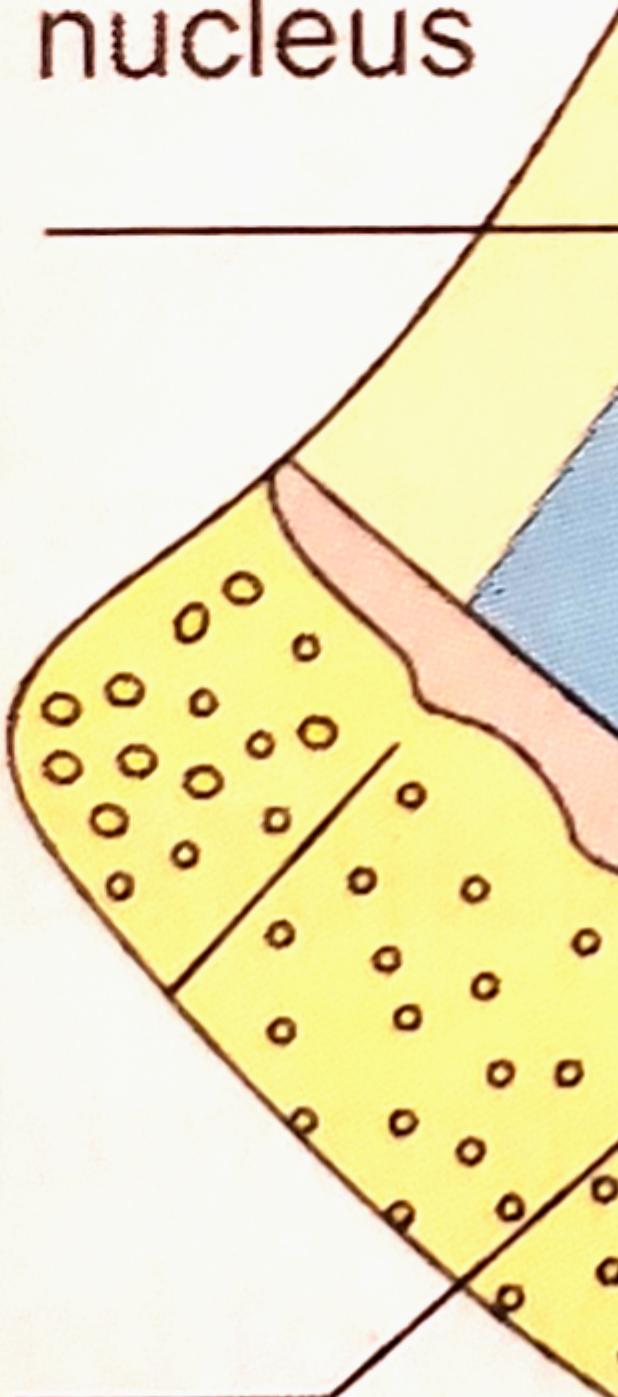


Midbrain

Preoptic —
nucleus

Edinger-
Westphal and
oculomotor
nerve nuclei

Red nucleus



Region 1: Crus cerebri

(cerebral peduncle = crus anteriorly and tegmentum posteriorly)

- *Artery:* Ventral paramedian branches of PCA
- *Lesion:* **Weber's**
- Clinically relevant *structures*:
 - Corticospinal and corticobulbar fibres in the cerebral peduncles
 - Oculomotor nerve fibres exiting from interpeduncular fossa
- Clinical *syndrome*: **i3 + c7u + CHP**
 - Ipsilateral: Oculomotor palsy ("down and out")
 - Contralateral: UMN facial, hemiplegia

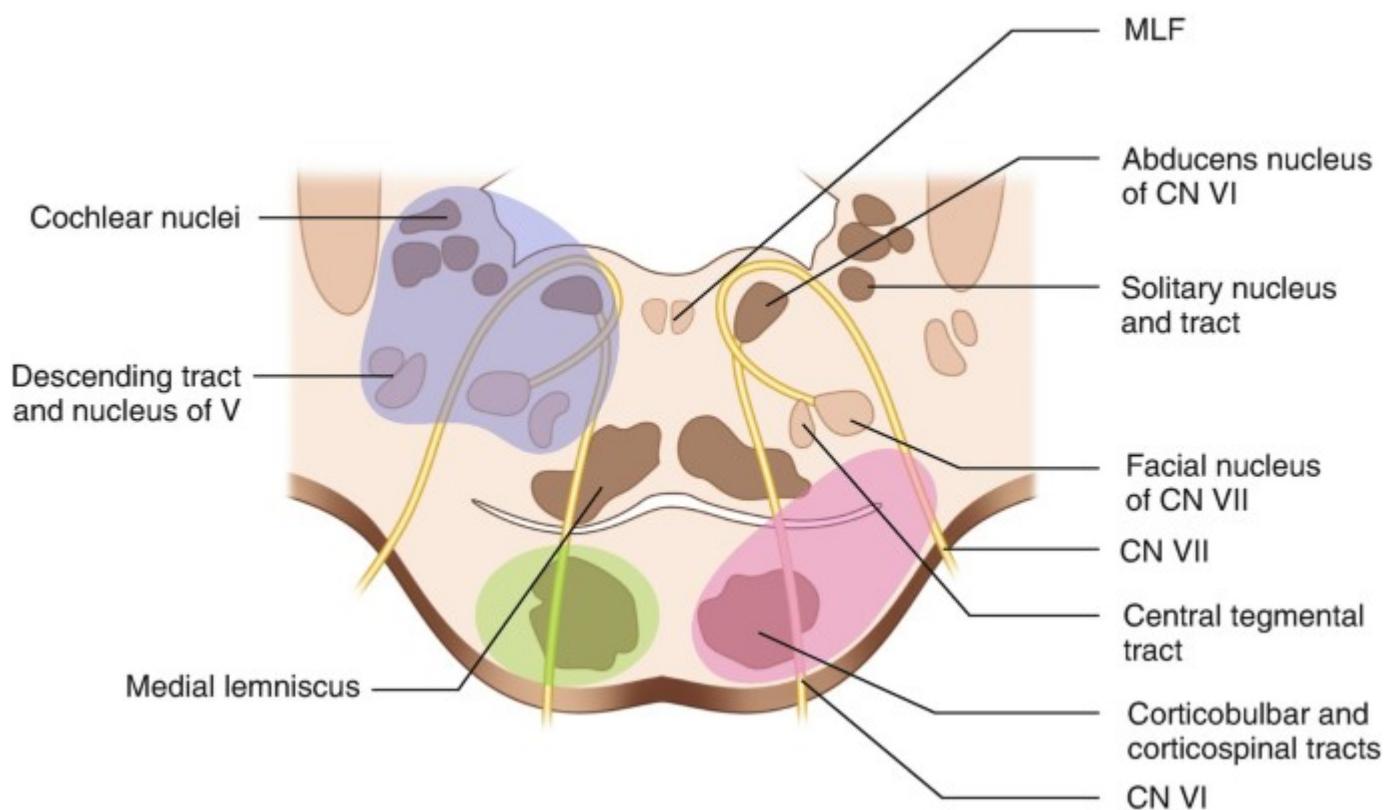
Region 2: Tegmentum

- *Artery:* Dorsal paramedian branches of PCA
- *Lesion:* **Claude's**
- Clinically relevant *structures*:
 - Red nucleus containing fibres from contralateral dentate nucleus of cerebellum (part of dentato-rubro-thalamic pathway)
 - Oculomotor nerve fibres in the central tegmental region
- Clinical *syndrome*: **i3 + CCAt**
 - Ipsilateral: Oculomotor palsy (CN3)
 - Contralateral: Cerebellar ataxia

Region 3: Tectum

- *Artery:* Posterior choroidal artery (br. of PCA) at sup. colliculus, superior cerebellar artery (SCA) at inf. colliculus
- *Lesion:* **Parinaud's**
- Clinically relevant *structures*:
 - Interstitial nucleus of Cajal at superior colliculus aka rostral interstitial nucleus of the MLF (riMLF) which is the vertical gaze centre
 - Pretectal nucleus: relays light reflex input arm signals to Edinger-Westphal nucleus, which then relays it to oculomotor nucleus
- Clinical *syndrome*:
 - Vertical gaze palsy (due to riMLF lesion)
 - Pupillary disorders (e.g. light-near dissociation) (due to pretectal nucleus lesion)

Pons



Ventral (Basilar) Pons

- Artery: Basilar artery (lodges in the median sulcus between the two sides of pons)
- Lesion: **Millard-Gubler's**
- Clinically relevant structures:
 - Corticospinal tract in the paramedian area
 - Axons of CN6 and CN7
- Clinical syndrome: **i6, i7 + CHP**
 - Ipsilateral lateral rectus (CN6) and LMN facial palsy (CN7)
 - Contralateral hemiplegia

Medulla

Medial longitudinal

Inferior cerebellar
peduncle

Spinal tract of
trigeminal nerve

Vagus nerve

Spinocerebellar
tracts

Inferior olfactory
nucleus



Posterolateral Medulla

- *Artery:* PICA (posteroinferior cerebellar artery, br. of vertebral)
- *Lesion:* **Wallenberg / lateral medullary syndrome**
- Clinically relevant structures:
 - Nucleus ambiguus: motor nucleus of CN 9, 10, 11 - ipsilateral soft palate, pharynx, larynx muscles
 - Spinal trigeminal nucleus and tract: ipsilateral face - pain and temperature senses
 - Lateral spinothalamic tract: contralateral body - pain and temperature senses
 - Vestibular nucleus
 - Spinocerebellar tracts - coordinate ipsilateral limb movements
 - Descending sympathetic fibres from hypothalamus - ipsilateral Horner
- Clinical syndrome: **i15, 9-11 + CPT***
 - Ipsilateral - 5 (pain and temperature lost at ipsilateral face), [9, 10, 11] (bulbar palsy) lesion; dysequilibrium (vestibular nucleus); ataxia (spinocerebellar tract); Horner's (ptosis, miosis, anhidrosis, enophthalmos)
 - Contralateral - pain and temperature lost (lateral spinothalamic) at contralateral body

Anteromedial Medulla

- *Artery:* Anterior spinal artery
- *Lesion:* **Dejerine syndrome**
- Clinically relevant structures:
 - Pyramidal tract
 - Medial lemniscus
 - Hypoglossal nucleus and nerve
- Clinical syndrome: **i12, dc + CHP***
 - Ipsilateral: fine touch, vibration (DCMLS); tongue paralysis (CN12)
 - Contralateral: hemiplegia (pyramidal)