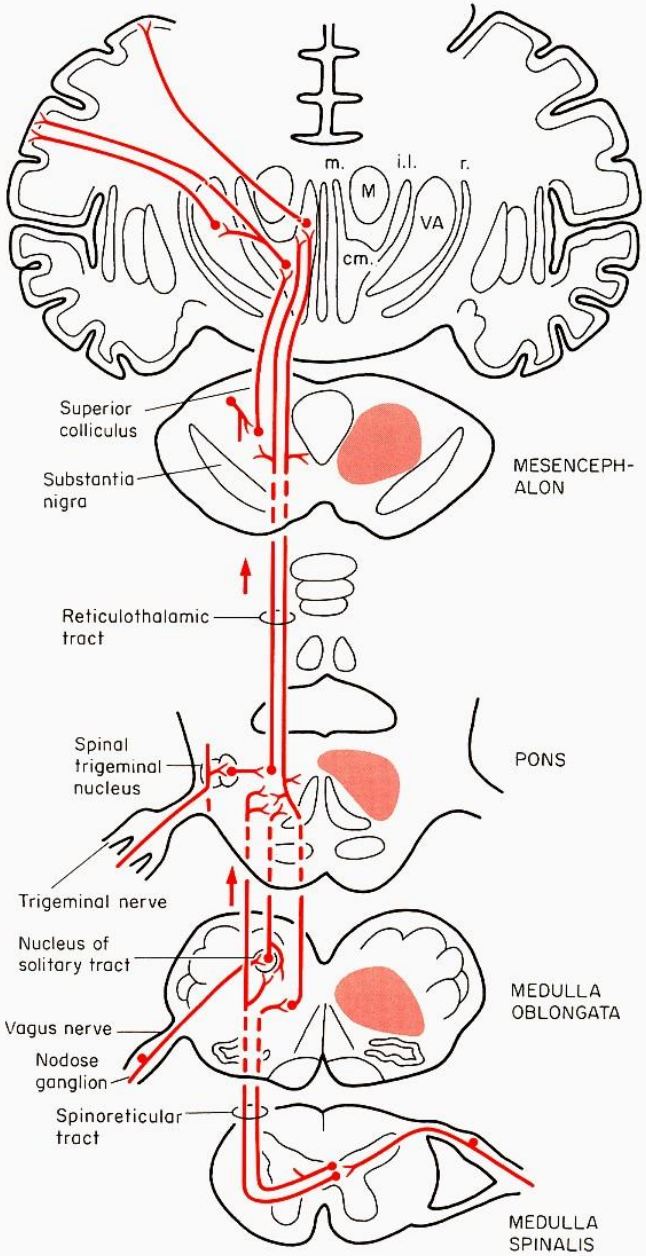


Fig. 12.8. *The ascending connections of the reticular formation and afferents from lower levels.* The afferents from lower levels arise in the cord (spinoreticular neurons) and in the cranial nerve nuclei. The ascending fibers from the reticular formation end in the intralaminar thalamic nuclei. In addition, there are direct connections to the cerebral cortex from the raphe nuclei and the nucleus locus coeruleus, not shown in this figure (Figs. 12.5 and 12.6).

Formatio reticularis - functions

- **Reflexes** – swalloving, salivatory, blinking, lacrimatory, cough, vomiting
- **Center** - respiratory control, pneumotactic, vasomotor (BP) cardiovascular control, thermoregulation, sleeping - wakefulness
- **Ascendent activating systém of the RF – reticulothalamic /hypothalamic projections – activation of the thalamus (IL nuclei) – thalamocortical projections (cholinergic nuclei), Lesion (interruption, tearing) = unconscious state**
- **Reticulospinal projections**

TECTUM

Colliculus superior

(visual subcortical structure)

Afferent connections : retina, cerebral cortex, SNr

Efferent connections:

Oculomotor nuclei, RF, spinal cord, thalamus