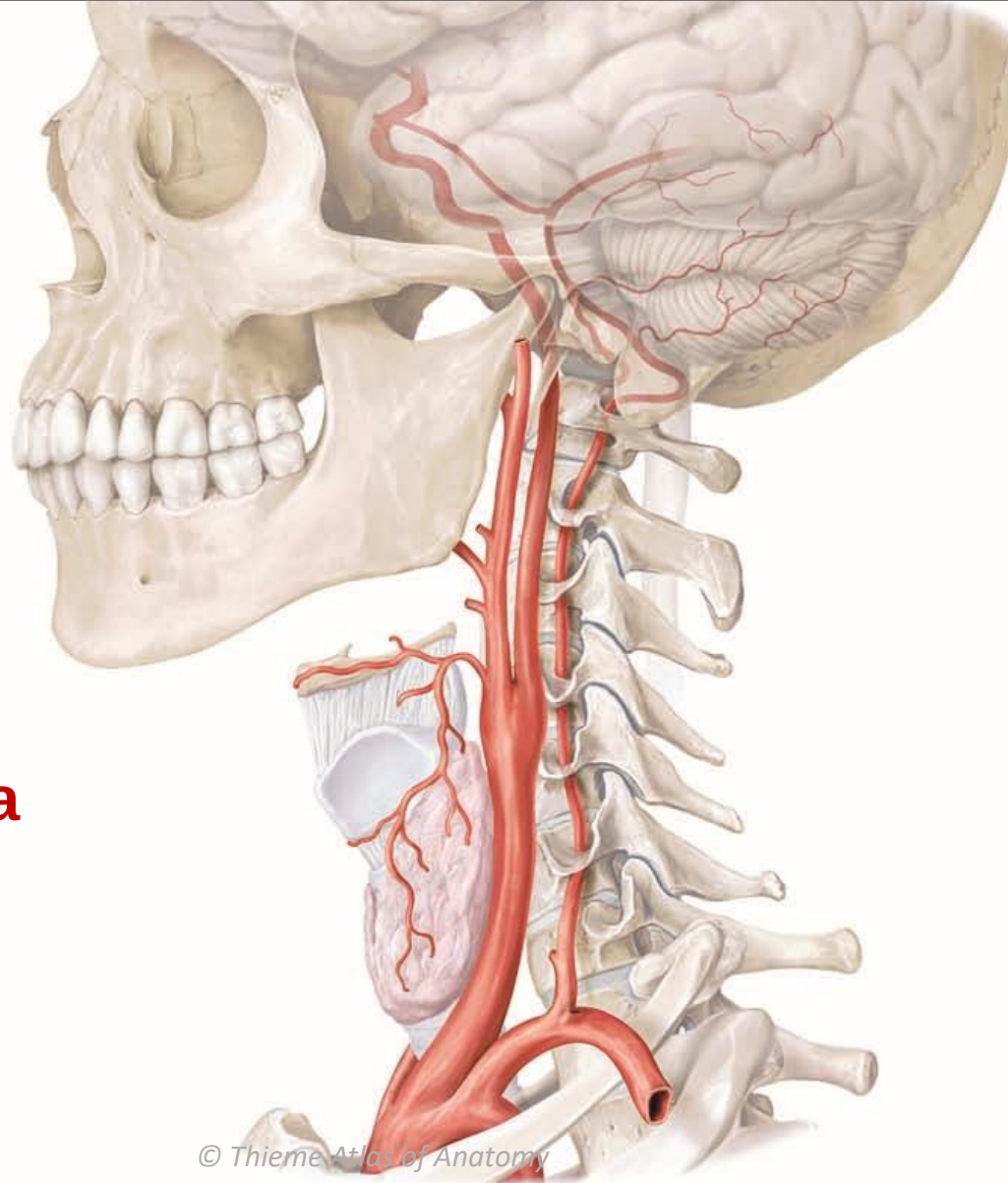


# Arteriae cervicis

- ♦ A. vertebralis
- ♦ A. carotis communis
- ♦ A. carotis externa
- ♦ A. carotis interna
- ♦ Tr. brachiocephalis
  - ♦ A. carotis communis dextra
  - ♦ A. subclavia dextra
- ♦ A. carotis communis sinistra
- ♦ A. subclavia sinistra

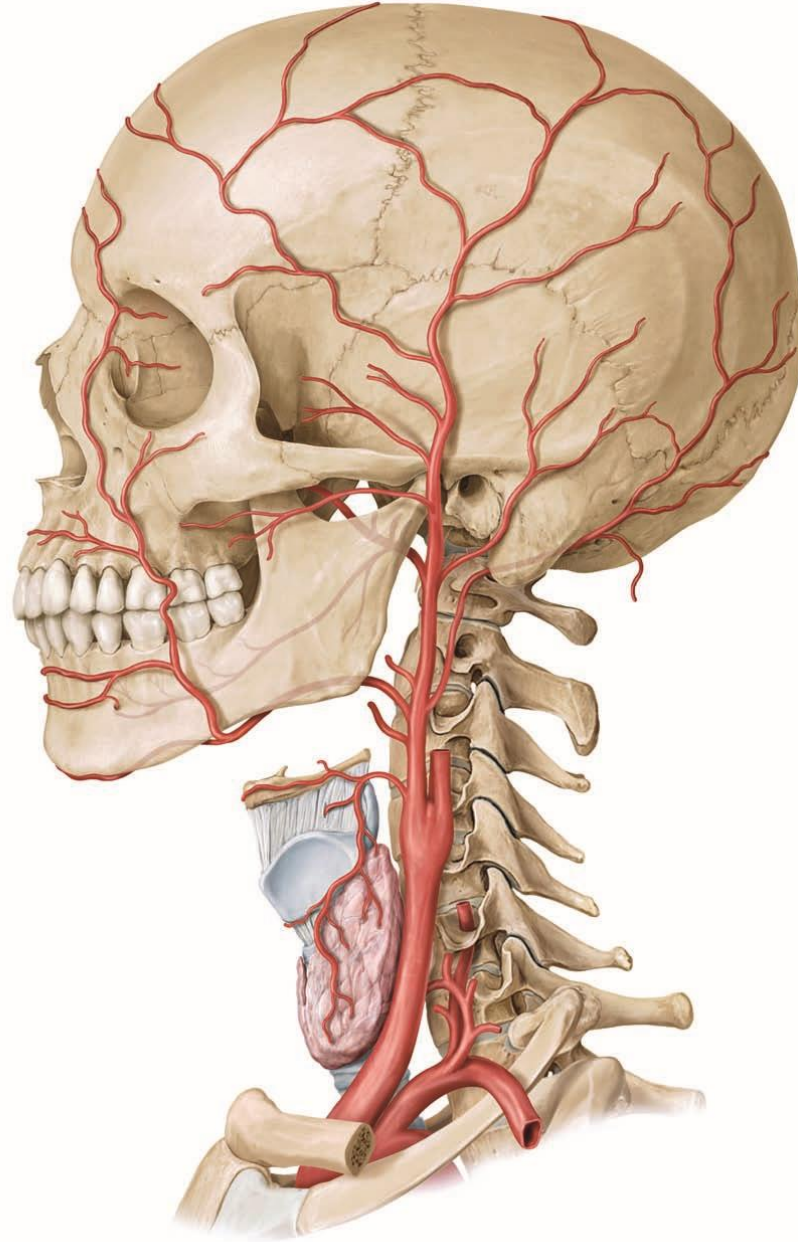


# Arteriae cervicis

- ♦ **A. vertebralis**
- ♦ **A. carotis communis**
- ♦ **A. carotis externa**
- ♦ **A. carotis interna**
  
- ♦ **Tr. brachiocephalisus**
  - ♦ **A. carotis communis dextra**
  - ♦ **A. subclavia dextra**
- ♦ **A. carotis communis sinistra**
- ♦ **A. subclavia sinistra**

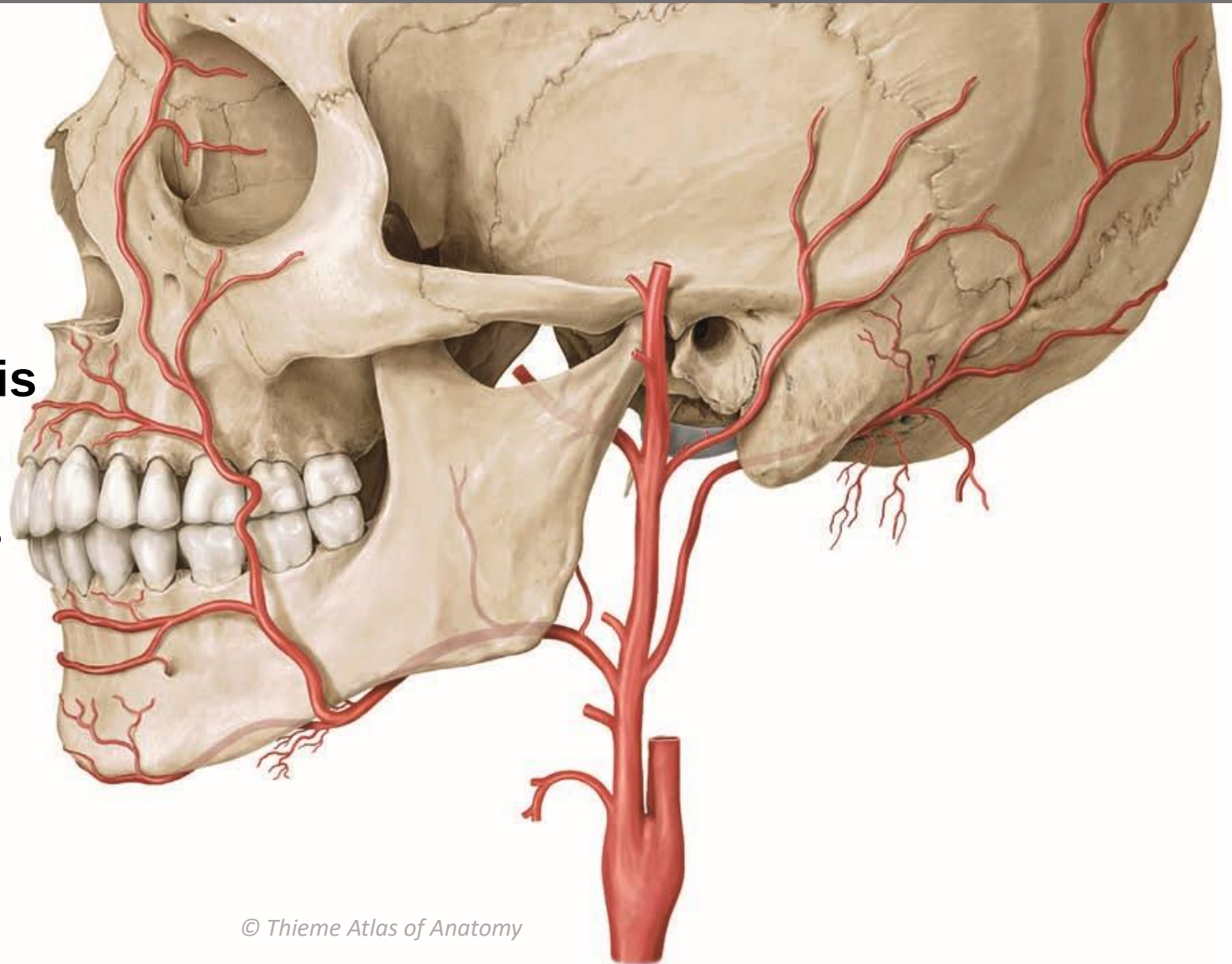
## a. carotis

- ♦ A. carotis communis
- ♦ A. carotis externa
- ♦ A. carotis interna



## a. carotis externa

- ♦ A. thyroidea superior
- ♦ A. lingualis
- ♦ A. facialis
- ♦ A. maxillaris
- ♦ A. temporalis superficialis
- ♦ A. pharyngea ascendens
- ♦ A. occipitalis
- ♦ A. auricularis posterior



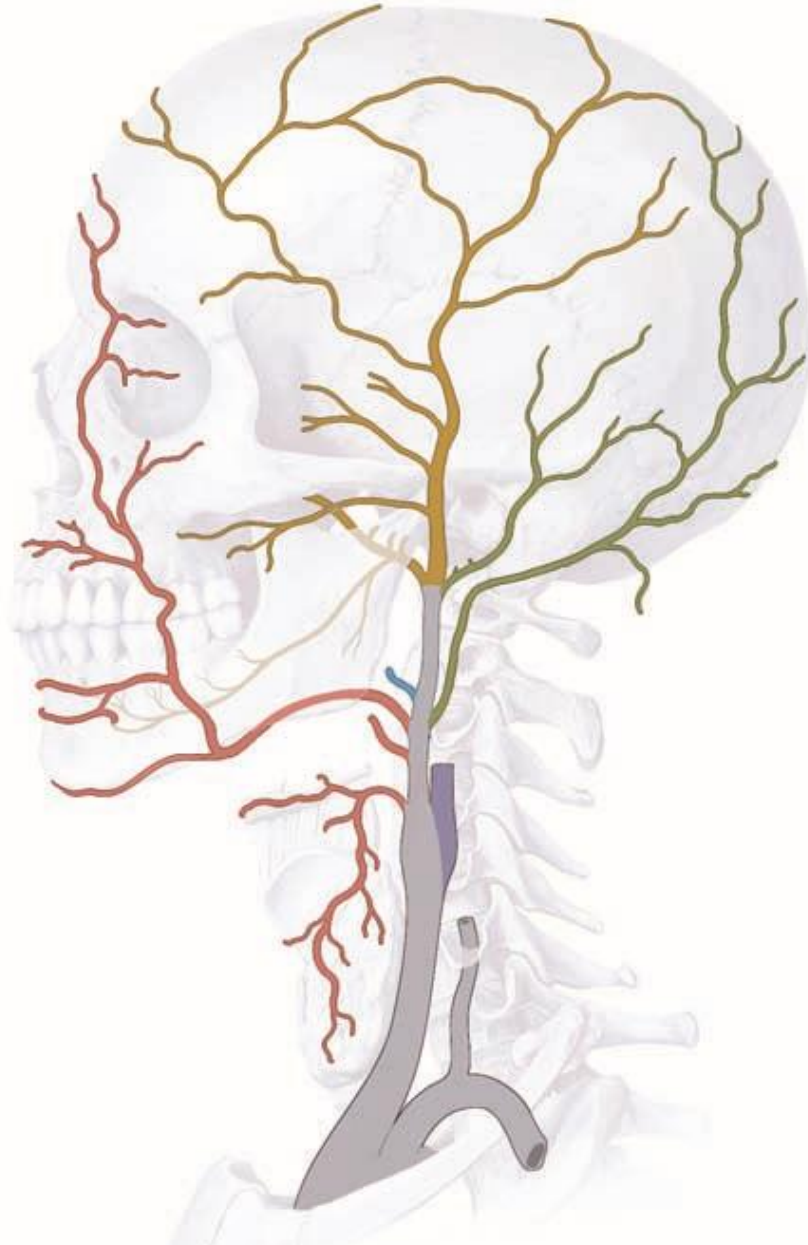
## a. carotis externa

- A. thyroidea superior
- A. lingualis
- A. facialis
- A. maxillaris
- A. temporalis superficialis
  
- A. pharyngea ascendens
- A. occipitalis
- A. auricularis posterior



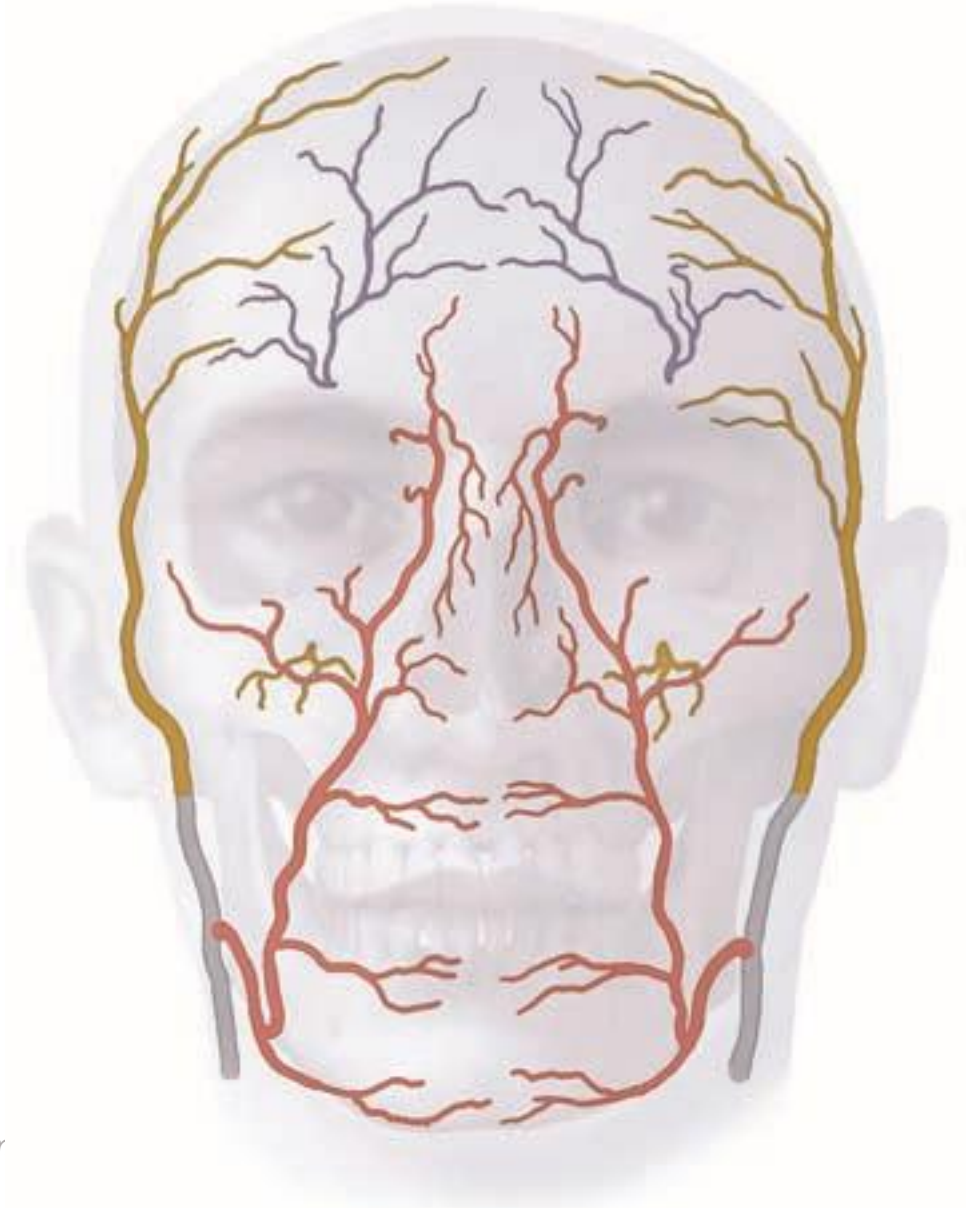
# aa. faciei et capitis

- ♦ A. facialis
- ♦ A. temporalis superficialis
- ♦ A. auricularis posterior
- ♦ A. occipitalis



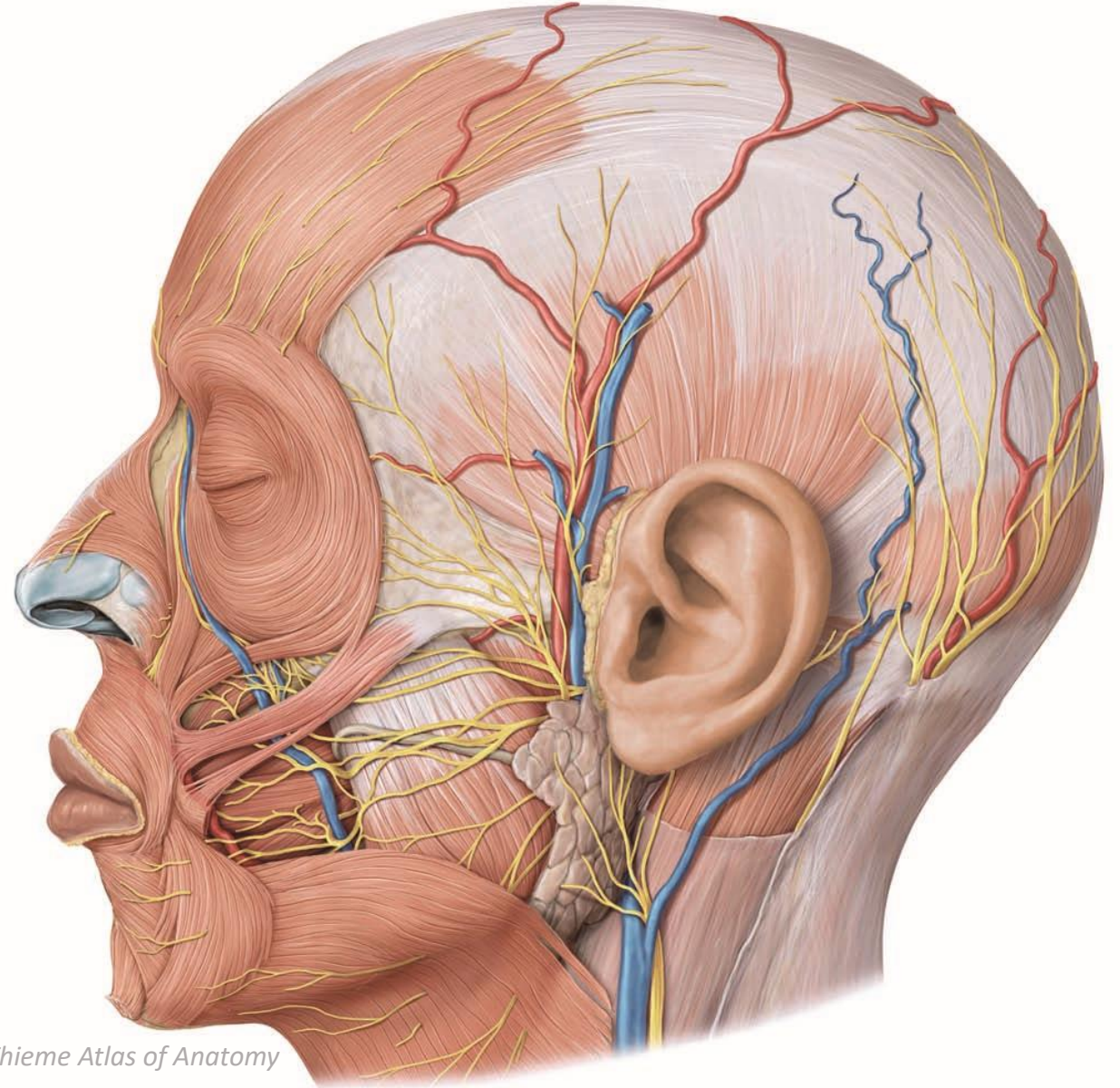
# aa. faciei

- ♦ A. supraorbitalis
- ♦ A. facialis – a. angularis
- ♦ A. temporalis sueprficialis
- ♦ A. infraorbitalis



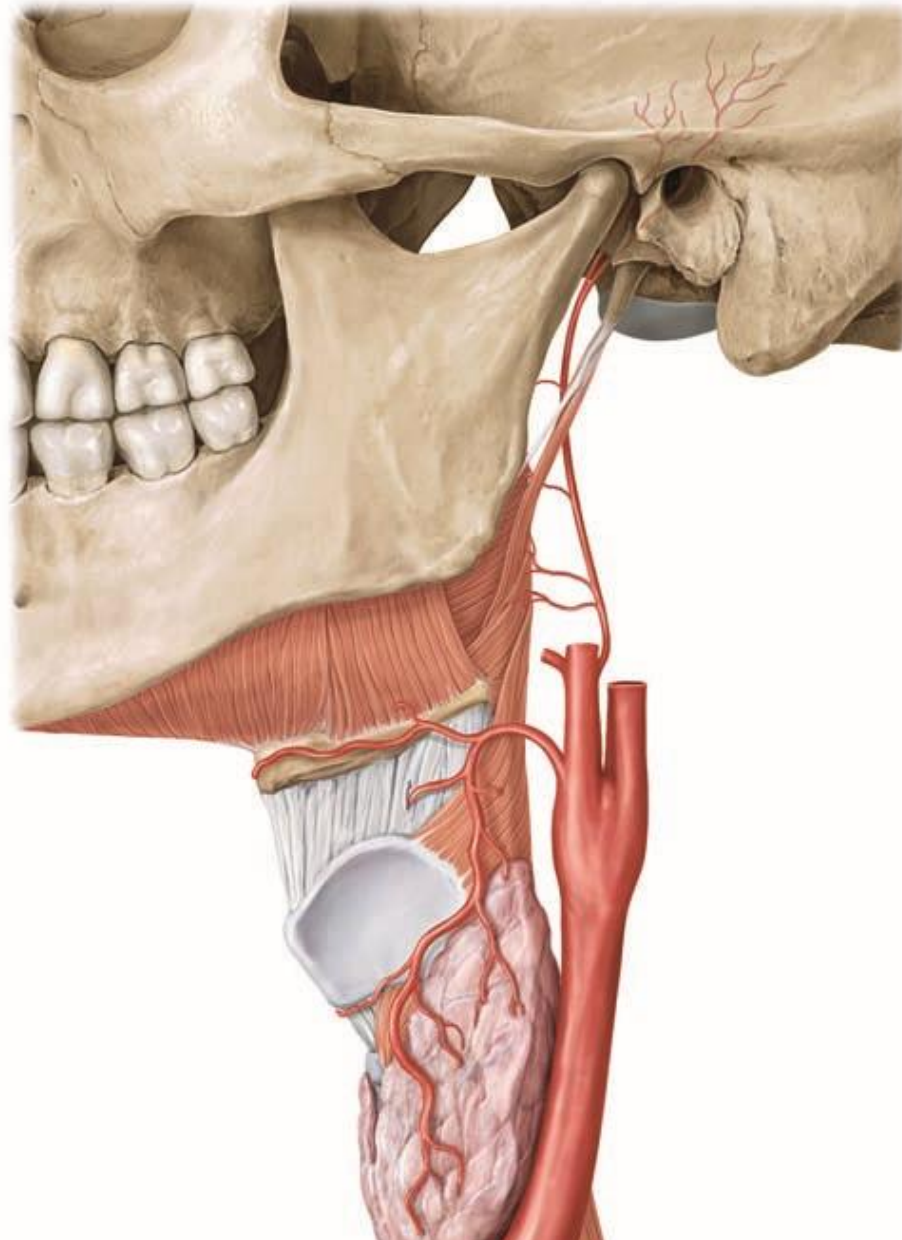


# vasa faciales et temporales superficiales

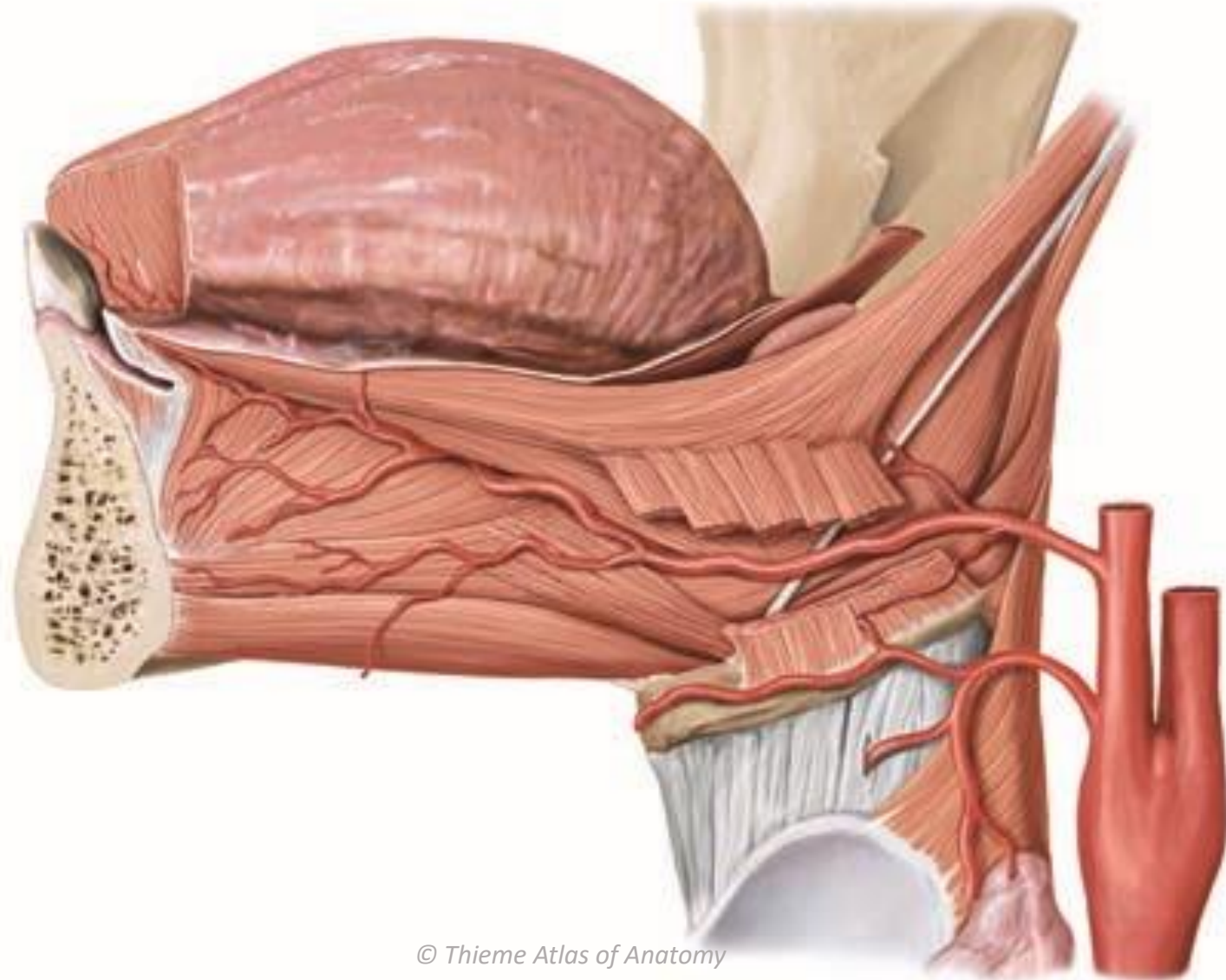




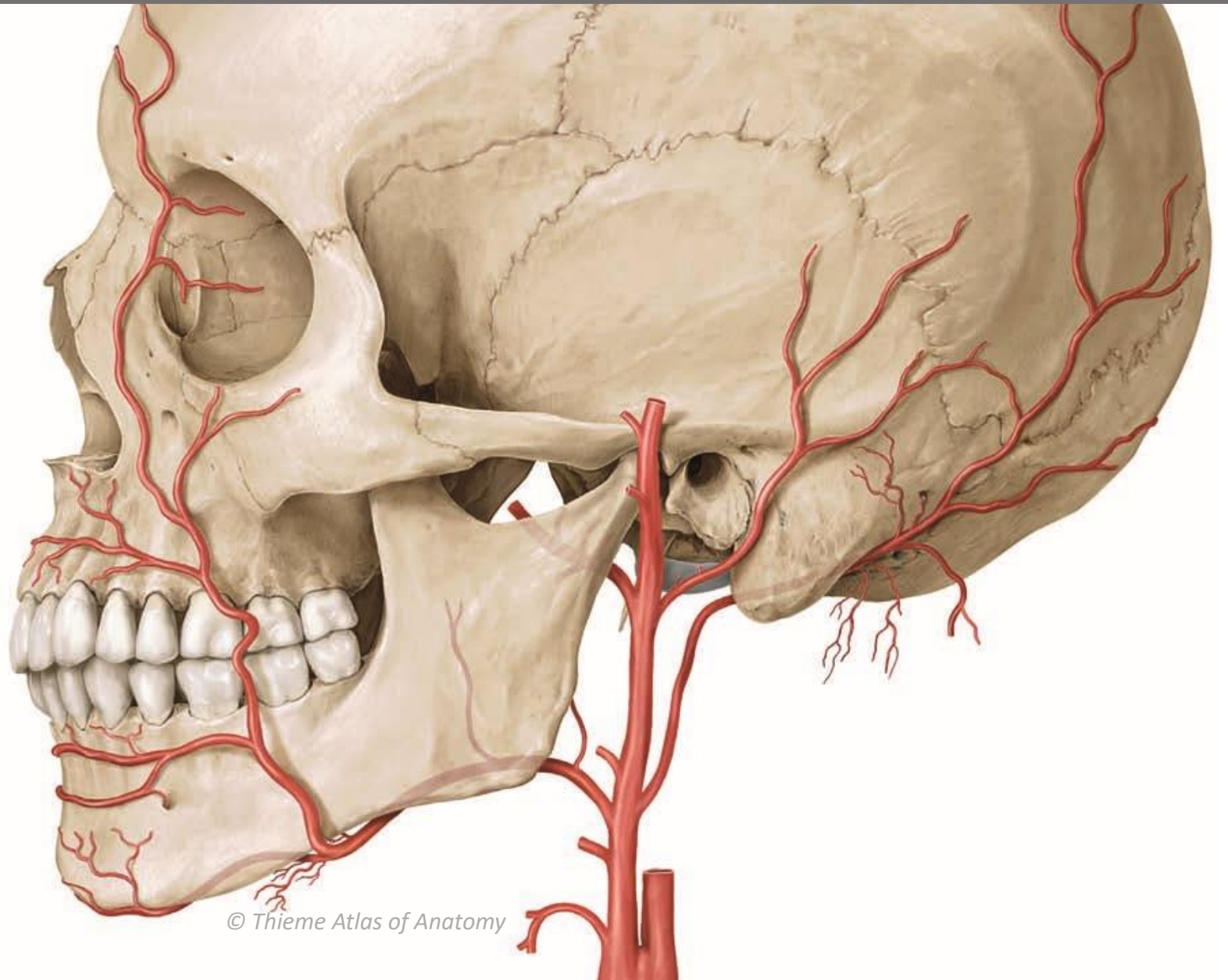
a. pharyngea ascendens, a. thyroidea superior



# a. lingualis

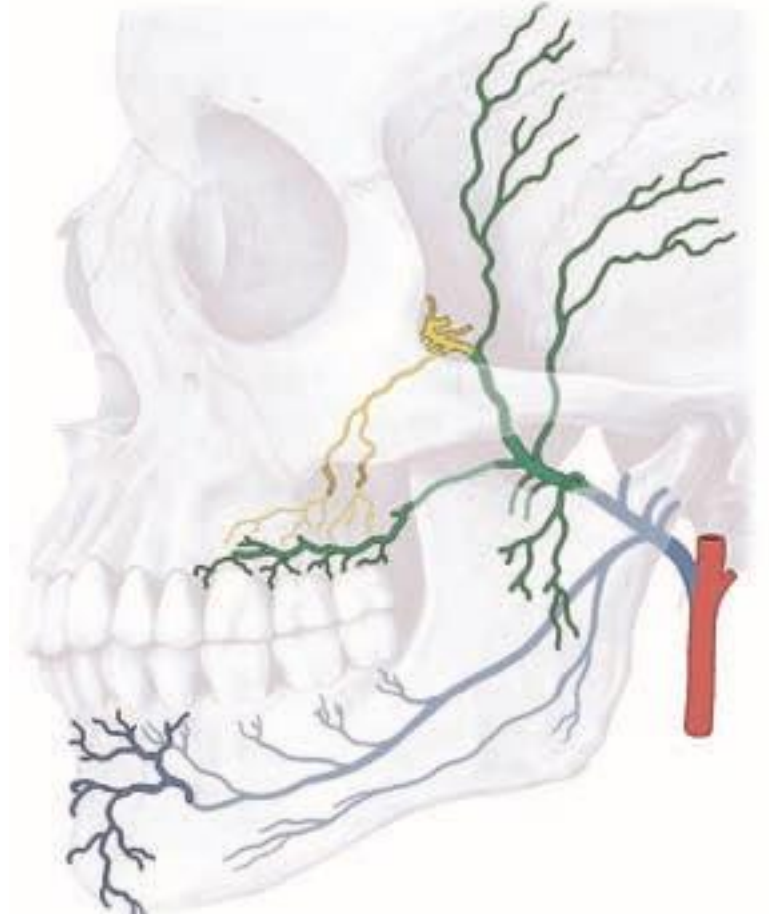
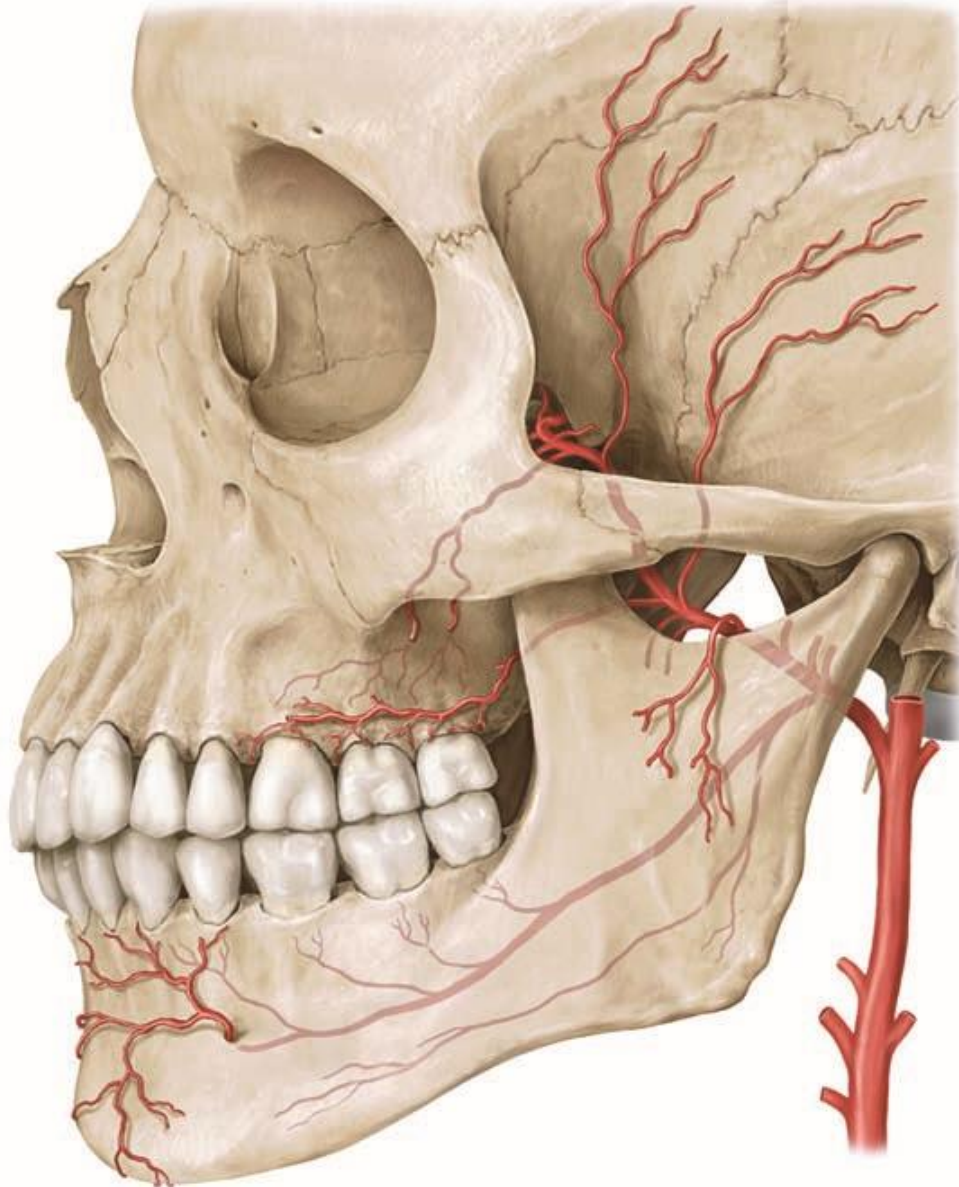


## a. facialis



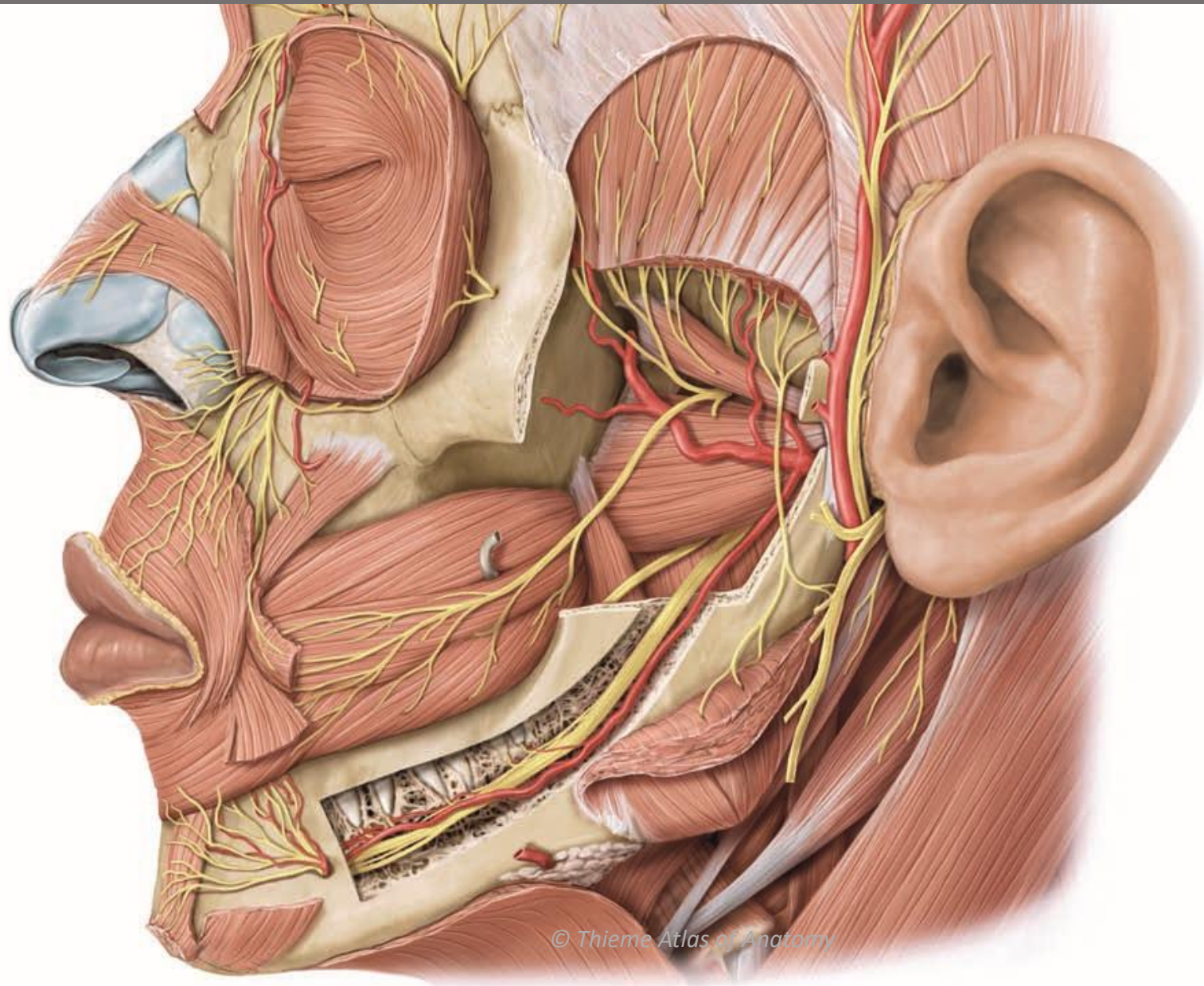


## a. maxillaris



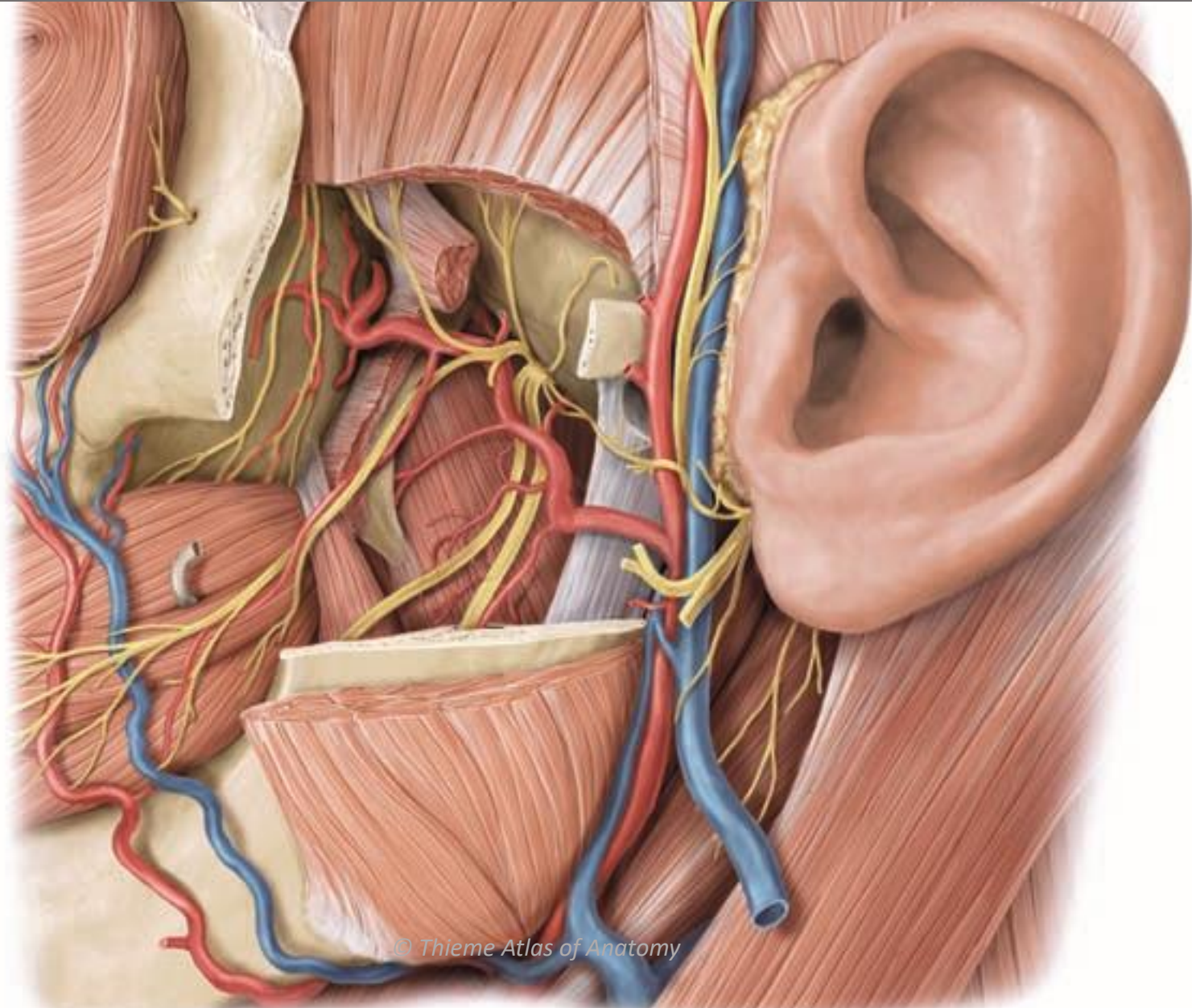


## a. alveolaris inferior



# a. maxillaris

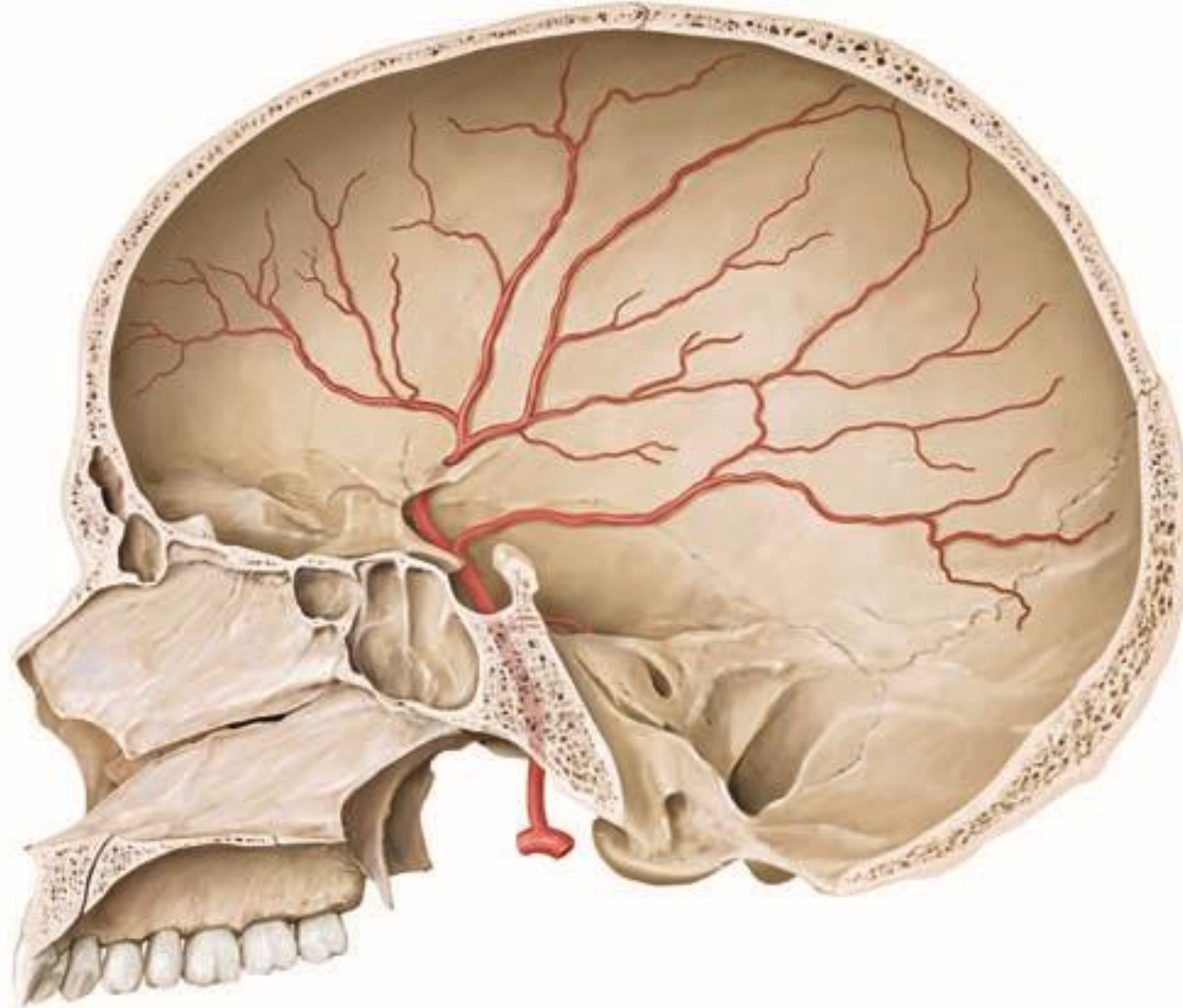
## ♦ A. sphenopalatina





# a. meningica media

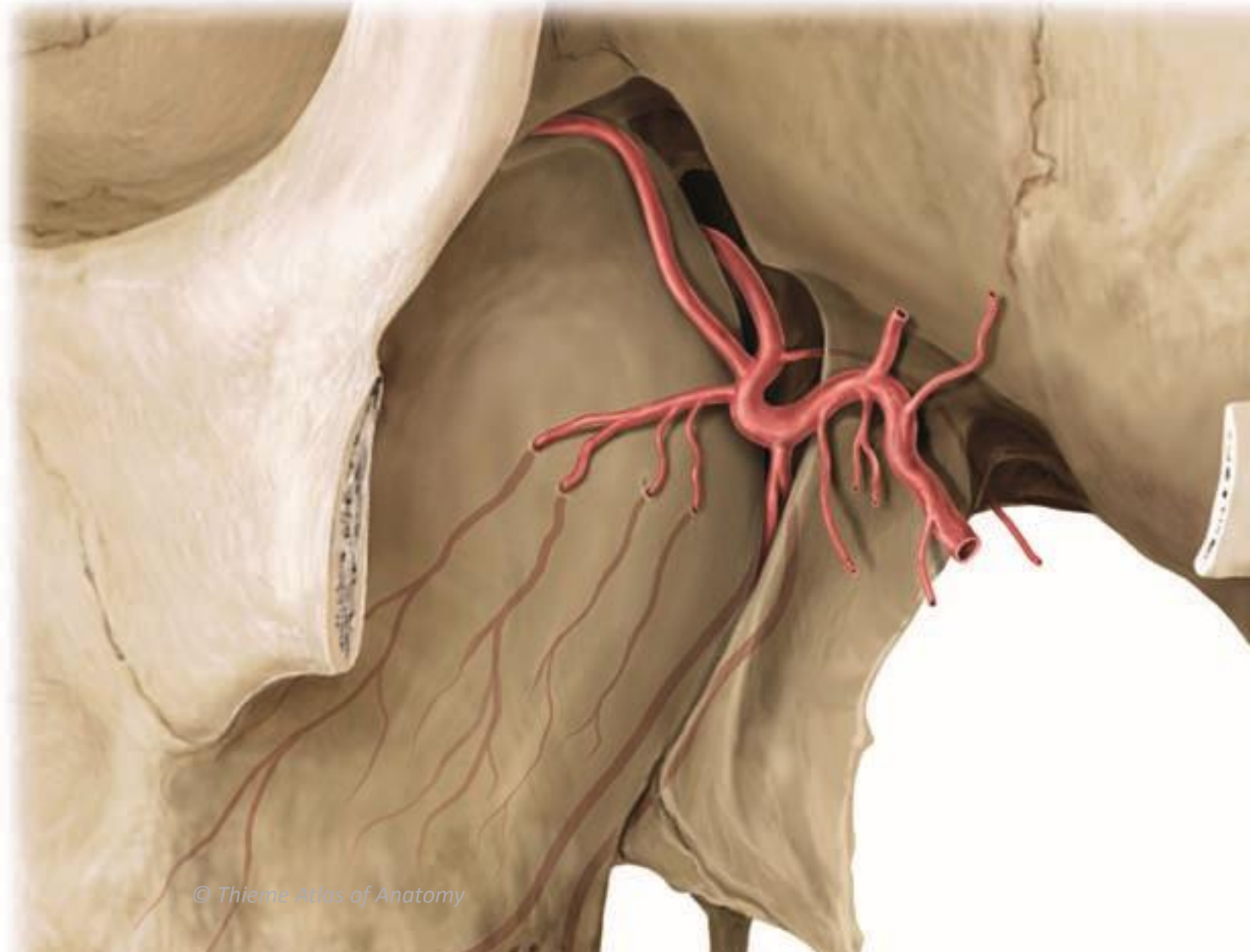
## • Epidural hematoma



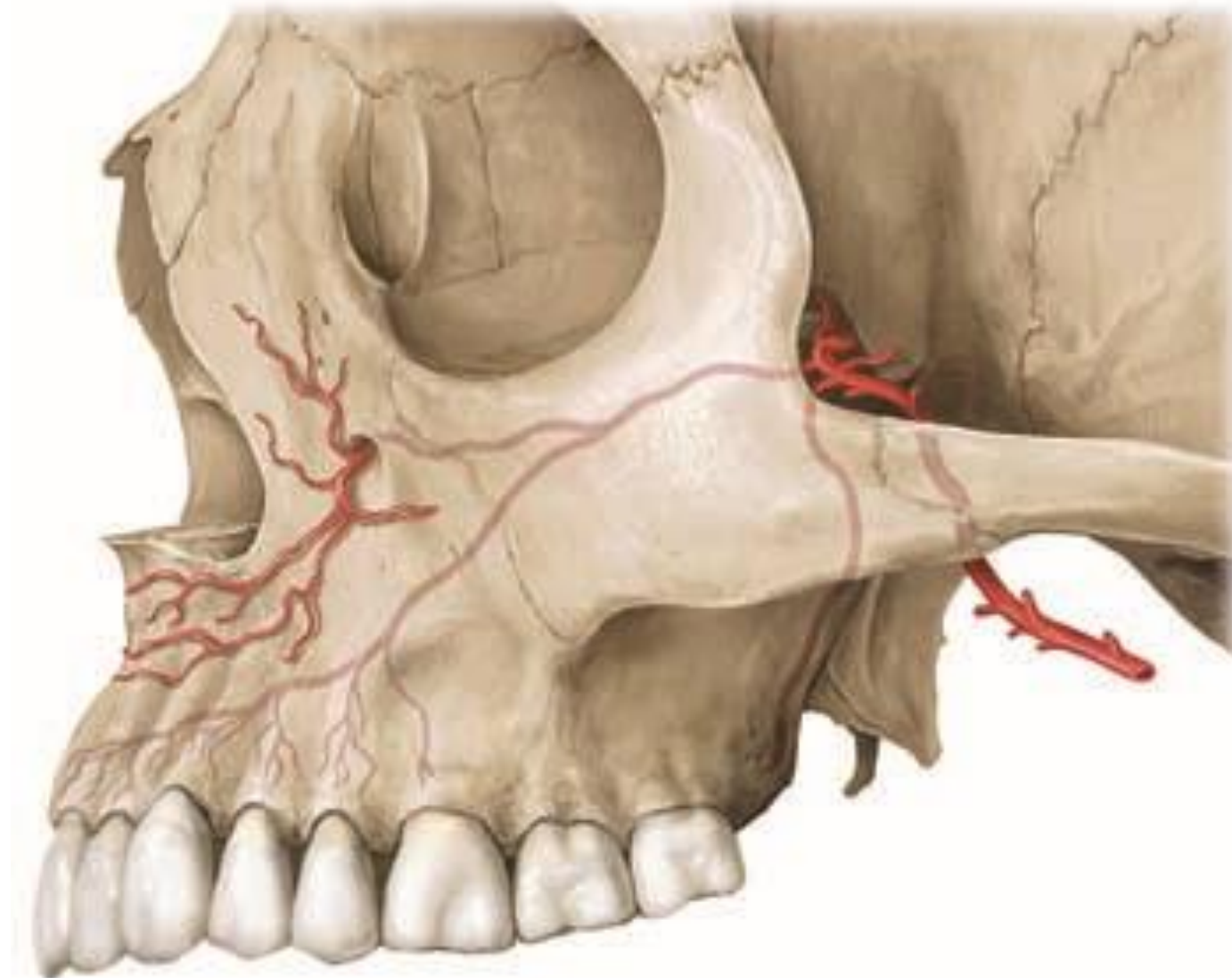


# a. sphenopalatina, a. infraorbitalis

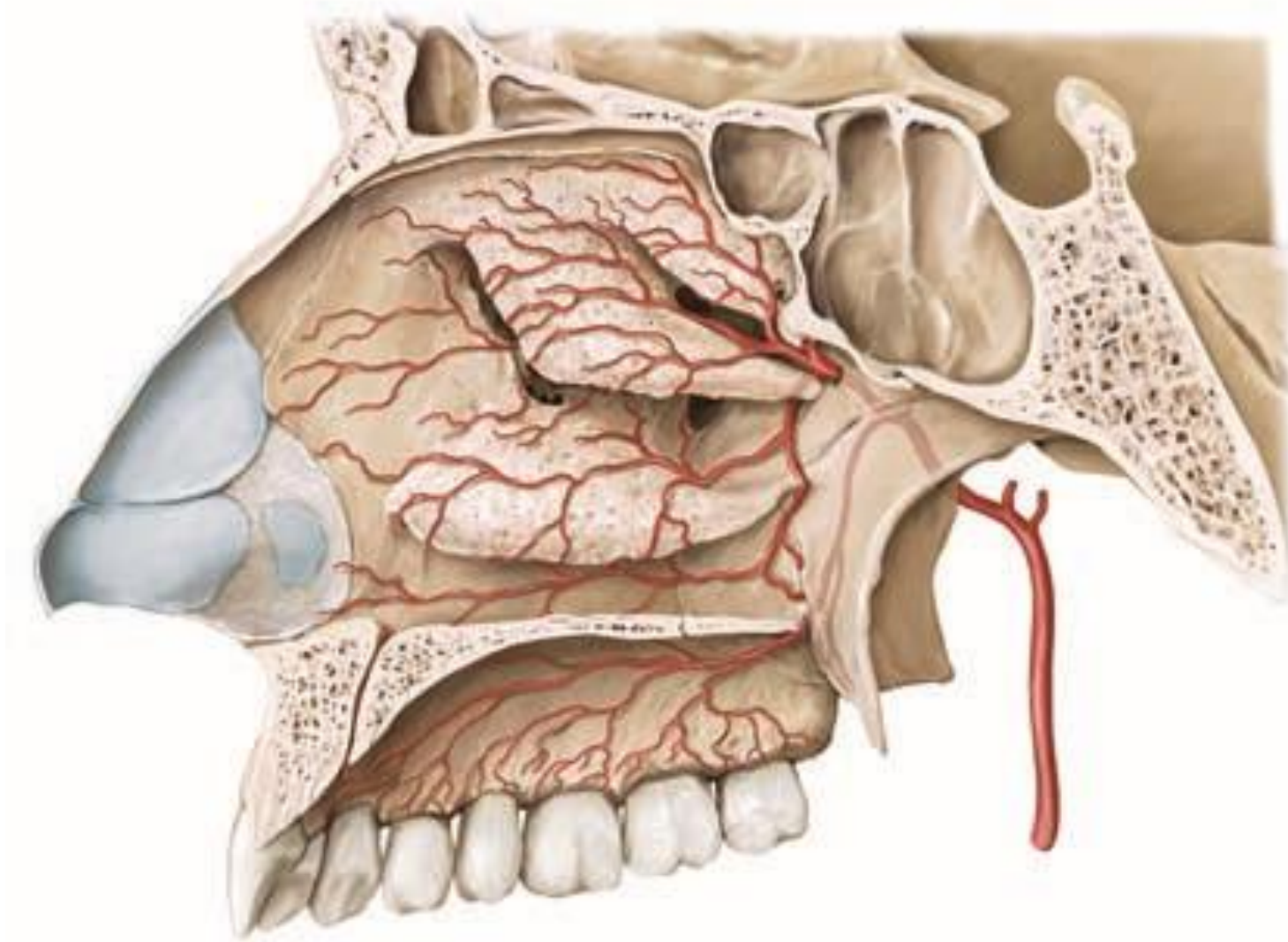
## ♦ Aa. alveolares posteriores



## a. infraorbitalis



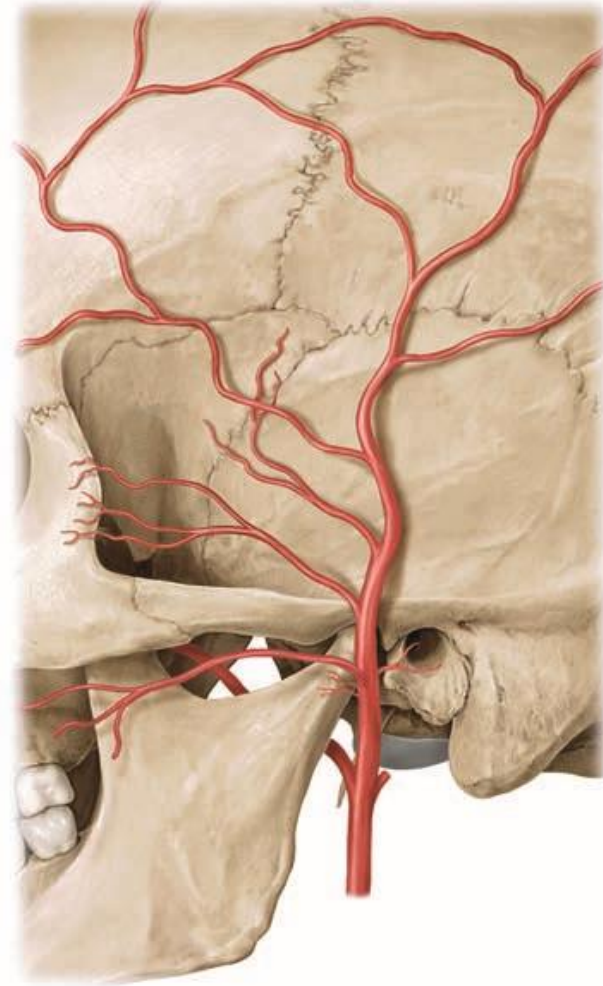
# a. sphenopalatina, a. palatina descendens



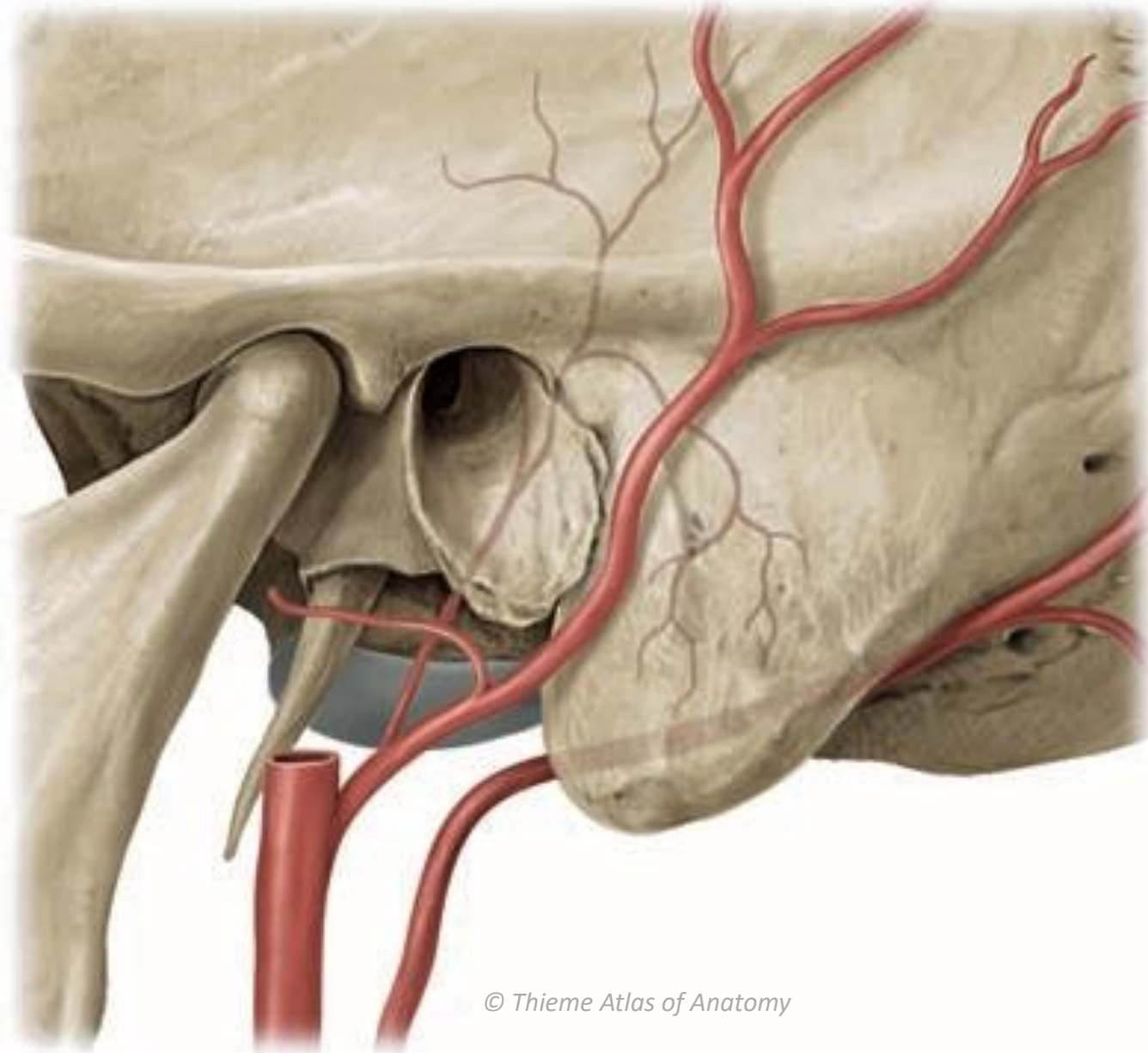


# a. temporalis superficialis

- ♦ A. transversa faciei
- ♦ A. zygomaticoorbitalis
- ♦ Ramus parietalis
- ♦ Ramus frontalis
- ♦ A. temporalis media

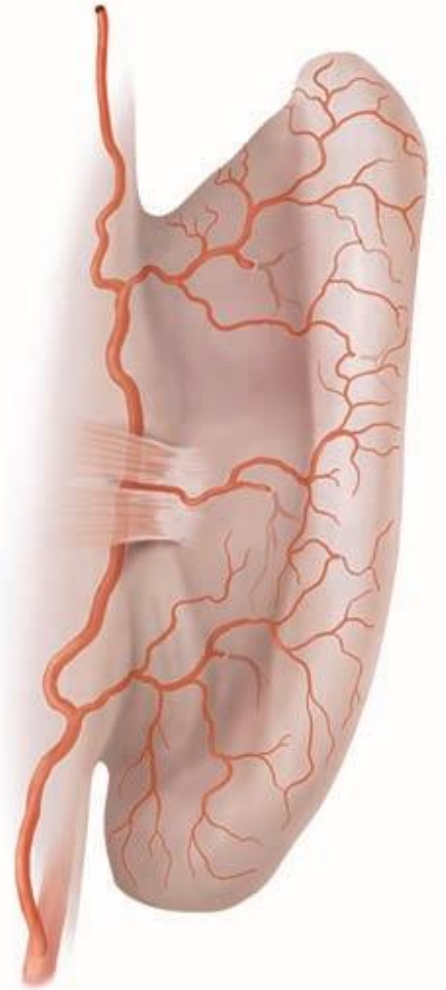
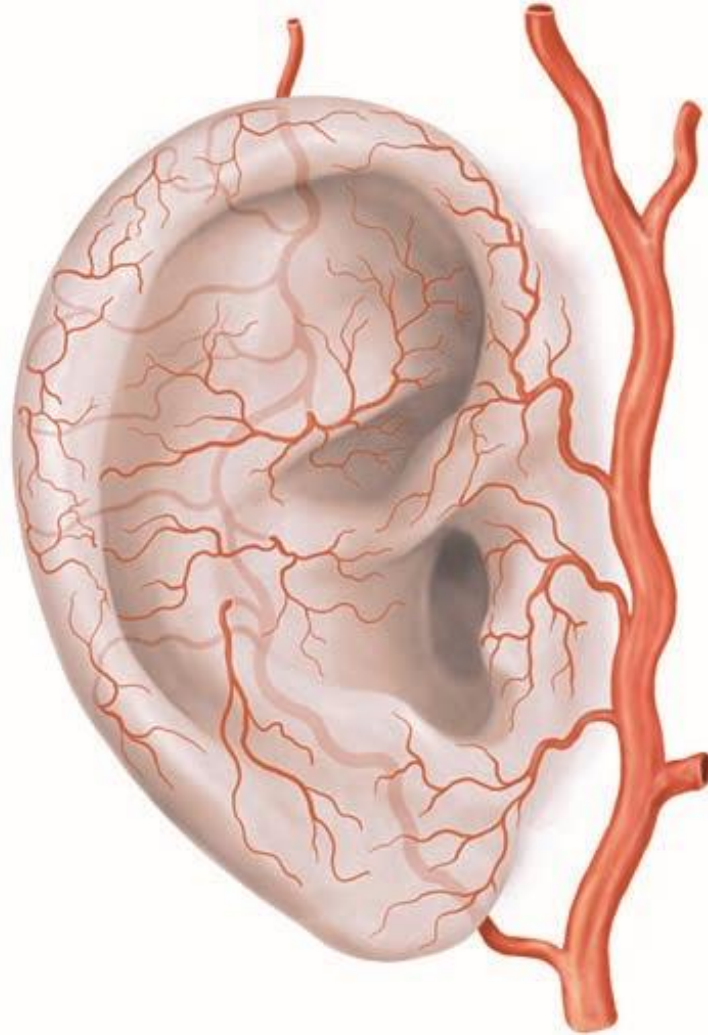


# a. occipitalis et auricularis posterior



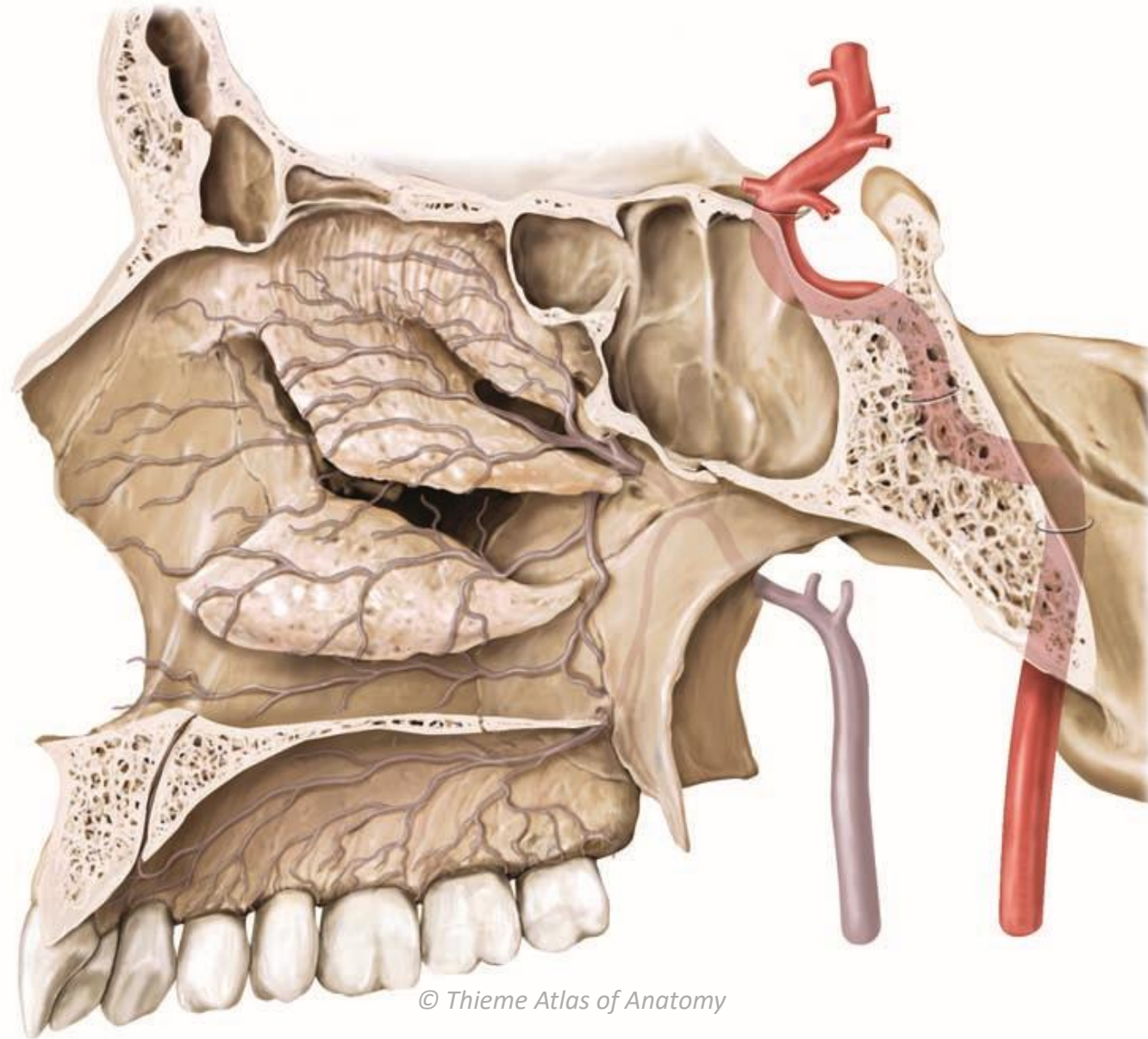
# aa. auris

- ♦ **A. temporalis superficialis**
- ♦ **A. auricularis posterior**



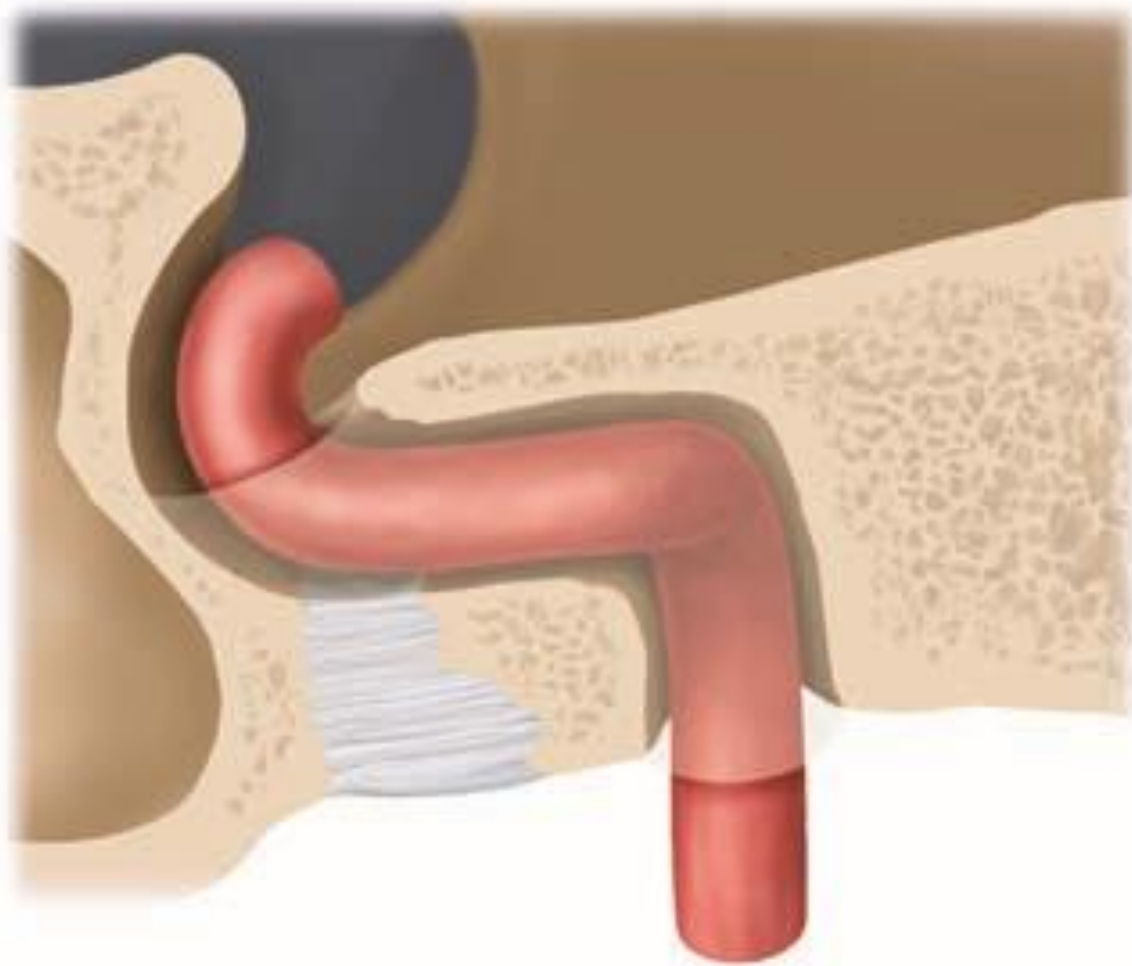


## a. carotis interna et externa



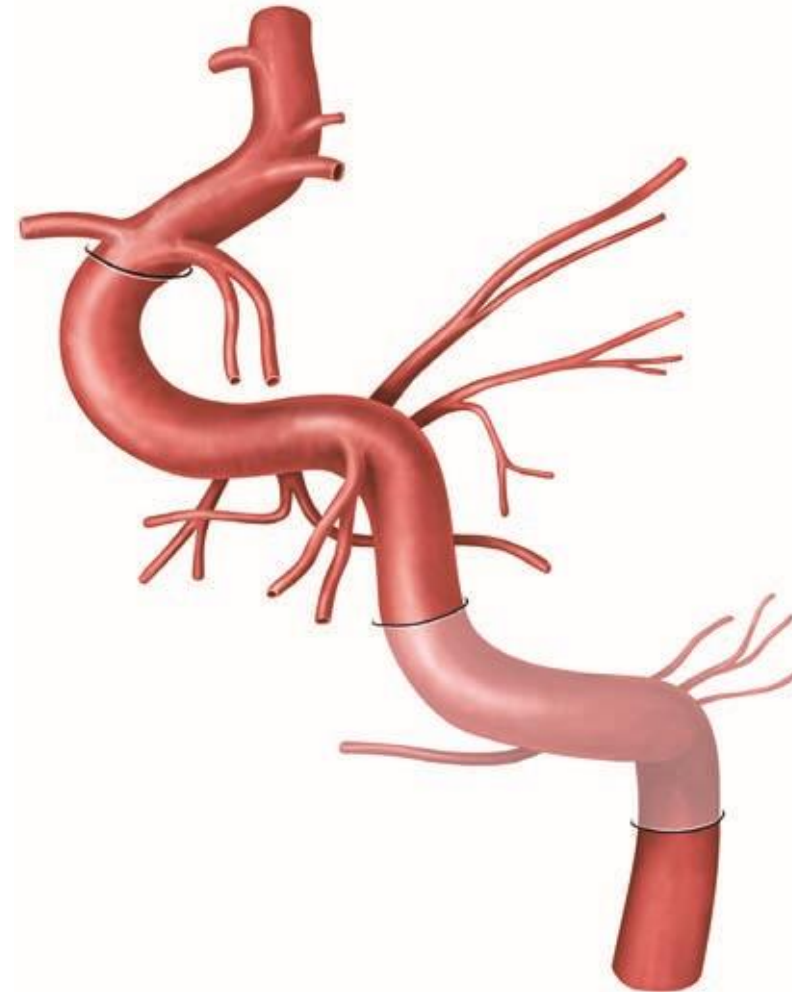
# canalis caroticus

## • Pars petrosa



# a. carotis interna

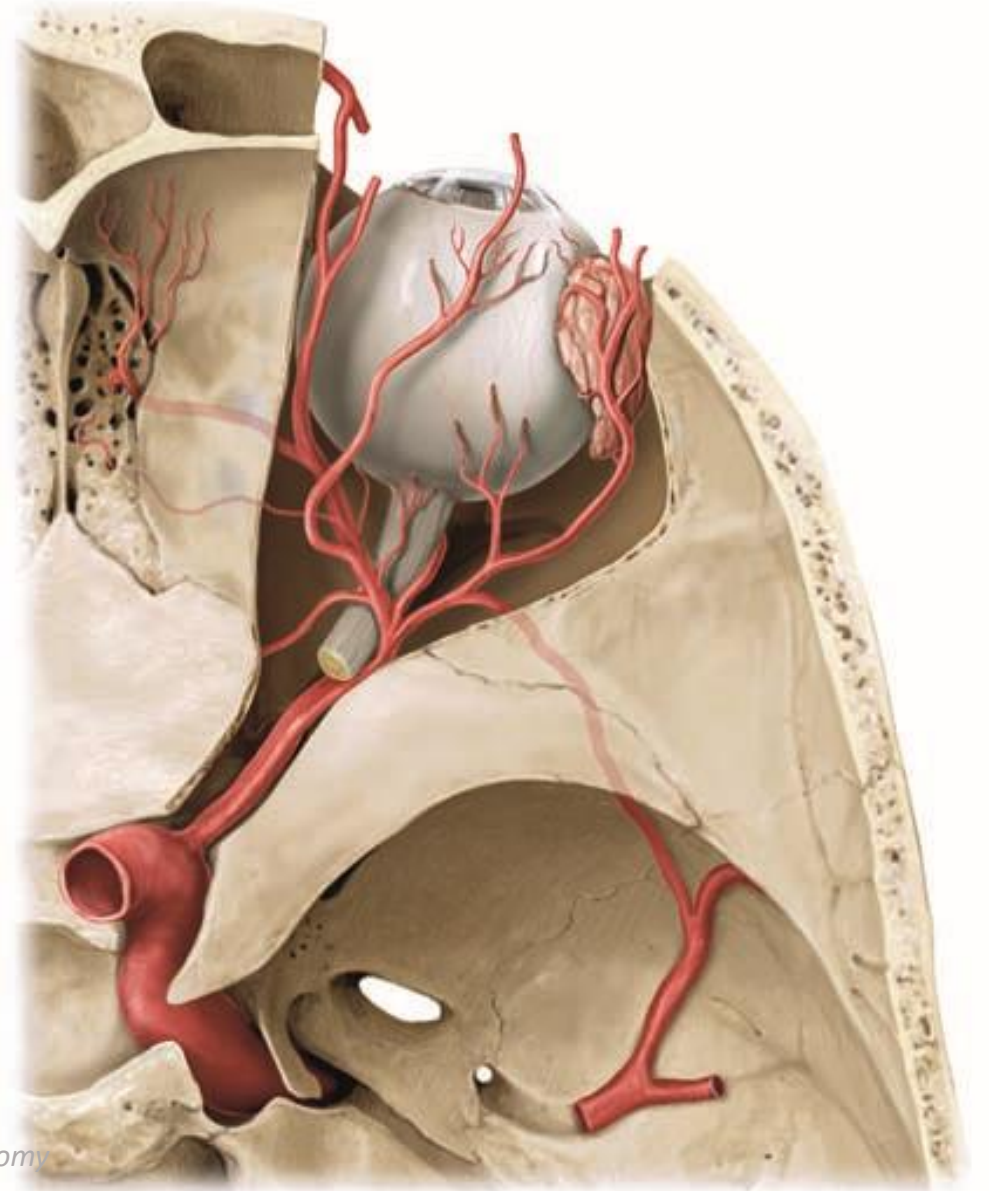
- ♦ **Pars cervicalis**
- ♦ **Pars petrosa**
  - ♦ Aa. caroticotympanales
  - ♦ A. canalis pterygoidei
- ♦ **Pars cavernosa**
  - ♦ A. hypophysealis inferior
  - ♦ A. hypophysealis superior
- ♦ **Pars cerebralis**
  - ♦ A. ophtalmica
  - ♦ A. communicans posterior
  - ♦ A. chorioidea anterior





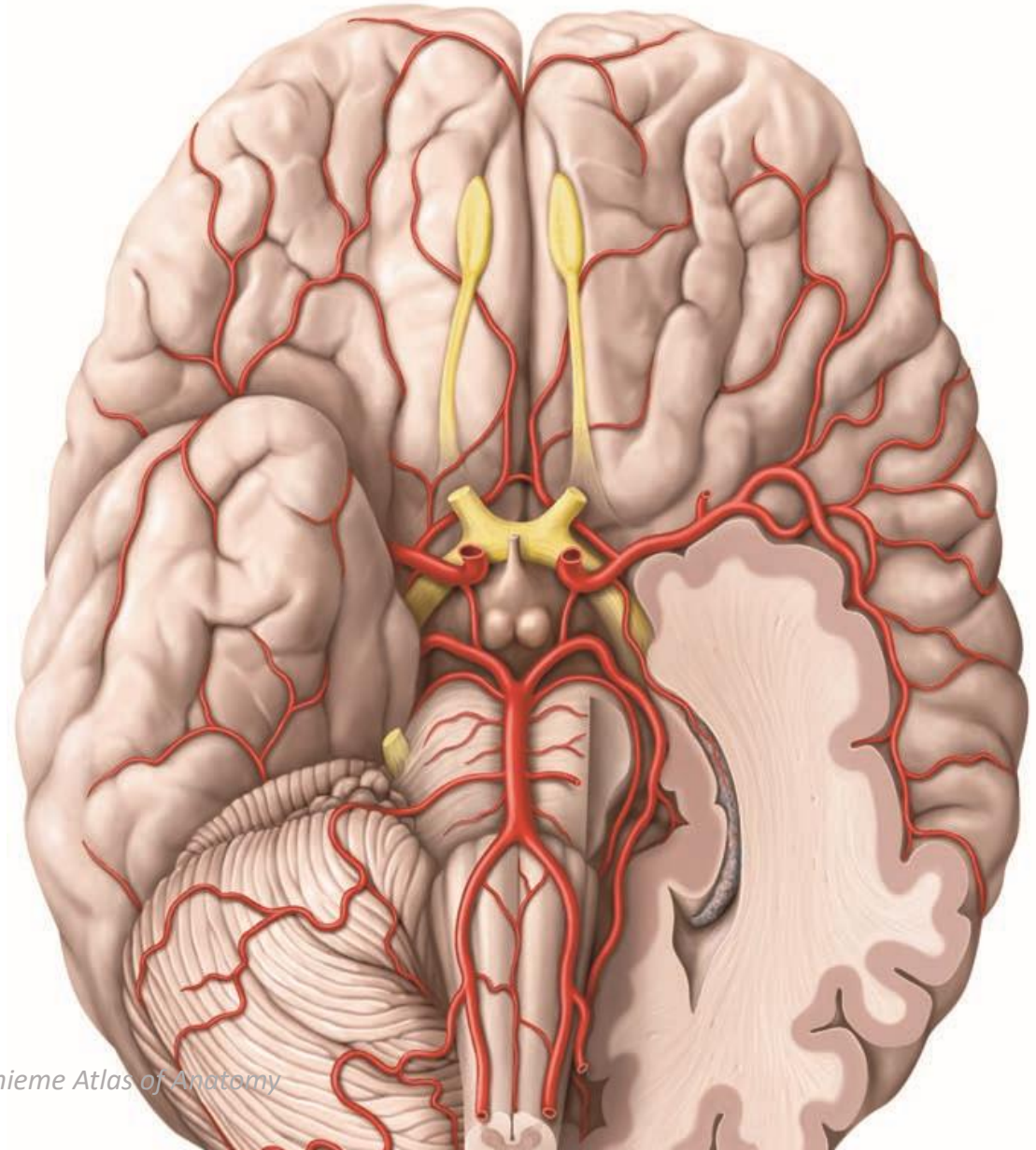
# a. ophtalmica

- ♦ A. ethmoidalis anterior
- ♦ A. ethmoidalis posterior
- ♦ A. supraorbitalis
- ♦ A. palpebralis media
- ♦ A. supratrochlearis
- ♦ A. lacrimalis
- ♦ Aa. ciliares longae
- ♦ Aa. ciliares breves
  
- ♦ Anastomosis ad a. meningica media



# aa. cerebri

- ♦ **A. vertebralis**
- ♦ **A. carotis interna**
- ♦ **A. cerebri anterior**
- ♦ **A. cerebri media**
- ♦ **A. cerebri posterior**
- ♦ **A. basilaris**
- ♦ **A. communicans anterior**
- ♦ **A. communicans posterior**



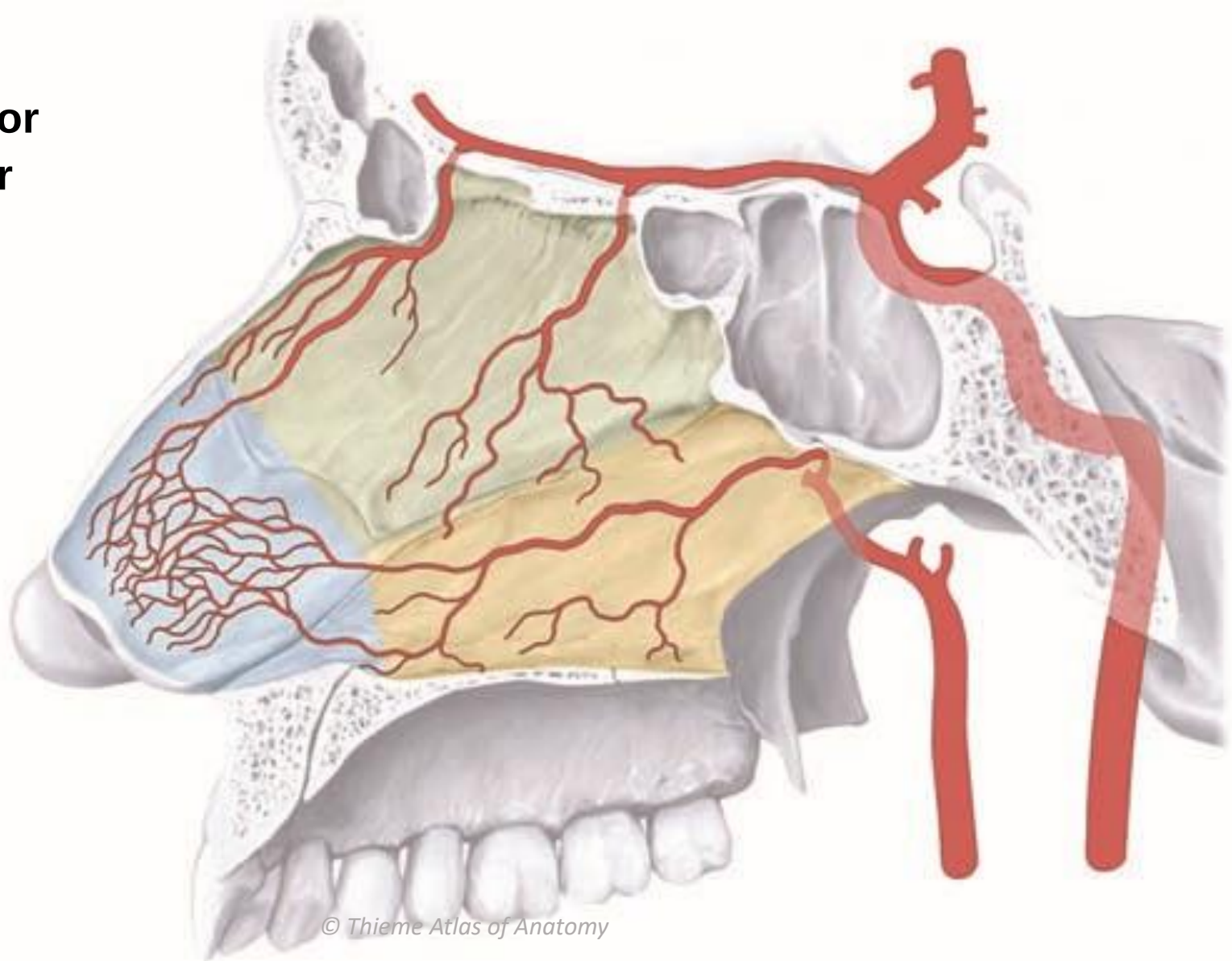
# aa. cerebri

- ♦ A. verterbalis
- ♦ A. carotis interna
- ♦ A. cerebri anterior
- ♦ A. cerebri media
- ♦ A. cerebri posterior
- ♦ A. basilaris
- ♦ A. communicans anterior
- ♦ A. communicans posterior



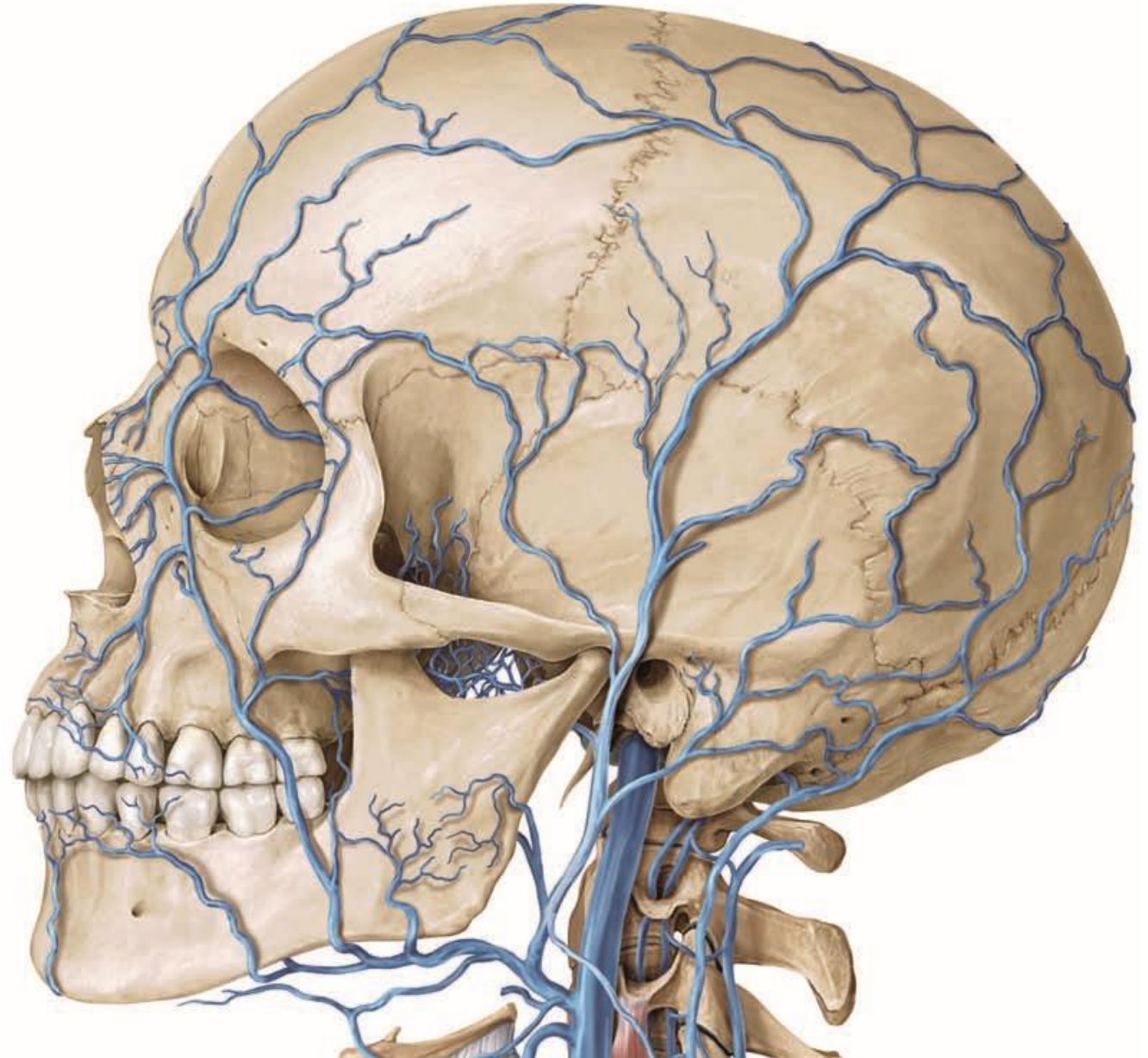
# aa. nasi

- ♦ **A. ophtalmica**
  - ♦ A. ethmoidalis posterior
  - ♦ A. ethmoidalis anterior
- ♦ **A. sphenopalatina**
- ♦ **Locus Kieselbachi**



# Venae capitis

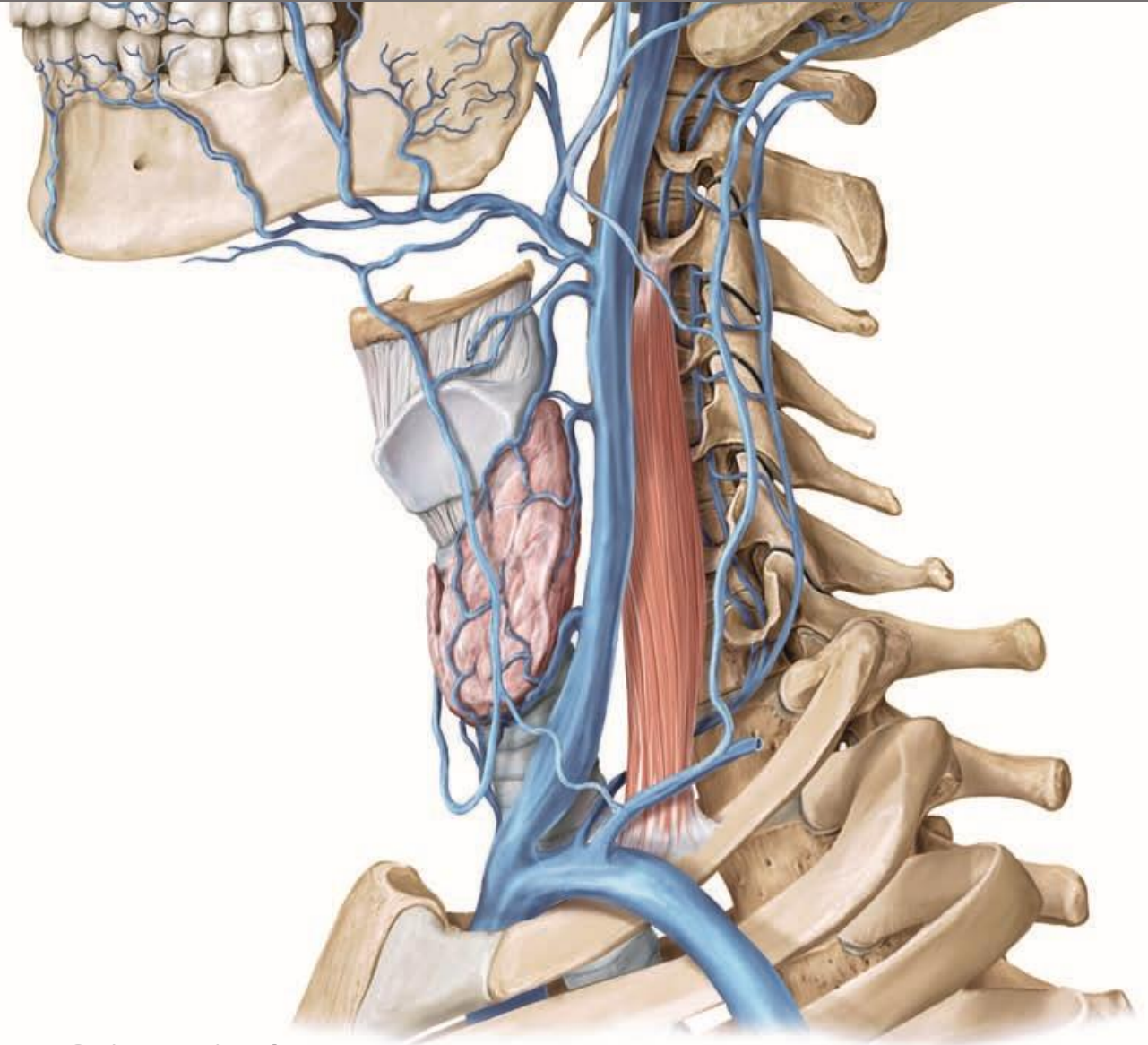
- ♦ V. jugularis interna
- ♦ V. jugularis externa
- ♦ V. jugularis anterior
  
- ♦ V. temporalis superficialis
- ♦ V. maxillaris
- ♦ V. retromandibularis
- ♦ V. facialis
- ♦ V. occipitalis
  
- ♦ V. angularis
- ♦ V. ophtalmica superior
- ♦ V. ophtalmica inferior





# Venae capitis

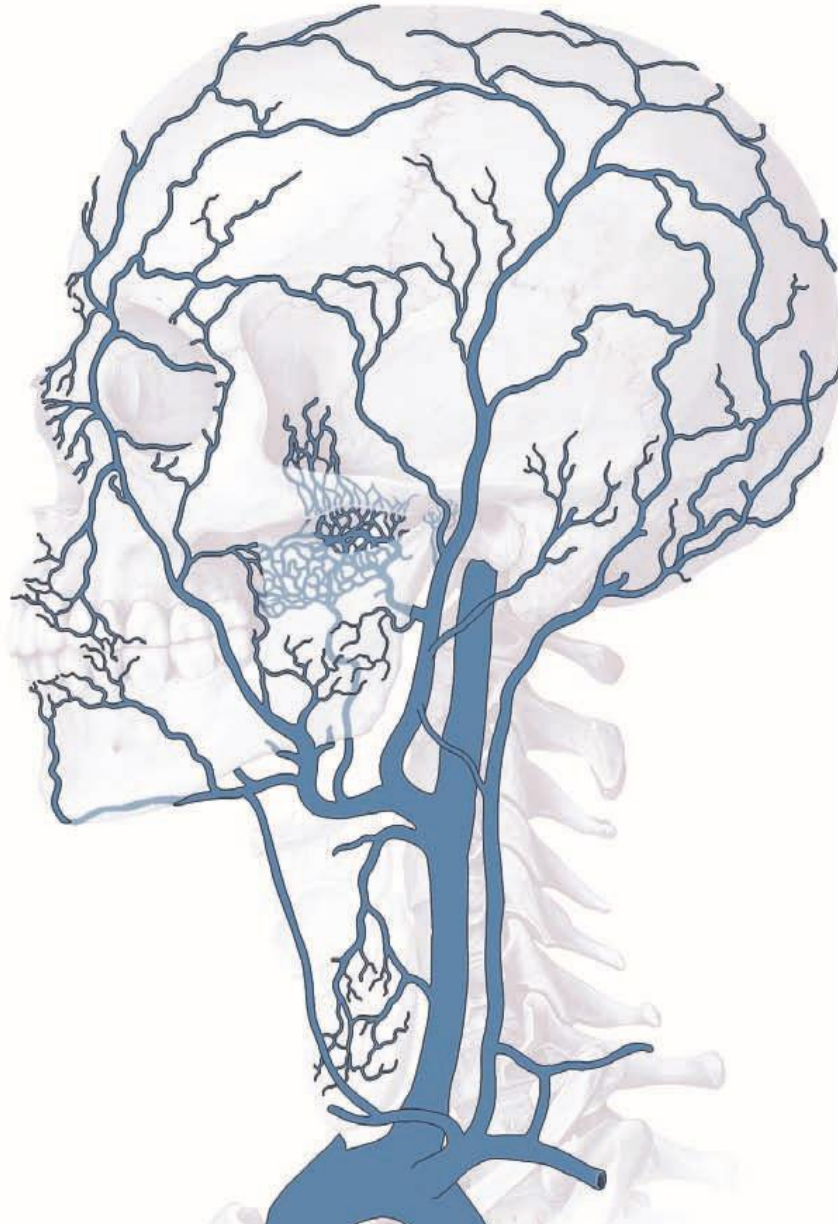
- ♦ V. jugularis interna
- ♦ V. jugularis externa
- ♦ V. jugularis anterior
- ♦ V. temporalis superficialis
- ♦ V. maxillaris
- ♦ V. retromandibularis
- ♦ V. facialis
- ♦ V. occipitalis
- ♦ V. angularis
- ♦ V. ophtalmica superior
- ♦ V. ophtalmica inferior





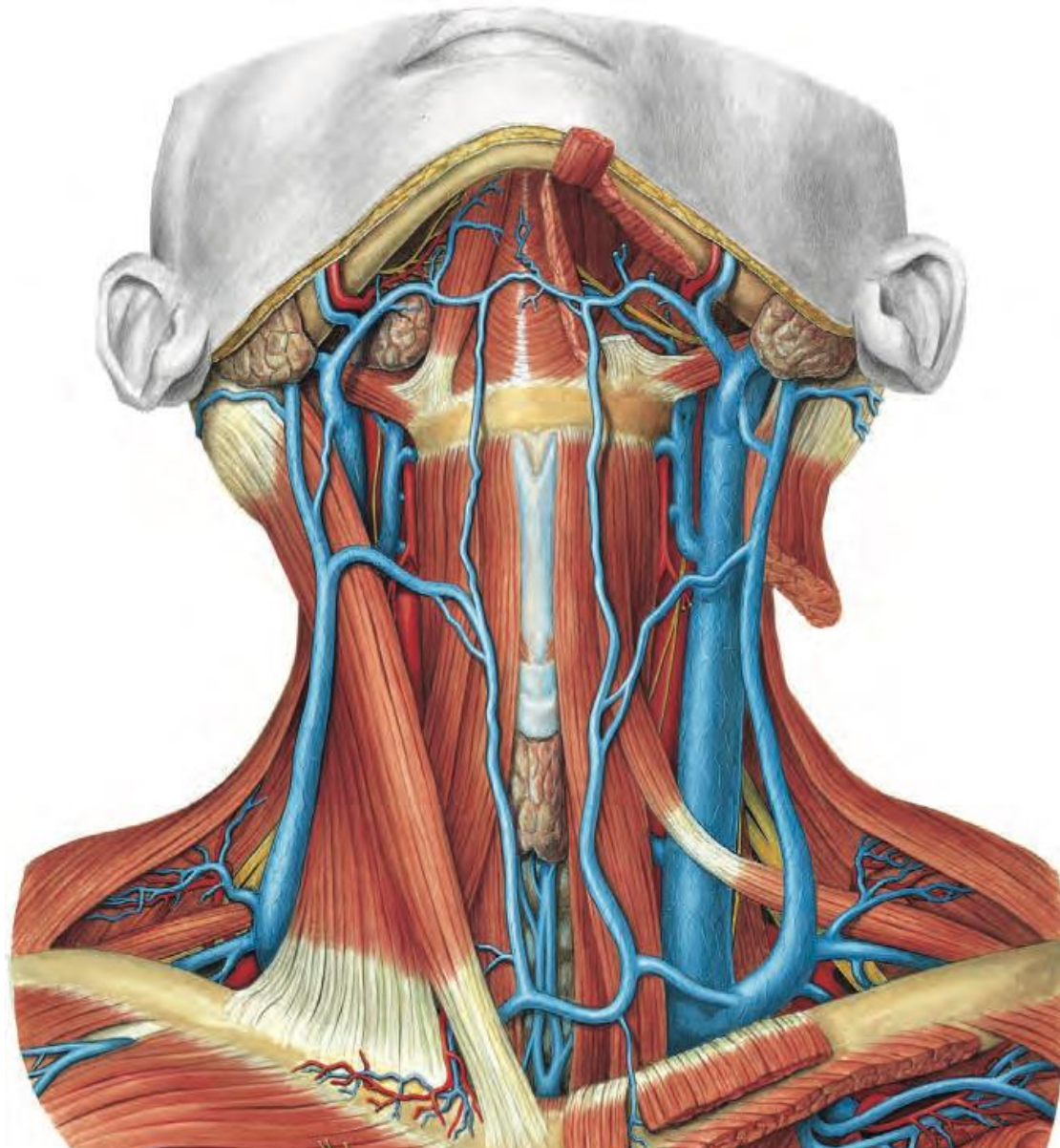
# Anastomoses

## • Plexus pterygoideus



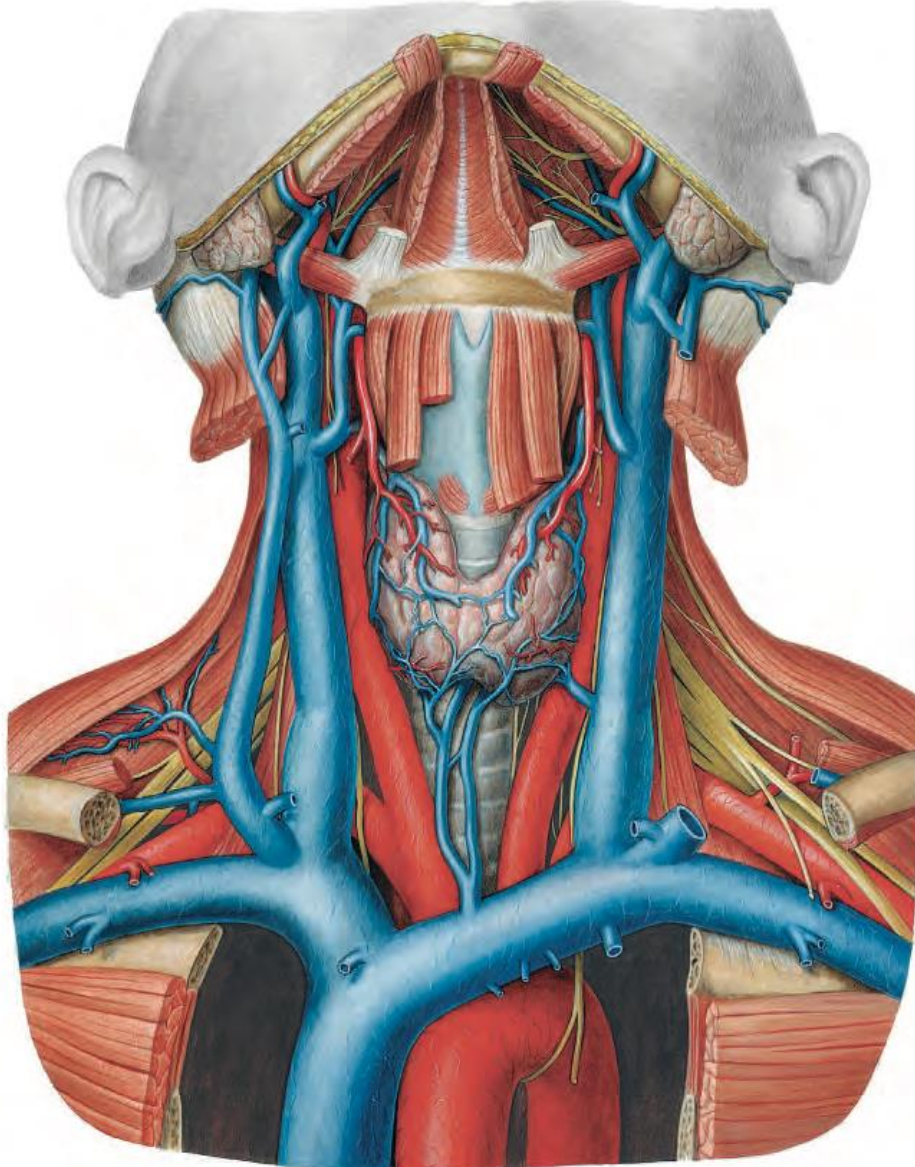
# Venae jugulares

- ♦ V. jugularis interna
- ♦ V. jugularis externa
- ♦ V. jugularis anterior



# Venae cervicis

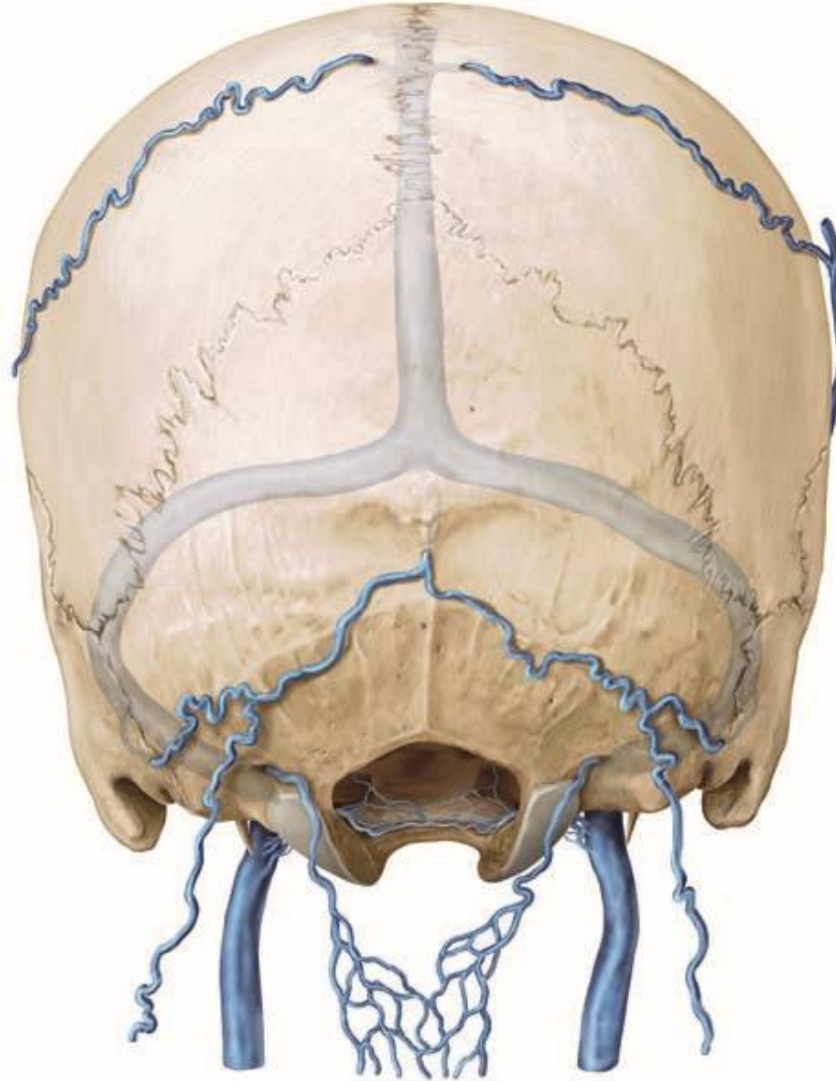
- ♦ V. jugularis interna
- ♦ V. jugularis externa
- ♦ V. jugularis anterior
- ♦ V. subclavia
- ♦ V. brachiocephalica
- ♦ V. cava superior





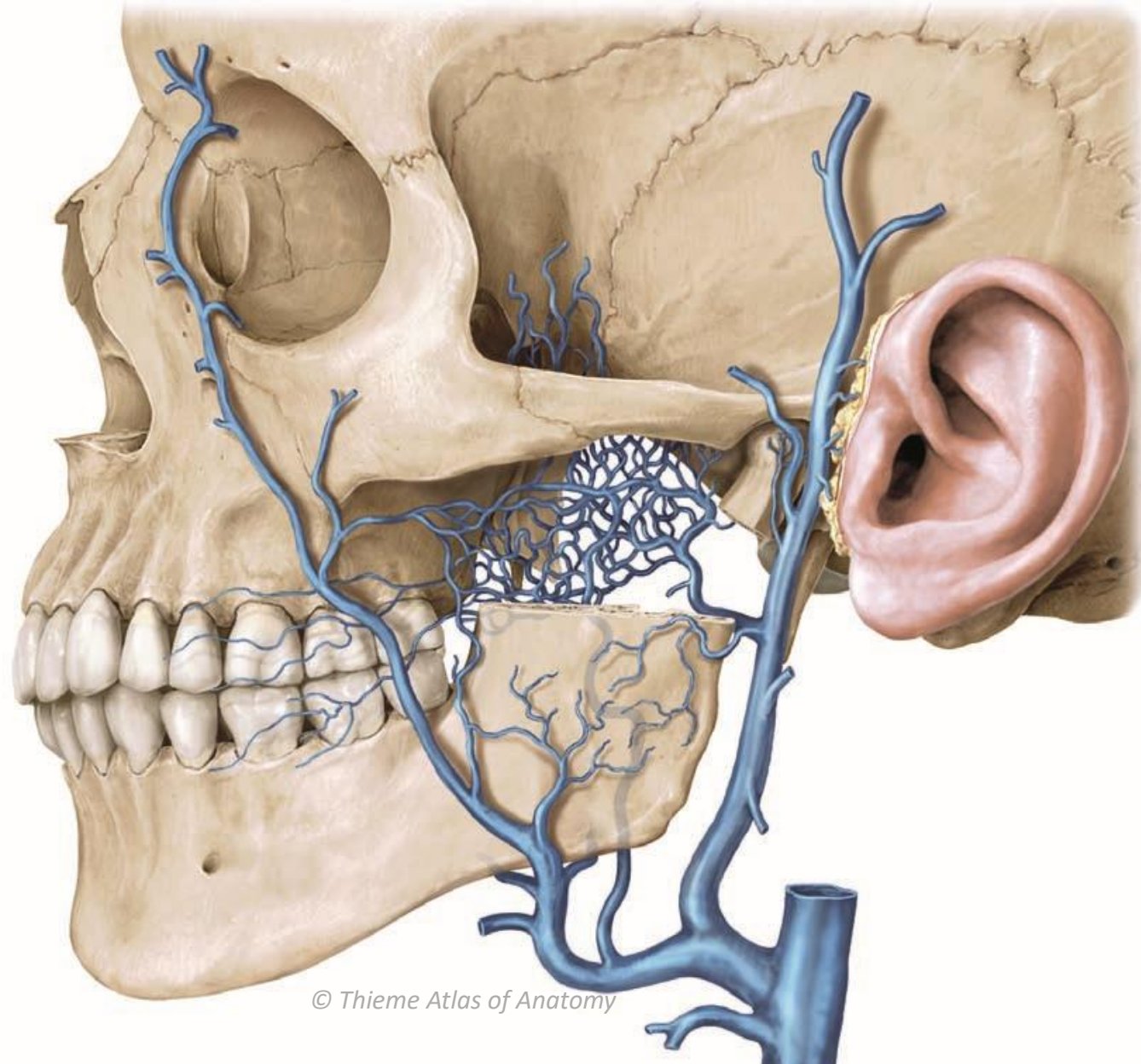
# emissaria

- ♦ Vv. superficiales
- ♦ Emissarium
- ♦ Sinus durae matris



# v. retromandibularis

## ♦ Plexus pterygoideus



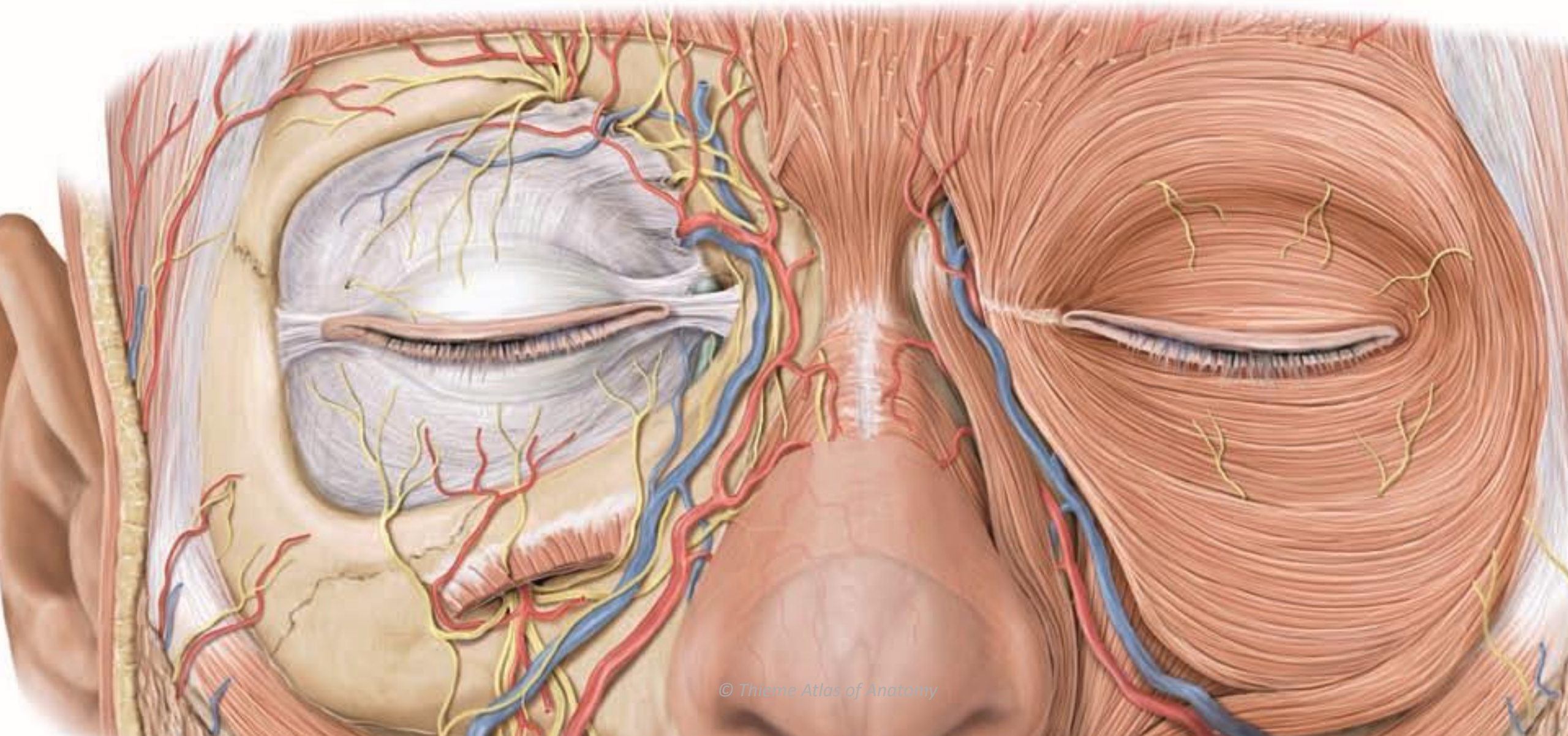
# Venae orbitae

## • Sinus cavernosus



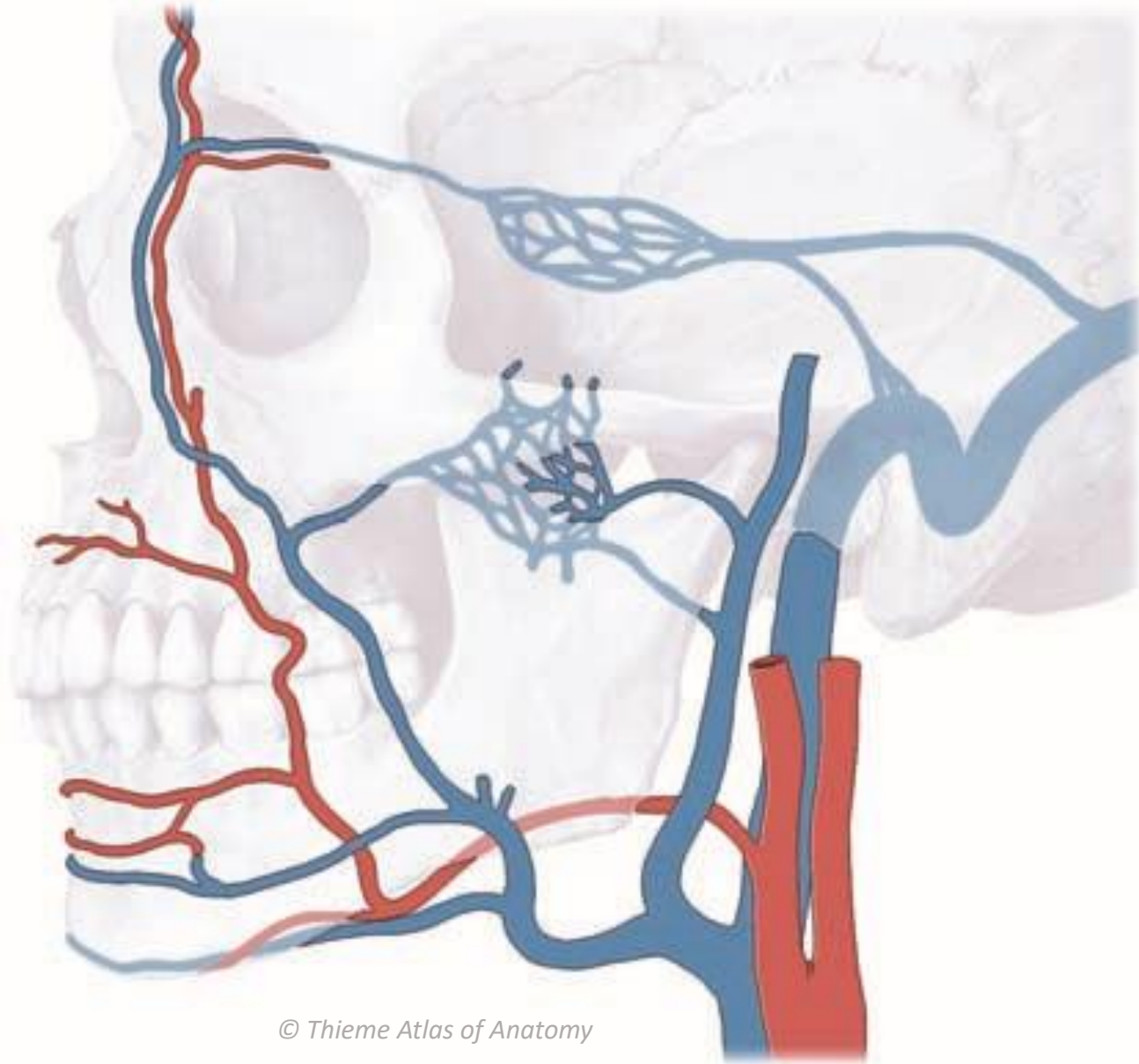


# a. et v. angularis



# Sinus cavernosus, plexus pterygoideus

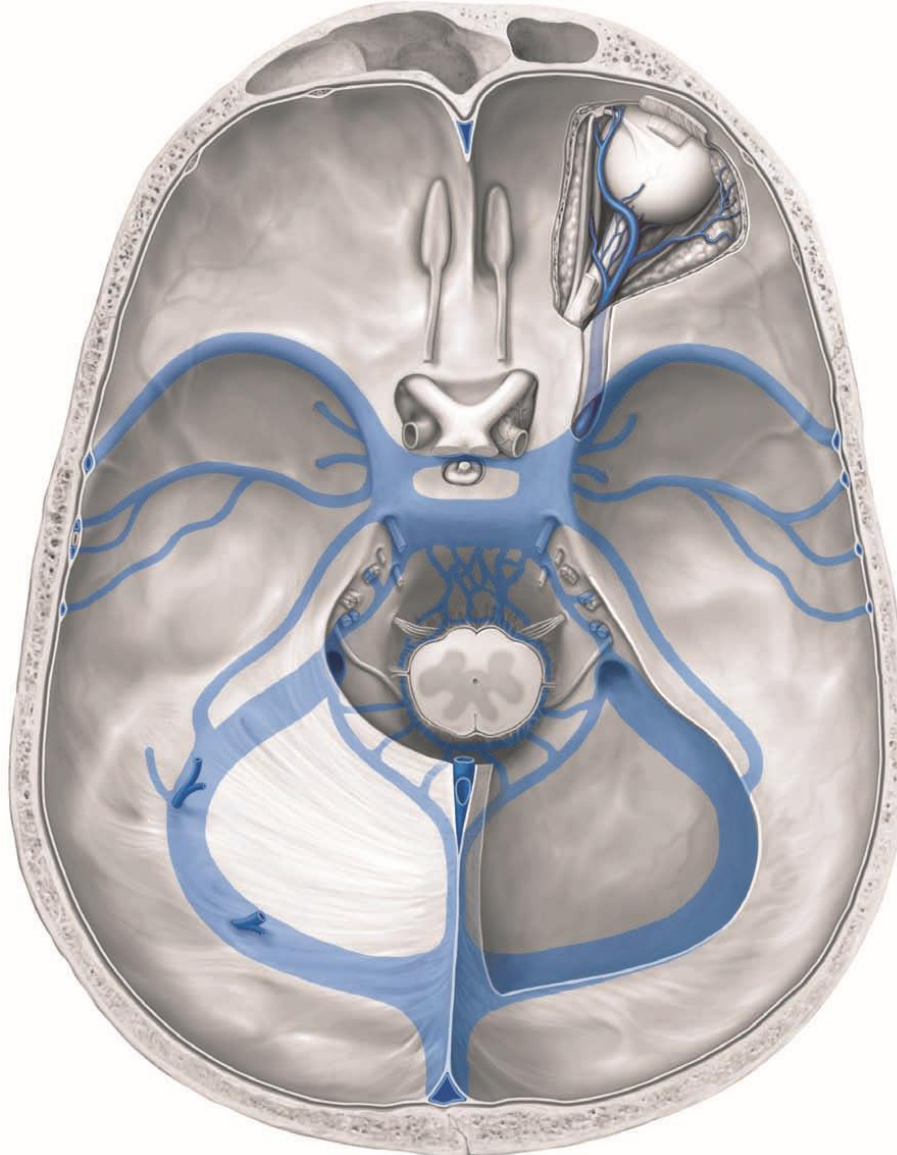
🔴 infection





# Sinus durae matris

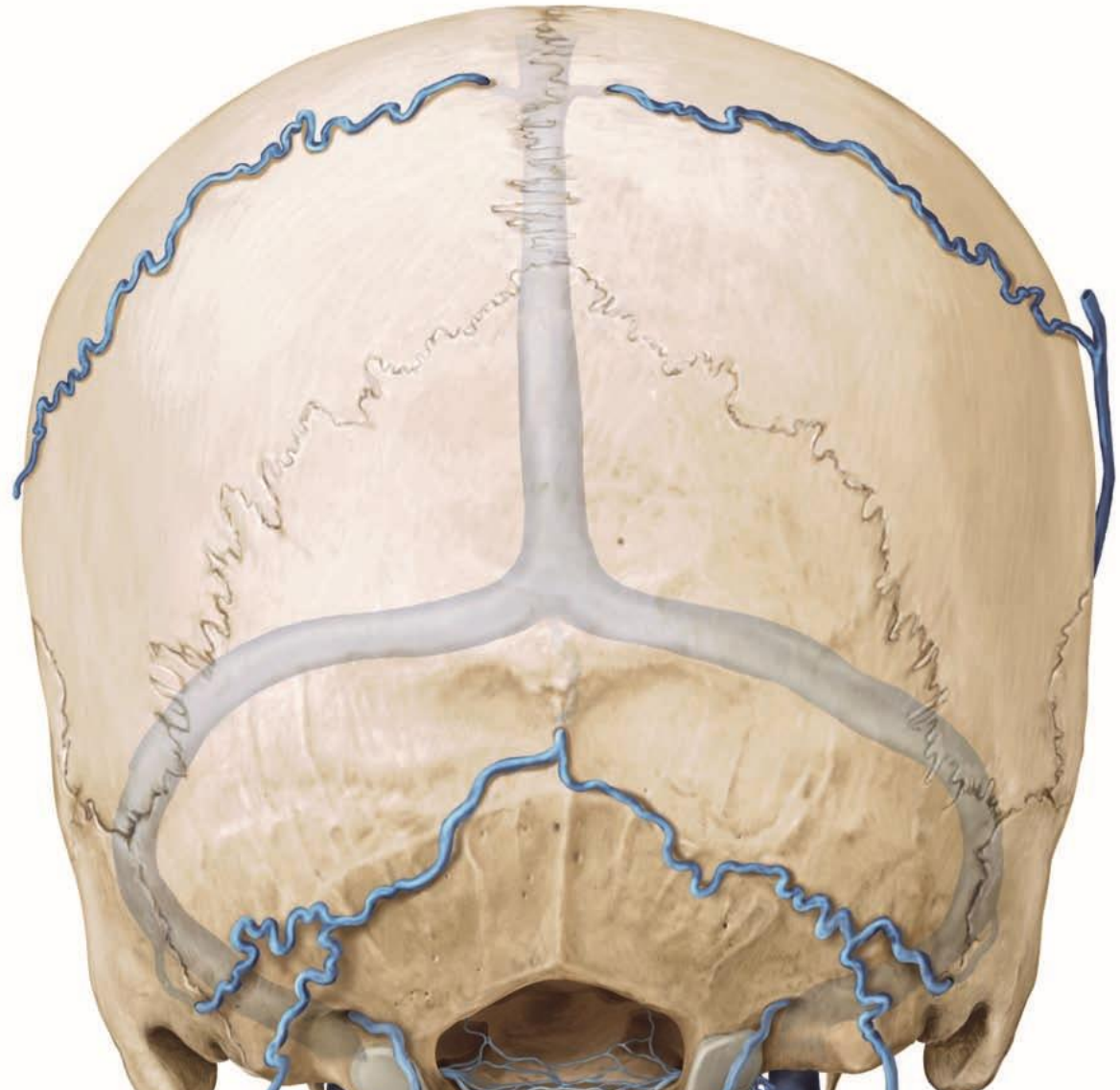
- **Confluens sinuum**
- **Sinus transversus**
- **Sinus sigmoideus**
- **V. jugularis interna**
- **Sinus cavernosus**



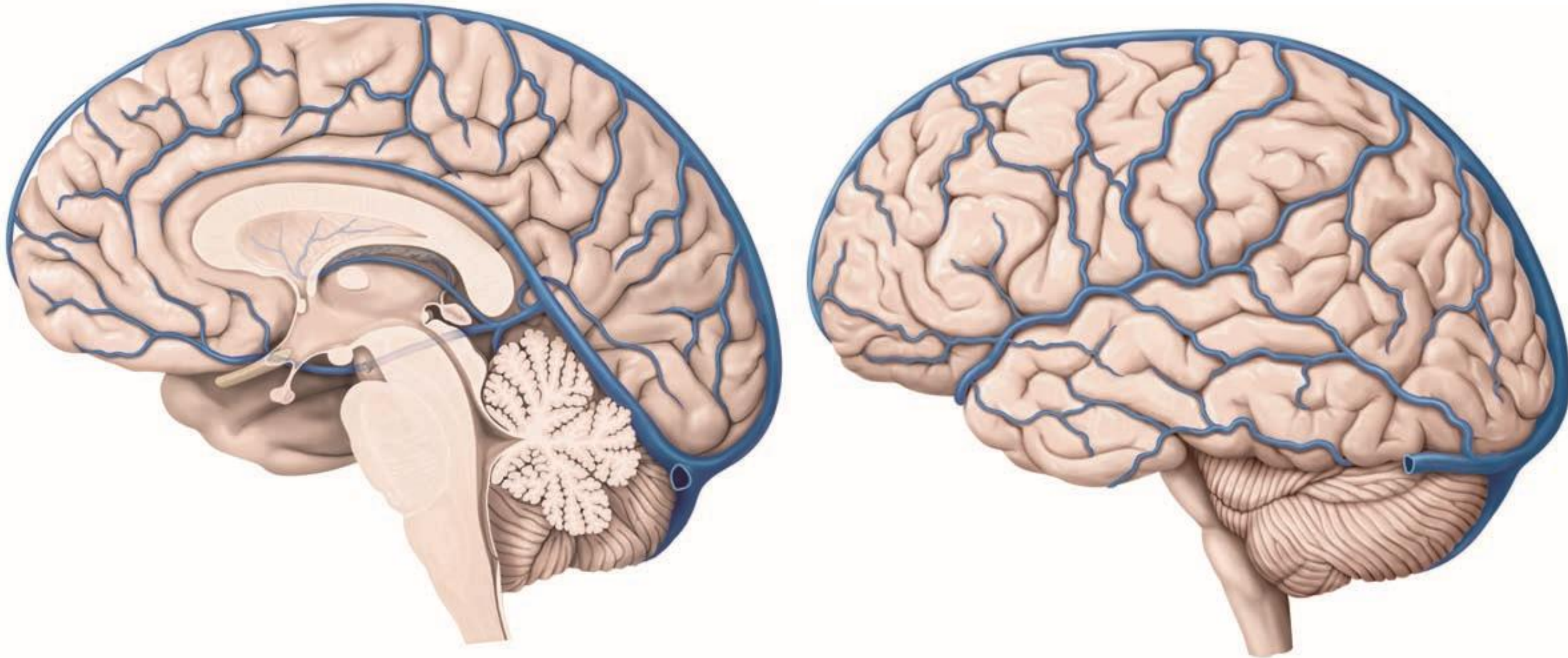


# Confluens sinuum

- Sinus sagittalis superior
- Sinus transversi



# Sinus sagittalis superior et inferior, sinus rectus

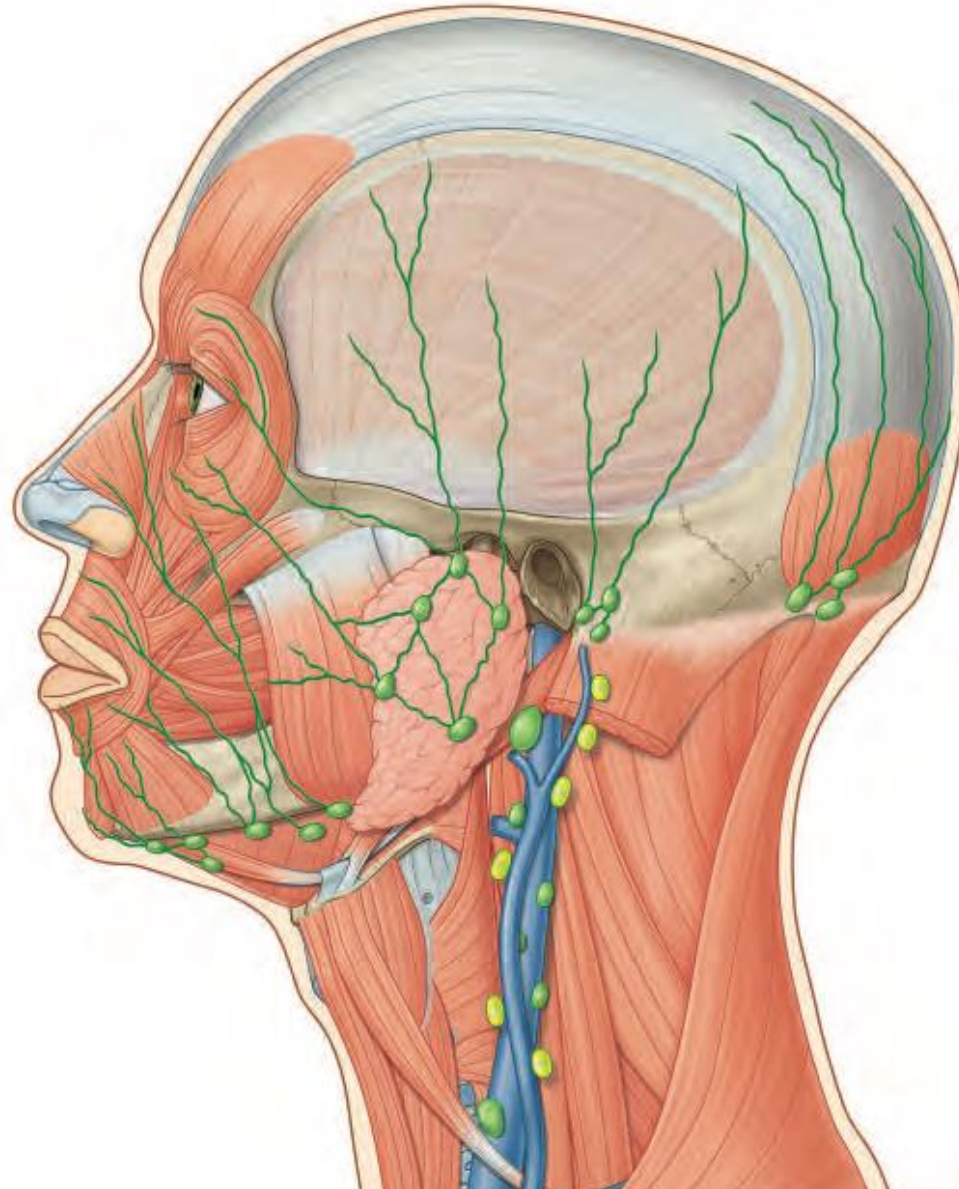


# Sinus durae matris

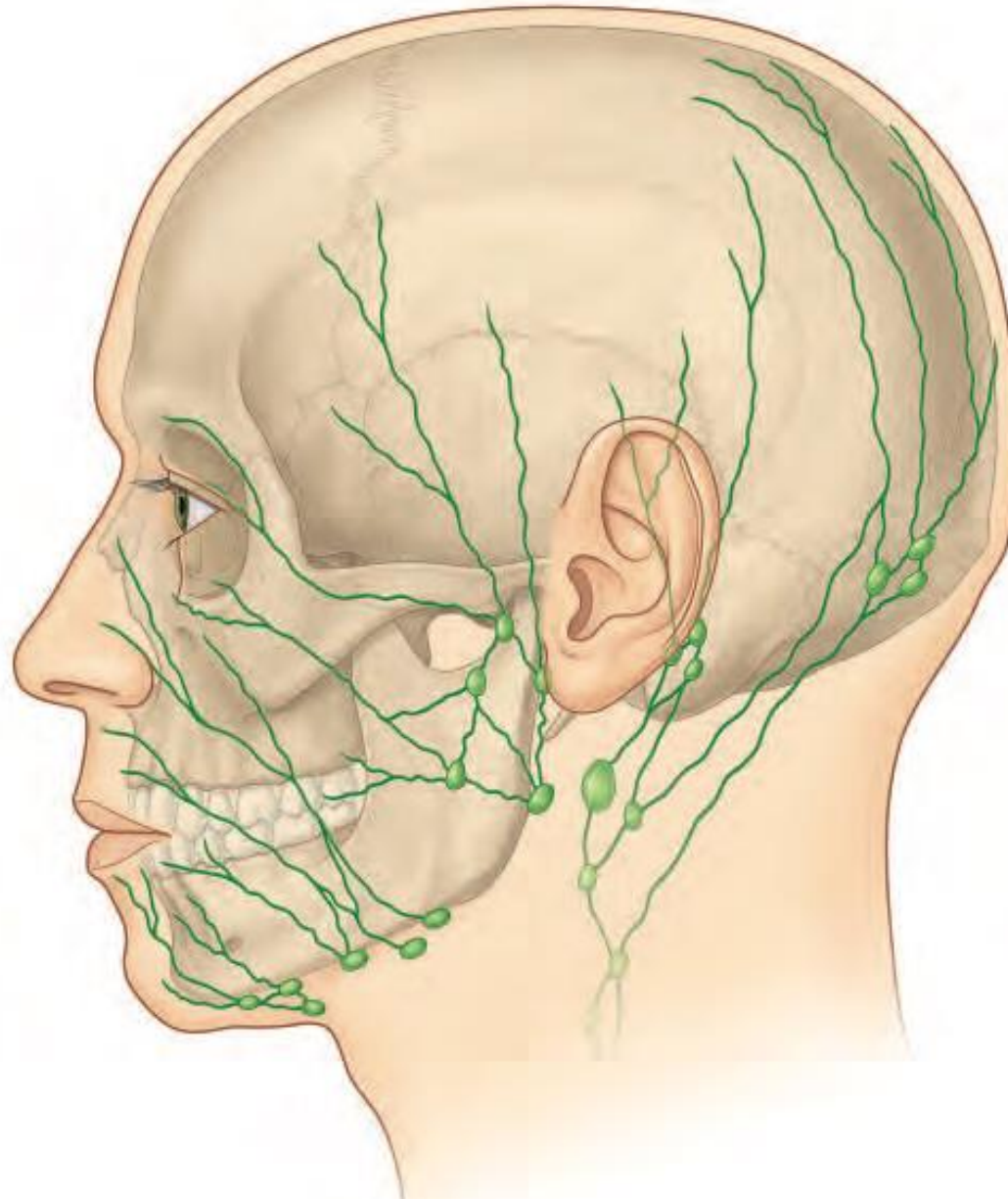


# Nodi lymphatici

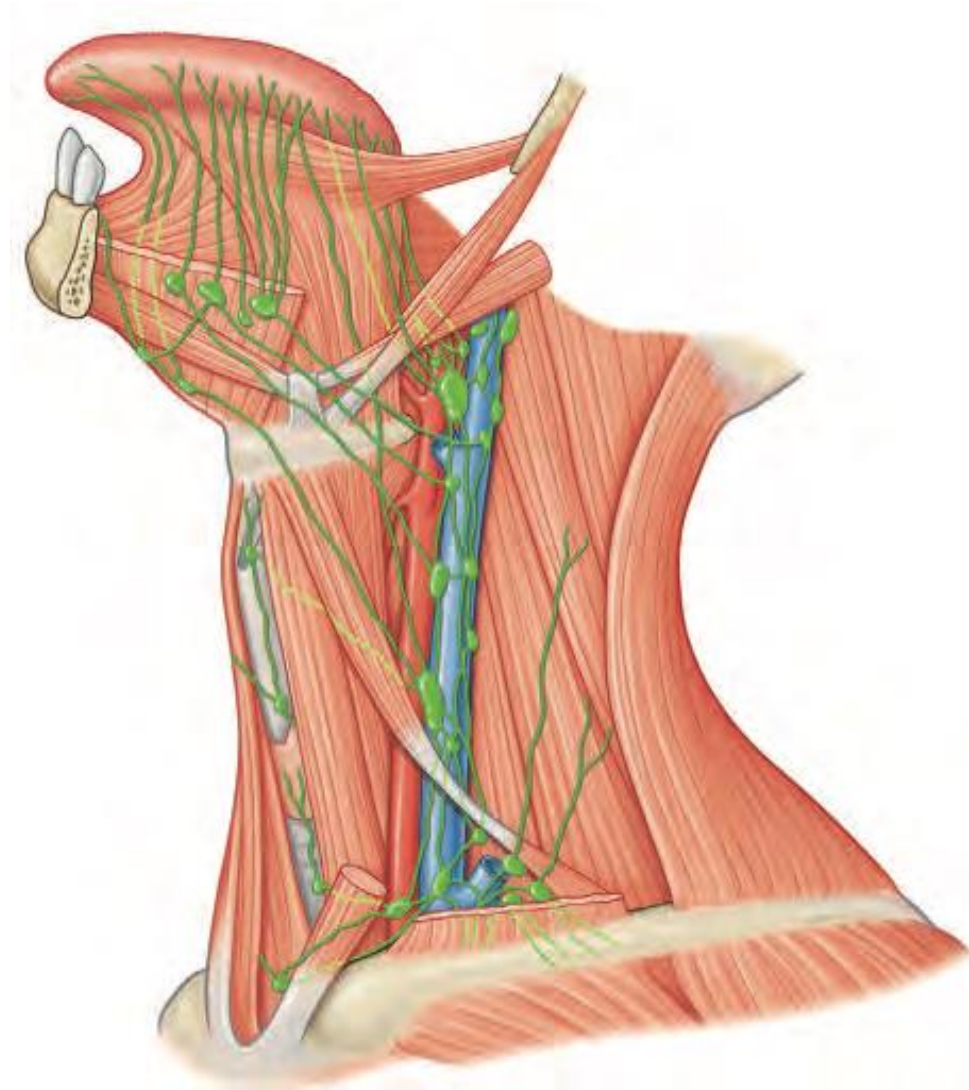
- ♦ Occipitales
- ♦ Retroauriculares
- ♦ Parotidei
- ♦ Submentales
- ♦ Submandibulares
- ♦ Jugulares
- ♦ Nodus digastricus



# Ring



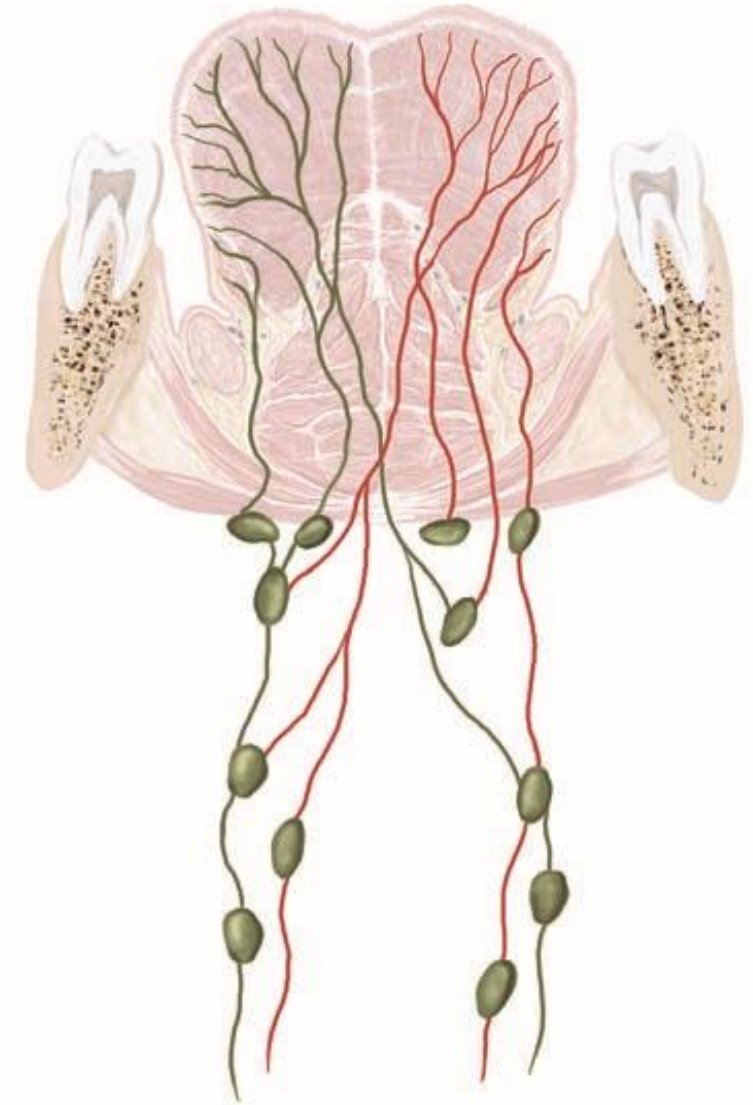
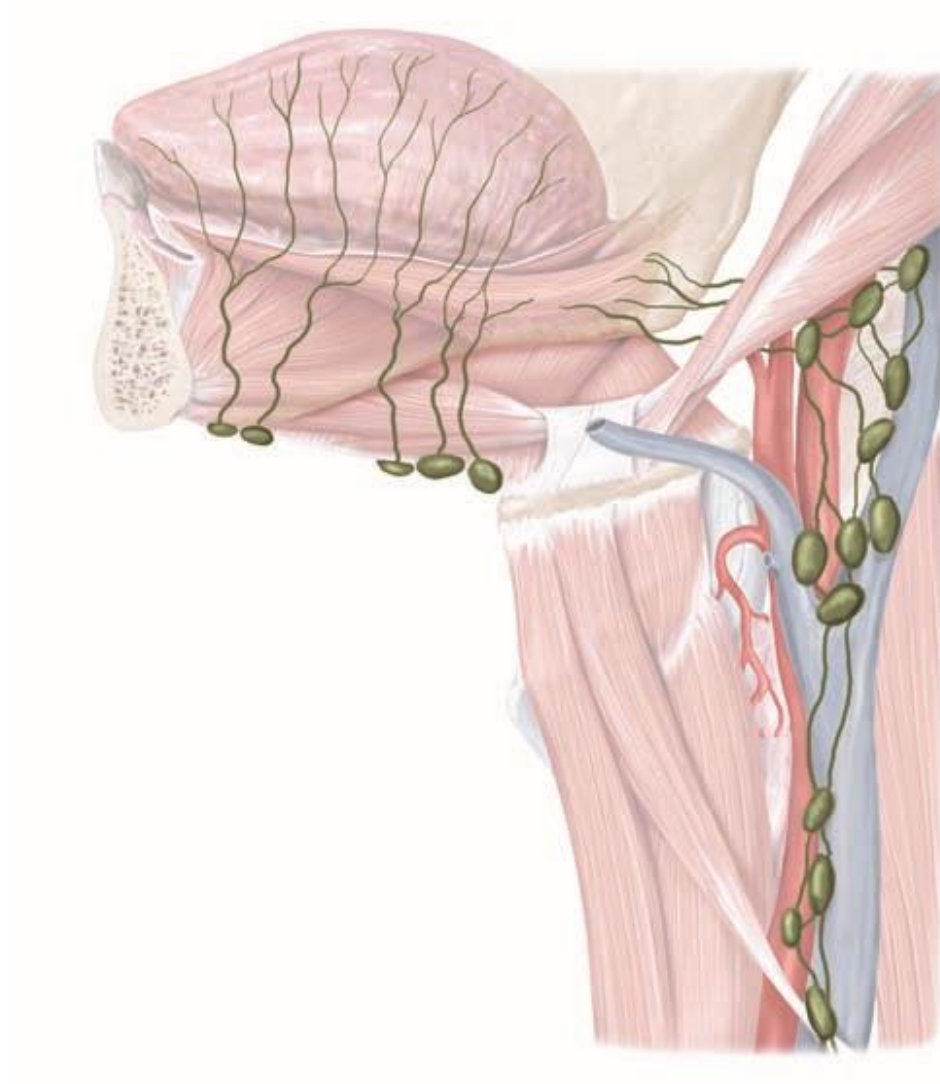
# String





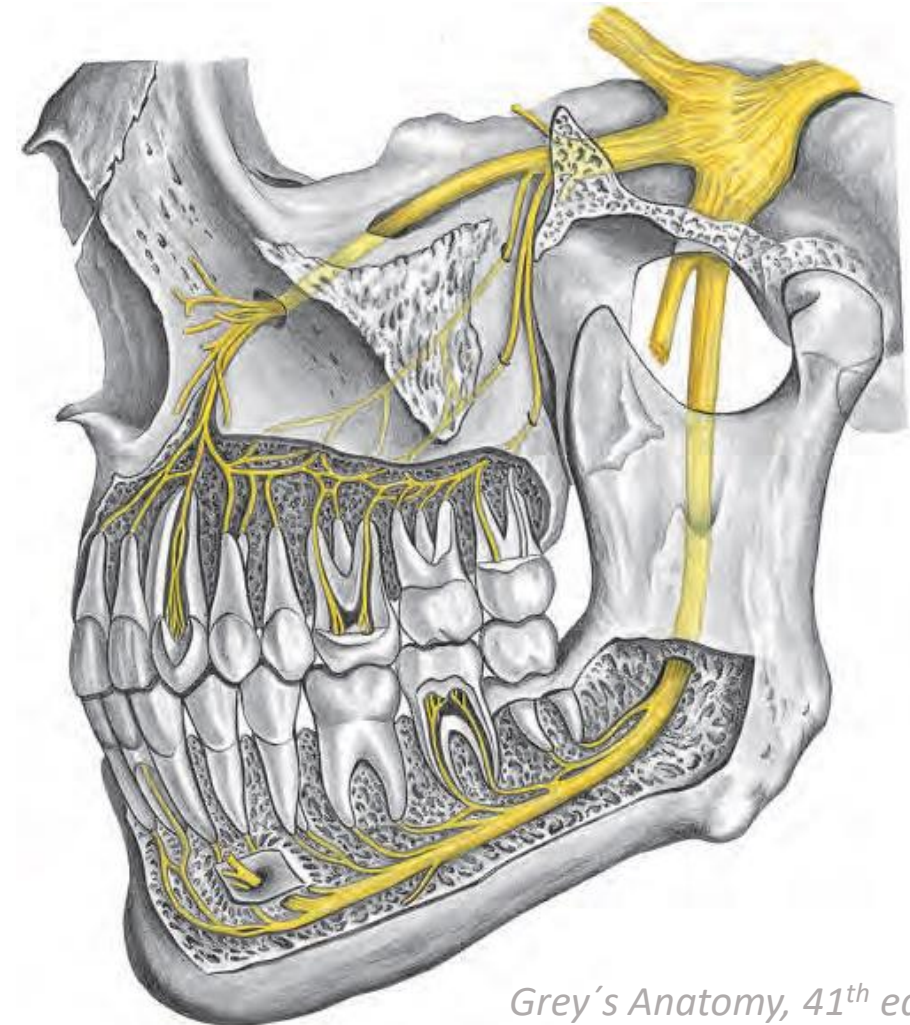
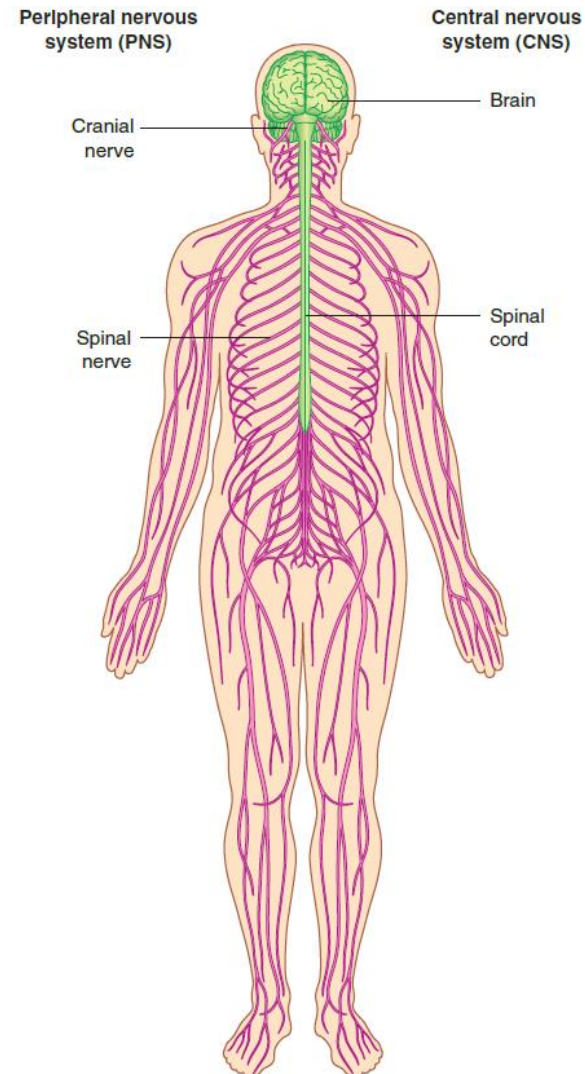
# Nodi lymphatici

- ♦ Submentales
- ♦ Submandibulare
- ♦ Jugulares



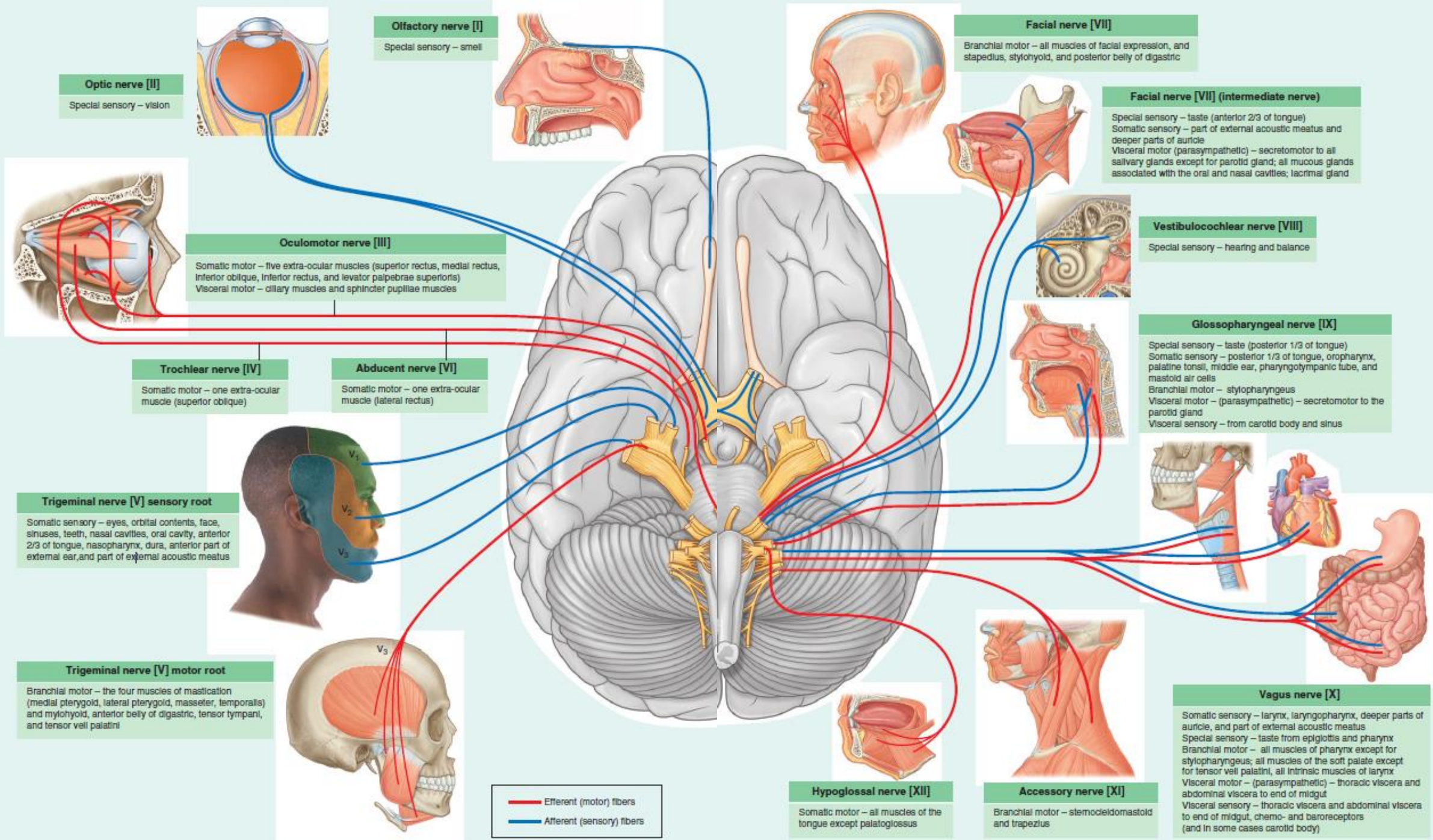
# Nerves of head and neck

- 💧 **CNS**
- 💧 Cerebrum
- 💧 Medulla spinalis
- 💧 **PNS**
- 💧 Nervi craniales
- 💧 Nervi spinales



*Grey's Anatomy, 41<sup>th</sup> ed.*





**Olfactory nerve [I]**  
Special sensory – smell

**Optic nerve [II]**  
Special sensory – vision

**Facial nerve [VII]**  
Branchial motor – all muscles of facial expression, and stapedius, stylohyoid, and posterior belly of digastric

**Facial nerve [VII] (intermediate nerve)**  
Special sensory – taste (anterior 2/3 of tongue)  
Somatic sensory – part of external acoustic meatus and deeper parts of auricle  
Visceral motor (parasympathetic) – secretomotor to all salivary glands except for parotid gland; all mucous glands associated with the oral and nasal cavities; lacrimal gland

**Oculomotor nerve [III]**  
Somatic motor – five extra-ocular muscles (superior rectus, medial rectus, inferior oblique, inferior rectus, and levator palpebrae superioris)  
Visceral motor – ciliary muscles and sphincter pupillae muscles

**Vestibulocochlear nerve [VIII]**  
Special sensory – hearing and balance

**Trochlear nerve [IV]**  
Somatic motor – one extra-ocular muscle (superior oblique)

**Abducent nerve [VI]**  
Somatic motor – one extra-ocular muscle (lateral rectus)

**Glossopharyngeal nerve [IX]**  
Special sensory – taste (posterior 1/3 of tongue)  
Somatic sensory – posterior 1/3 of tongue, oropharynx, palatine tonsil, middle ear, pharyngotympanic tube, and mastoid air cells  
Branchial motor – stylopharyngeus  
Visceral motor – (parasympathetic) – secretomotor to the parotid gland  
Visceral sensory – from carotid body and sinus

**Trigeminal nerve [V] sensory root**  
Somatic sensory – eyes, orbital contents, face, sinuses, teeth, nasal cavities, oral cavity, anterior 2/3 of tongue, nasopharynx, dura, anterior part of external ear, and part of external acoustic meatus

**Trigeminal nerve [V] motor root**  
Branchial motor – the four muscles of mastication (medial pterygoid, lateral pterygoid, masseter, temporalis) and mylohyoid, anterior belly of digastric, tensor tympani, and tensor veli palatini

**Vagus nerve [X]**  
Somatic sensory – larynx, laryngopharynx, deeper parts of auricle, and part of external acoustic meatus  
Special sensory – taste from epiglottis and pharynx  
Branchial motor – all muscles of pharynx except for stylopharyngeus; all muscles of the soft palate except for tensor veli palatini, all intrinsic muscles of larynx  
Visceral motor – (parasympathetic) – thoracic viscera and abdominal viscera to end of midgut  
Visceral sensory – thoracic viscera and abdominal viscera to end of midgut, chemo- and baroreceptors (and in some cases carotid body)

**Hypoglossal nerve [XII]**  
Somatic motor – all muscles of the tongue except palatoglossus

**Accessory nerve [XI]**  
Branchial motor – sternocleidomastoid and trapezius

— Efferent (motor) fibers  
— Afferent (sensory) fibers



# nervi craniales – cranial nerves – hlavové nervy

0. nervus terminalis – terminal nerve – koncový nerv

I. nervus olfactorius – olfactory nerve – čichový nerv

II. nervus opticus – optic nerve – zrakový nerv

III. nervus oculomotorius – oculomotor nerve – okohybný nerv

IV. nervus trochlearis – trochlear nerve – kladkový nerv

V. nervus trigeminus – trigeminal nerve – trojklanný nerv

VI. nervus abducens – abducent nerve – odťahovací nerv

VII. nervus facialis – facial nerve – lícní nerv

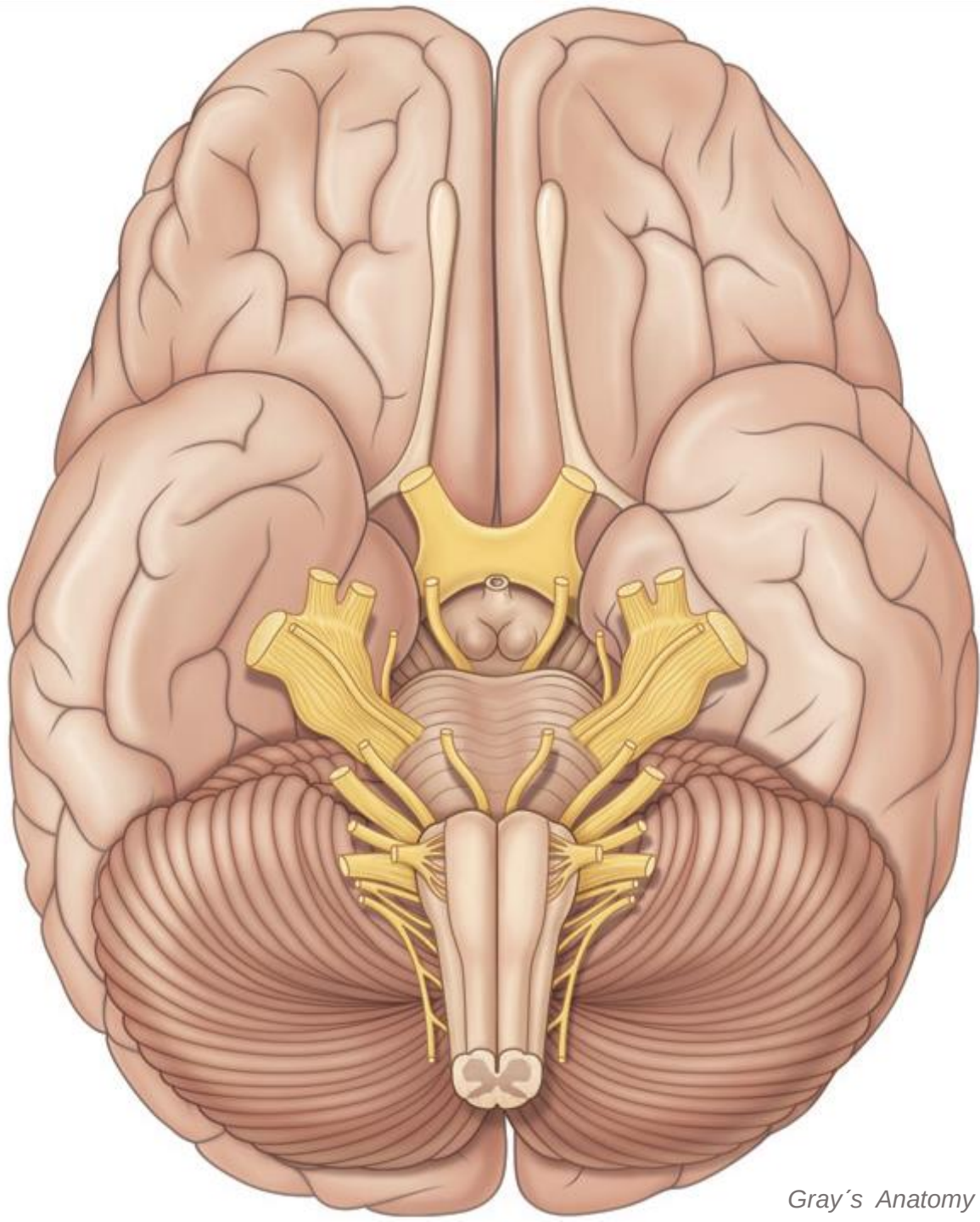
VIII. nervus vestibulocochlearis – vestibulocochlear nerve – rovnovážný a sluchový nerv

IX. nervus glossopharyngeus – glossopharyngeal nerve – jazykohltanový nerv

X. nervus vagus – vagal nerve – bloudivý nerv

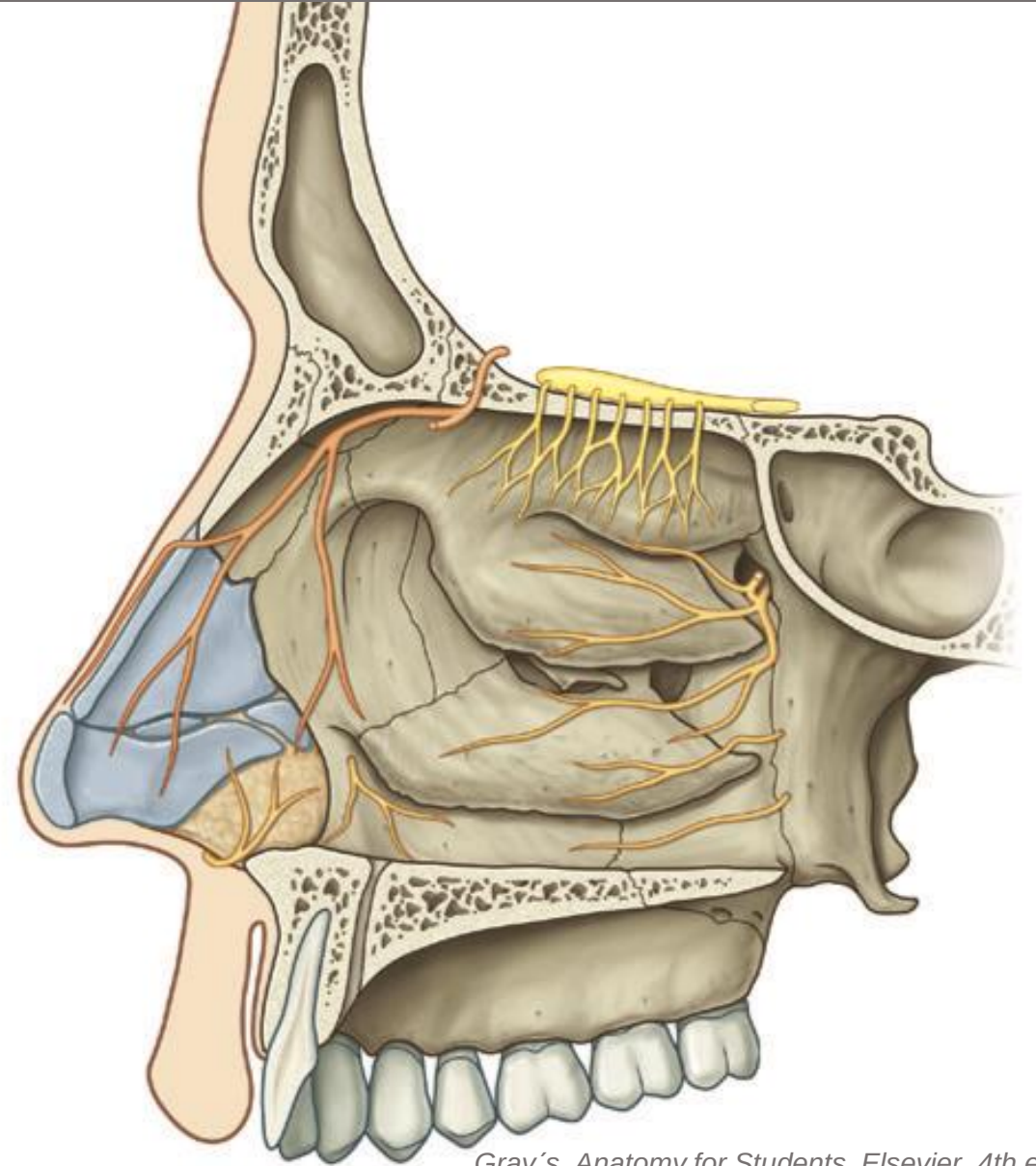
XI. nervus accessorius – accessory nerve – přídatný nerv

XII. nervus hypoglossus – hypoglossal nerve – podjazykový nerv



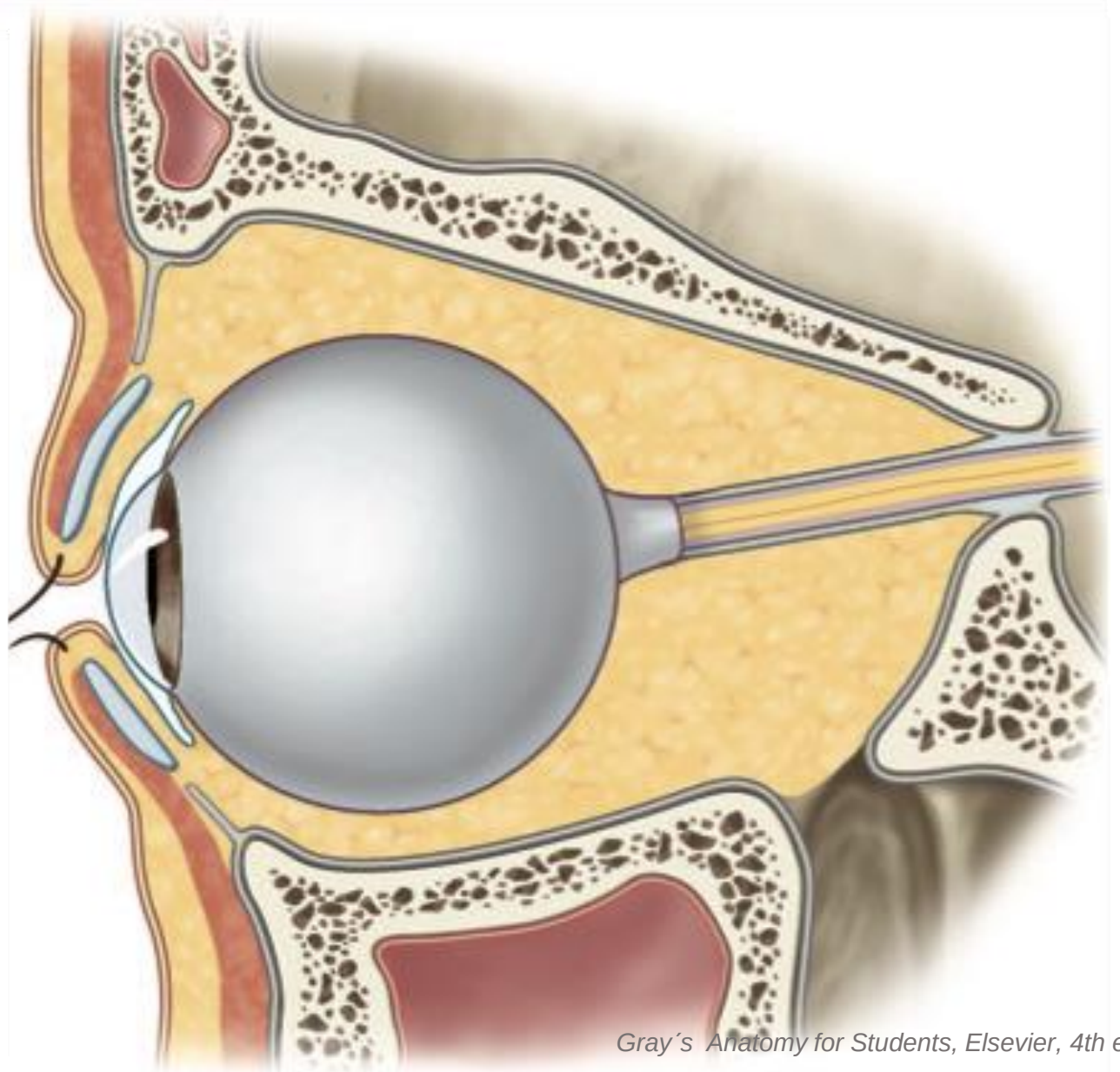


# I. Nervus olfactorius

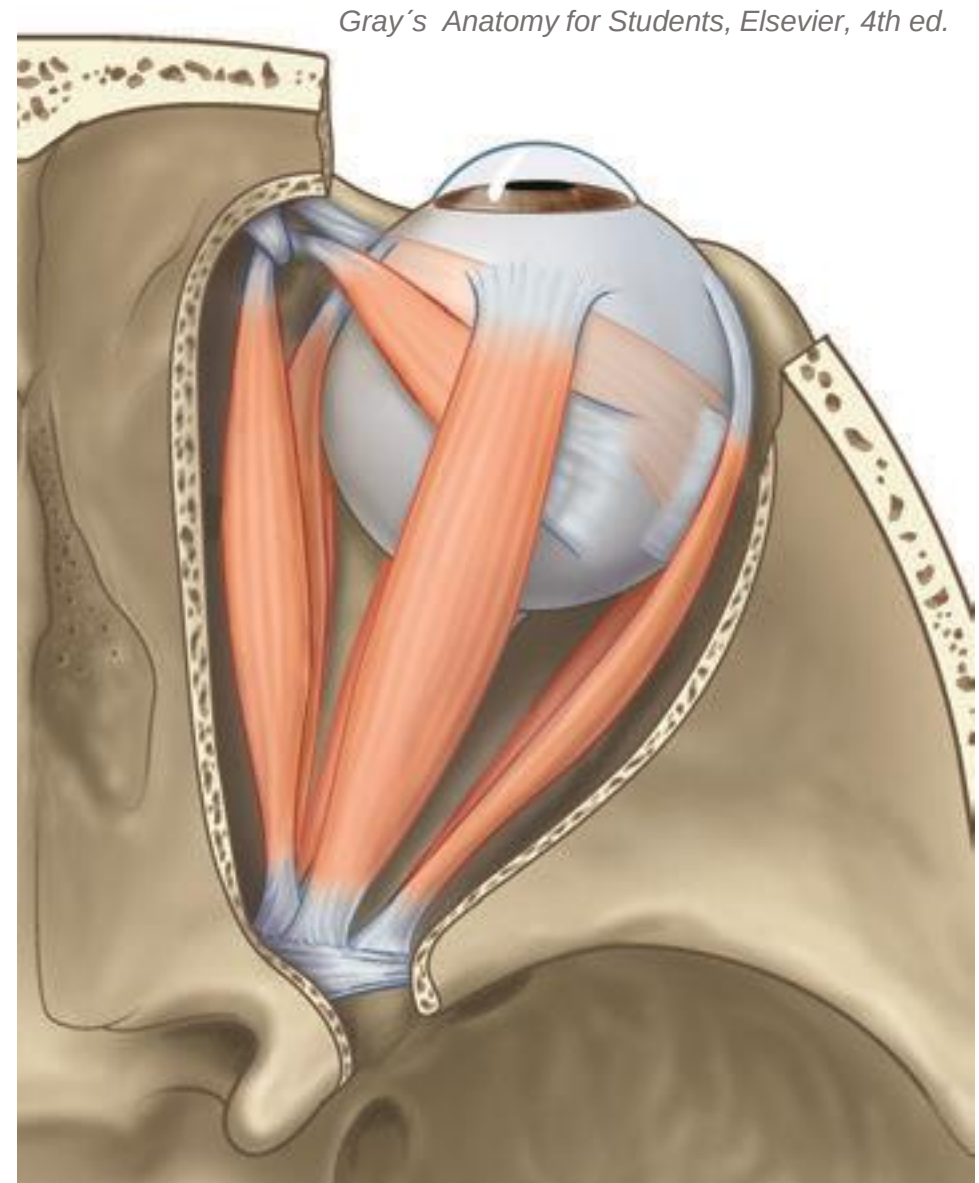




## II. Nervus opticus

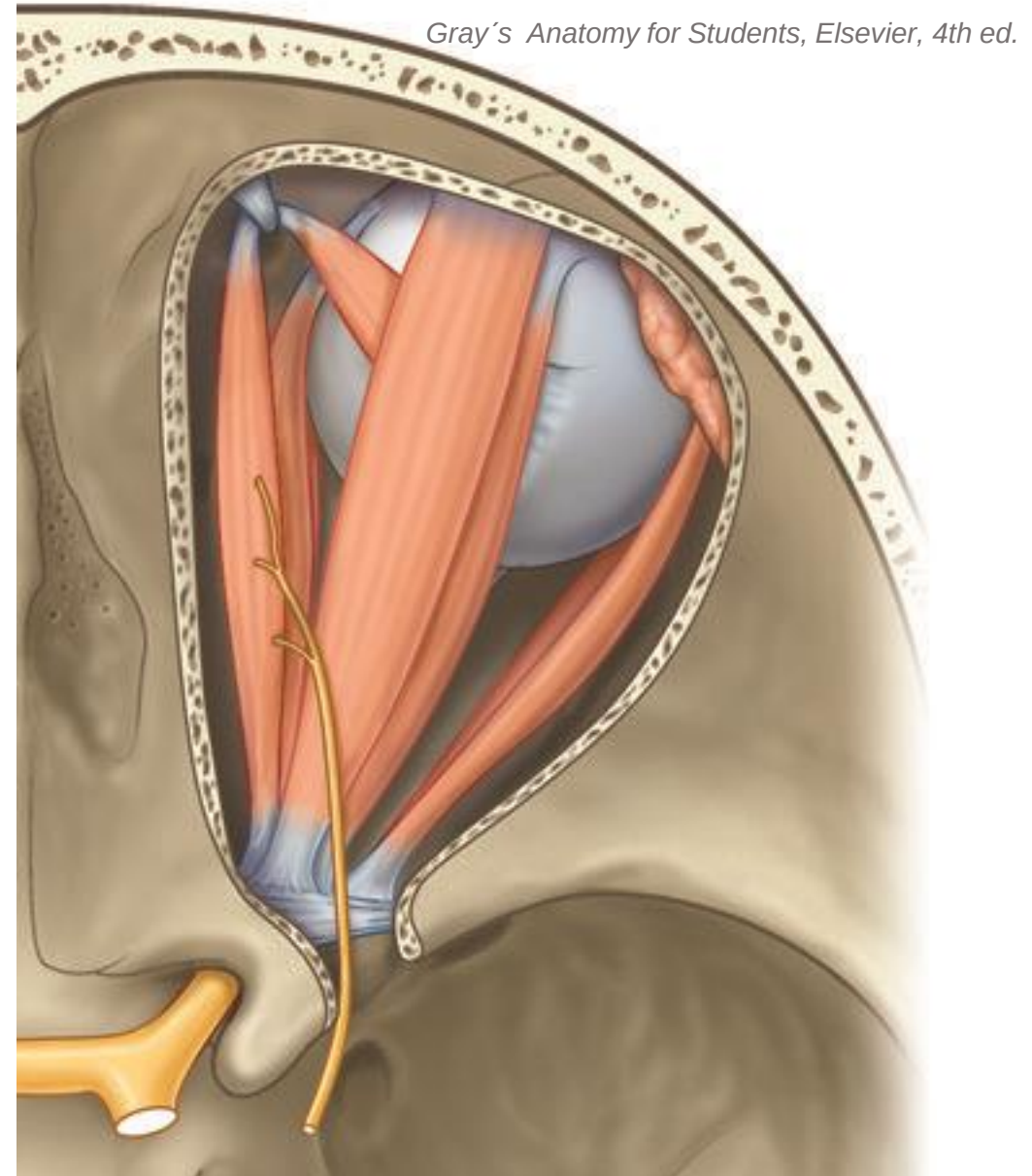


# III. Nervus oculomotorius



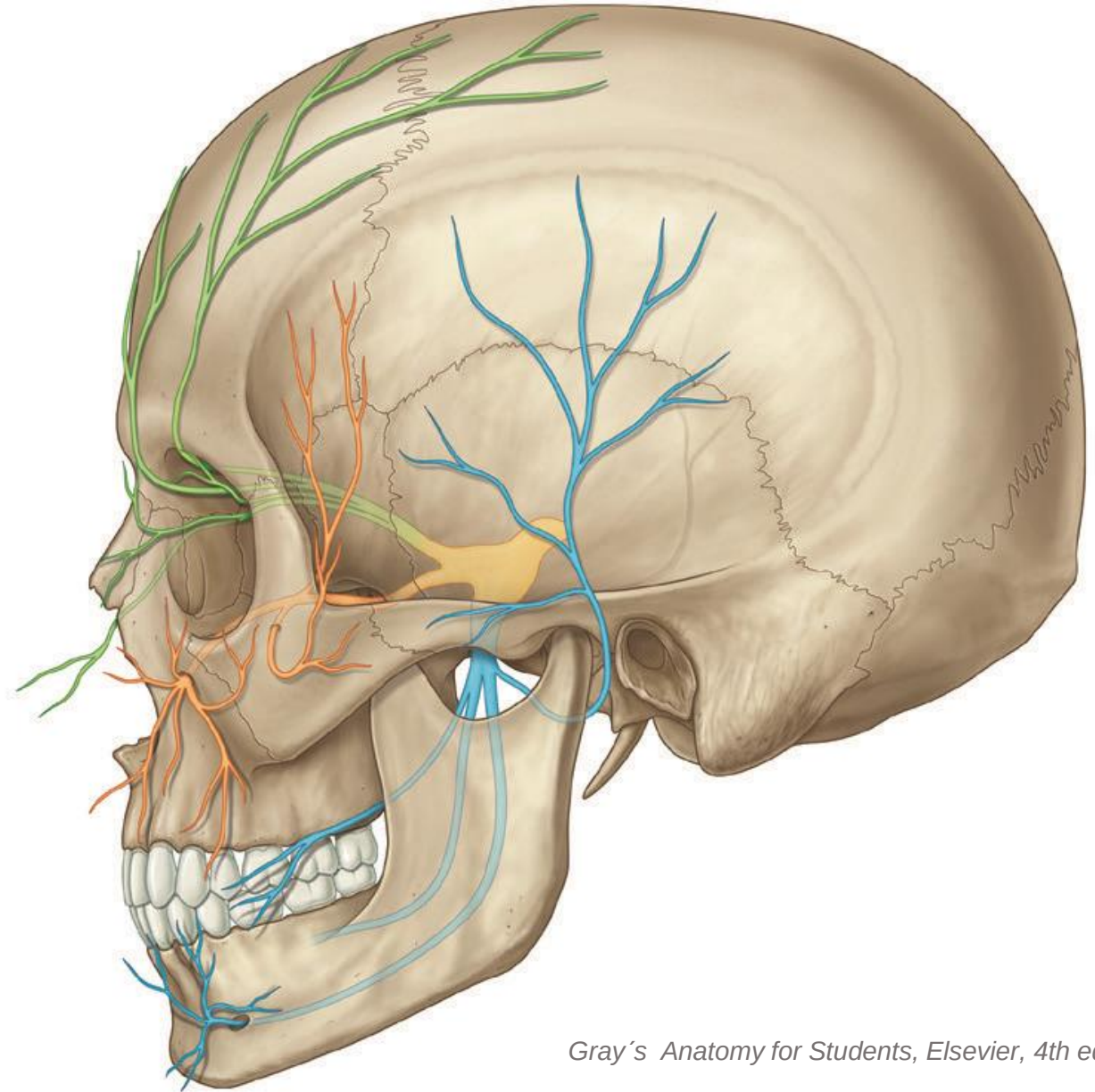


# IV. Nervus trochlearis



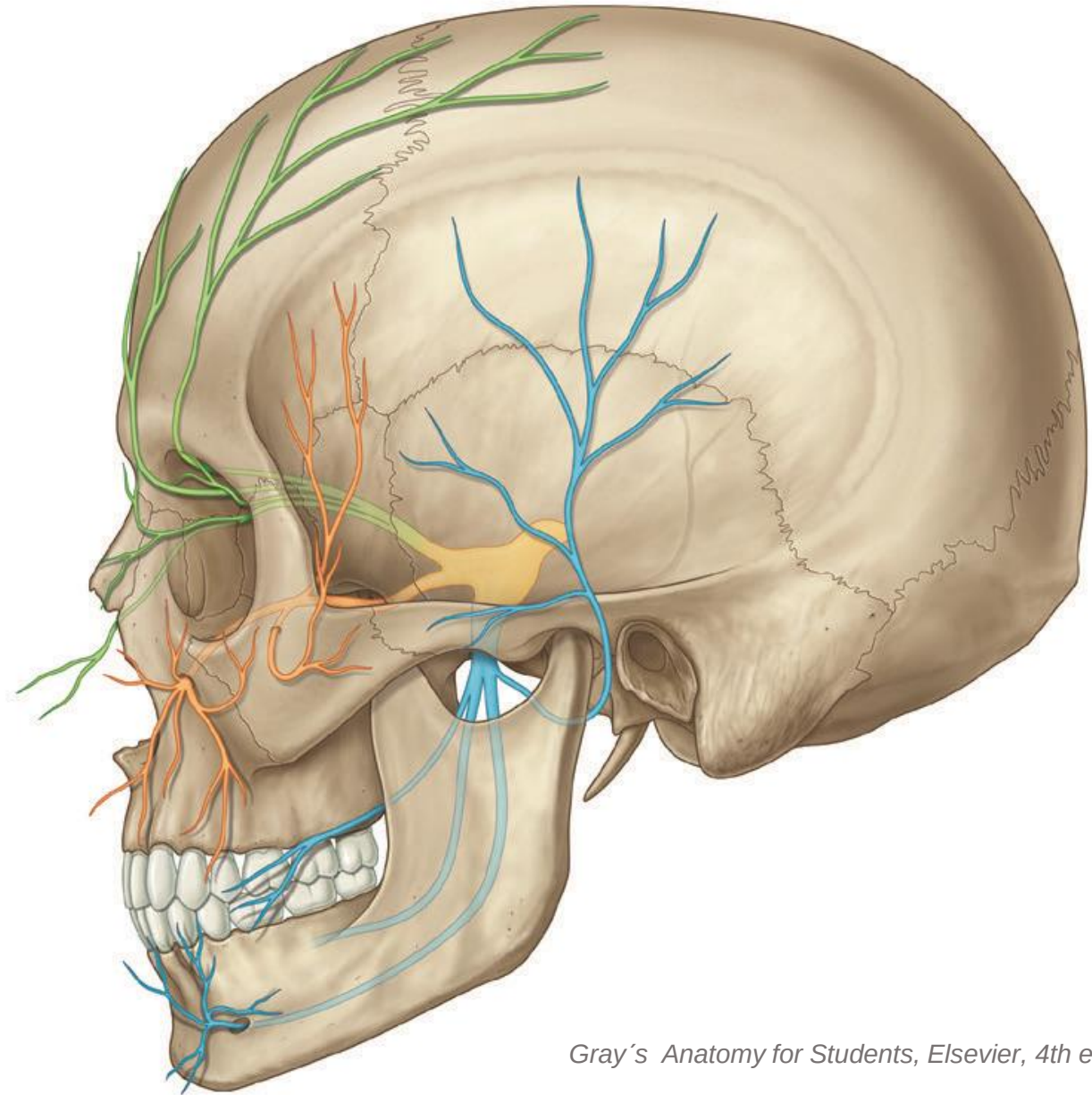
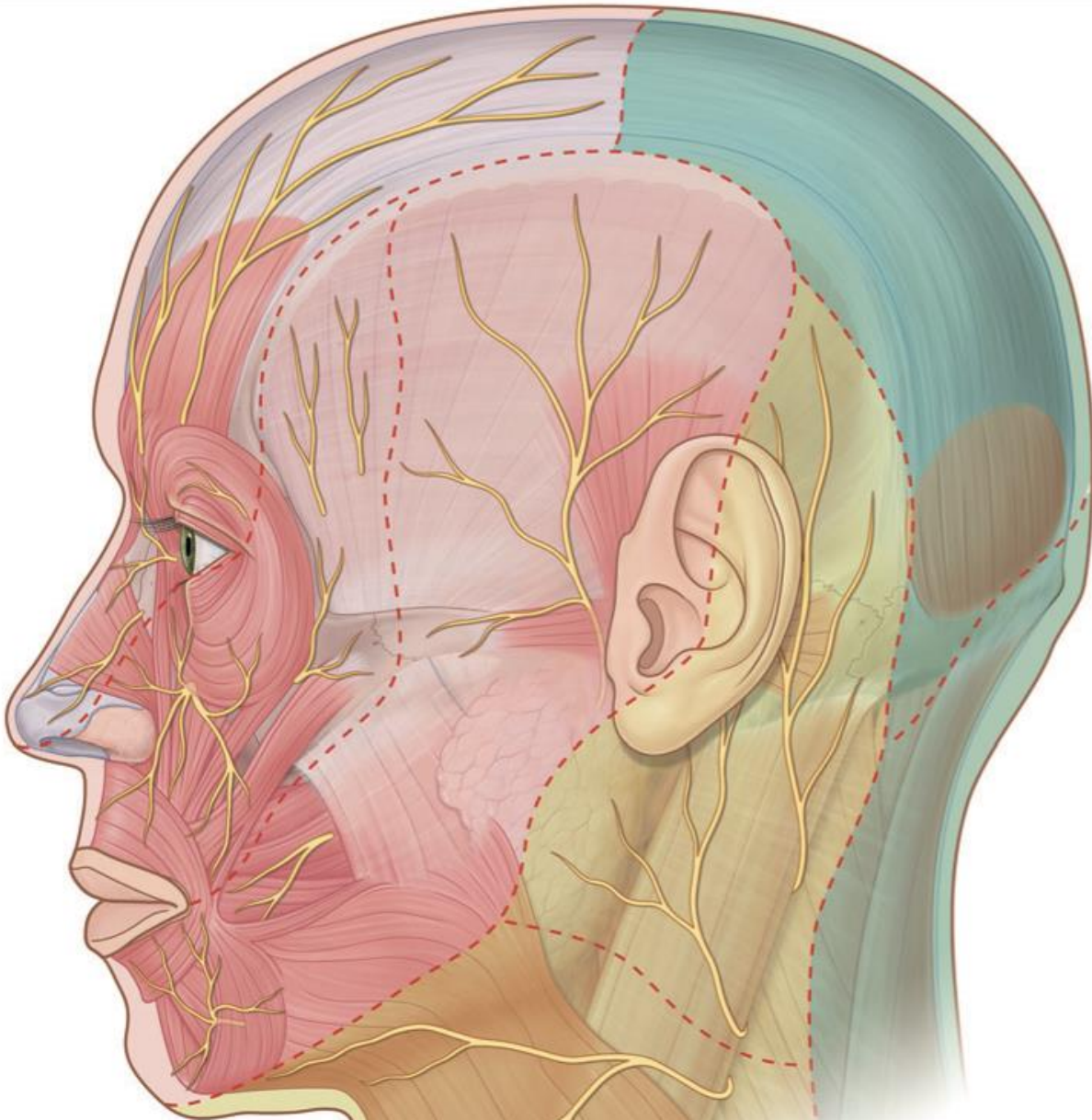


# V. Nervus trigeminus

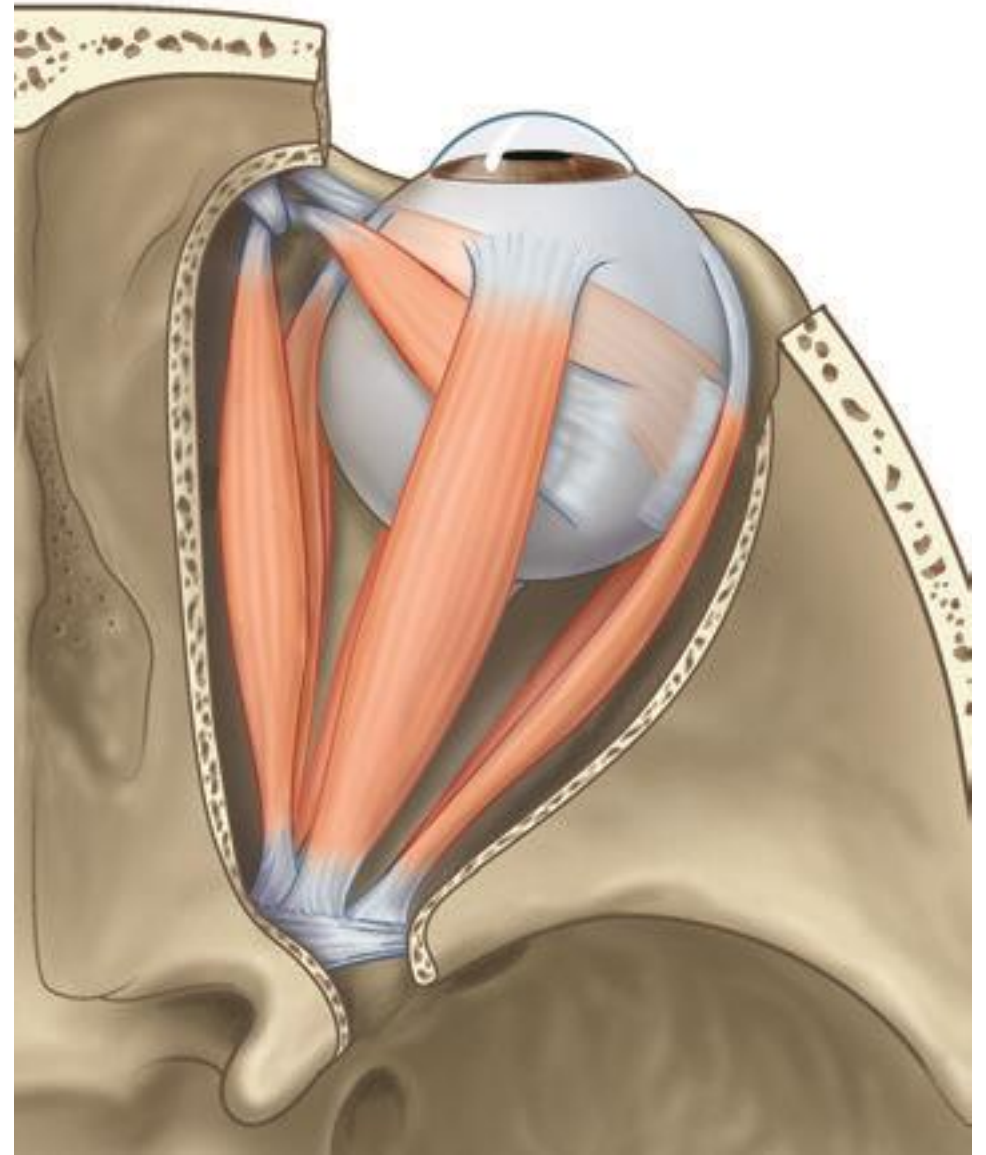




# V. Nervus trigeminus

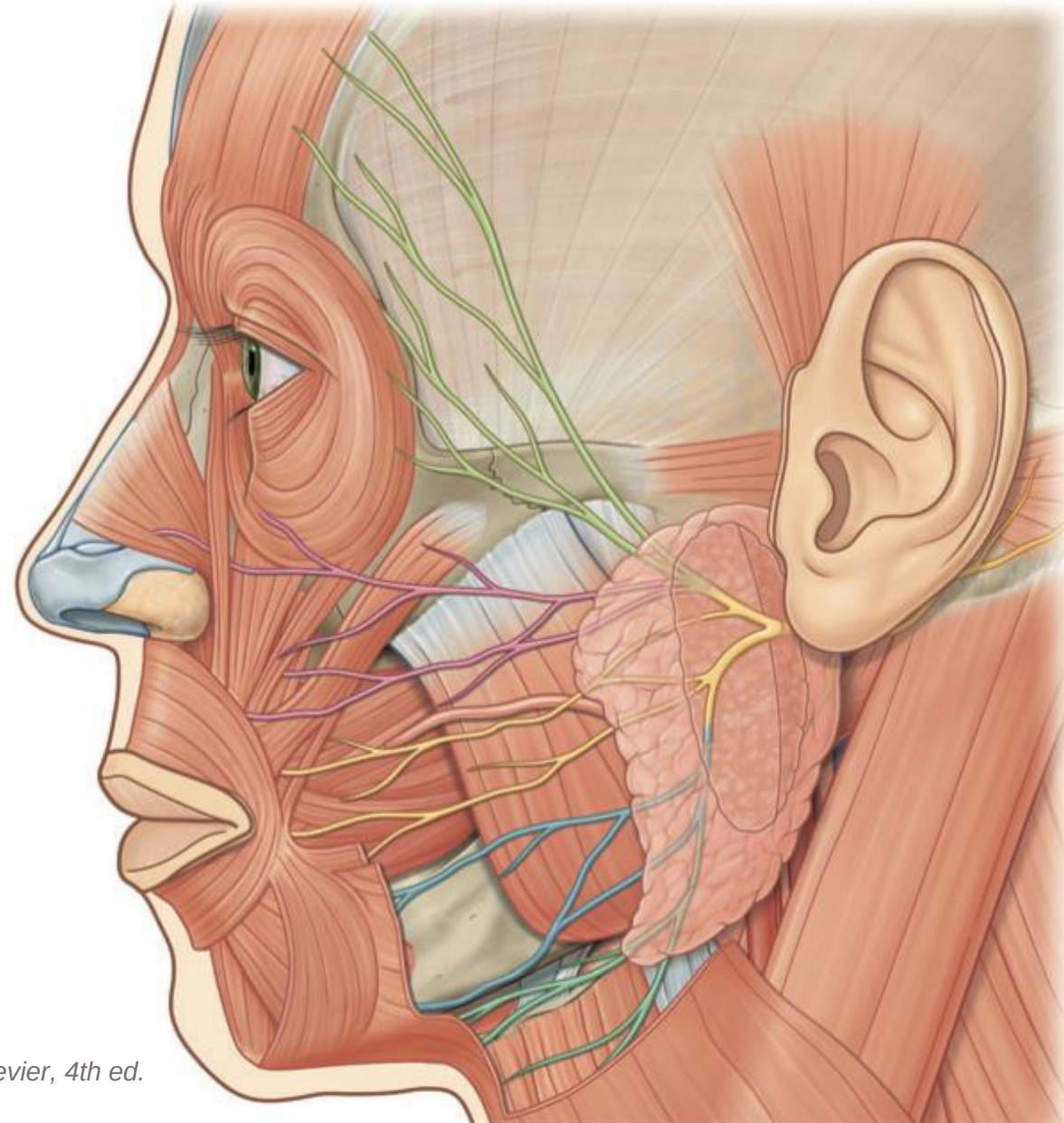


## VI. Nervus abducens



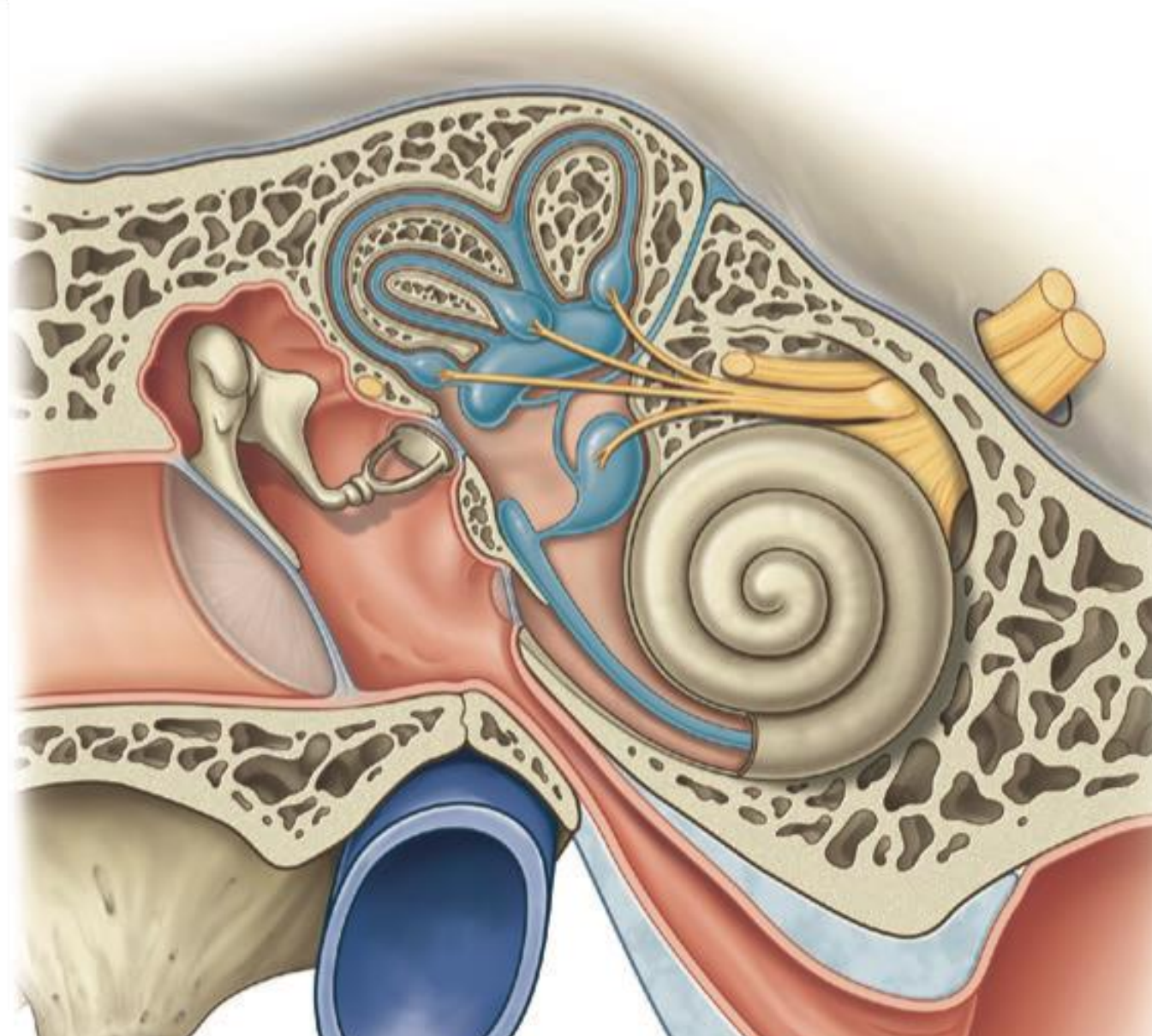


# VII. Nervus facialis





# Nervus vestibularis

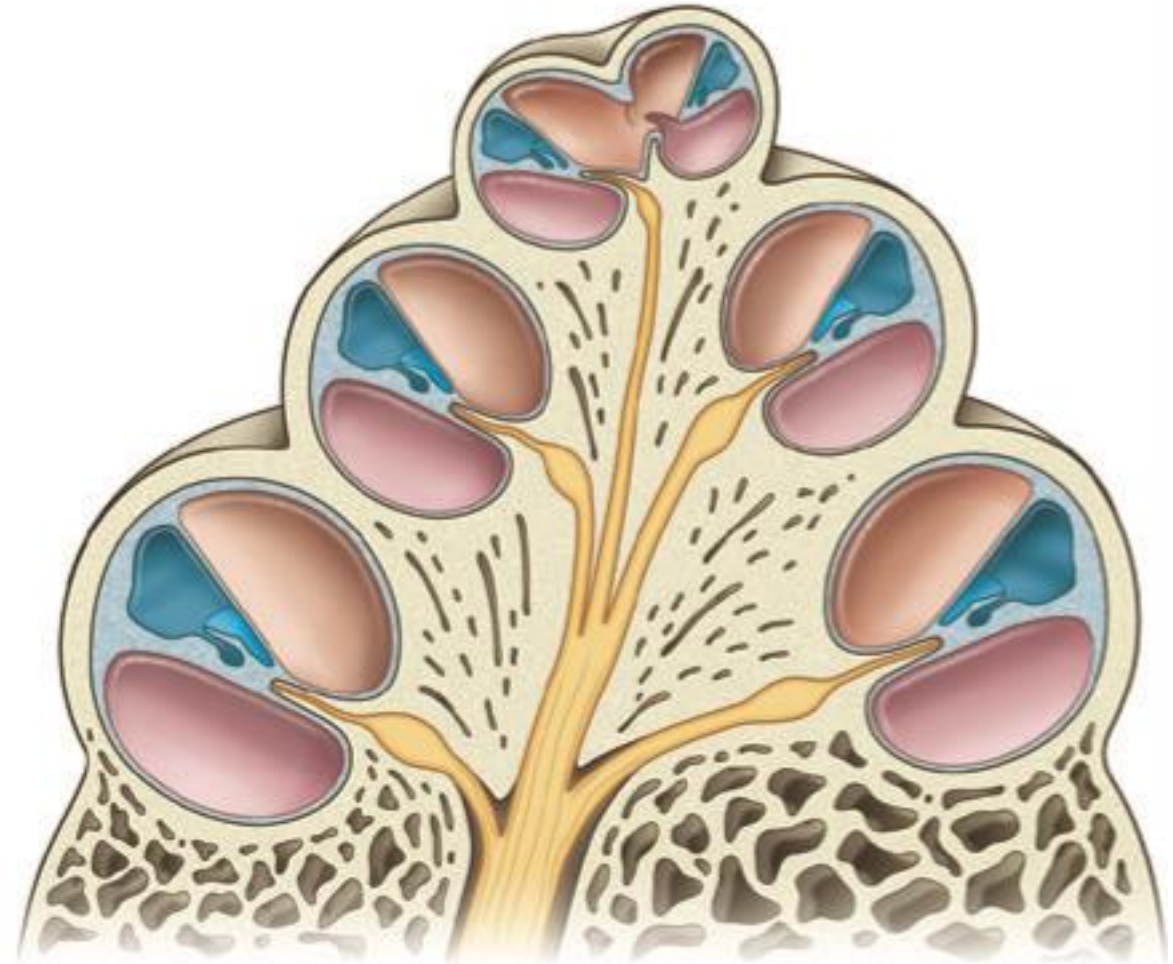




# N. cochlearis



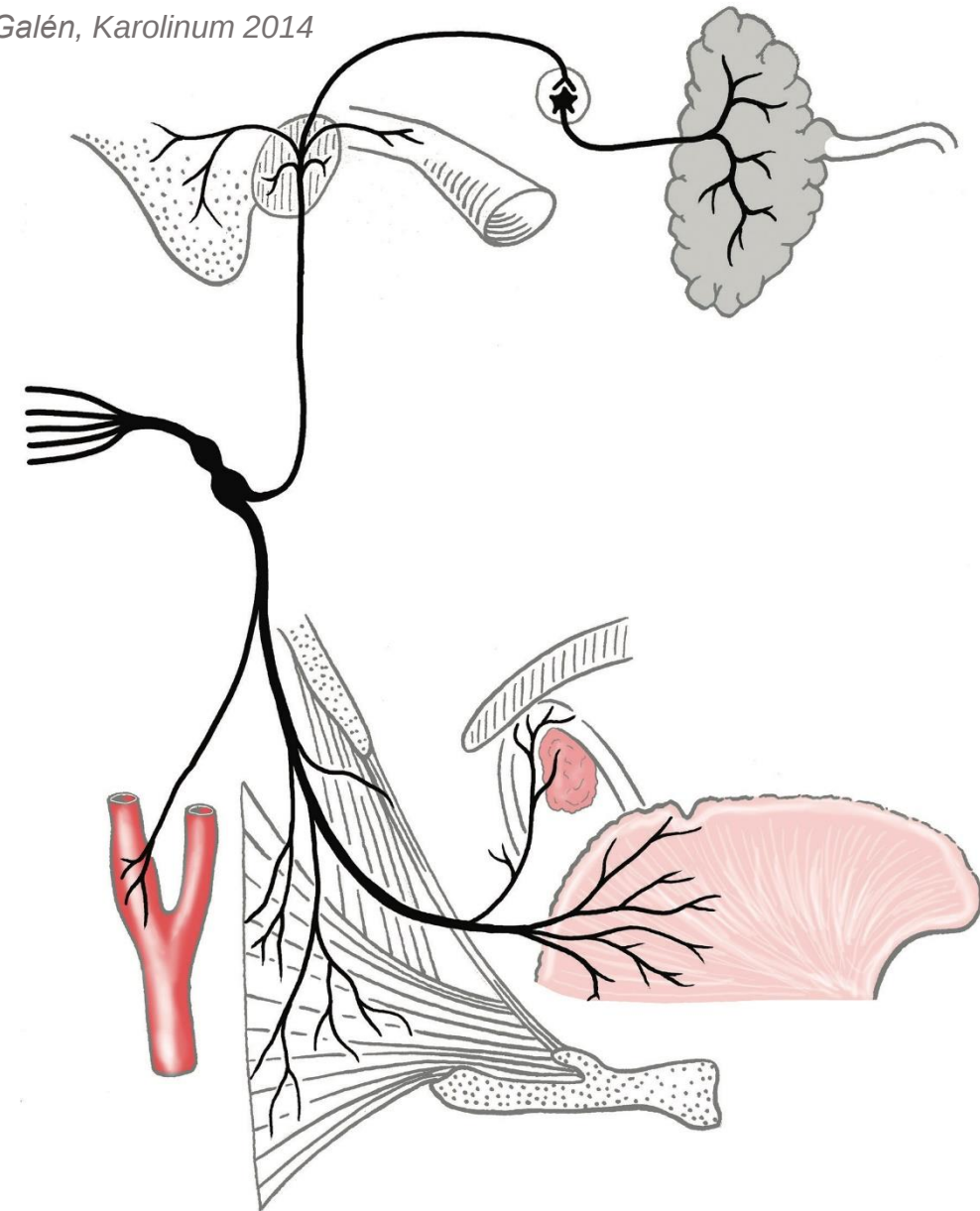
Gray's Anatomy for Students, Elsevier, 4th ed.





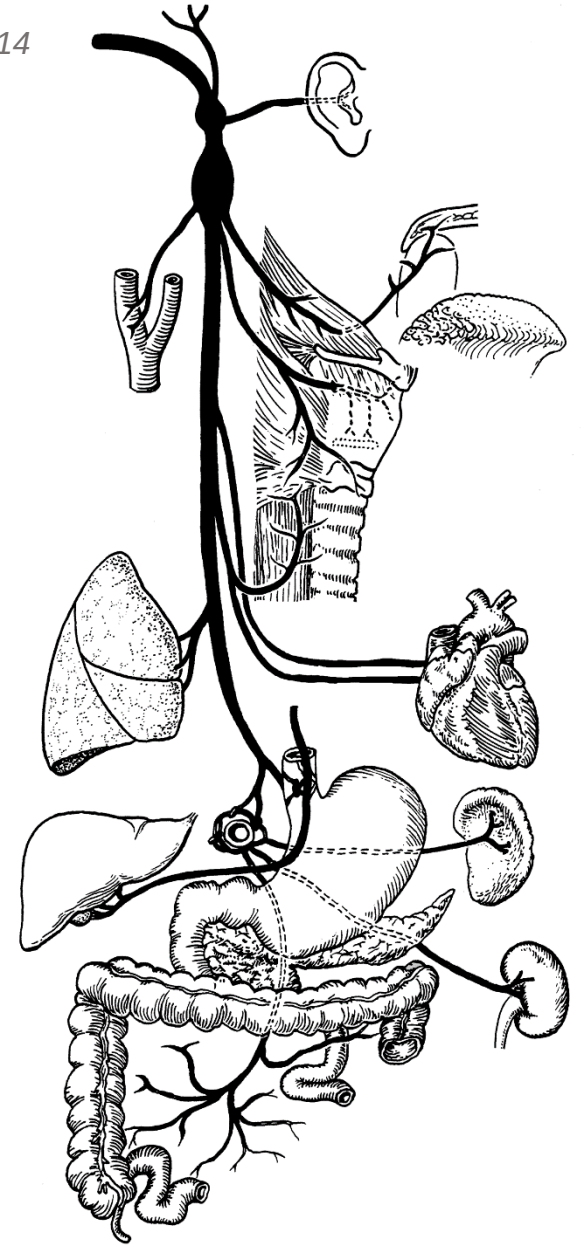
# IX. Nervus glossopharyngeus

*Grim M, Druga R, et al. Základy anatomie, Galén, Karolinum 2014*



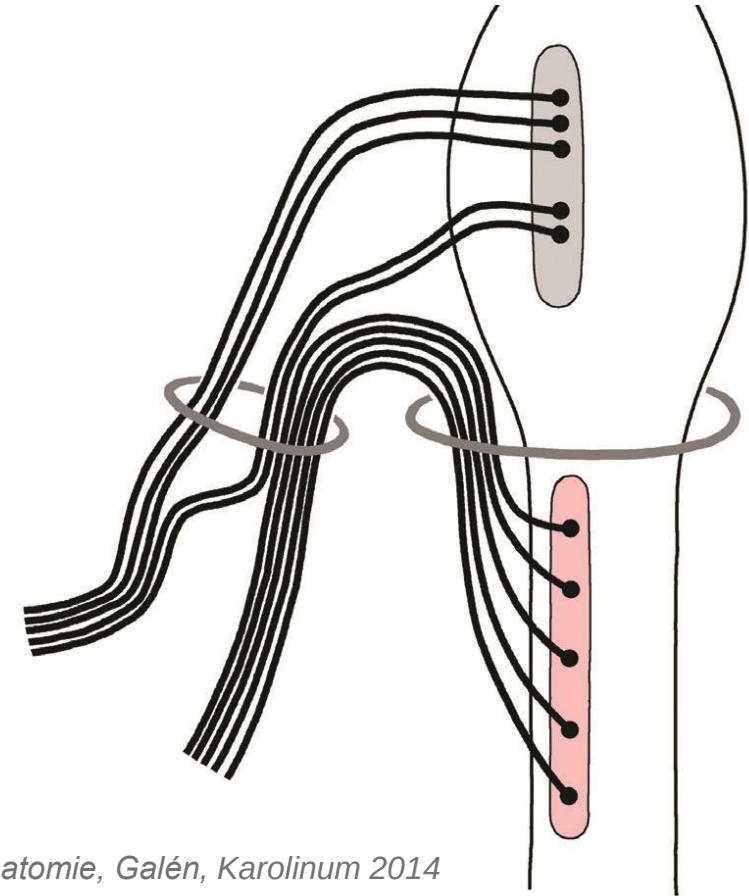
# X. Nervus vagus

*Grim M, Druga R, et al. Základy anatomie, Galén, Karolinum 2014*





# XI. Nervus accessorius

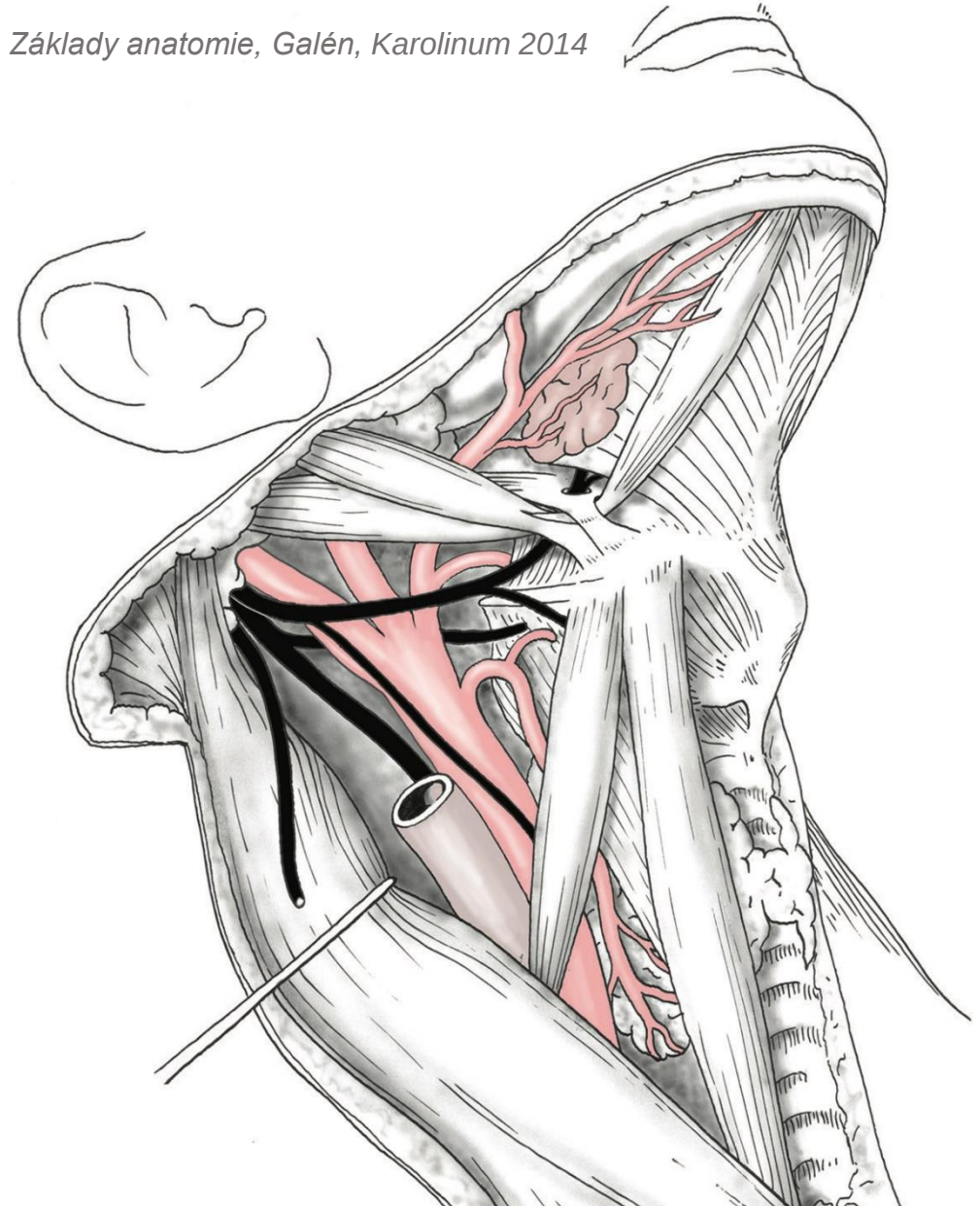


*Grim M, Druga R, et al. Základy anatomie, Galén, Karolinum 2014*



# XII. Nervus hypoglossus

*Grim M, Druga R, et al. Základy anatomie, Galén, Karolinum 2014*





## XII. Nervus hypoglossus



*Gray's Anatomy for Students, Elsevier, 4th ed.*

