

CRANIAL NERVES

1/19/82, 13 Jan 00, 17 Jan 01, 15 Jan 03, 28 Jan 04, 28Jan08, 28Jan09, 27Jan10, 26Jan11, 12Apr13
Martini's 6th, 493-506, 7th: 480-490, 8th: 490-501, 9th: 478-490

On Old Olympus' Towering Tops, A Finn and German Viewed Some Hops*

12 pairs, three pure sensory (I, II, VIII), rest mixed: motor and sensory
sensory cell bodies are located outside in **ganglia** (as in spinal cord)

Overview of ventral brain with cranial nerves: 478

CEREBRUM:

I 479 **Olfactory** tract, not true nerve (tract: bundle of nerve fibers having same origin, function & termination.)
Actual olfactory nerves pass through cribriform plate of ethmoid receptor cells located in nasal mucosa (olfactory tract and bulb are actually part of the cerebrum)

DIENCEPHALON:

II 480 **Optic** also a tract, not true nerve. Cells located in retina. Optic nerve forms chiasm.

some fibers go to **superior colliculi**: visual reflexes.

most to **lateral geniculate bodies** in thalamus, synapse to form **optic radiations**, 3^o neurons lead to visual cortex

MESENCEPHALON:

III 481 **oculomotor** emerge just superior to pons, supply **four of six extrinsic eye muscles** and upper eyelids
parasympathetic Ciliary ganglion associated with intrinsic muscles of eye (pupil size and lens shape).

IV 481 **Trochlear** Pulley-like muscle = **superior oblique** (rotates eyeball fully upward)

PONS: (lateral)

V 482 **Trigeminal**: large nerve, branches into **major sensory nerves of face**. Sensory ganglia in huge **semilunar ganglion**

Branches: **ophthalmic**: through superior optic fissure
maxillary: through foramen rotundum
mandibular: through foramen ovale forms lingual nerve (toothache)

VI 481 **Abducens**: (“toward-carry”) to lateral rectus of eye, turns eye to outside

VII 483 **Facial** supplies somatic motor for muscles of facial expression
Bell's palsy affects: caused by viral infection
sensory (taste from **anterior 2/3 tongue**)
(geniculate ganglion in temporal bone)

parasympathetic: sphenopalatine ganglion: for **lacrimal glands** and nasal glands
Submandibular ganglion: **salivary glands**: submandibular and sublingual (*not* parotid)

VIII 484 **Vestibulocochlear**: (“hall-snail”) (Can be called **auditory**) two nerves as name suggests. Entirely sensory
vestibular: equilibrium, semicircular canals. Ganglia in vestibular ganglion near ear
cochlear: spiral ganglion in ear: hearing

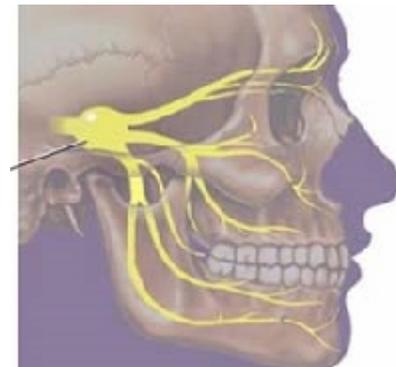
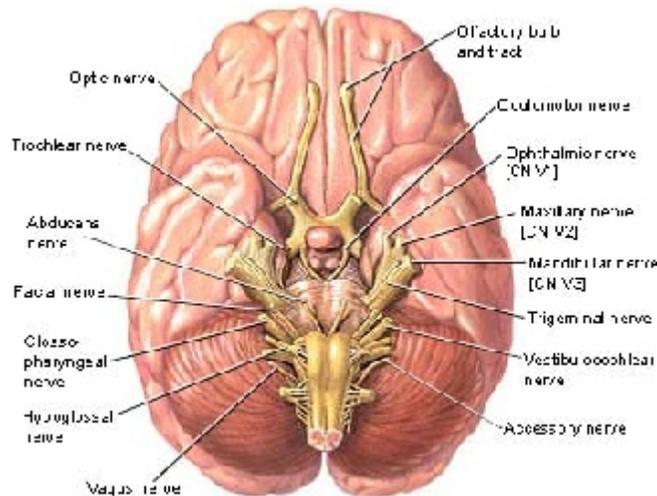
MEDULLA OBLONGATA:

IX 485 **Glossopharyngeal** (“tongue-throat”) **posterior 1/3rd of tongue, taste** (notably bitter)
monitors blood pressure & gasses in carotid sinus
parasympathetic: otic ganglion innervates **parotid gland**

X 486 **Vagus**: (“wanderer”) **major parasympathetic nerve**. only cranial not restricted to head and neck.
Several rootlets fr medulla, passes through jugular foramen, passes close to carotid and jugular
Carries somatic to and sensory fr pharynx and larynx
Also carries sensory fr viscera, small ganglion on walls of organs: reg heart rate, depth of respiration, BP, digest, etc.

XI 487 **Spinal Accessory** mixed nerve, also carries nerves arising fr upper cervical region exits by jugular foramen
supplies muscles of larynx, pharynx, trapezius and sternocleidomastoid (along with vagus)

XII 487 **Hypoglossal Nerve**: pass thru hypoglossal canal
supplies **muscles of tongue** (intrinsic and extrinsic) as well as carries proprioceptors





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|--|---|
| 1 frontal cortex | 21 vestibulo-acoustic nerve (not seen in Plate 1) |
| 2 olfactory bulbs | 22 glossopharyngeal nerve (not seen in Plate 1) |
| 3 periamygdaloid cortex | 23 vagus nerve (not seen in Plate 1) |
| 4 optic chiasm | 24 spinal accessory nerve |
| 5 lateral olfactory tract | 25 hypoglossal nerve |
| 6 medial olfactory tract | 26 optic tract |
| 7 pituitary gland (not seen in Plate 1) | |
| 8 mamillary bodies | |
| 9 cerebral peduncles | |
| 10 pons | |
| 11 trapezoid body | |
| 12 pyramidal tract | |
| 13 olive | |
| 14 olfactory nerve (not seen in picture) | |
| 15 optic nerve | |
| 16 oculomotor nerve | |
| 17 trochlear nerve | |
| 18 trigeminal nerve | |
| 19 abducens nerve | |
| 20 facial nerve | |