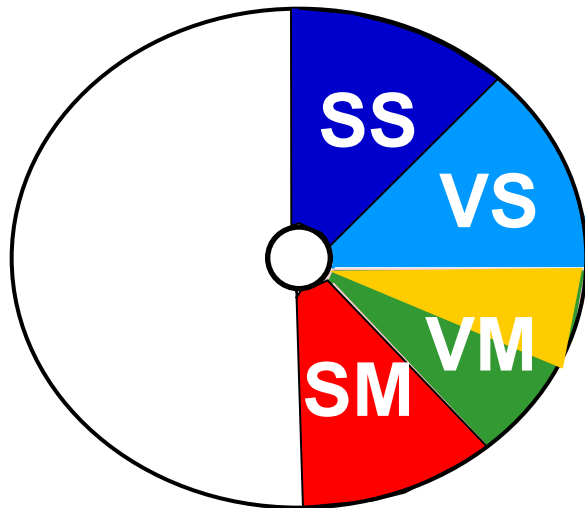
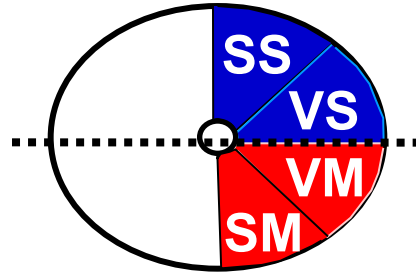


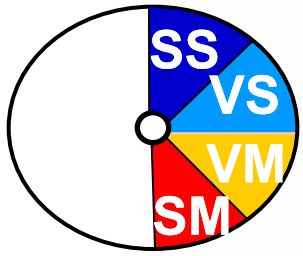
Functional zones in the spinal cord



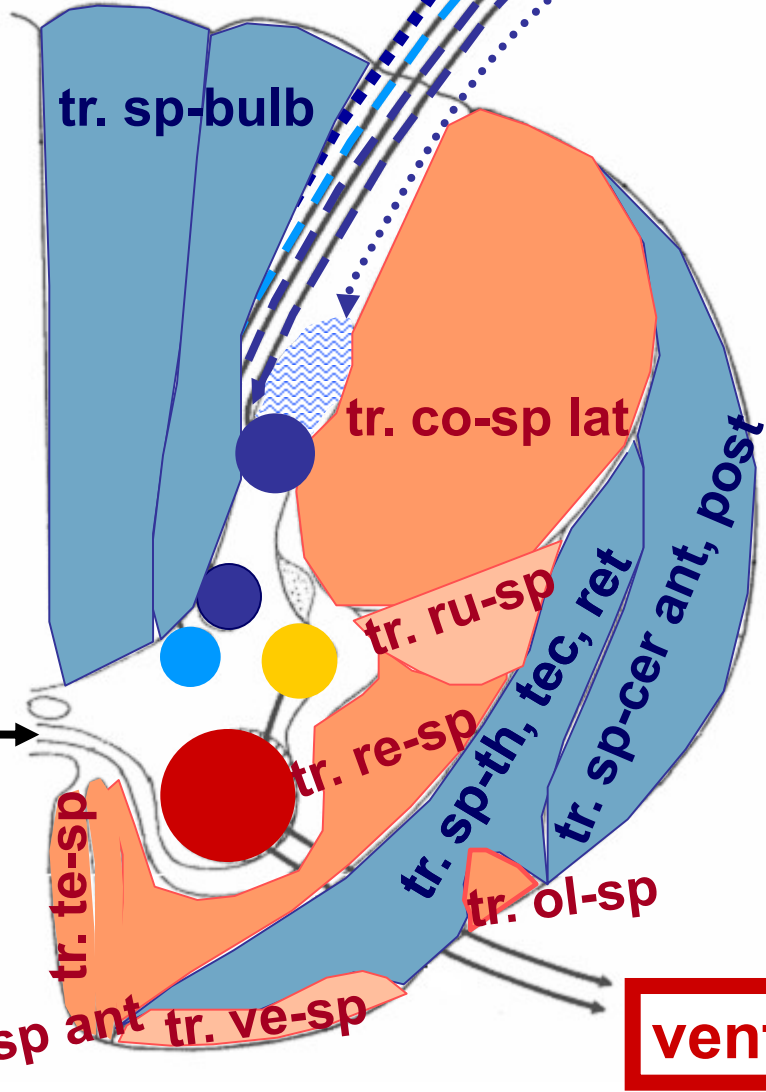
VM zone

T1 - L2 - preganglionic
sympathetic neurons

below L2 - preganglionic
parasympathetic neurons



dorsal root



ncl apicalis
subst gel Rolandi

ncl proprius

ncl thoracicus

ncl intermed-med

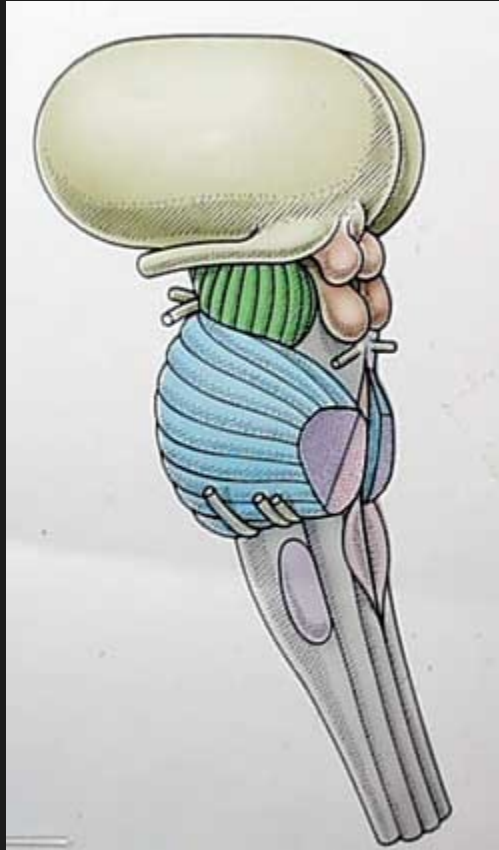
ncl intermedio-lat

ncll motorii

tr. sp-sp →

ventral root

Brainstem



Mesencephalon

Pons

Medulla oblongata

nuclei of CN III - XII

connection to the cerebellum

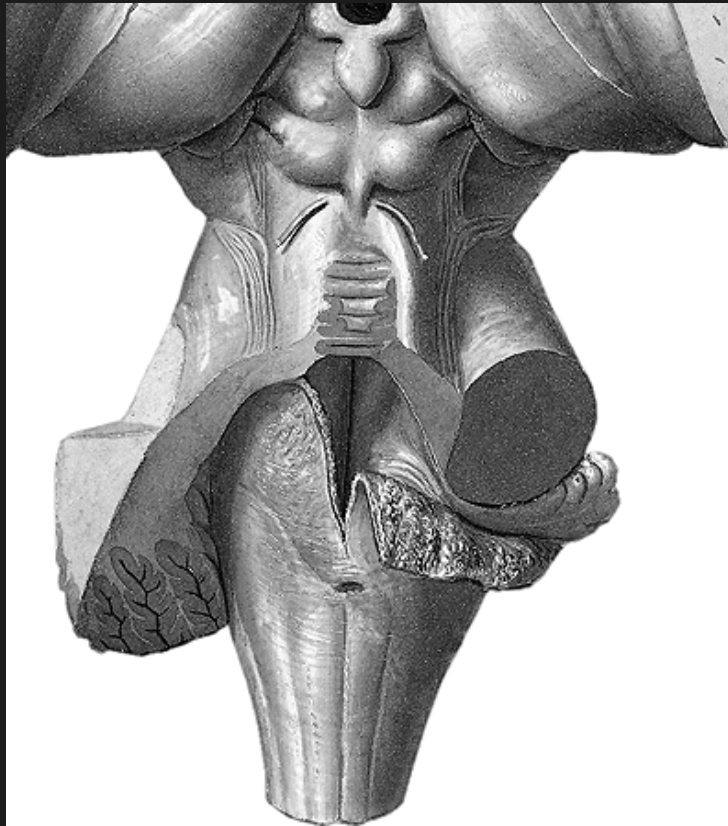
large reticular formation



Ventral aspect

**CN III
CN IV, V**

**CN VI, VII, VIII
CN XII, IX, X
CN XI**

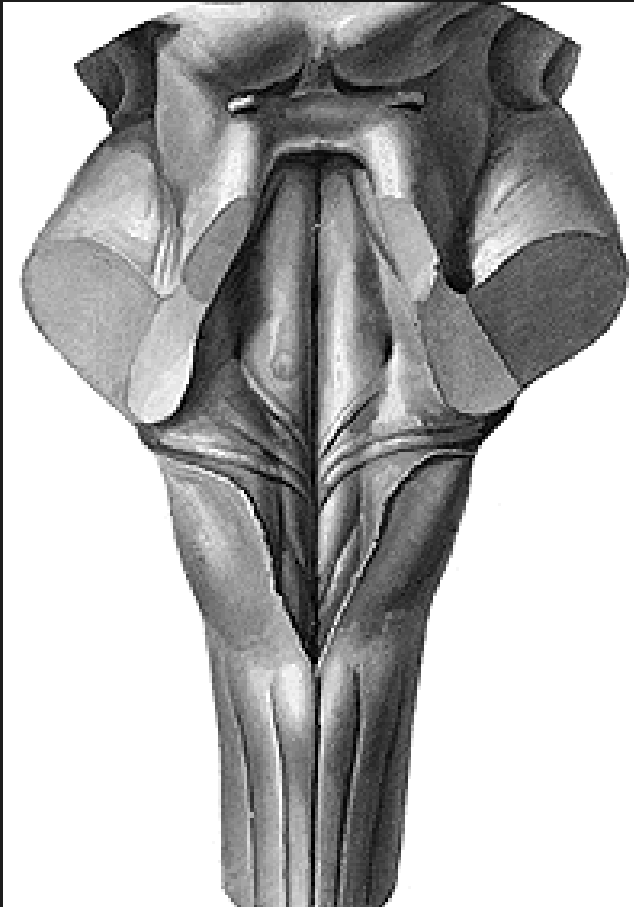


Dorsal aspect

IV. ventricle

roof of the IV. ventricle:
velum medullare sup.
fastigium
velum medullare inf. =
tela choroidea ventriculi IV.
(ependyma + pia mater +
vessels)

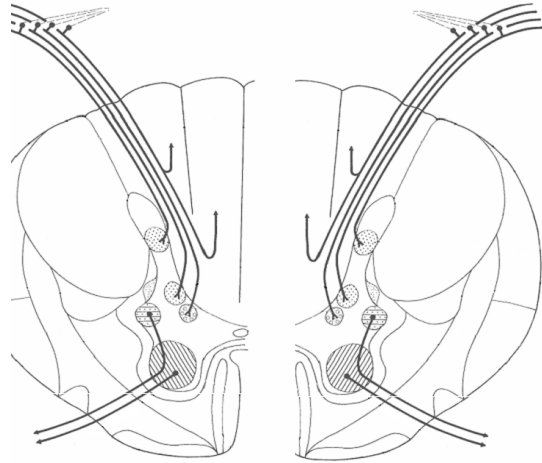
CN IV



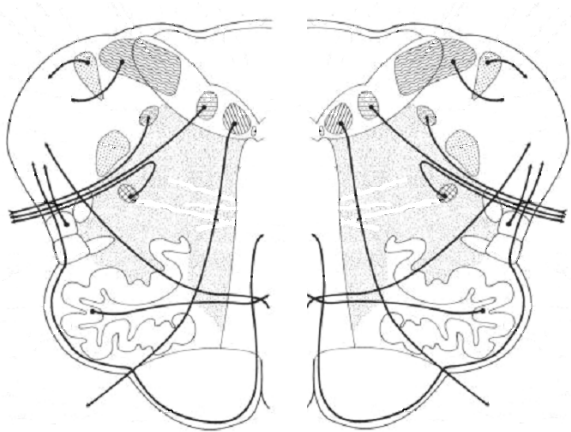
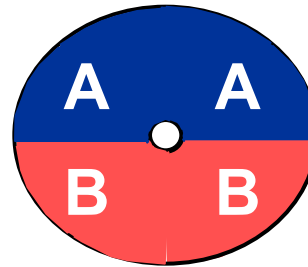
floor of the IV. ventricle
Fossa rhomboidea

Dorsal aspect

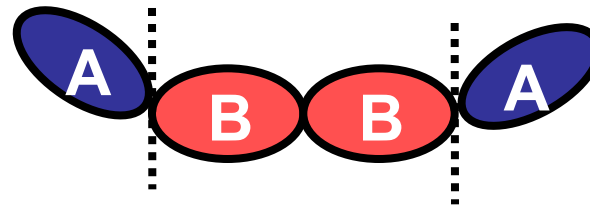
Structure of the brainstem



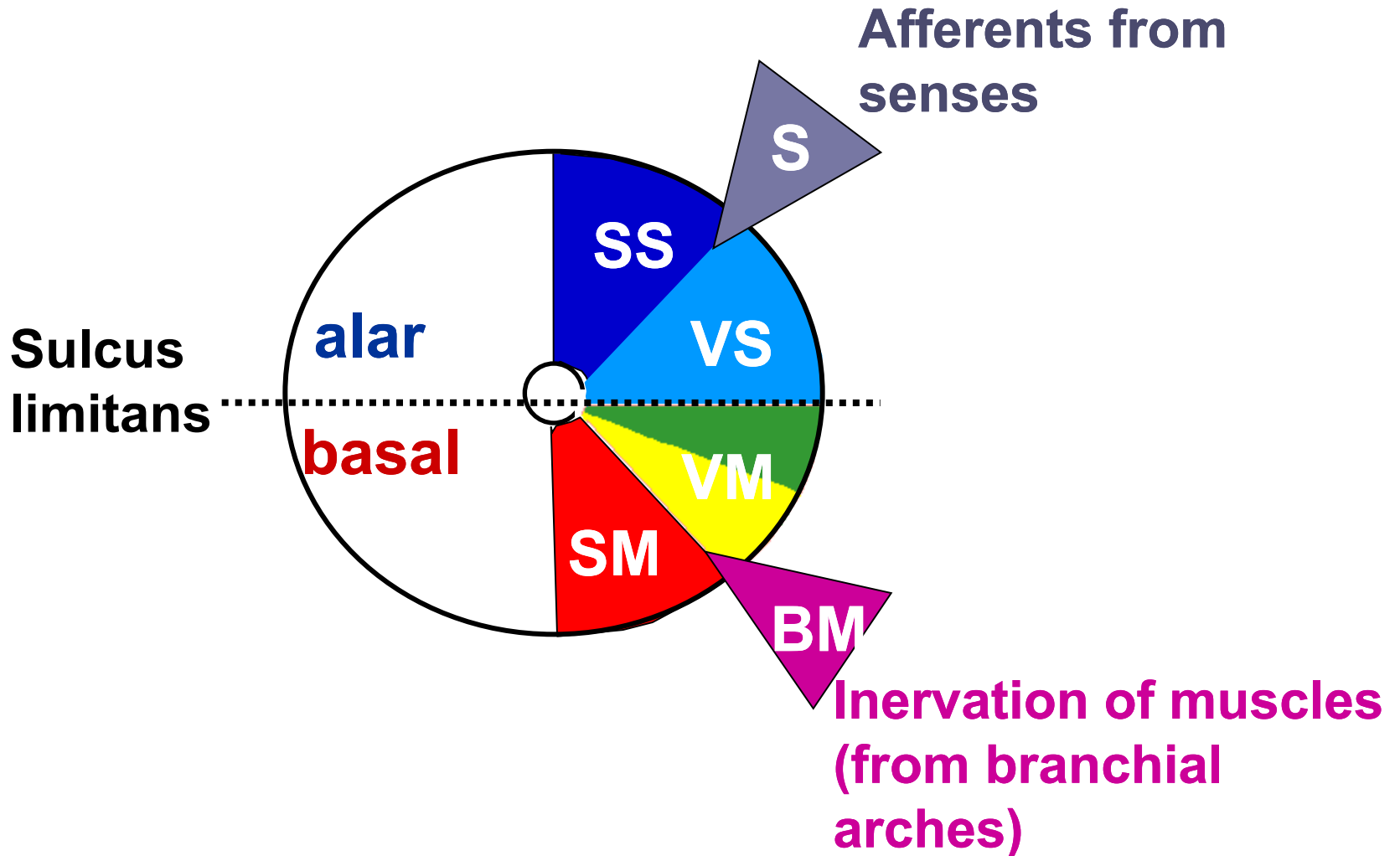
Spinal cord



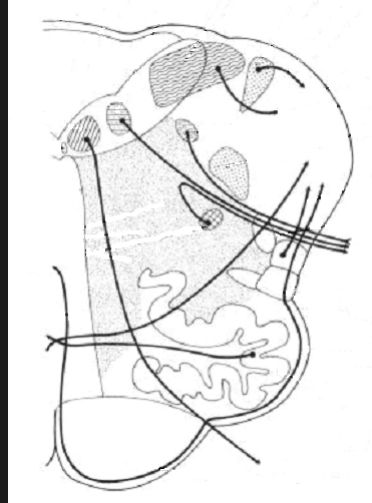
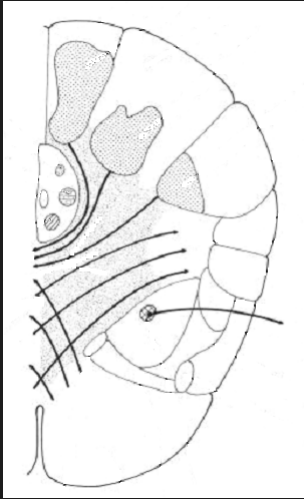
Pons



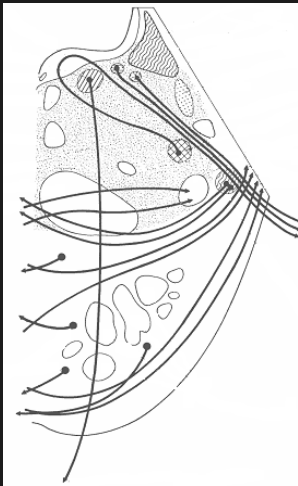
Functional zones of the brainstem



Gray matter of the brainstem



nuclei of dorsal columns
nuclei of cranial nerves
nuclei of RF
nuclei connected to the cerebellum
motor nuclei of the brainstem



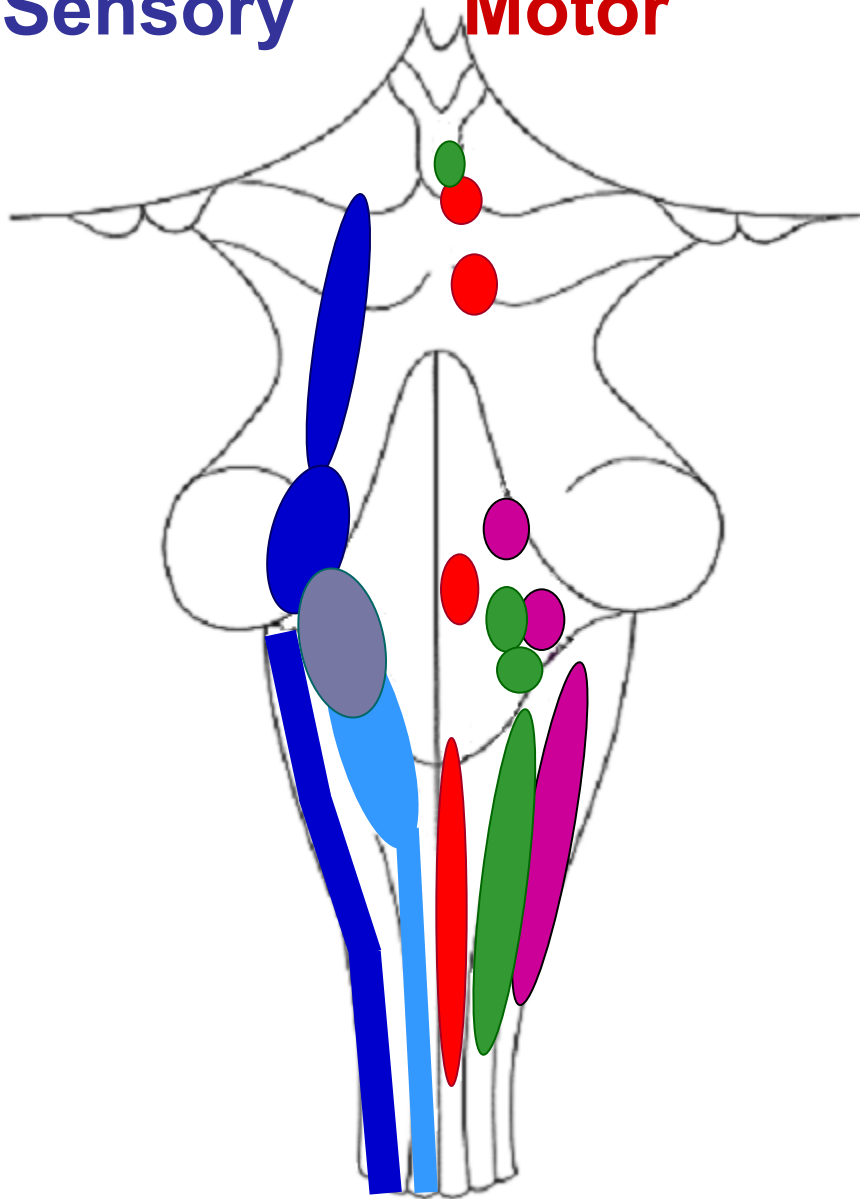
White matter of the brainstem

ascending tracts

descending tracts from the cortex and brainstem

Sensory

Motor



SM CN III, IV, VI, XII

BM CN V, VII, IX, X, XI

Ncl. ambiguus

VM CN III, VII, IX, X

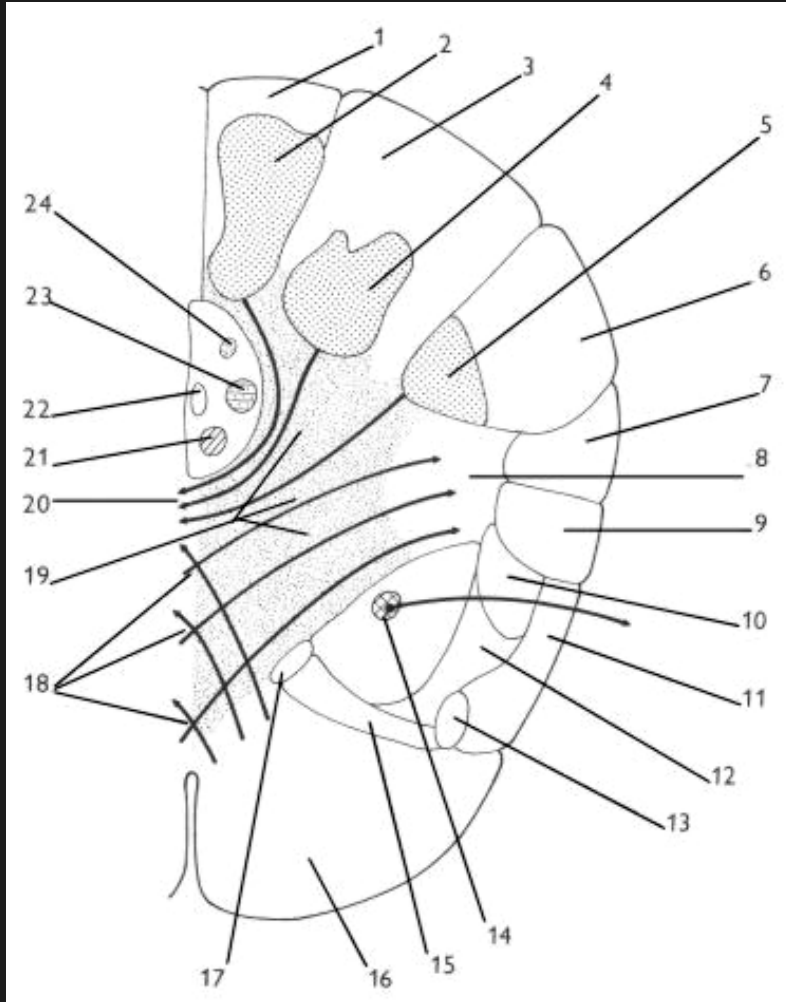
VS CN VII, IX, X

Ncl. solitarius + gustatorius

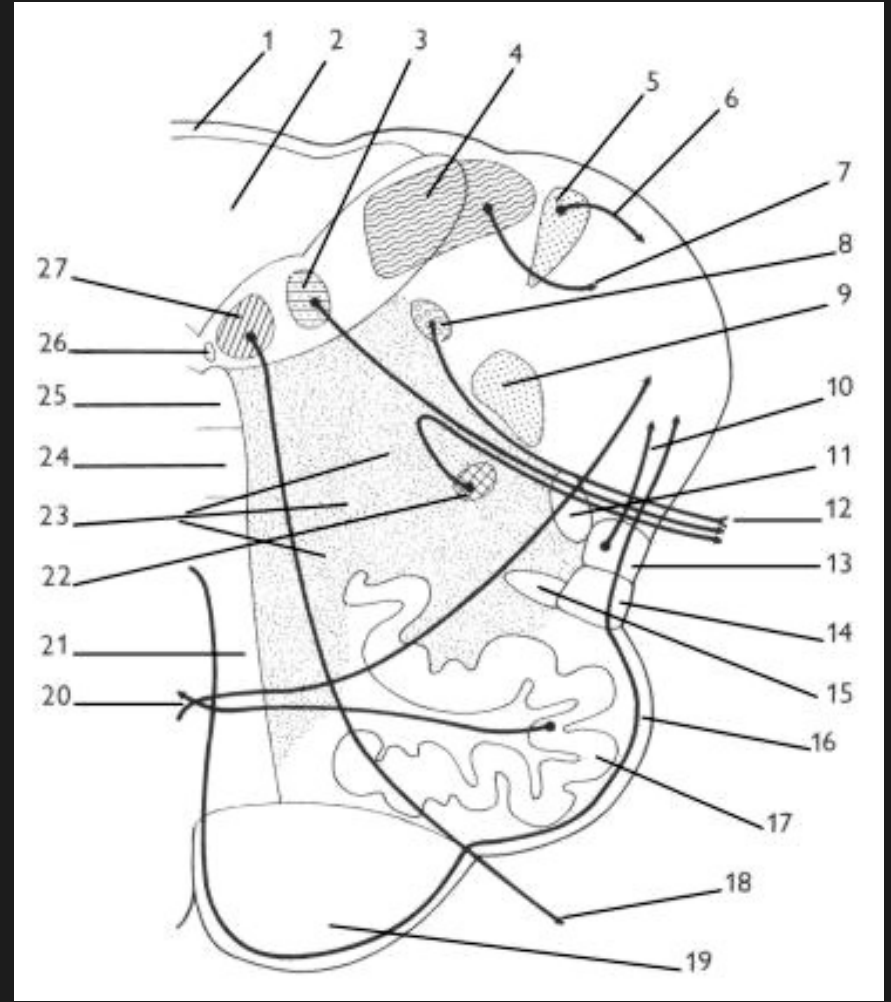
SS CN V

S CN VII, IX, X, VIII

Medulla oblongata

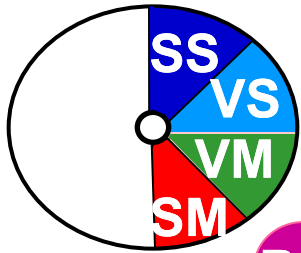


Caudal section



Rostral section

Caudal section



BM

ncl + tr solit

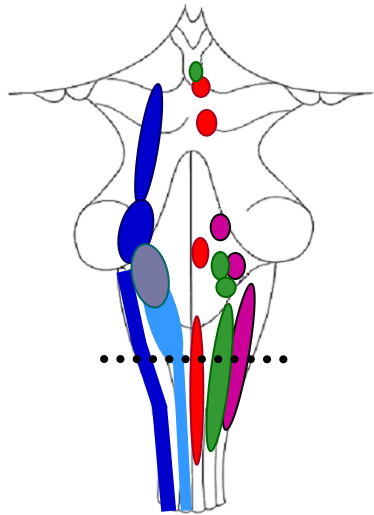
ncl o (p) CNX

ncl o CN XII

ncl + f gracilis

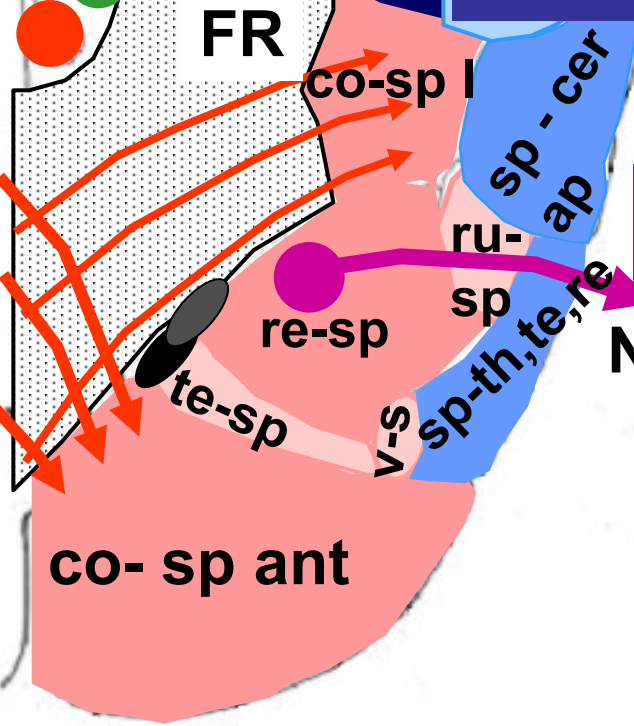
ncl + f cuneatus

ncl + tr sp CN V



Decussatio
pyramidum

FLM
FLD

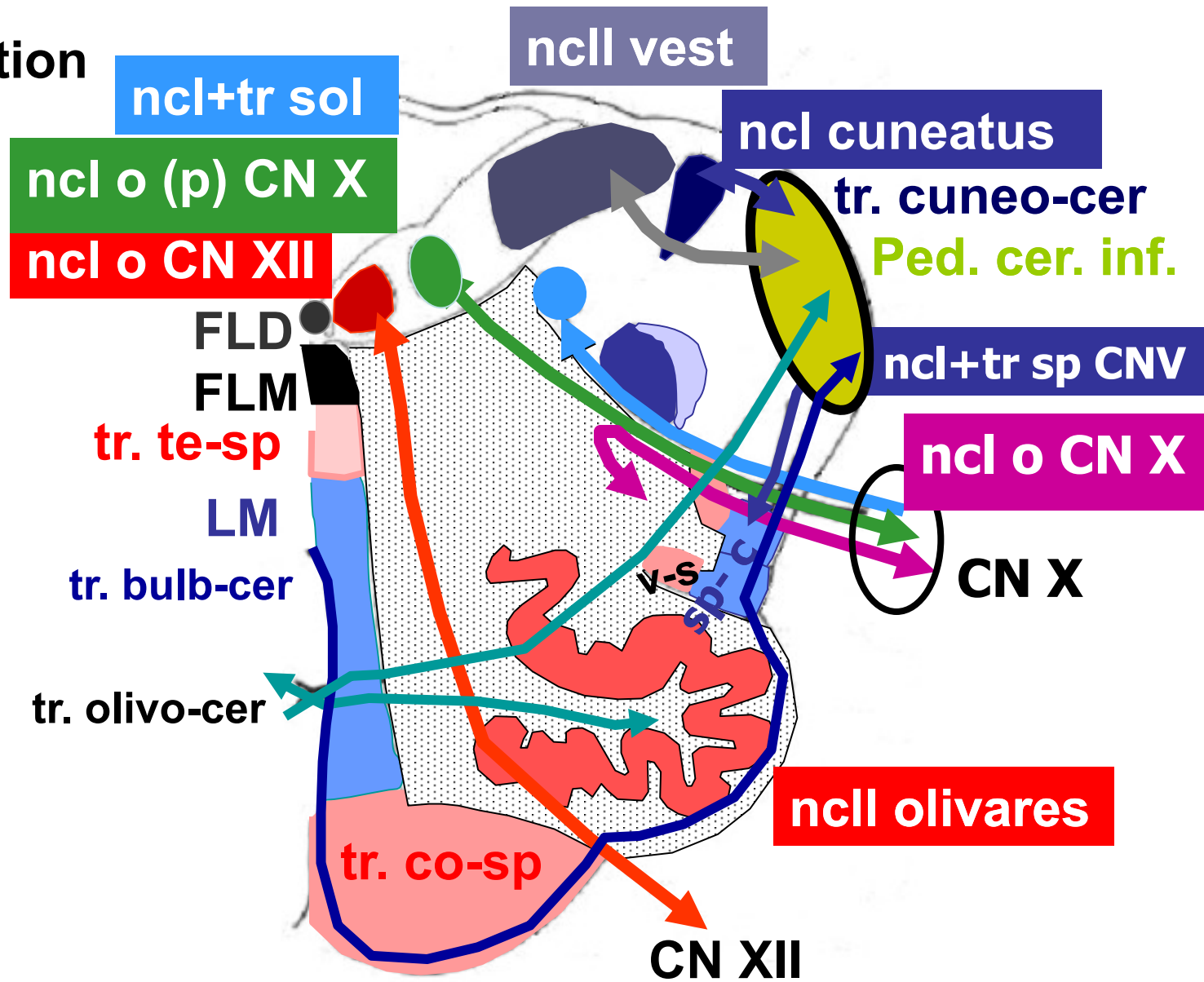
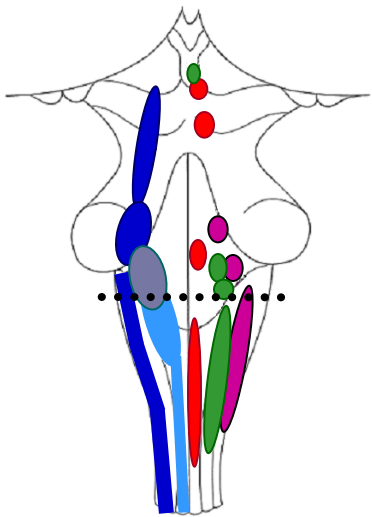
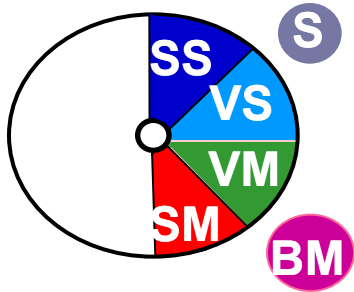


ncl o CN XI

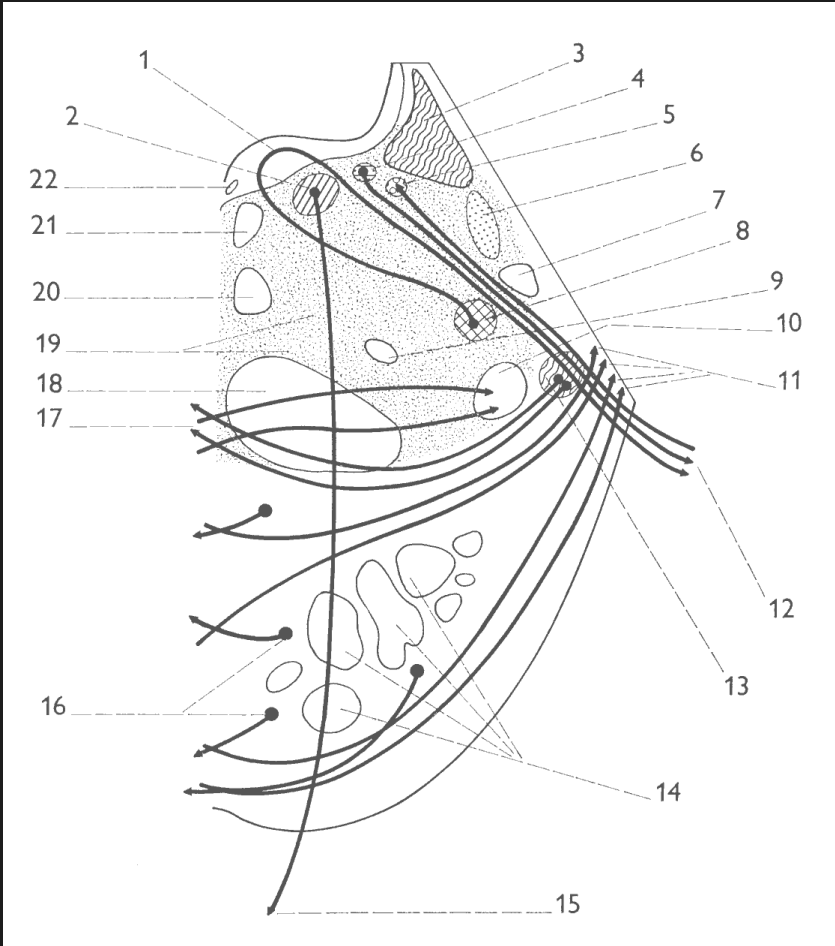
N. access.

co- sp ant

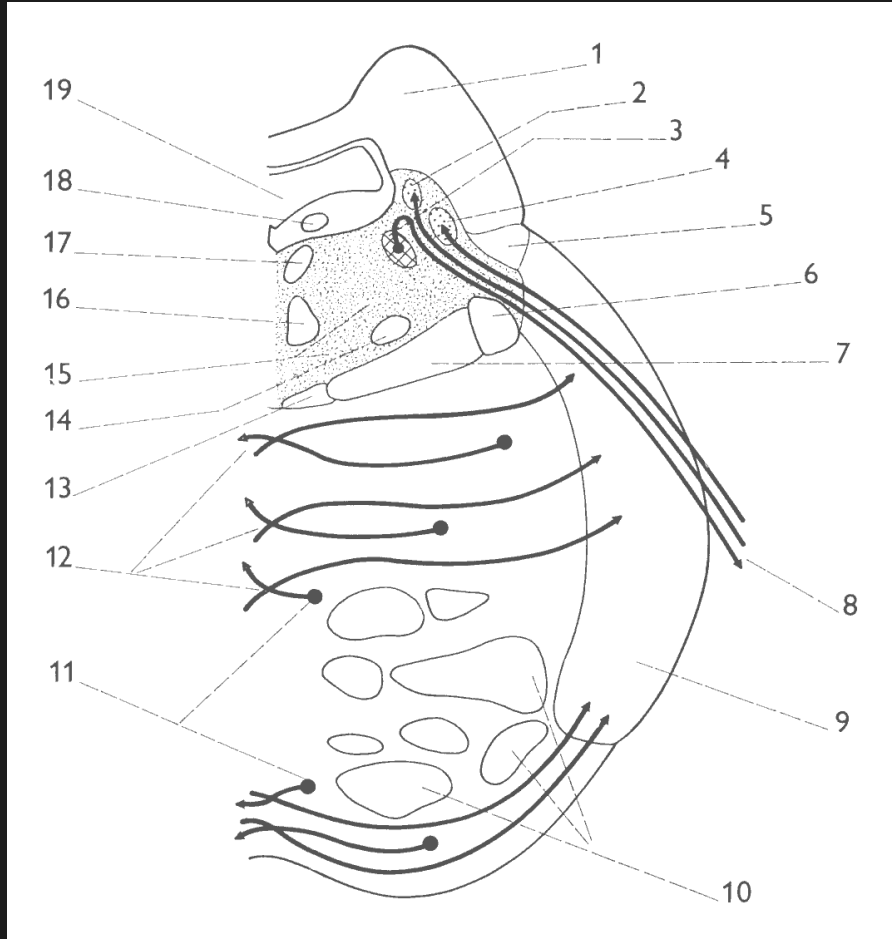
Rostral section



Pons Varoli

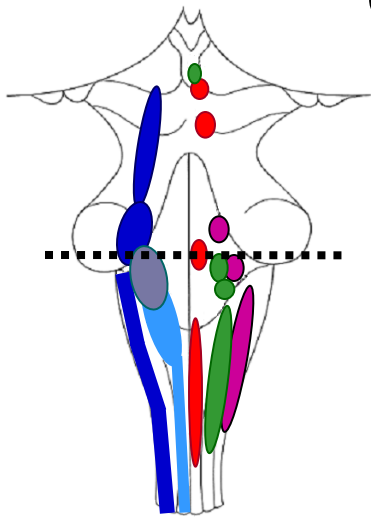
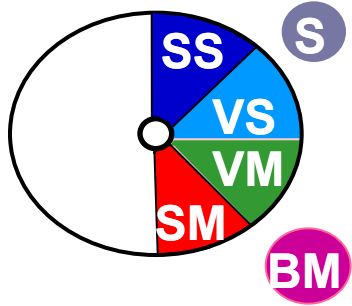


Caudal section



Rostral section

Caudal section



ncl o (p) CN VII

ncl o CN VI

ncll. vestib.

ncl+tr solit. gust.

ncl+tr sp CN V

tr. sp-ce ant

ncl o CN VII

ncll. cochl.

FLD

FLM

tr. te-sp

tr. ru-sp

LM

LL

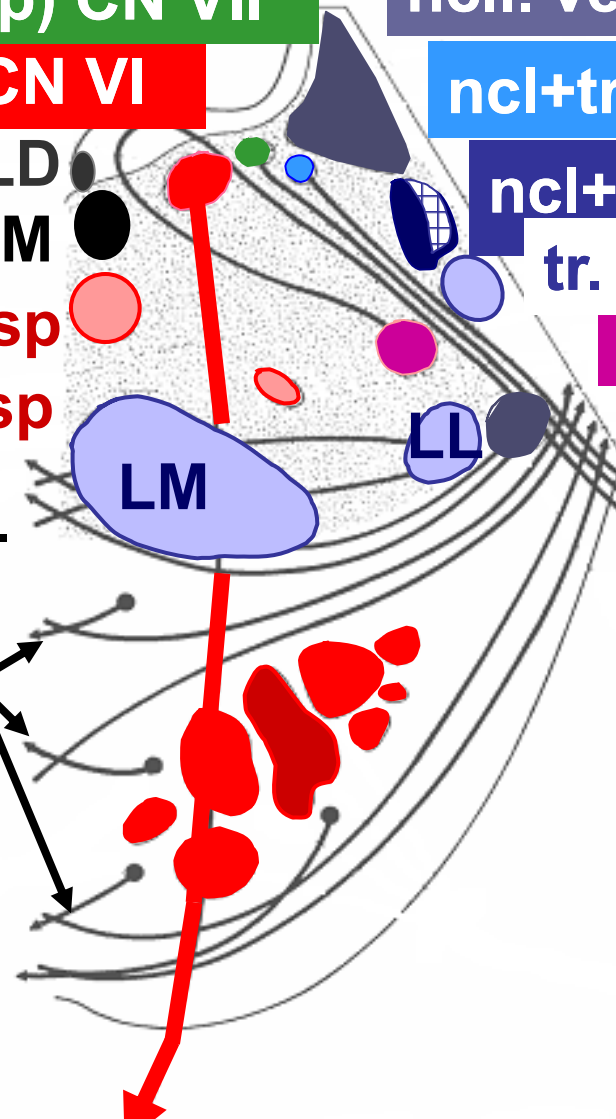
Corp. trapezoid.

ncll pontis

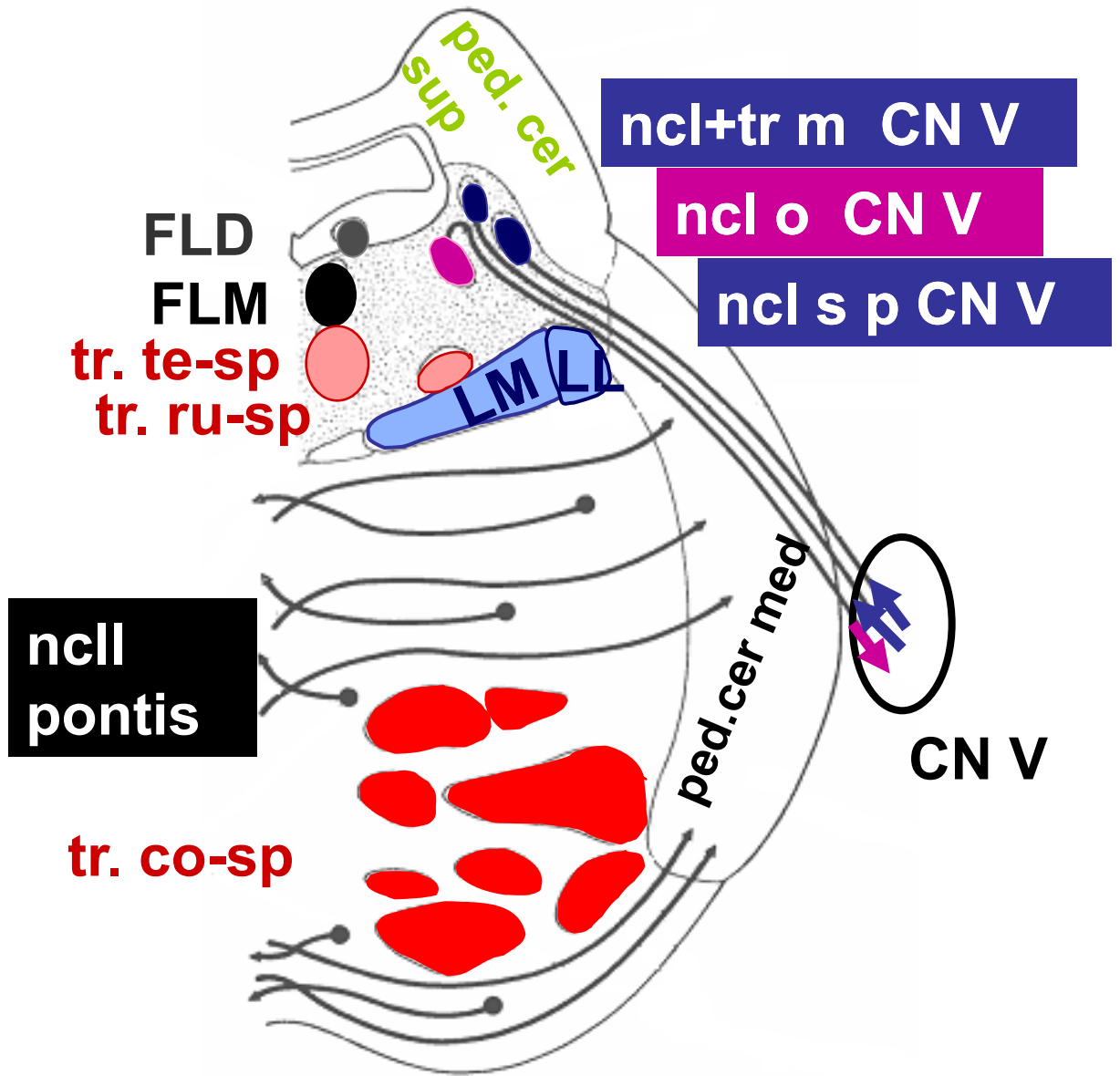
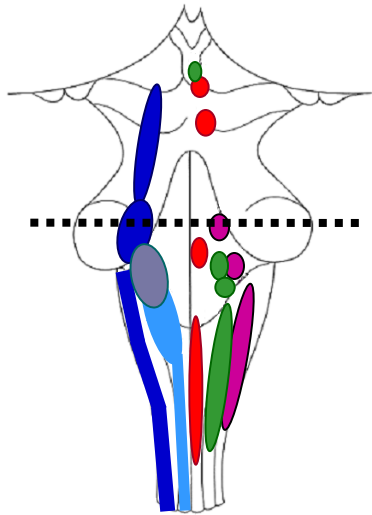
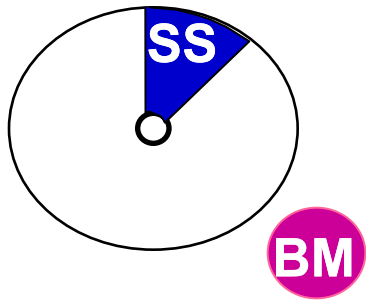
tr. co-sp

CN VII

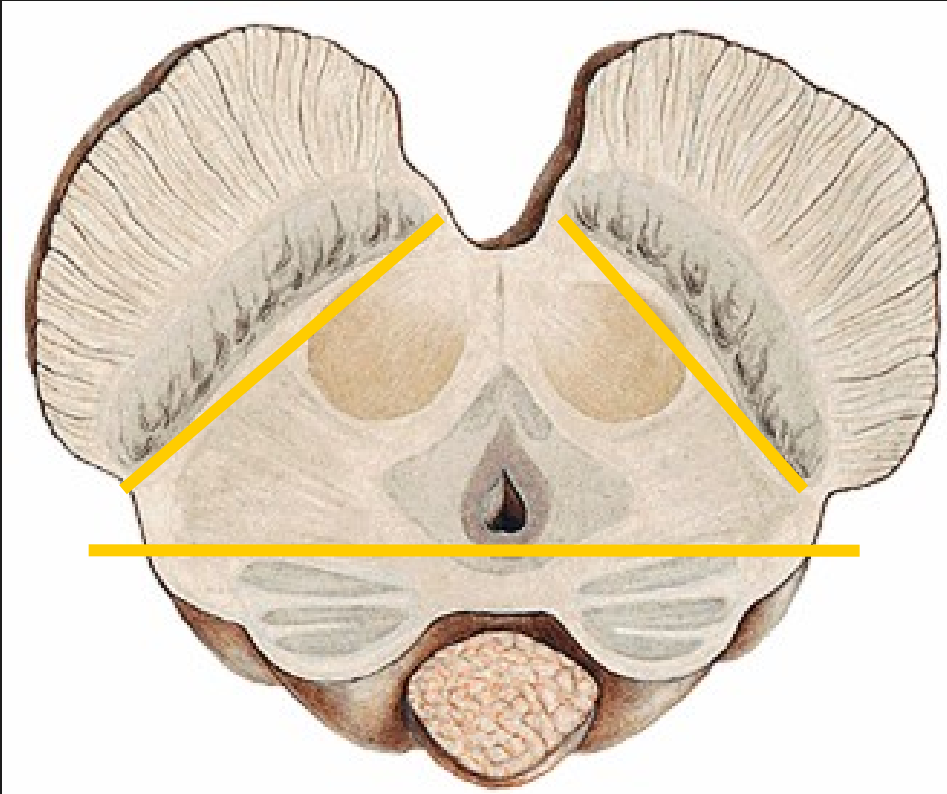
CN VI



Rostral section



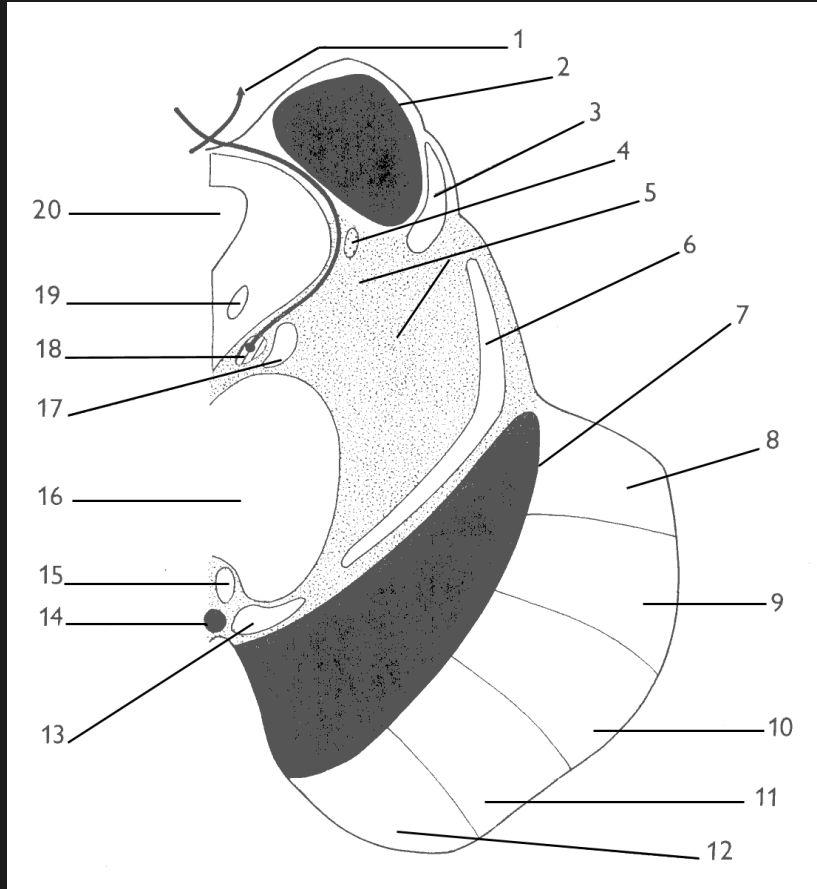
Mesencephalon



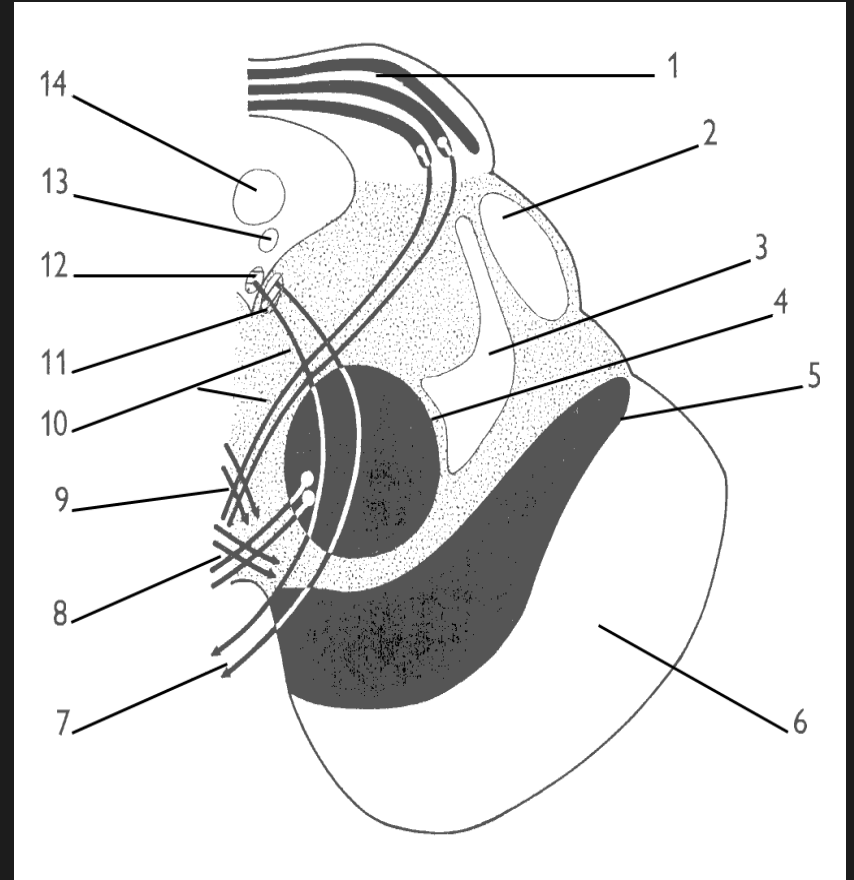
crura cerebri

tegmentum

tectum

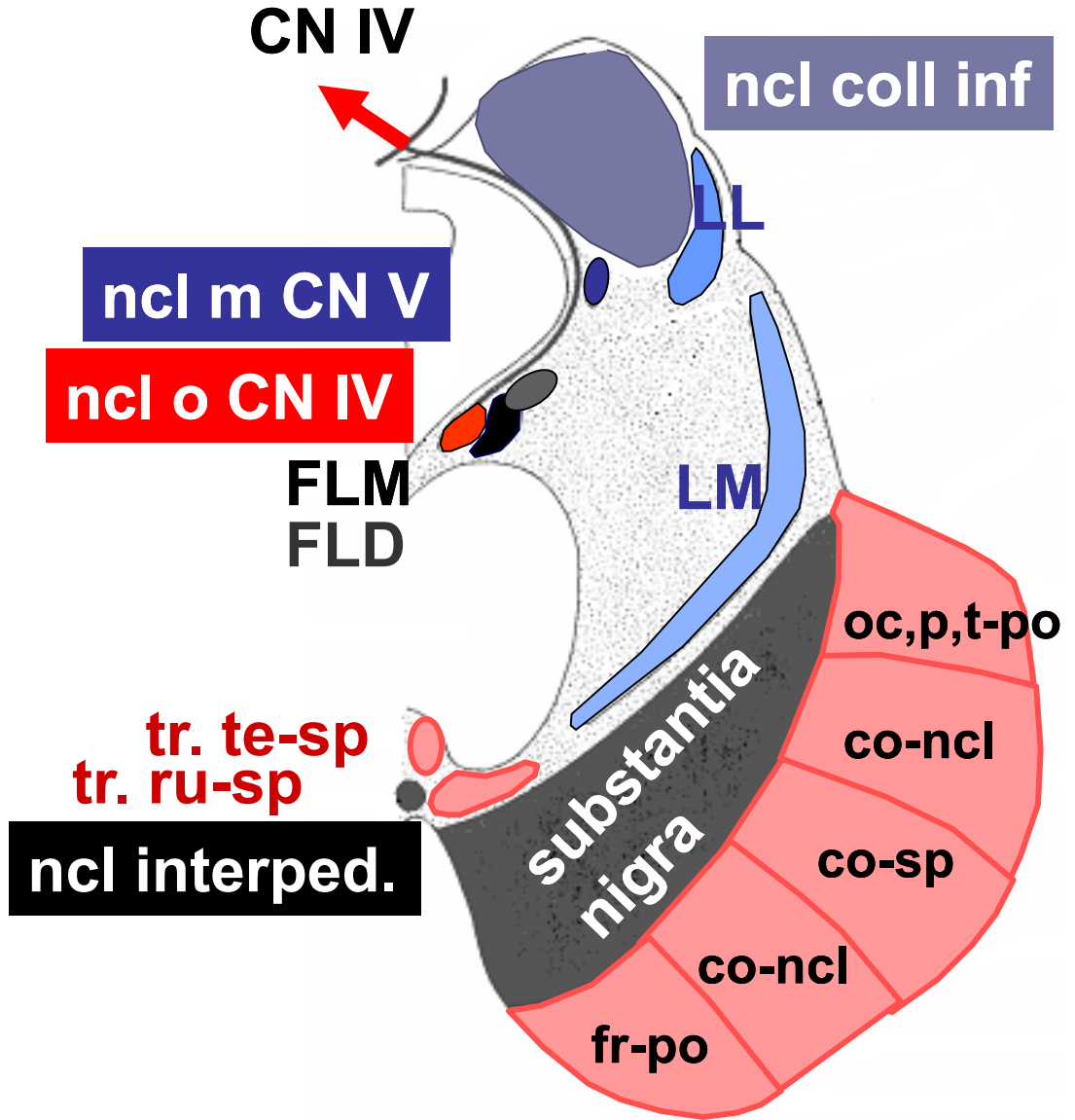
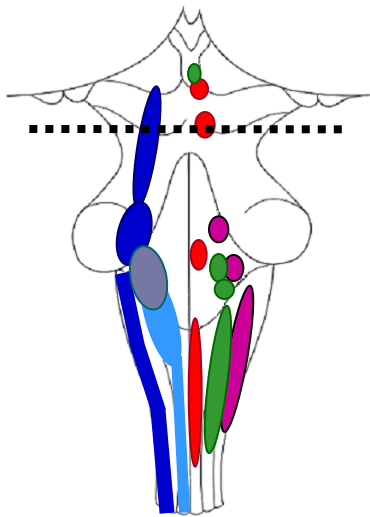
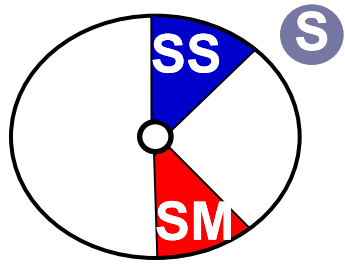


Caudal section



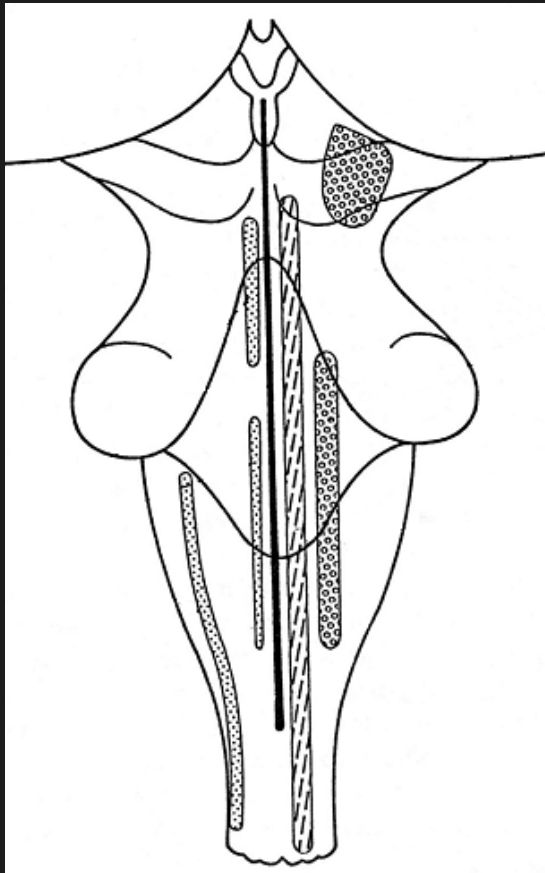
Rostral section

Caudal section



Reticular formation

between afferent and motor systems
spinal cord – diencephalon



Nuclei of RF

median, single
(raphe system)

medial, paired

lateral

Function

Patterned cranial nerve activities

Pattern generation

Posture, locomotion

Salivary secretion, lacrimation

Bladder control

Respiratory rhythm

Vital centers (circulation, respiration)

Conveys somatic and visceral information to the cerebellum

Arousal (Ascending reticular activating system)

Sleeping and waking, attention and mood, sensory modulation, blood pressure control

