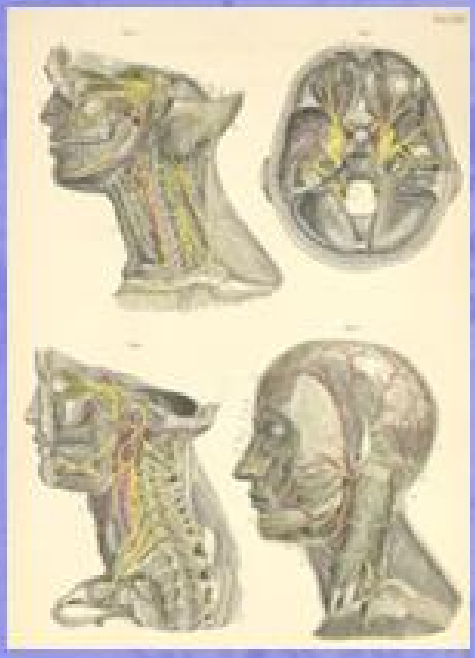
Head & Neck Practical Anatomy



Mo3ath ALSaiady

To 428 With love .. ♡

Mo3ath Al-Saiady

Thanks to :

Amani ALbijadi

For her helping in preparation this handout

Sara ALHasani

For her revesion to this handout

Saad AlQahtani

For his supervising on the team's work

Ahmed AlMazrou

Group A leader

Also thanks to anatomy's DVD heros:

Bilal Marwa (428 Godfather)

Yahya Asiri (Best penguin ever)

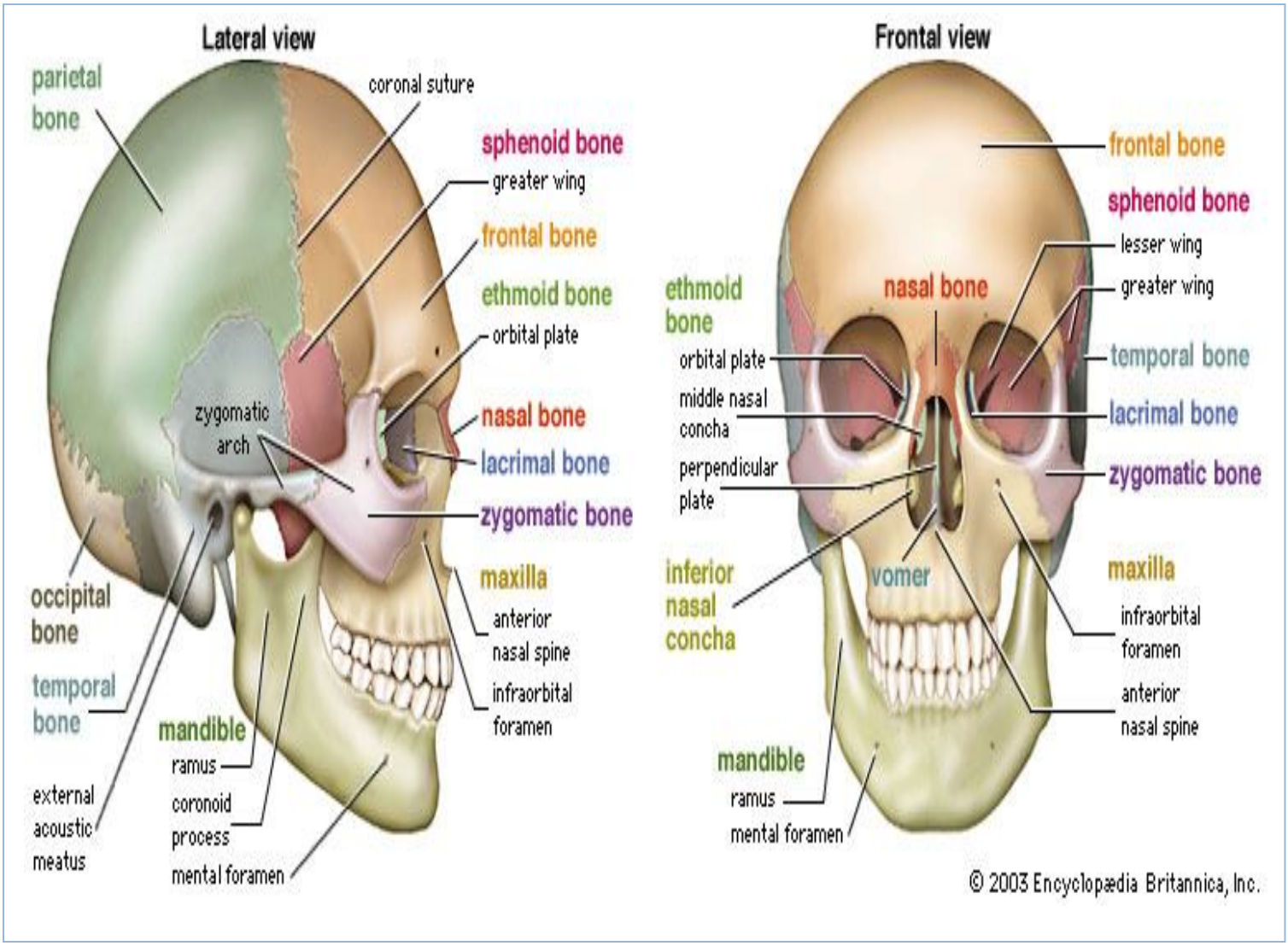
Mohammed Aba- Alhasan

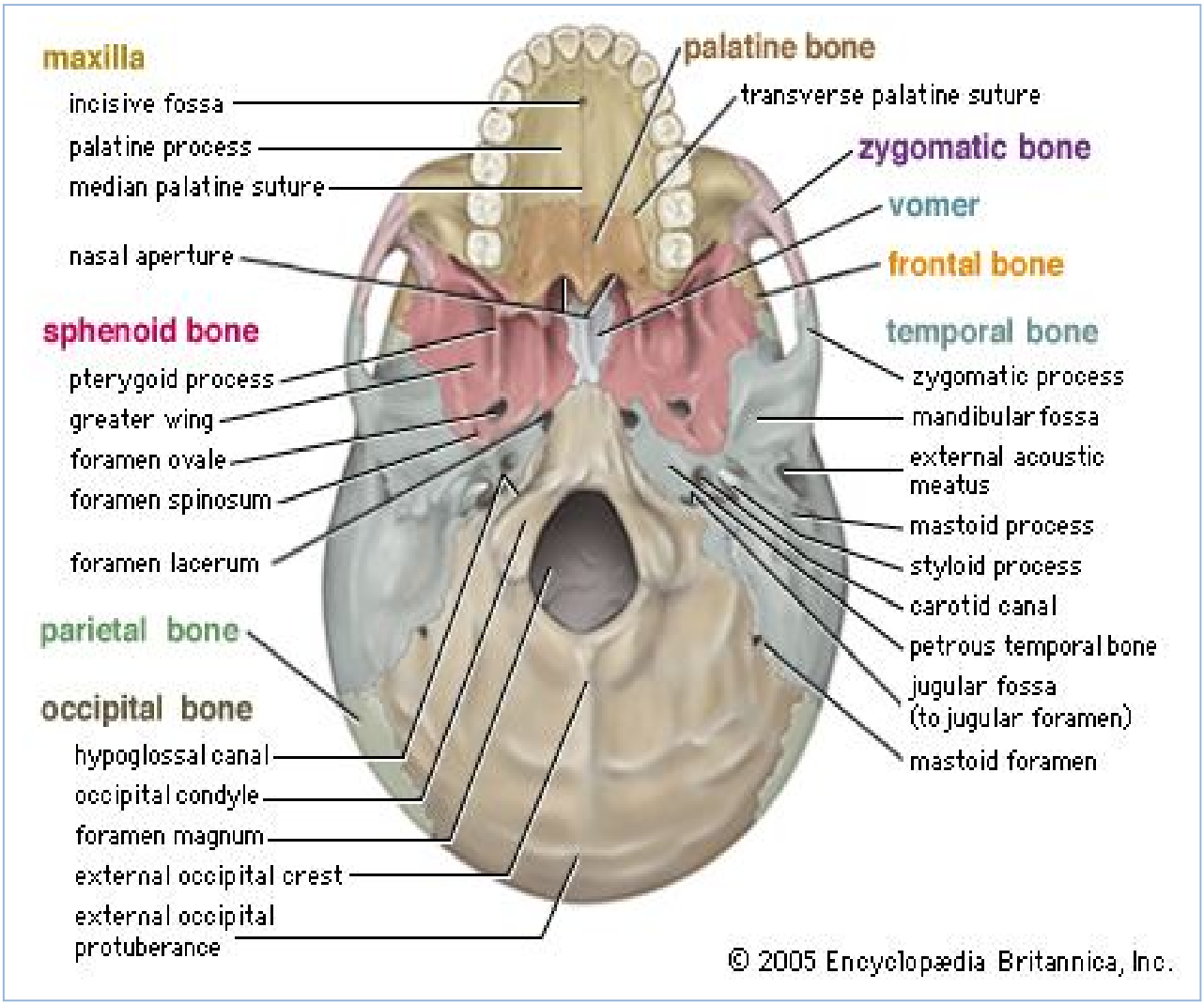
And finally to the best anatomy leader :

Mohammed Al-Otibi

Practical ► 1 ◄

✖ Skull & Scalp ✖




maxilla
incisive fossa
palatine process
median palatine suture
nasal aperture
sphenoid bone
pterygoid process
greater wing
foramen ovale
foramen spinosum
foramen lacerum
parietal bone
occipital bone
hypoglossal canal
occipital condyle
foramen magnum
external occipital crest
external occipital protuberance
palatine bone
transverse palatine suture
zygomatic bone
vomer
frontal bone
temporal bone
zygomatic process
mandibular fossa
external acoustic meatus
mastoid process
styloid process
carotid canal
petrous temporal bone
jugular fossa (to jugular foramen)
mastoid foramen
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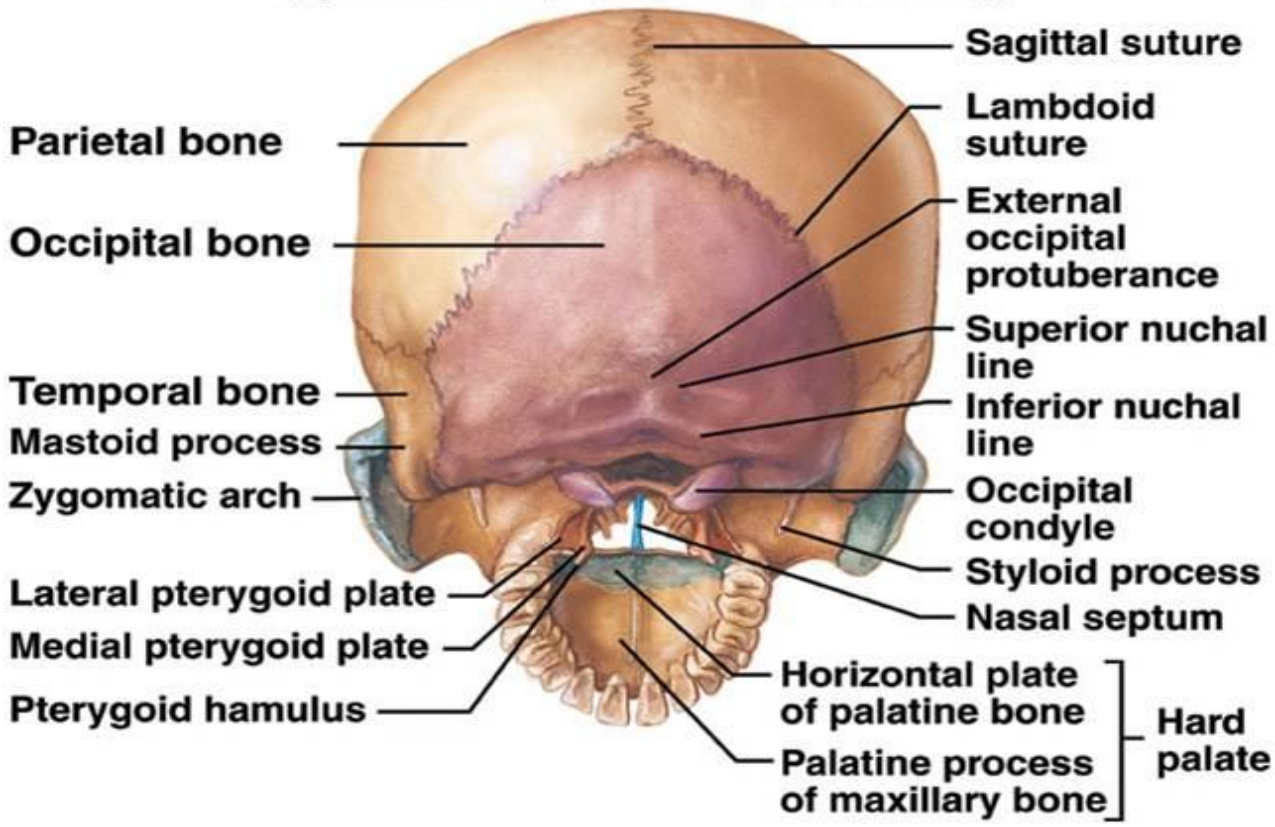
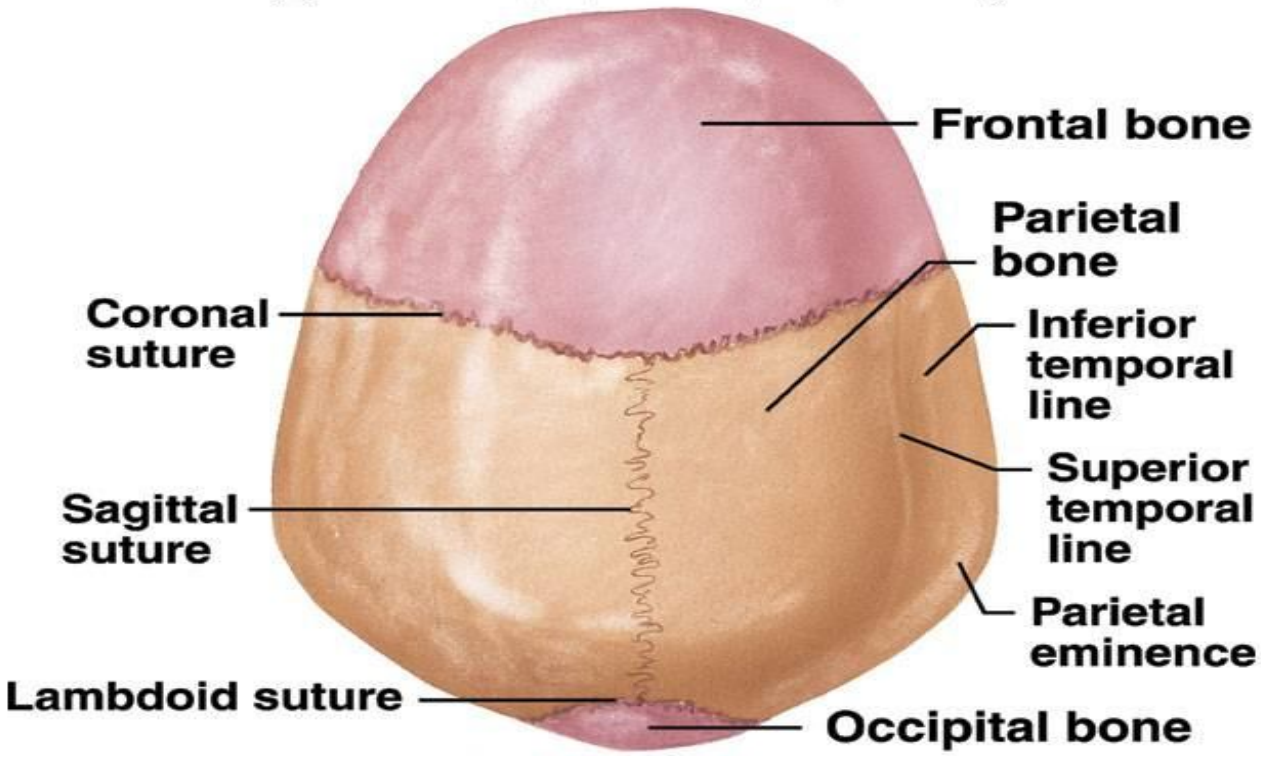
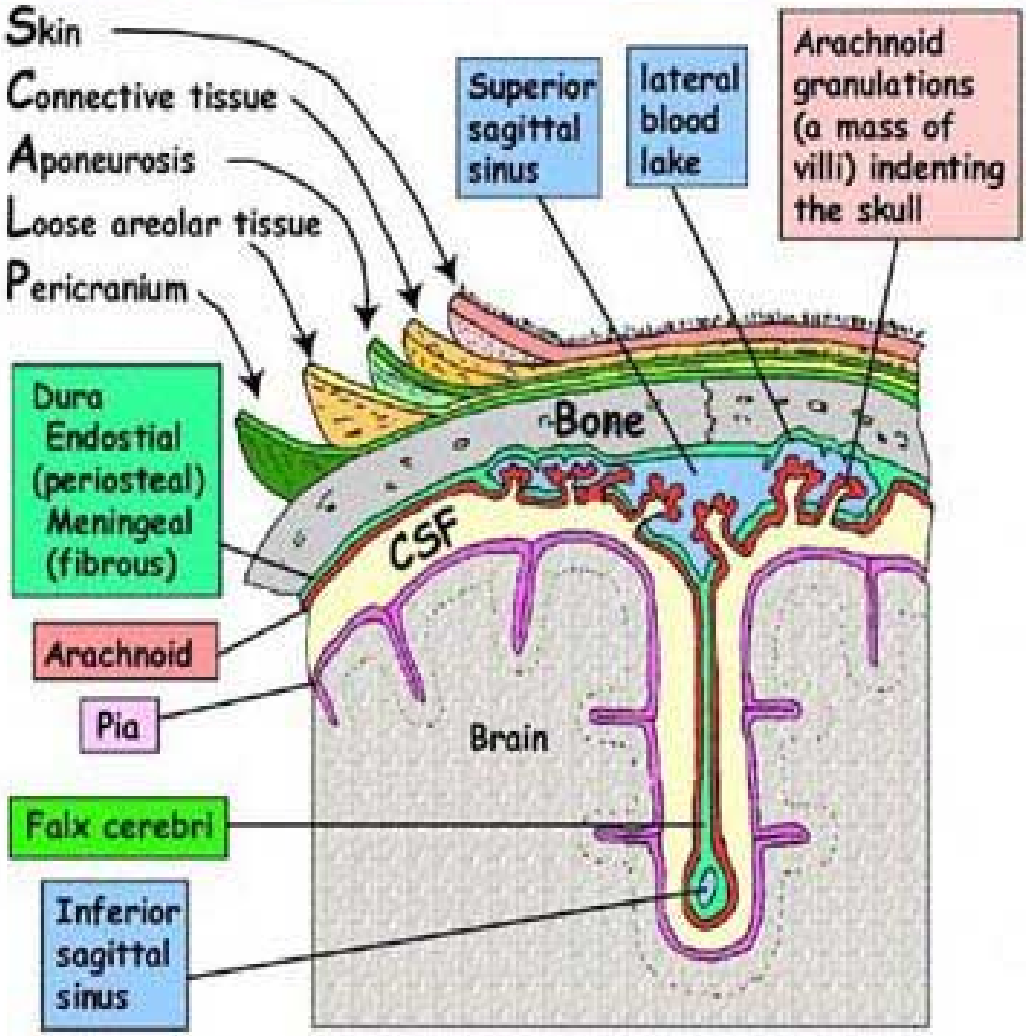




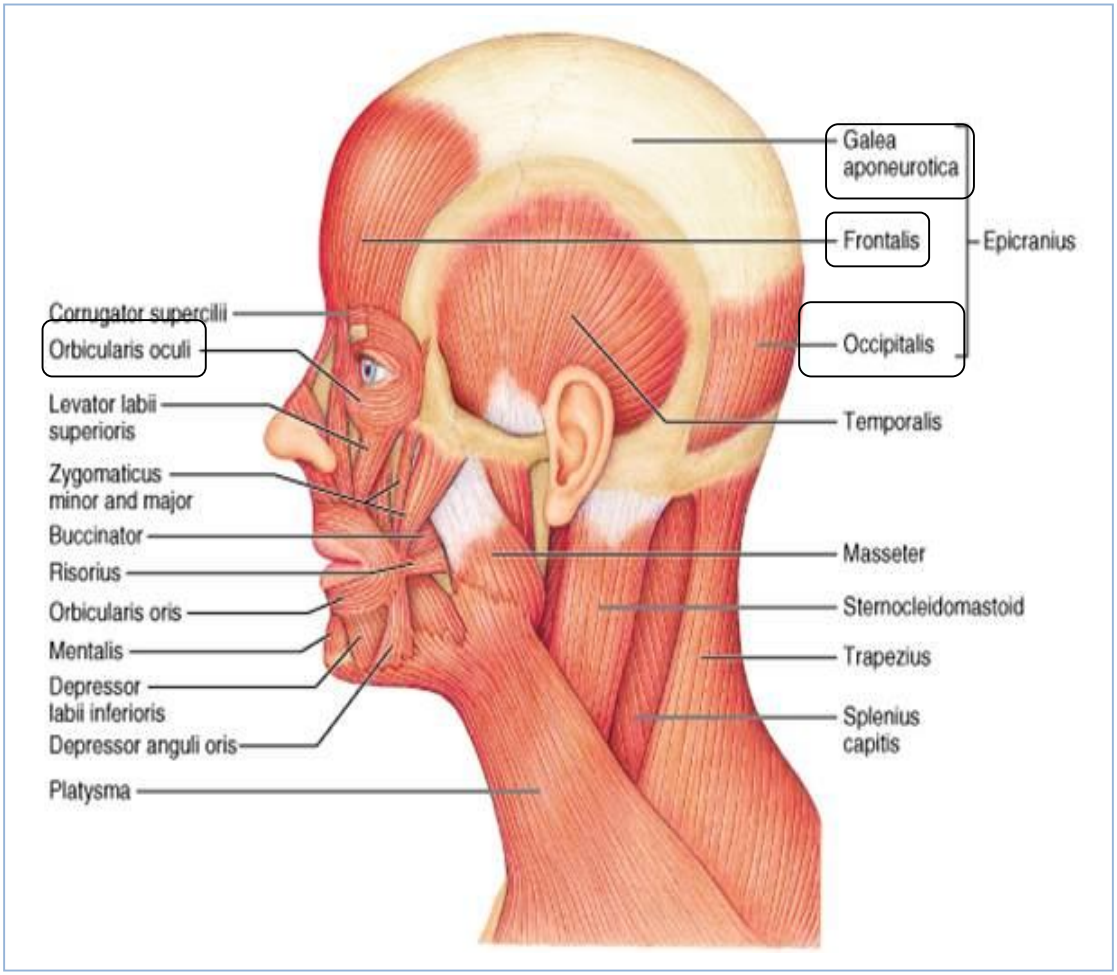
CORONAL SECTION OF SKULL, SCALP & MENINGES IN MIDLINE

To show layers of scalp, meninges and falx cerebri



CEREBROSPINAL FLUID

- 130ml - 30ml in ventricles, 75ml in spinal system, 25ml in cranium
- Turn over - 500ml per day from choroid plexus to 4th ventricle to subarachnoid space to arachnoid villi
- Pressure - 130mm of water
- Function - Brain floats in it, some metabolic change, effectively reduces weight of brain from 1500g to 50g



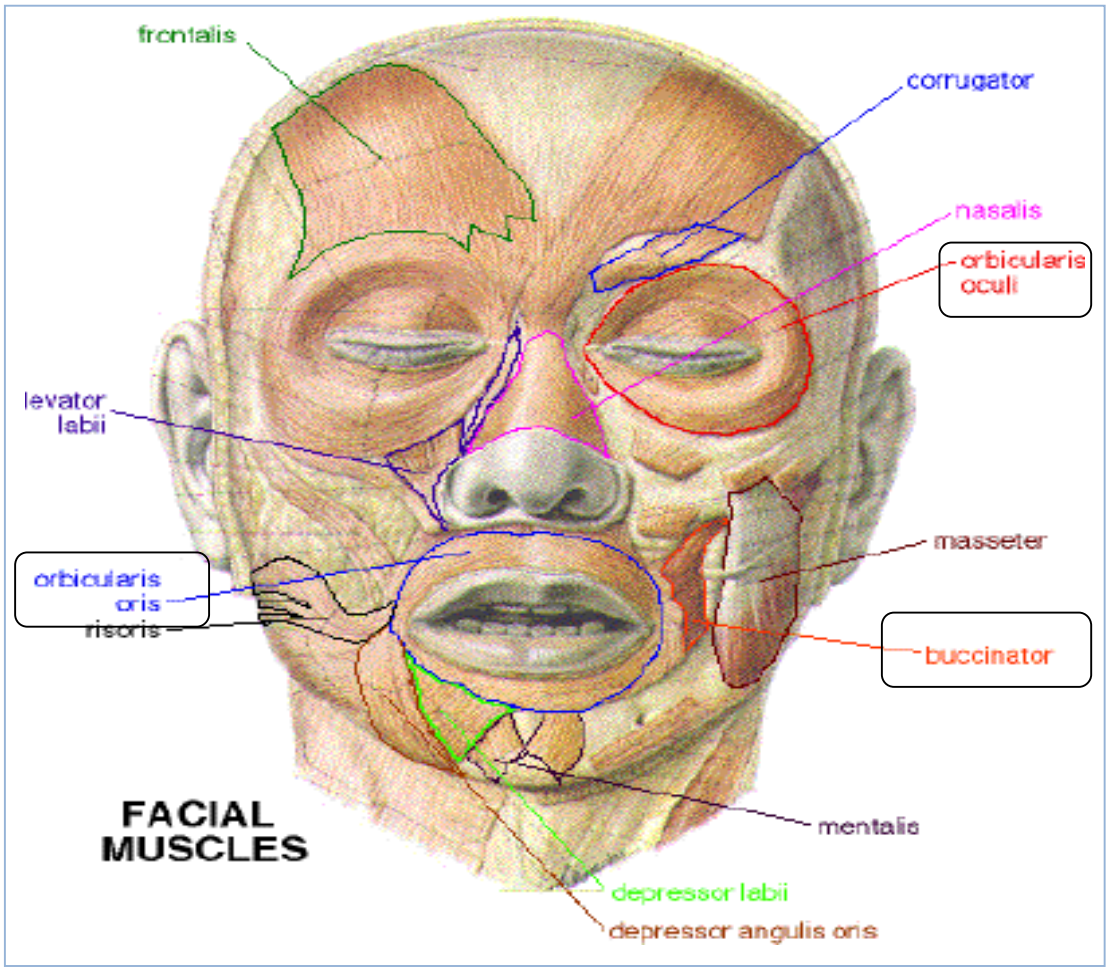
You should identify :

- Epicranius (occipitofrontalis) .
    - bipartite muscle consisting of the :
        - Frontalis .
        - Occipitalis .
        - Galea aponeurotica – cranial aponeurosis connecting above muscles .

Practical ► 2 ◄

✖ Face & Parotid Gland ✖

MUSCLES OF THE FACE



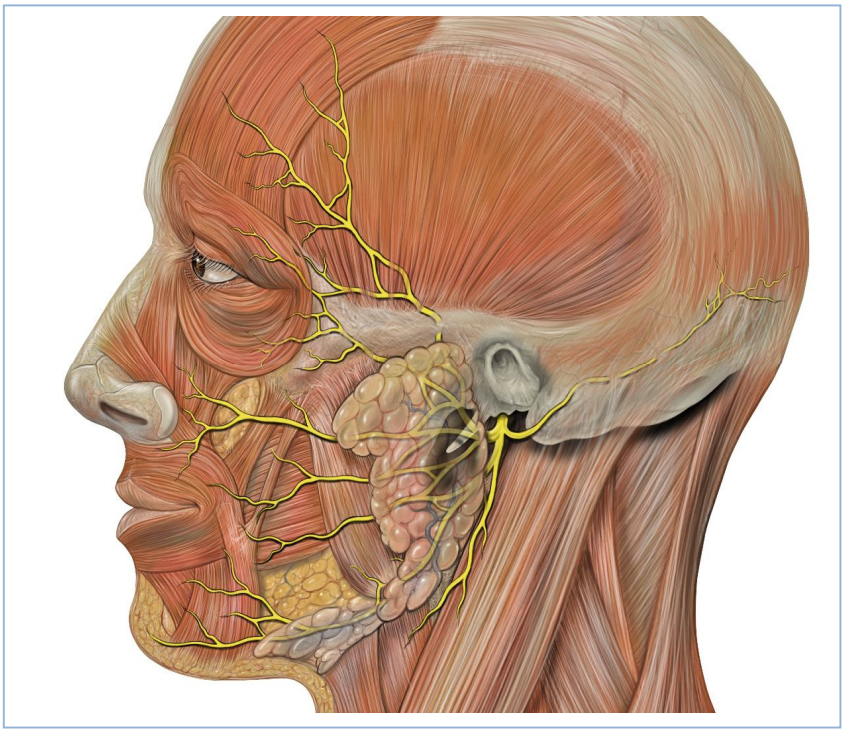
You should identify :

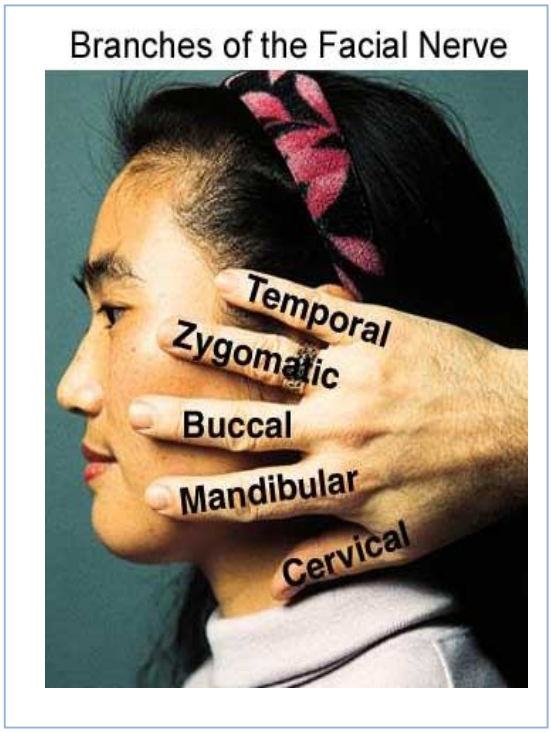
- orbicularis oculi.
- buccinator .

- orbicularis oris.

MOTOR INNERVATION TO THE FACE

The motor innervation to the muscles of facial expression is Cranial Nerve VII (Facial)





The Facial nerve divides into 5 major divisions :

- T -- temporal
- Z -- zygomatic
- B -- buccal
- M -- mandibular
- C -- cervical

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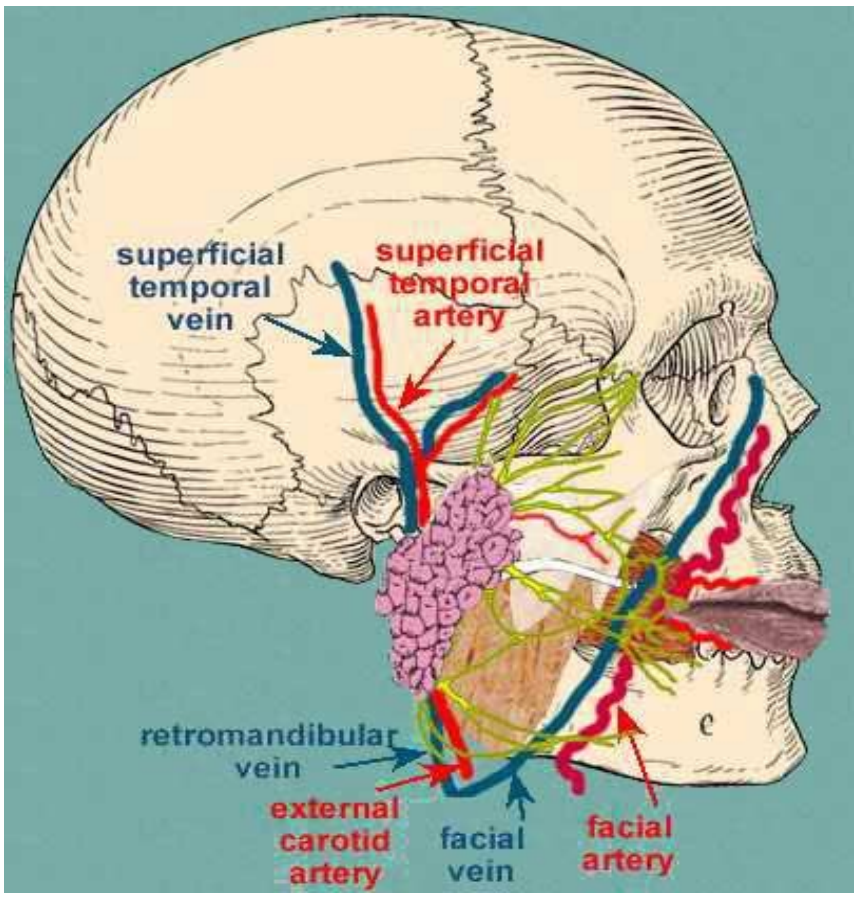
In the exam , you will not be asked to write the divisions' names of facial nerve .

The arterial and venous supply to the face are :

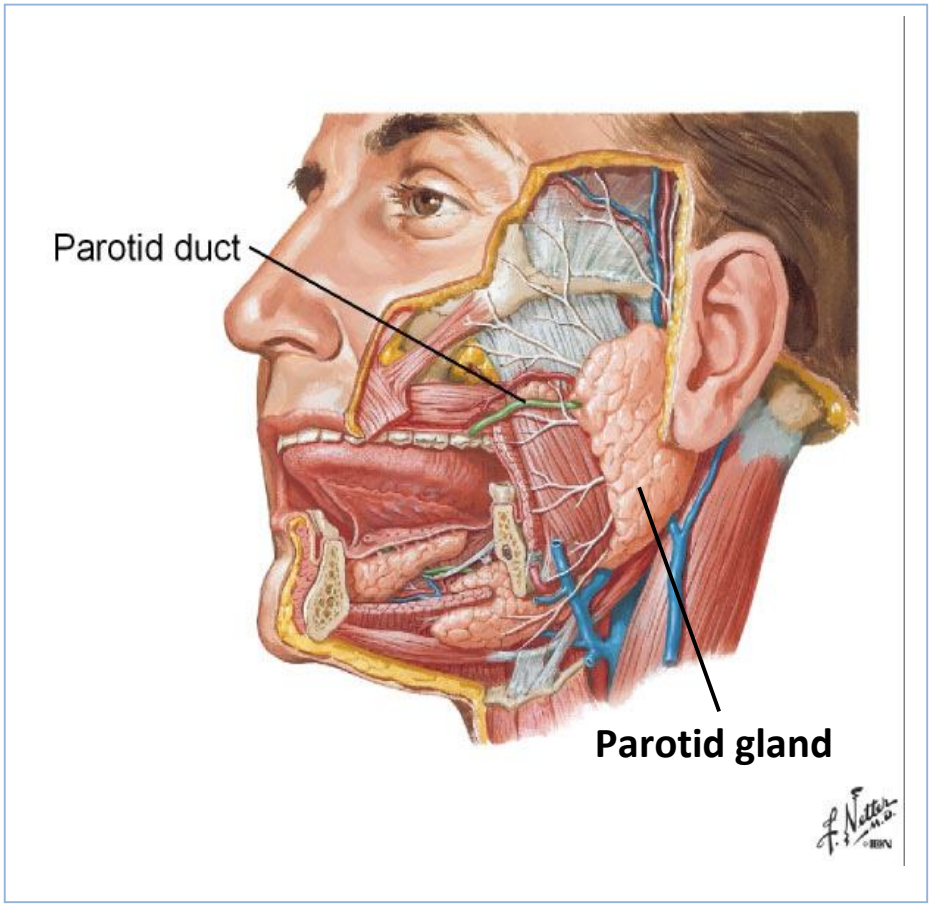


- Facial artery .
- Superficial temporal artery .
- External carotid artery .
- Facial vein .

- Superficial temporal vein .

- Retromandibular vein .

Parotid Gland



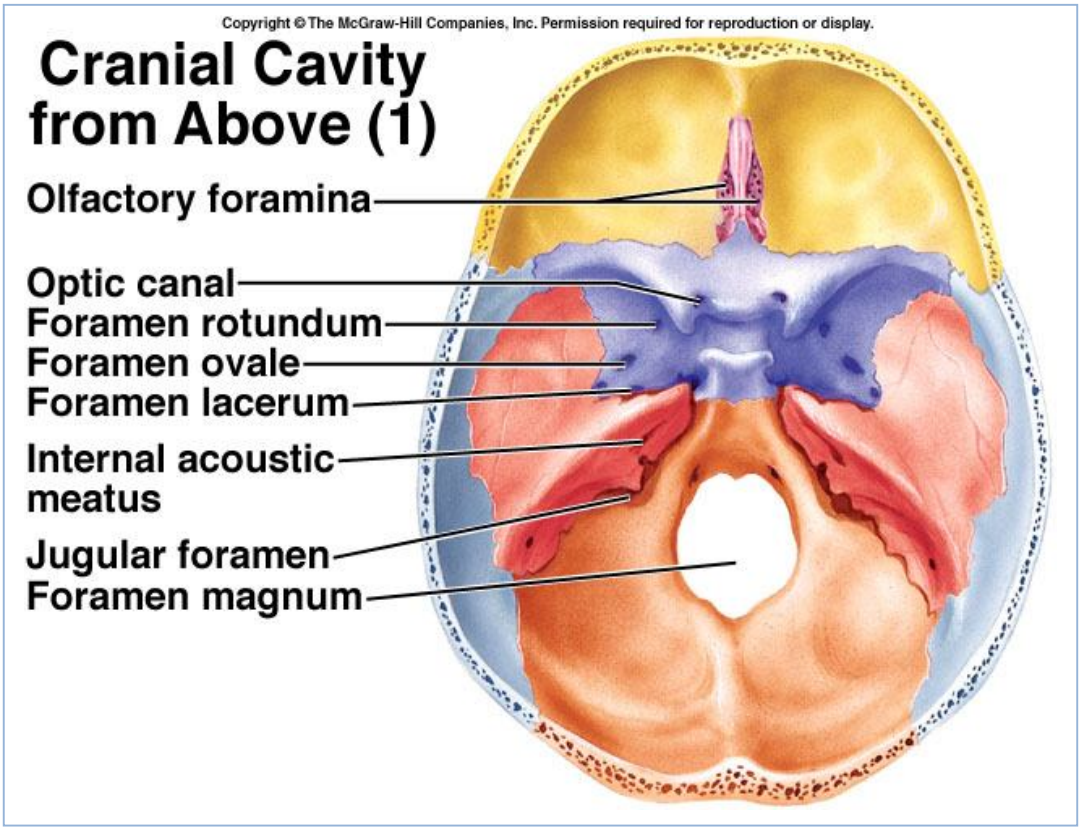
You should identify :

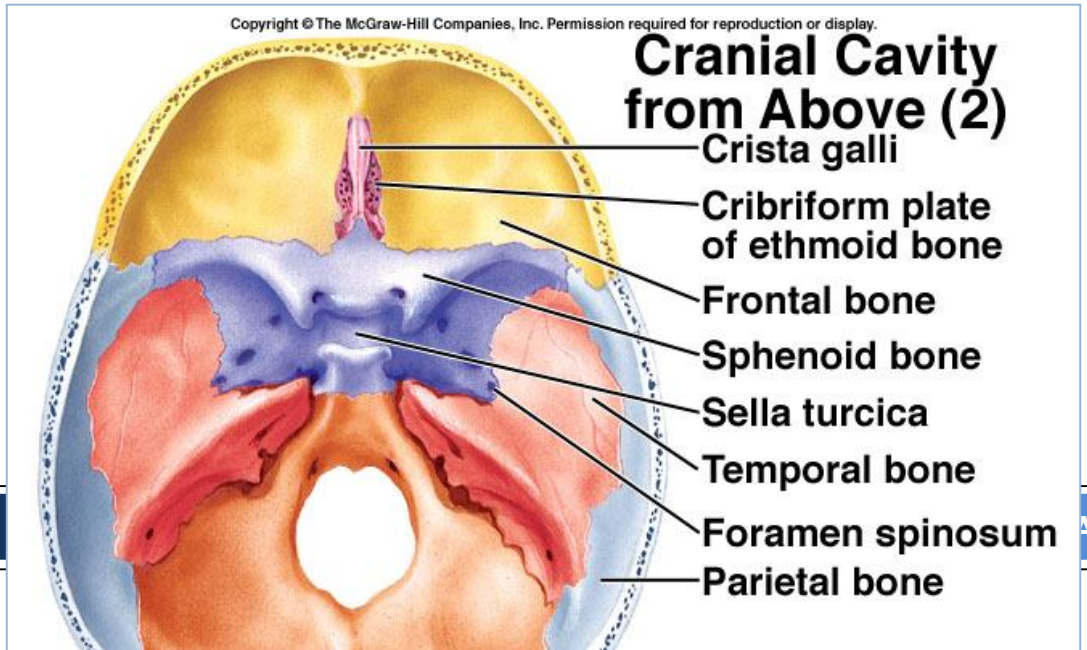
- Parotid gland .

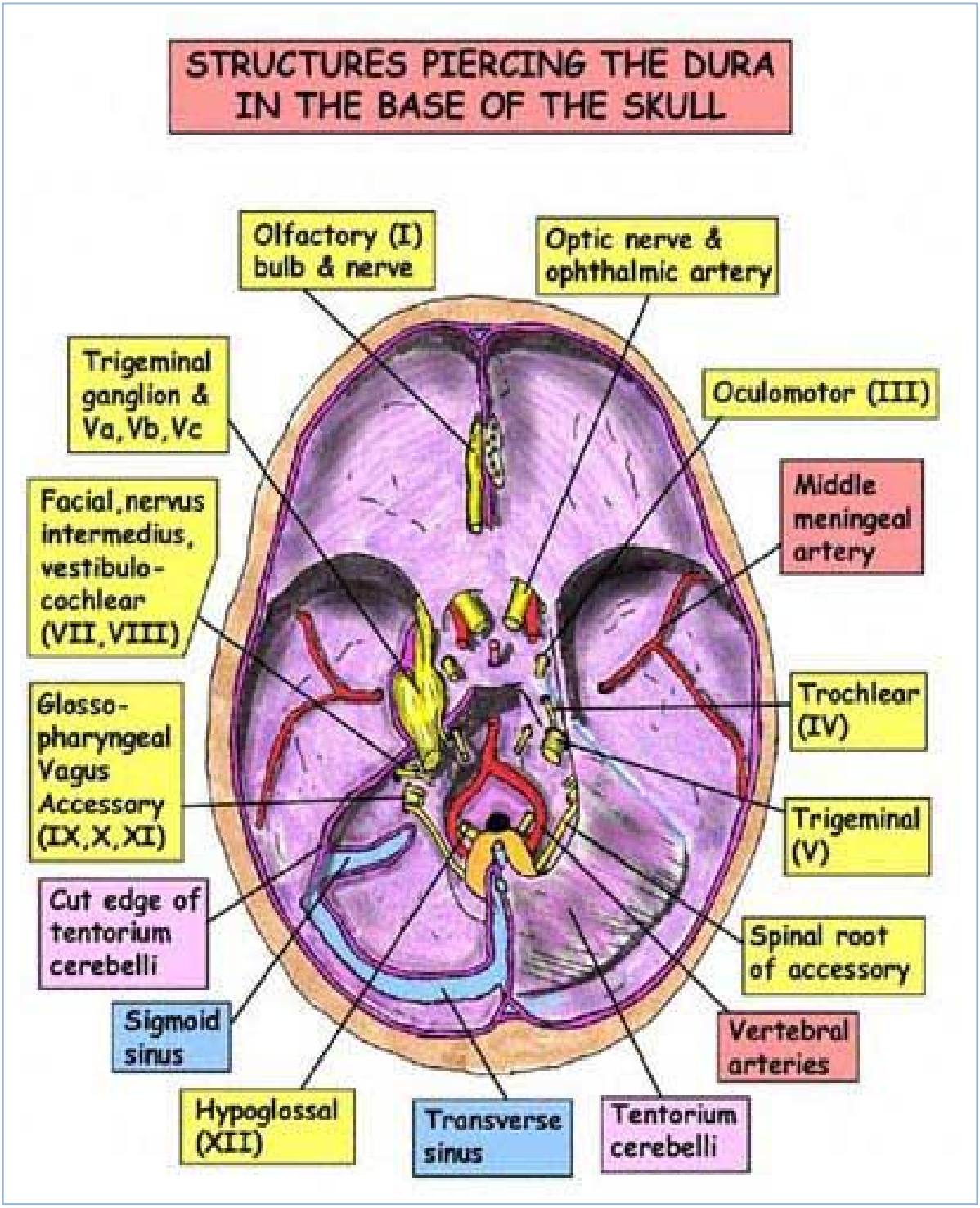
- Parotid duct .

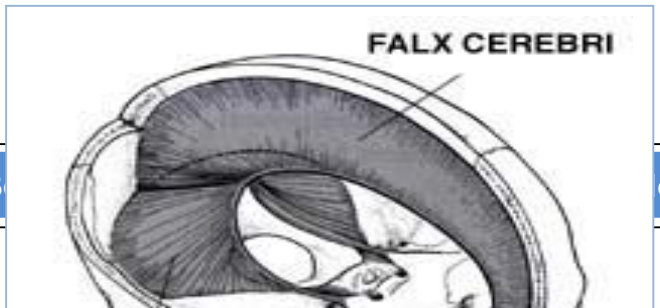
Practical ► 3 ◄

✖ Cranial Cavity & Dural Venous Sinuses ✖

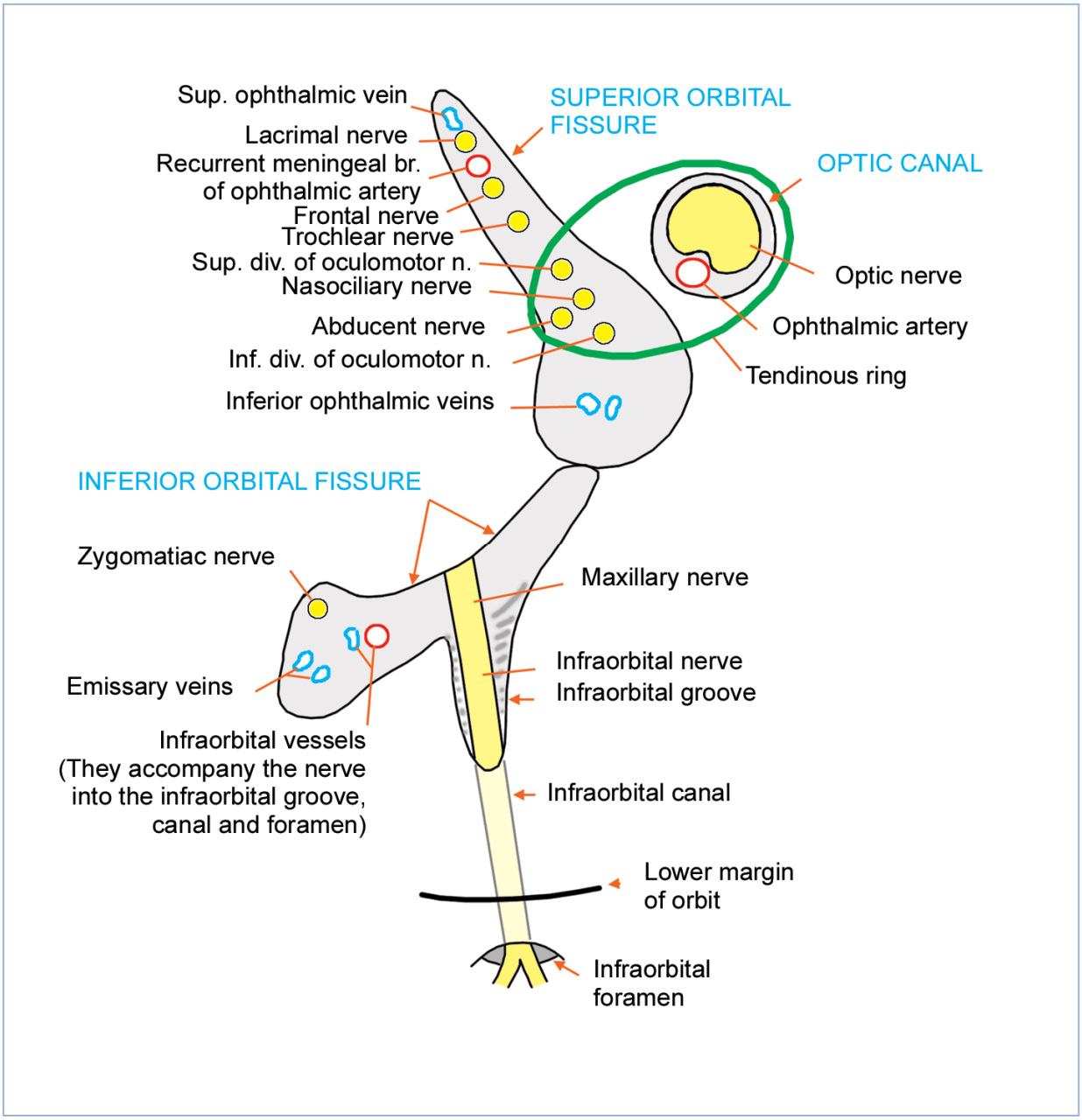




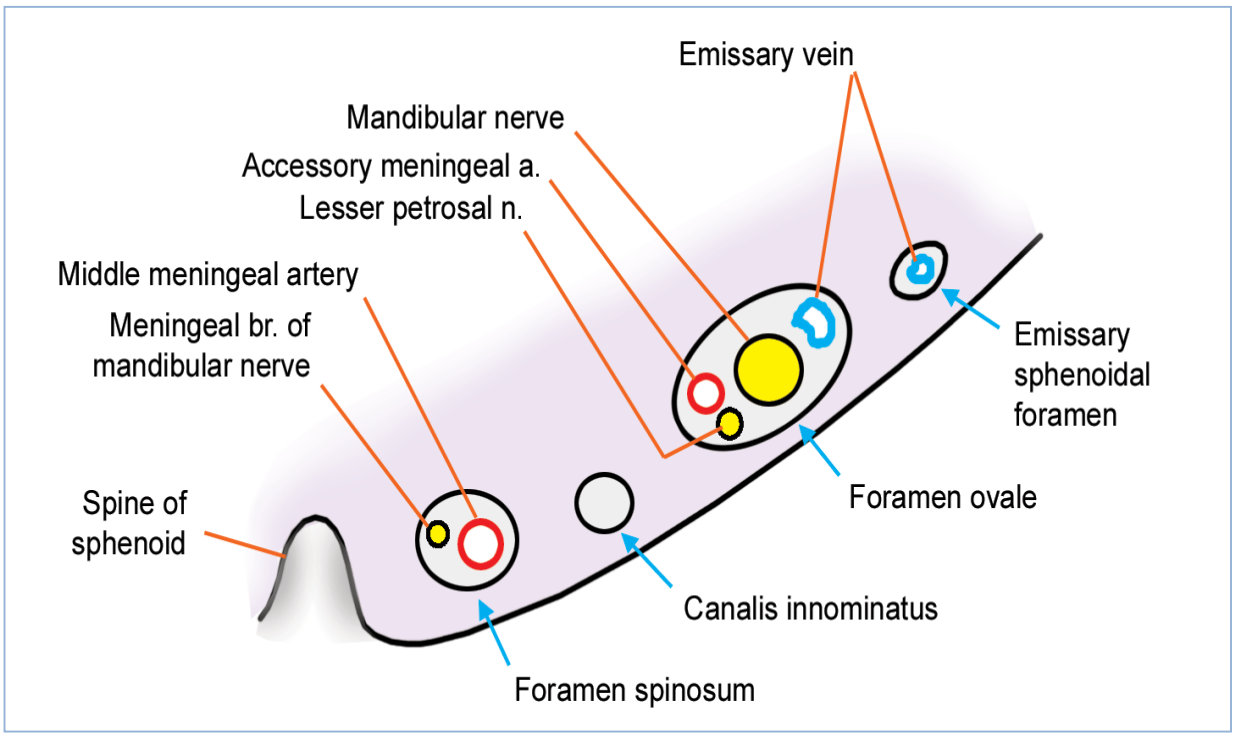

STRUCTURES PIERCING THE DURA IN THE BASE OF THE SKULL
Olfactory (I) bulb & nerve
Optic nerve & ophthalmic artery
Trigeminal ganglion & Va, Vb, Vc
Oculomotor (III)
Middle meningeal artery
Facial, nervus intermedius, vestibulo-cochlear (VII, VIII)
Trochlear (IV)
Glosso-pharyngeal Vagus Accessory (IX, X, XI)
Trigeminal (V)
Cut edge of tentorium cerebelli
Spinal root of accessory
Sigmoid sinus
Vertebral arteries
Hypoglossal (XII)
Transverse sinus
Tentorium cerebelli


FALX CEREBRI

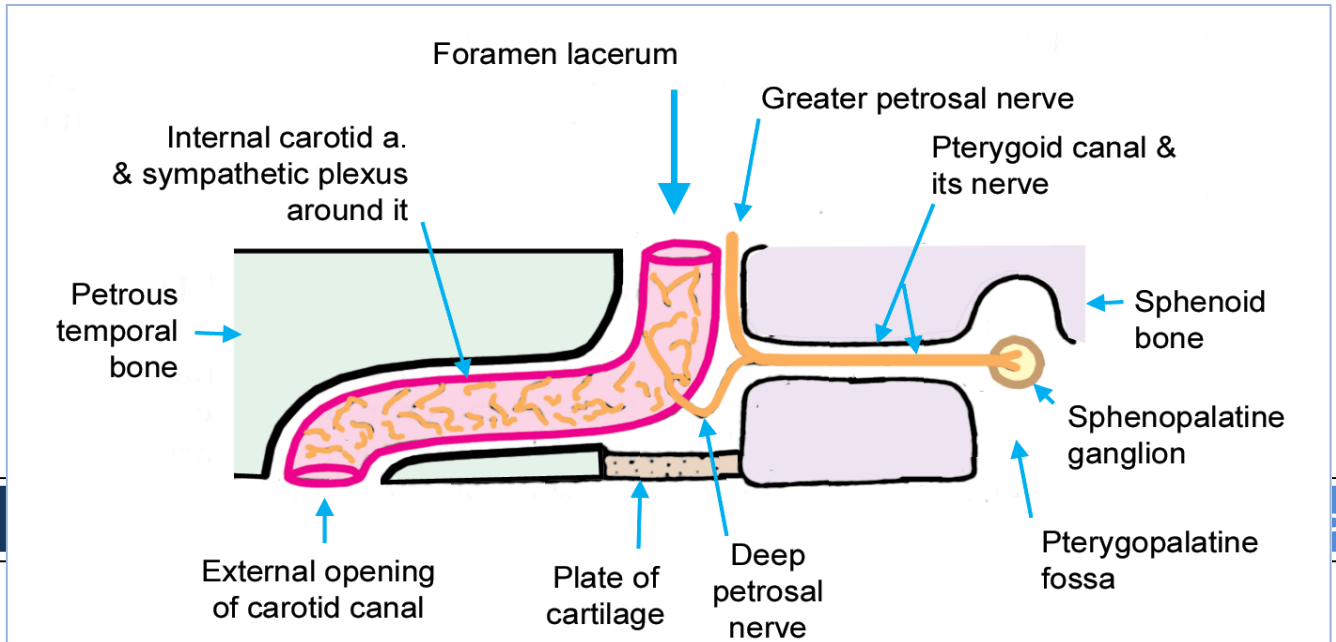
Structures passing through the optic canal, the superior orbital fissure, and the inferior orbital fissure :



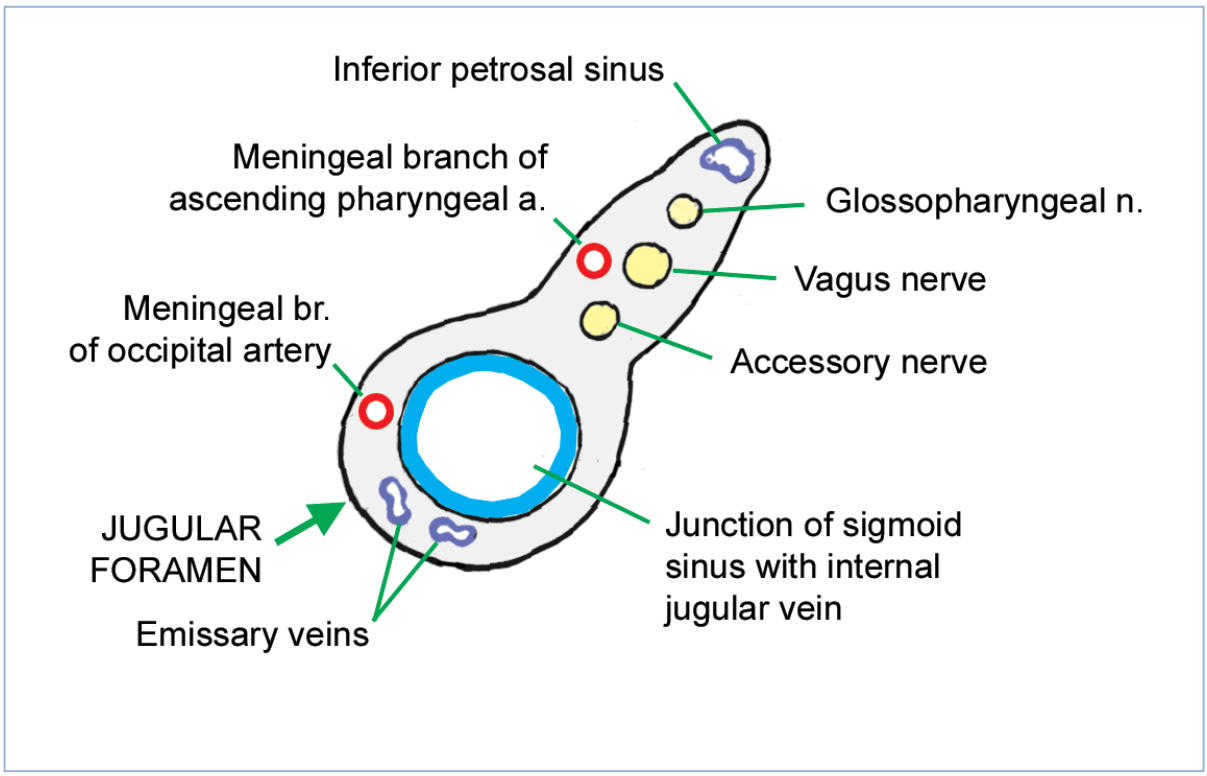
- **Structures passing through the foramen ovale, and through smaller foramina near it. The lesser petrosal nerve sometimes passes through the canalis innominatus :**



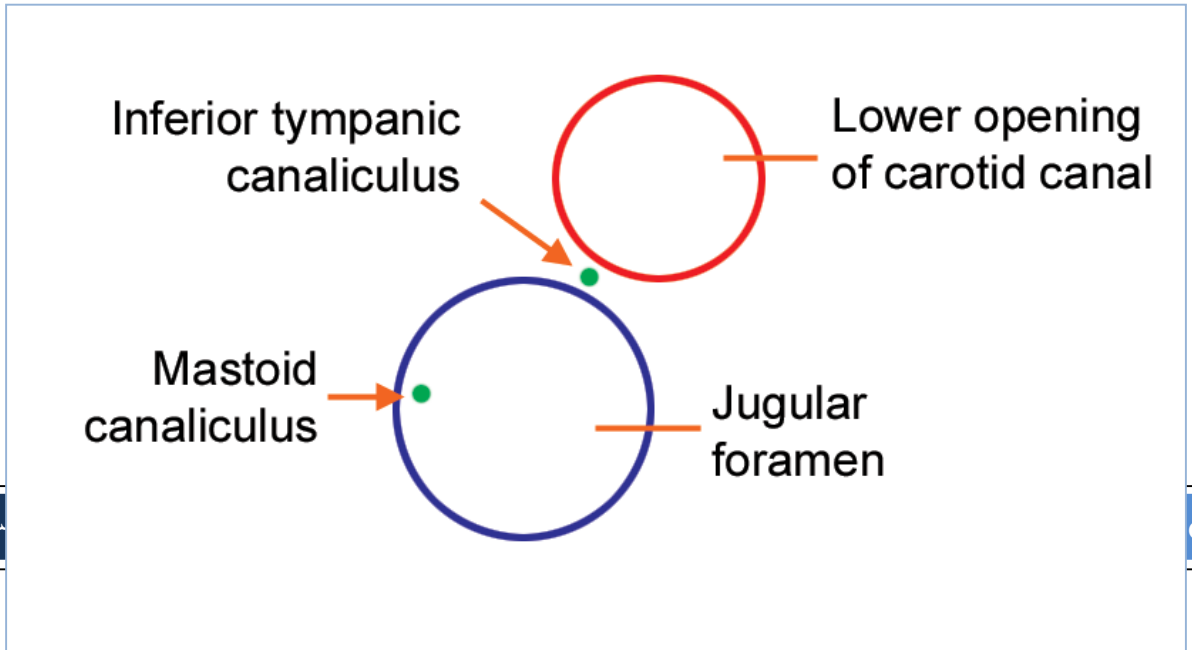
- **Scheme to show structures passing through the carotid canal and the**



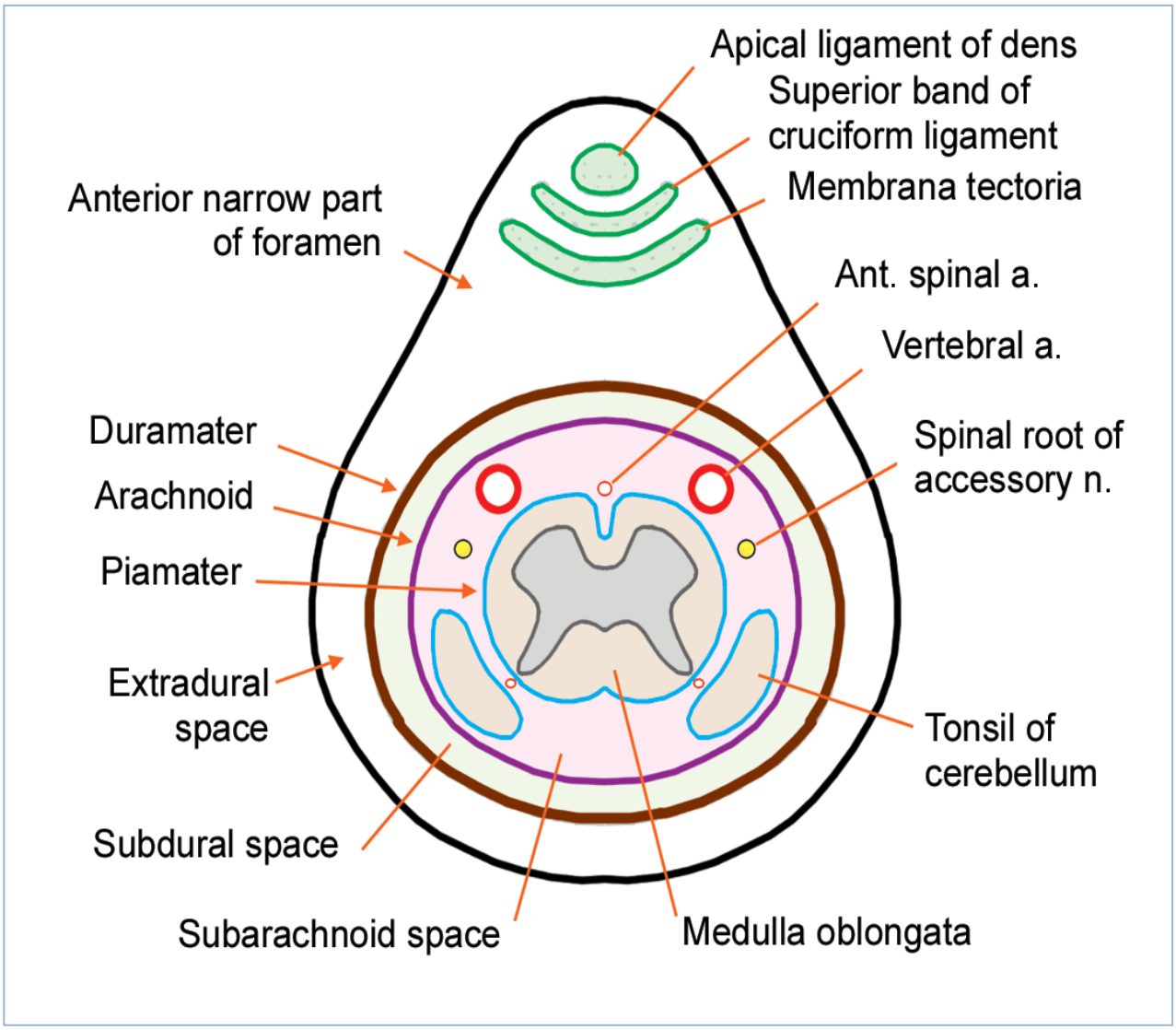
- **Scheme to show structures passing through the jugular foramen:**



- **Scheme to show the position of the opening of the inferior tympanic canaliculus, and of the mastoid canaliculus:**



Scheme to show the arrangement of structures passing through the foramen magnum:



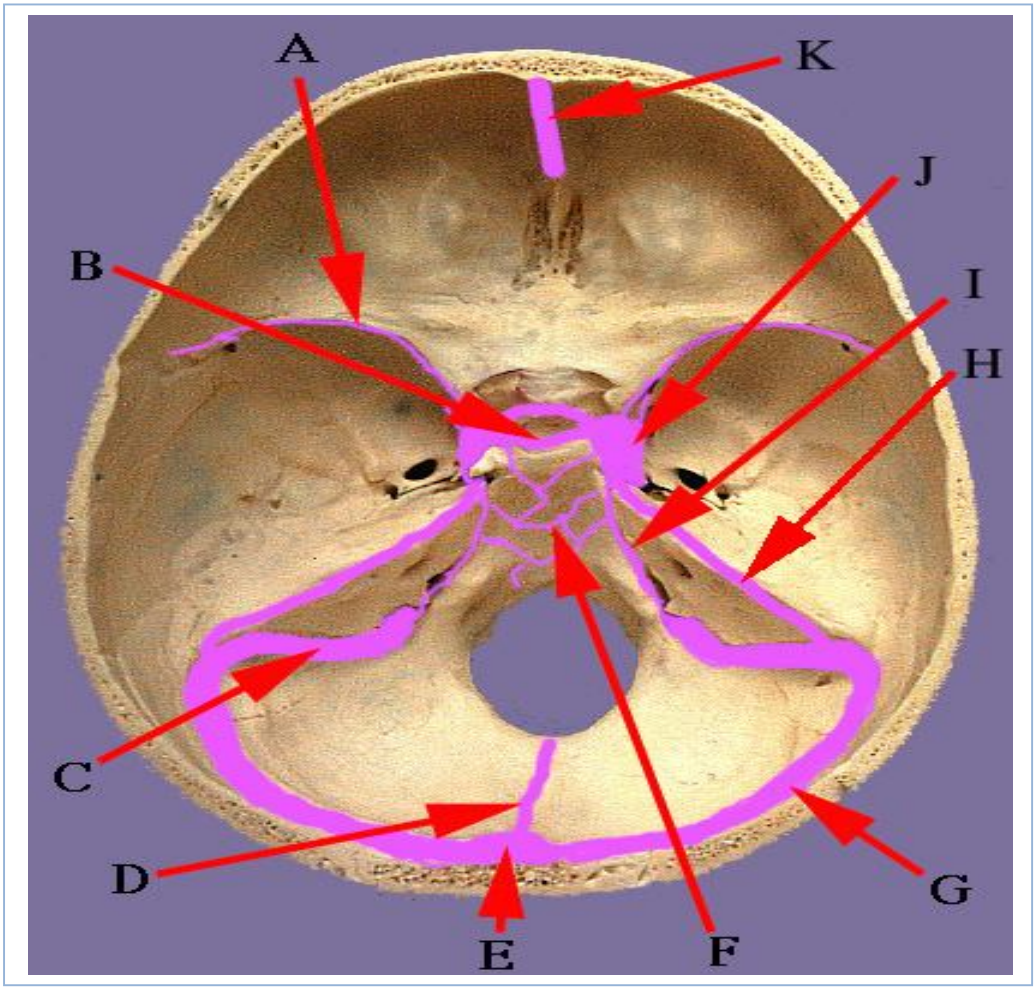
Summary (very important)

Name of Foramen	Structures passing through it
1- Foramen Magnum . (lie between the 2 Occipital Condyles)	1- Lower end of medulla oblongata . 2- Meninges . 3- Spinal roots of accessory nerves . 4- Vertebral arteries . 5- Spinal arteries
2- Foramen Rotundum .	1- Maxillary N .
3- Foramen Ovale .	1- Mandibular N . 2- Motor root of trigeminal N . 3- Middle meningeal vein .
4- Foramen Spinosum .	1- Middle meningeal artery . 2- Nervus Spinosus .

5- Foramen Lacerum .	1- Internal carotid artery . 2- Meningeal br. Of ascending pharyngeal artery .
6- Optic Foramen .	℘ Optic nerve . ℘ Ophthalmic artery .

(7) Superior Orbital Fissure	* Occulomotor Nerve 3rd * Trochlear Nerve 4th * Abducent Nerve 6th * Opthalmic veins
(8) Jugular Foramen	* Cranial nerves 9th, 10th , 11th * Internal Jugular vein * Inferior petrosal Sinus
(9) Internal Auditory Meatus	* Facial Nerve 7th (medial) * Vestibulocochlear 8th (lateral) * Internal Auditory Vessels
(10) Hypoglossal Canal (Anterior Condylar Foramen)	* Hypoglossal Nerve 12th
(11) Carotid Canal	* Internal Carotid Artery * Internal Carotid Sympathetic Plexus * Deep Petrosal Nerve
(12) Stylomastoid Foramen	* Facial Nerve 7th * Stylomastoid Artery
(13) Inferior Orbital Fissure	* Infra orbital Nerve and Vessels
(14) Foramina Of Cribriform Plate Of Ethmoid	* Olfactory Nerves

Dural Venous Sinuses



A. Sphenoparietal

B. Intercavernous

C. **Sigmoid**

D. Occipital

E. Confluence

F. Basilar

G. Transverse

H. Superior Petrosal

I. Inferior Petrosal

J. Cavernous

K. Superior Sagittal

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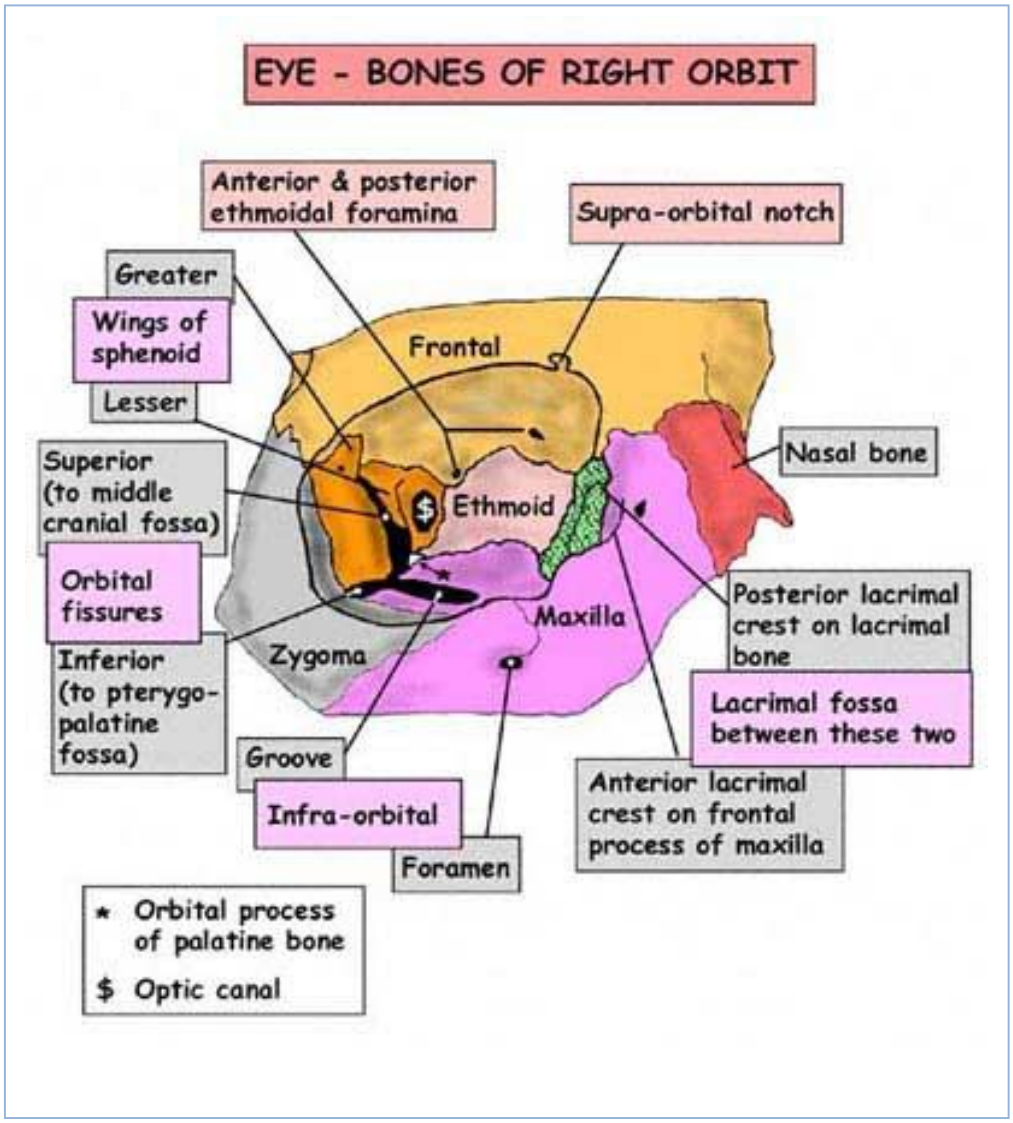
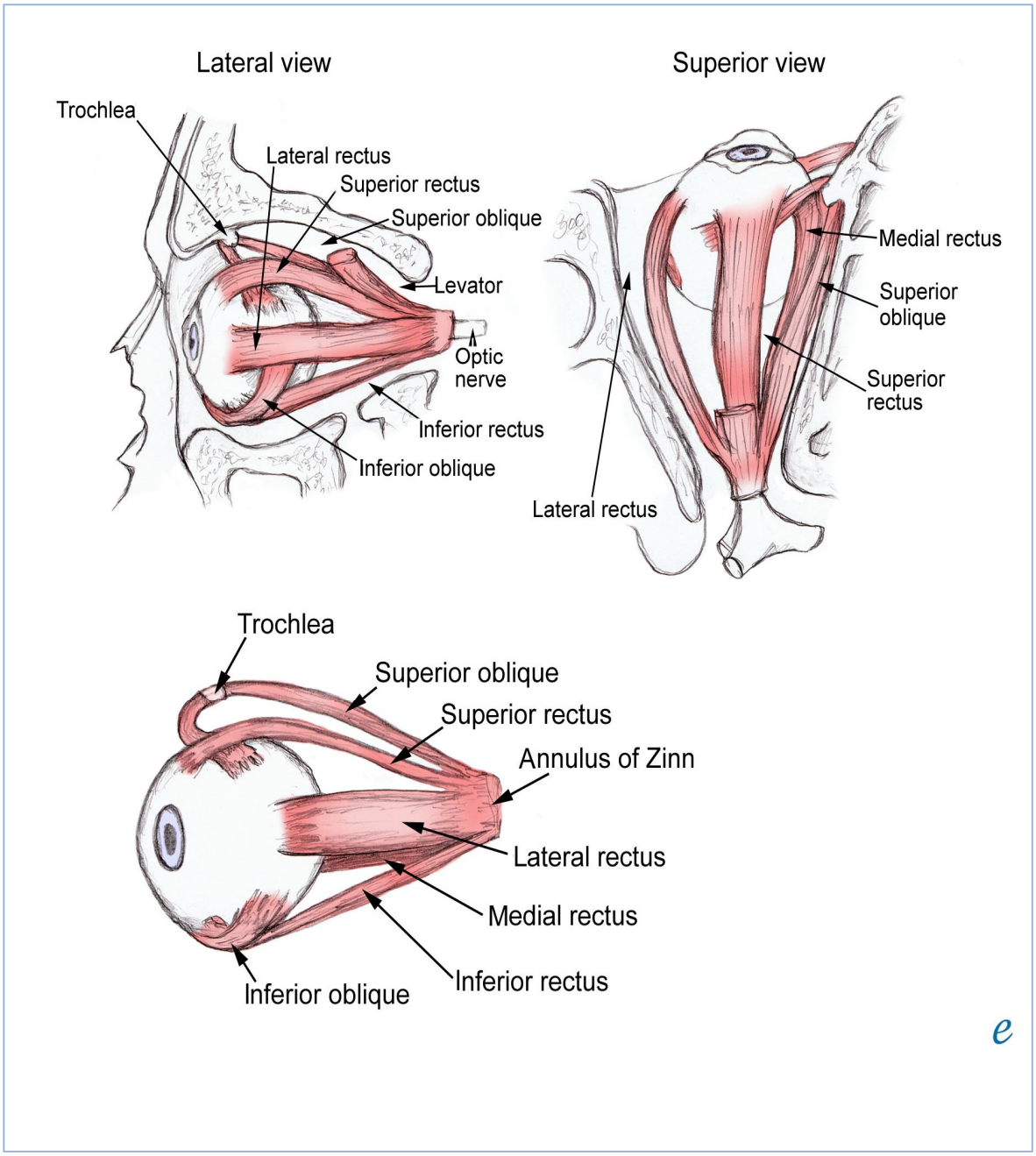
You will be asked here as the structure related on the skull . The most common to come in the exam are written in **RNIN**

Practical ► 4 ◄

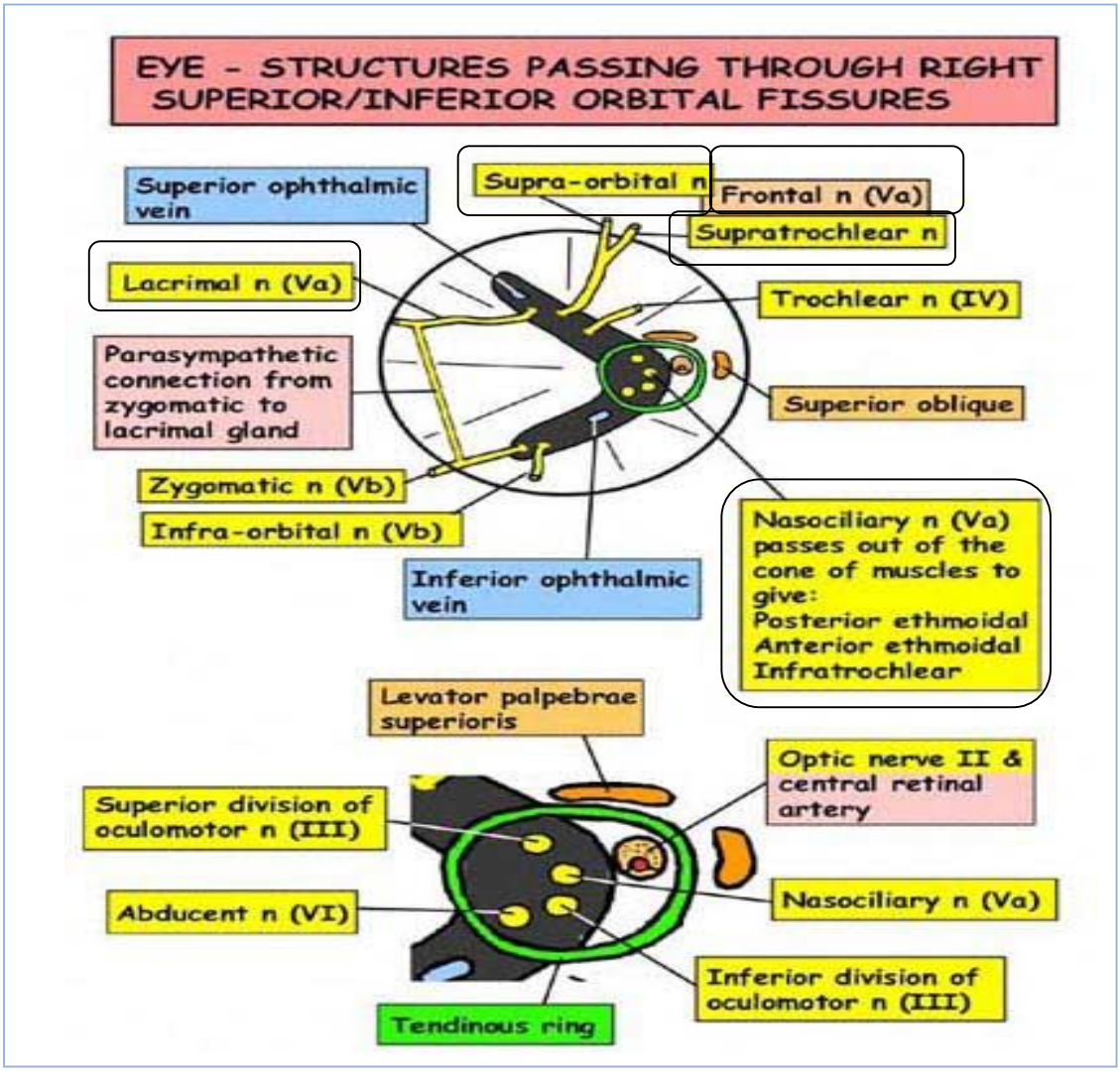
✖Orbit✖

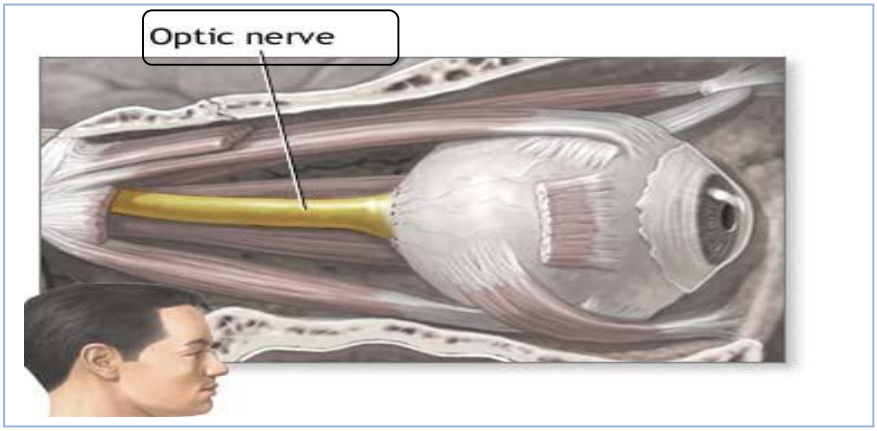




You should identify :

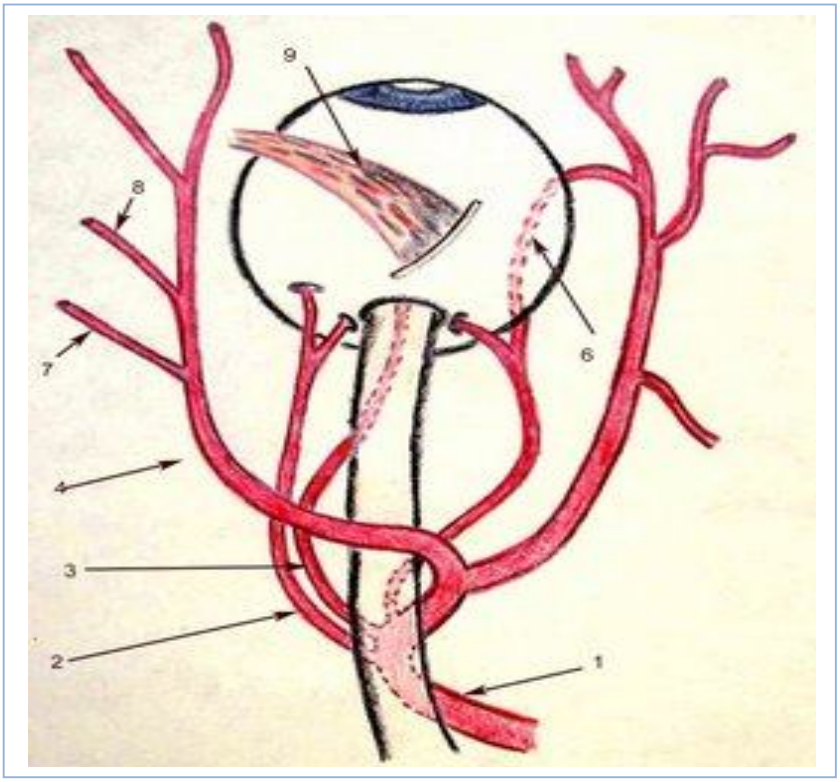
- m. Superior rectus oculi.
- m. Medial rectus oculi.
- m. Levator palpebral superioris.
- m. Lateral rectus oculi.

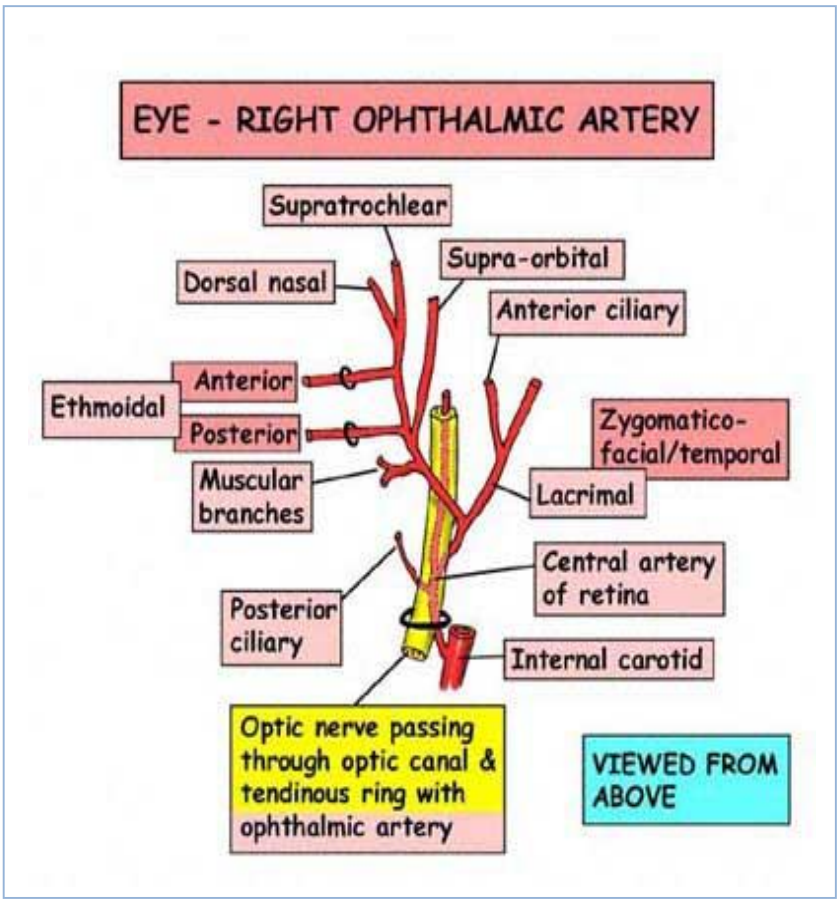




You should identify :

- Optic n.
- Nasociliary n.
- Frontal n. & its branches (supra- trochlear & orbital)
- Lacrimal n.



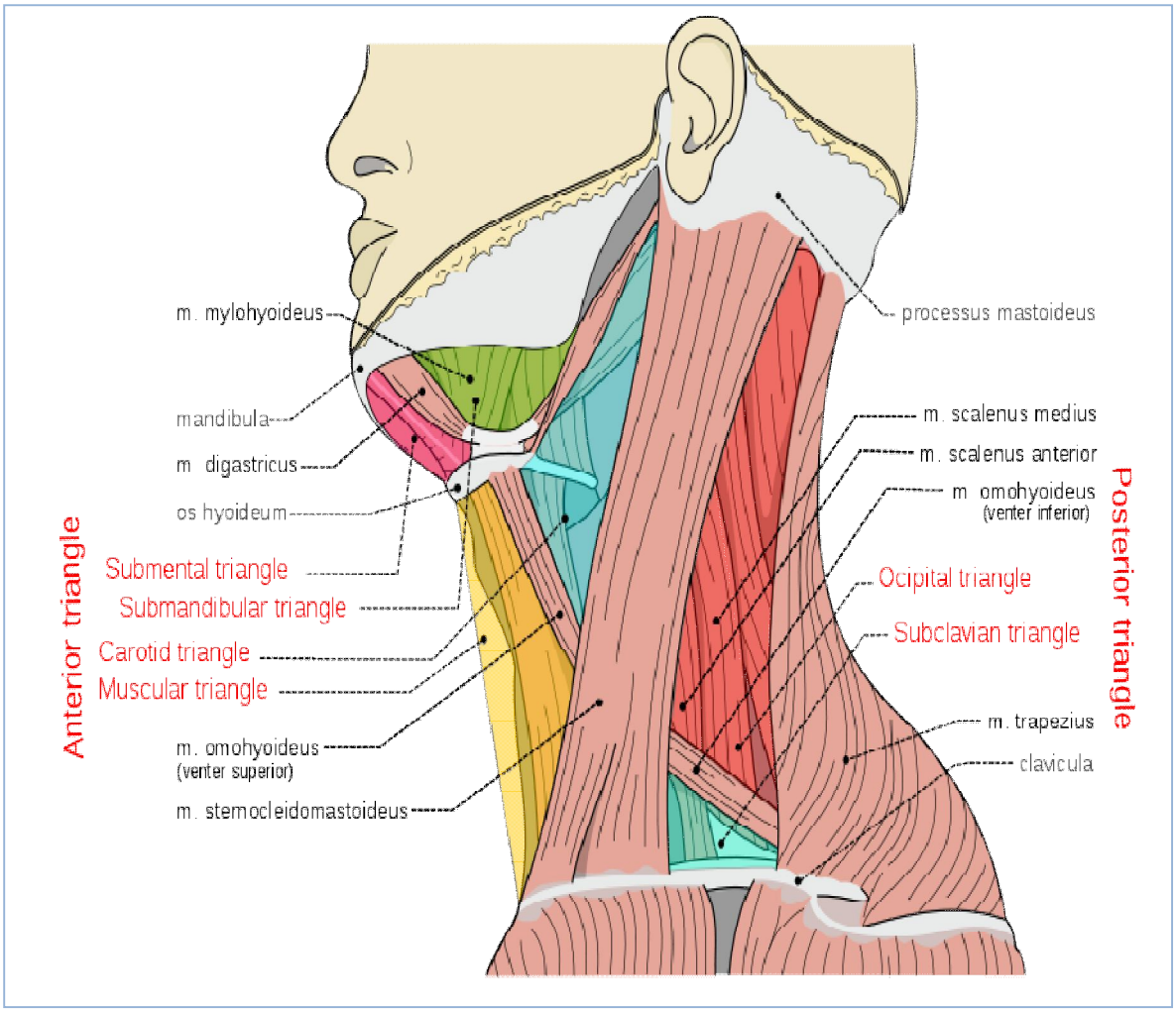


You should identify :

- Opthalmic a.

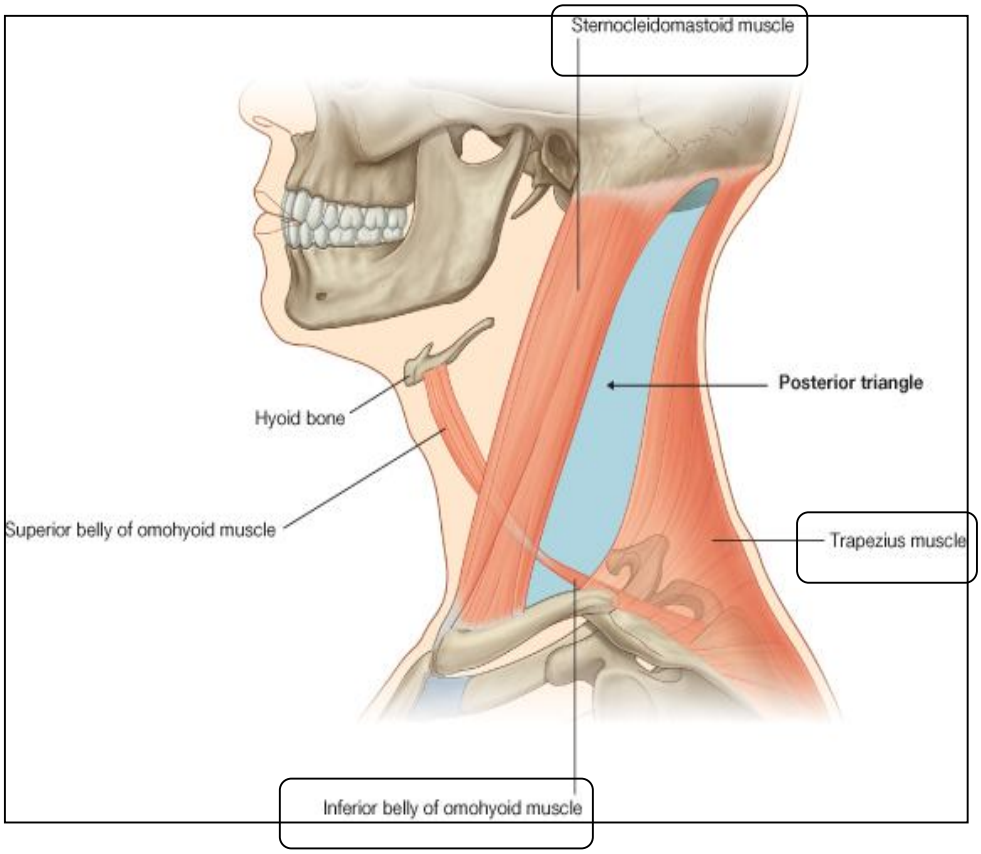
Practical ► 5 ◄

✖Posterio Triangle of Neck✖



You should identify :

Its Boundaries :



Anteriorly:

Posterior border of sternomastoid.

Posteriorly:

Anterior border of Trapezius.

Base:

Middle 1/3 of the clavicle.

Apex:

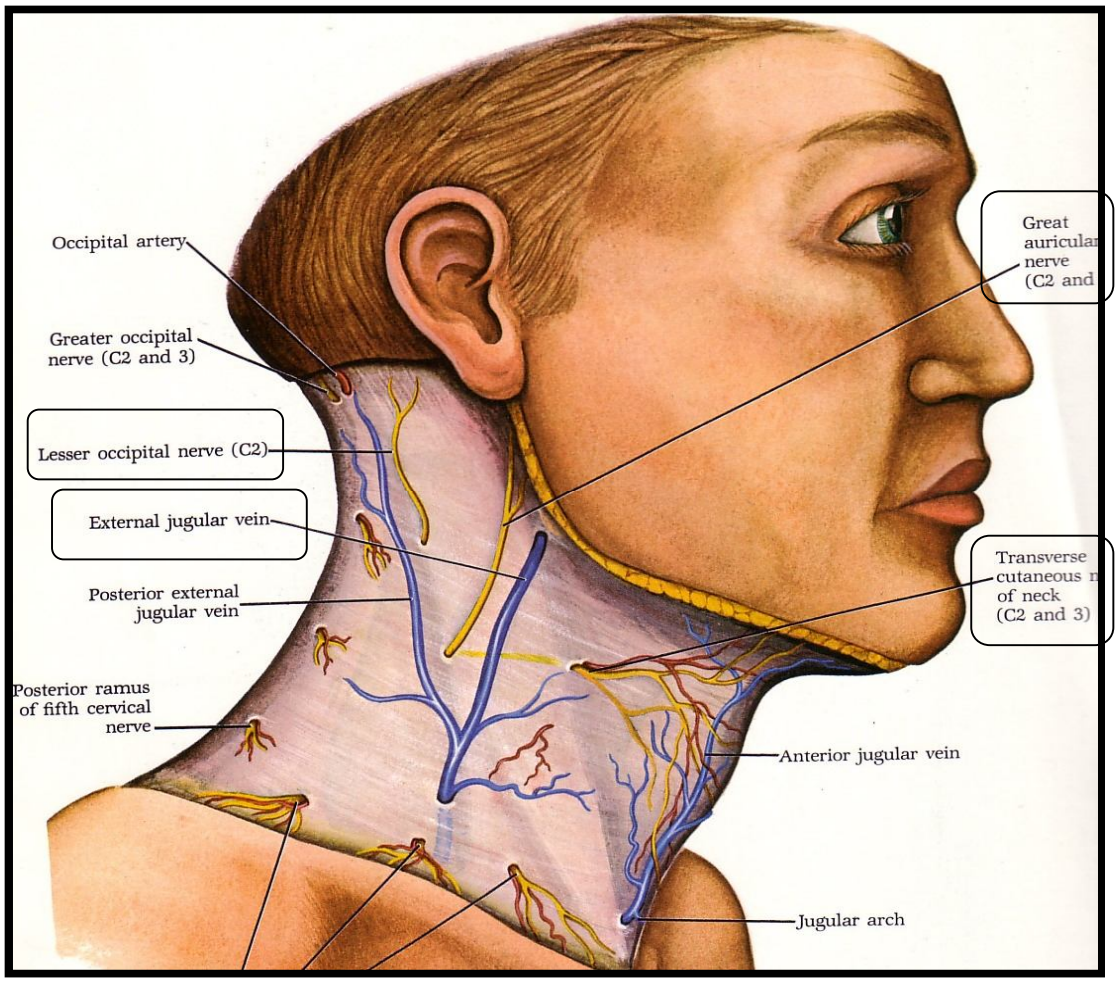
meeting of Trapezius & Sternomastoid.

Remember

The **inferior belly of omohyoid** subdivides the posterior triangle into:

a large **occipital triangle** above and a small **supraclavicular triangle** below

Its Roof :



- Skin .
- Superficial facia , **which contains :**

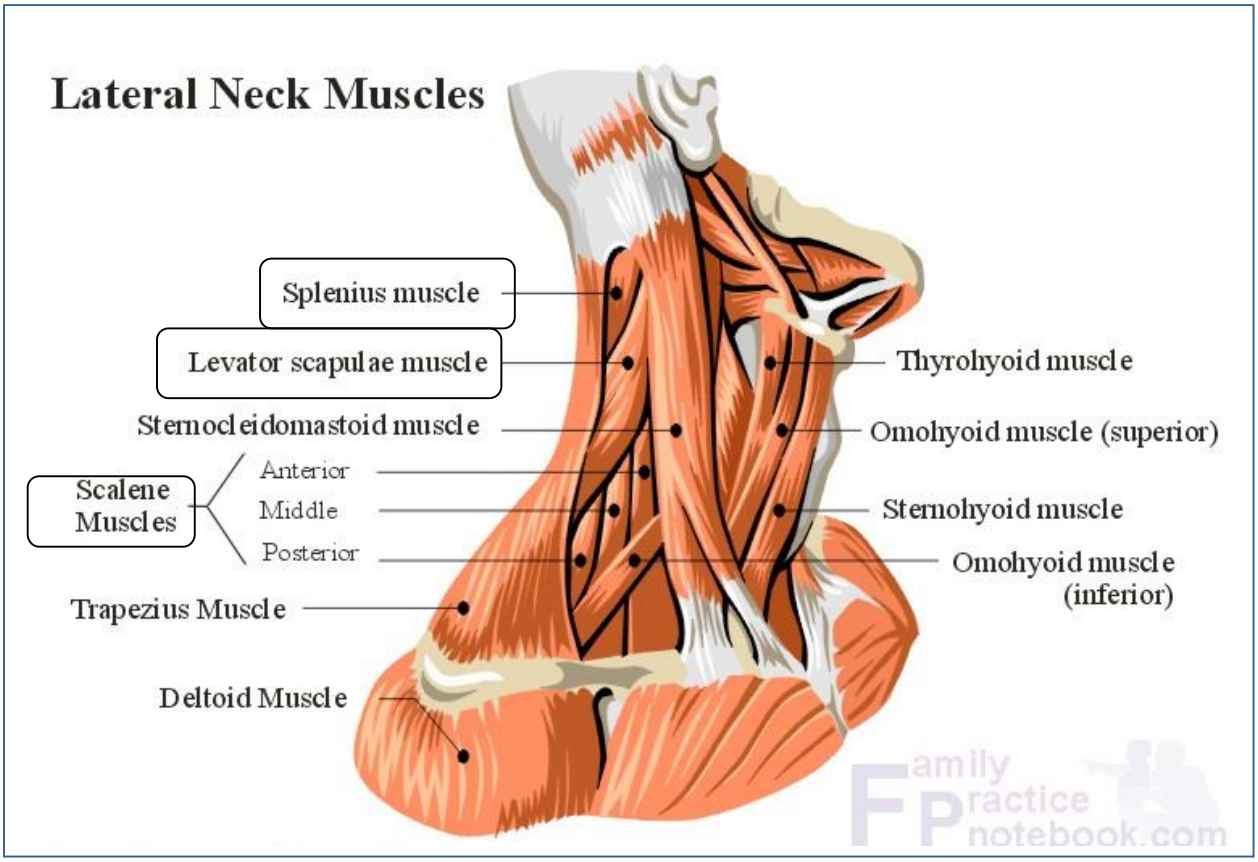
~ Platysma muscle .

~ Cutaneous branches of cervical plexus .

~ <u>External jugular vein</u> .

~Investing layer of deep cervical fascia .

Its Floor :



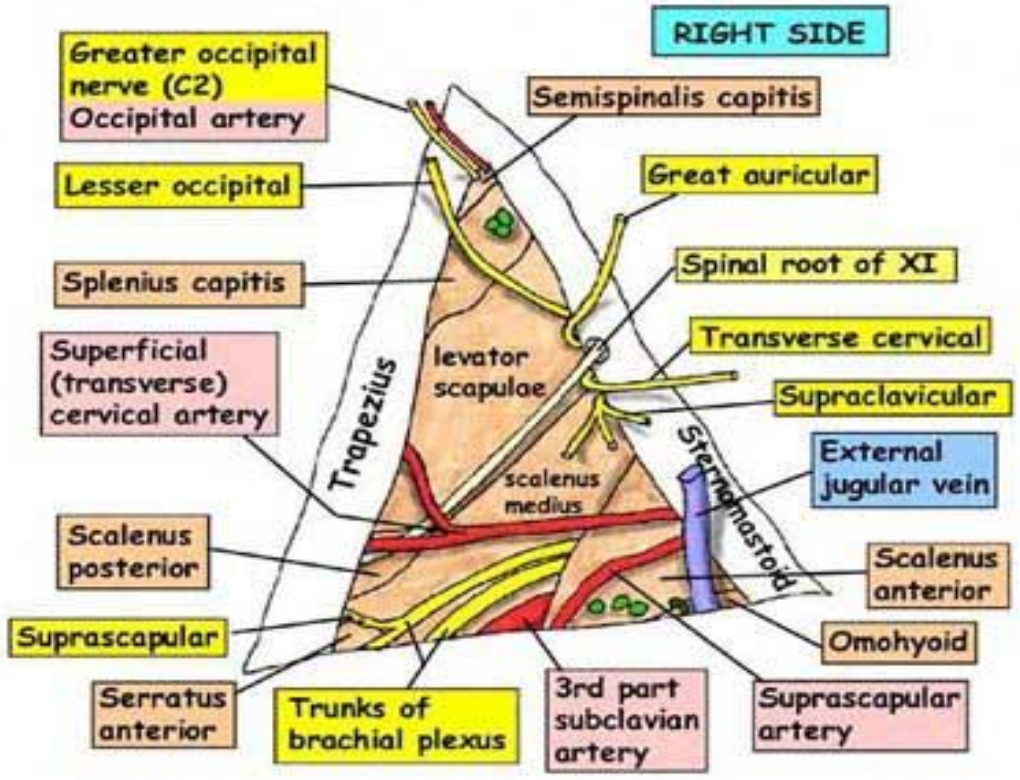
from below upward :

- Scalenus medius .
- Levator scapulae .
- Splenius capitis .
- Semispinalis capitis(not seen here).

Its Contents :

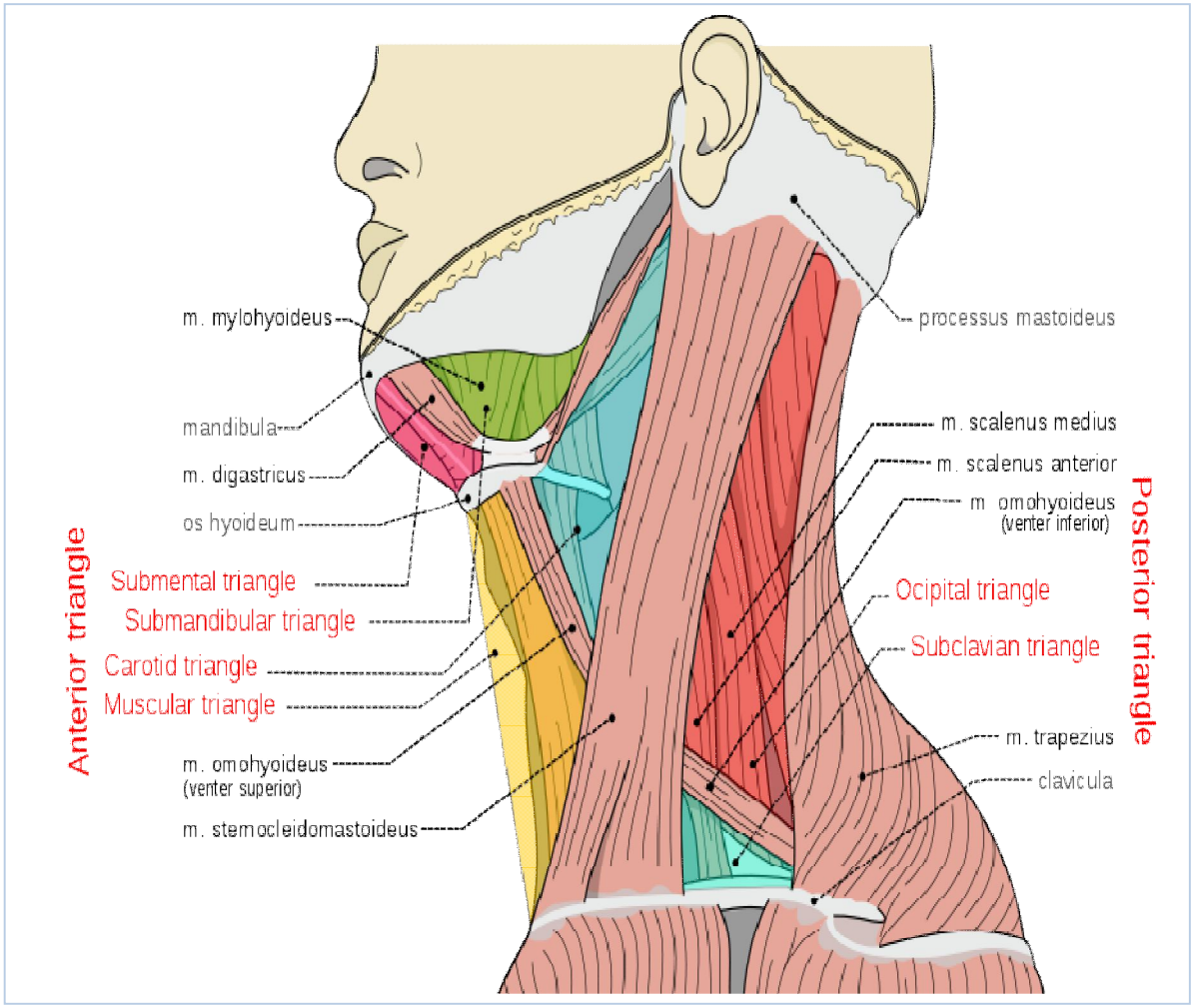
POSTERIOR TRIANGLE OF NECK

- Boundaries: Posterior border of sternocleidomastoid, anterior border of trapezius, mid 1/3 clavicle
- Shape: Spiral
- Roof: Investing fascia, platysma, external jugular vein
- Floor: Prevertebral fascia covering muscles, subclavian artery, trunks of brachial plexus & cervical plexus
- Contents:
  - Arteries: Occipital, superficial cervical, suprascpular
  - Veins: Transverse cervical, suprascapular, external jugular
  - Nerves: Branches of cervical plexus, spinal root of accessory
  - Muscle: Omohyoid with its sling
  - Lymph nodes: Occipital (rubella/scalp infections) Supraclavicular (part of the deep chain)



Practical ► 6 ◄

✖Anterior Triangle of Neck✖



You should identify :

Its Boundries :

- Anteriorly:

  Median plane.

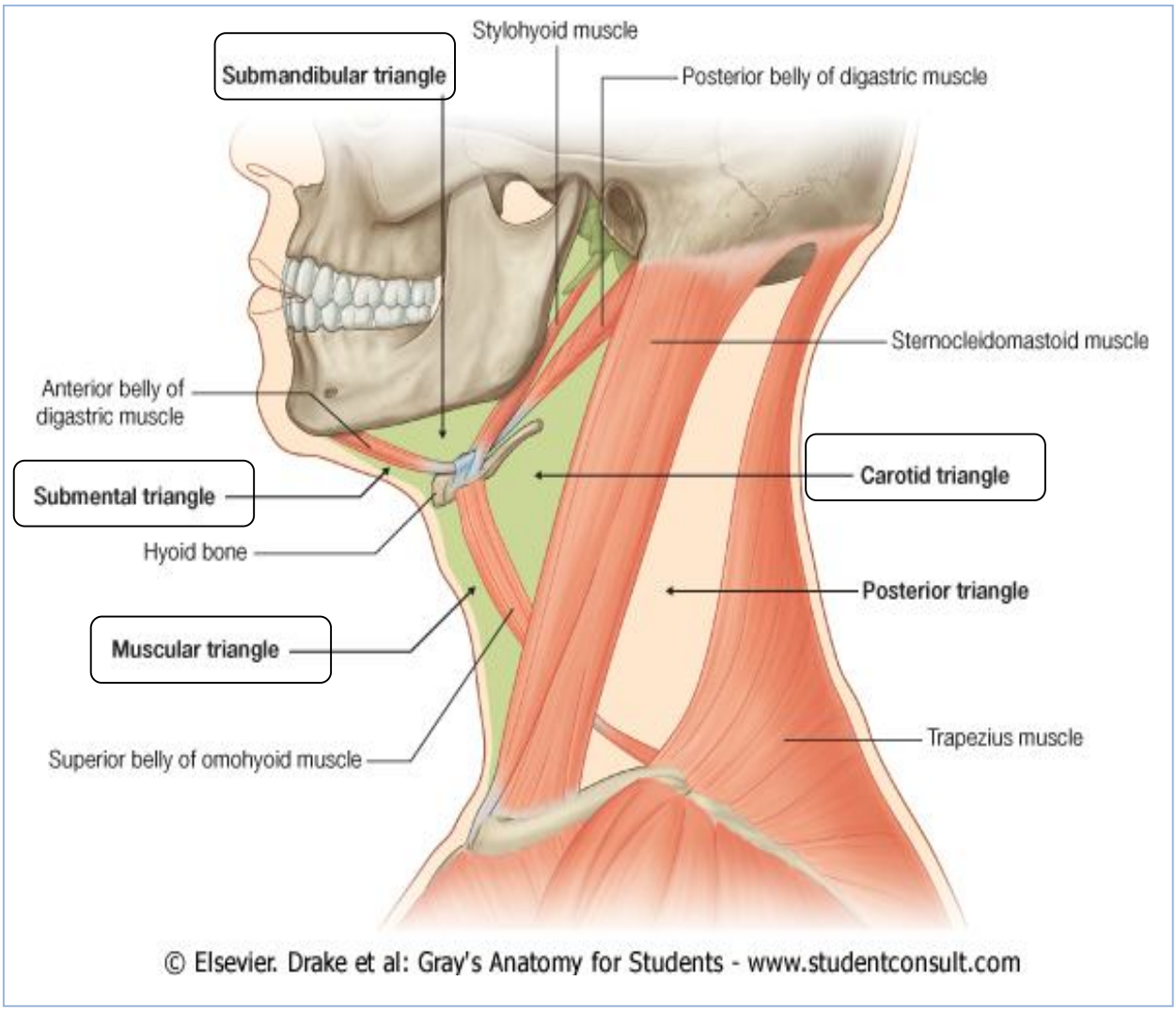
- Posteriorly:

  Anterior border of sternomastoid.

- Superiorly:

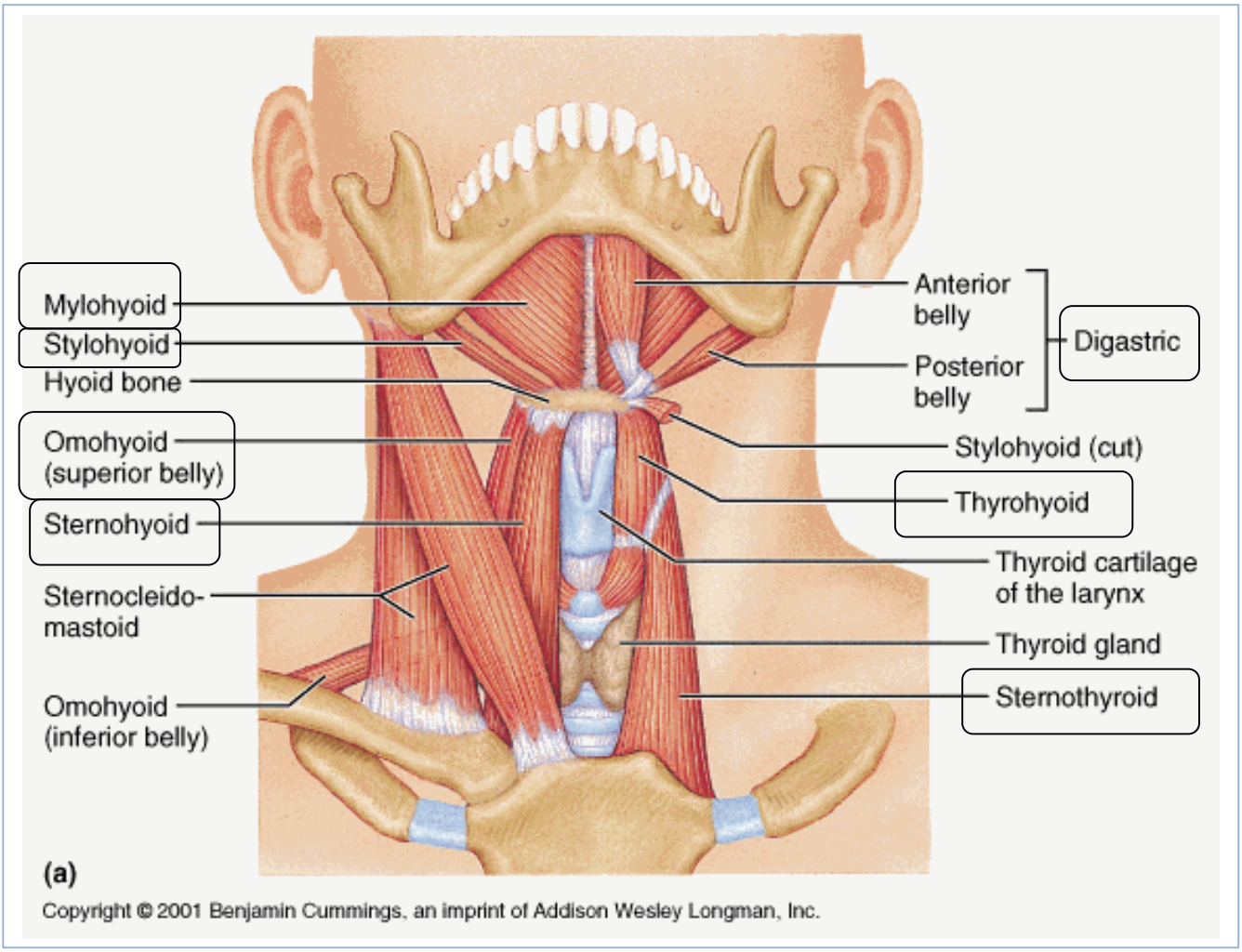
Base of the mandible.

It is divided into **4** triangles by digastric & superior belly of omohyoid :



- Submental triangle.
- Submandibular or Digastric triangle.
- Carotid triangle.
- Muscular triangle.

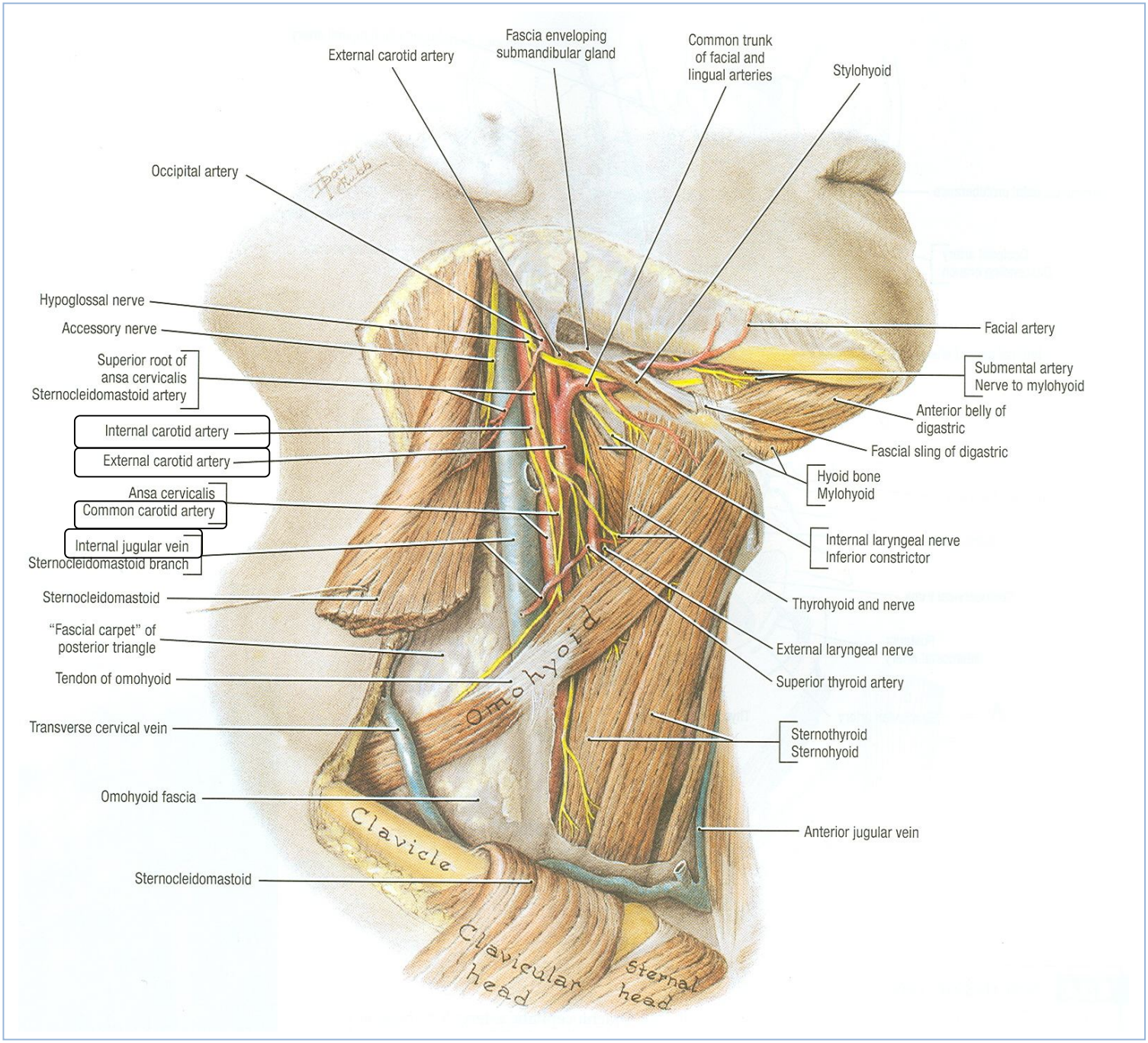
You should identify :



These muscles :

- Ant. & post. bellies of digastric m.
- Mylohyoid m.
- Stylohyoid m.
- Sup. Belly of omohyoid m.
- Sternohyoid m.
- Sternothyroid m.
- Thyrohyoid m.

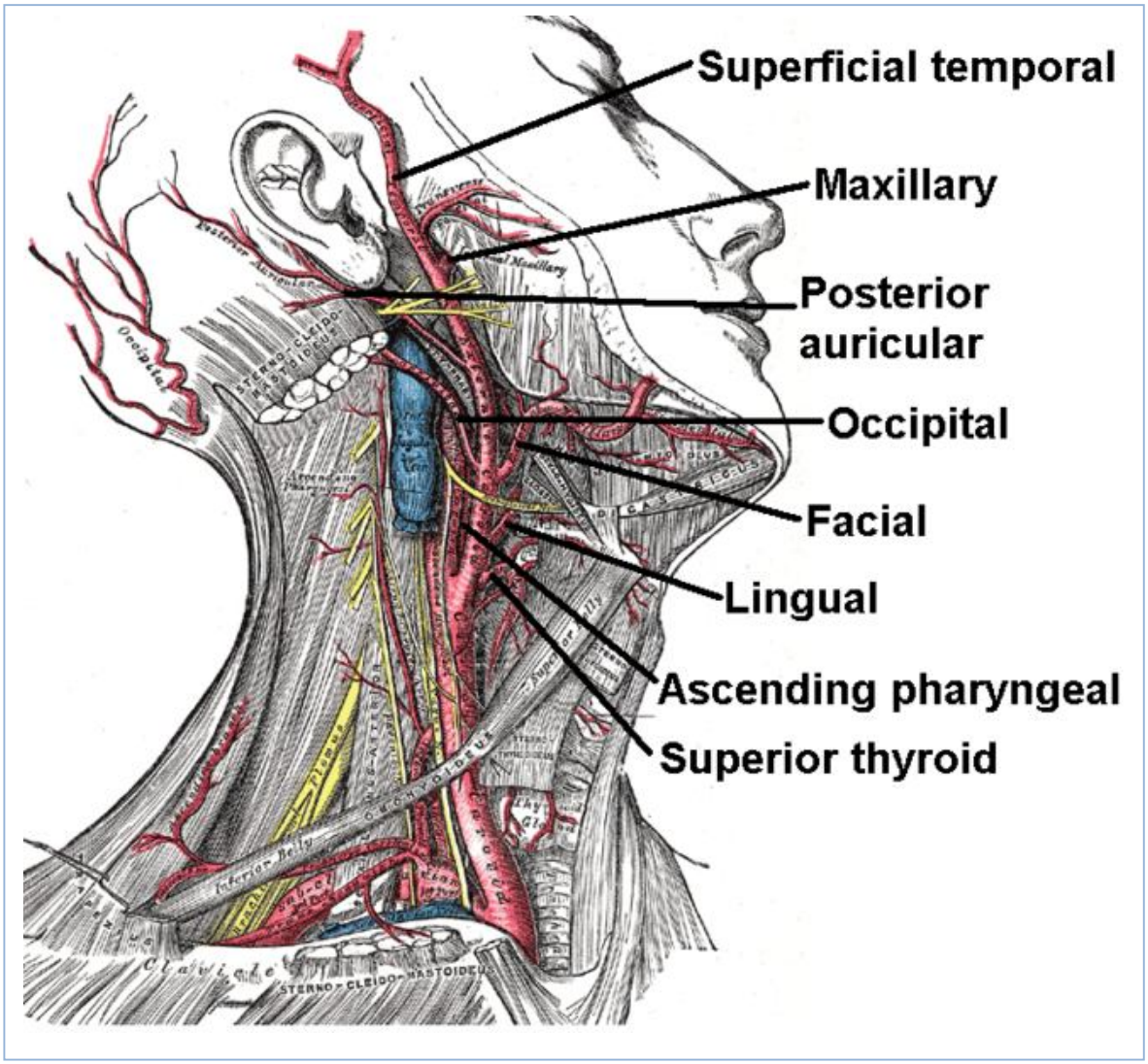
These vessels :



℘ Internal jugular v.

- Common carotid a.wich bifurcate into internal & external carotid arteries .

The external carotid a. gives :



1.Superior thyroid .

2.Ascending pharyngeal .

3.Lingual .

4.Facial .

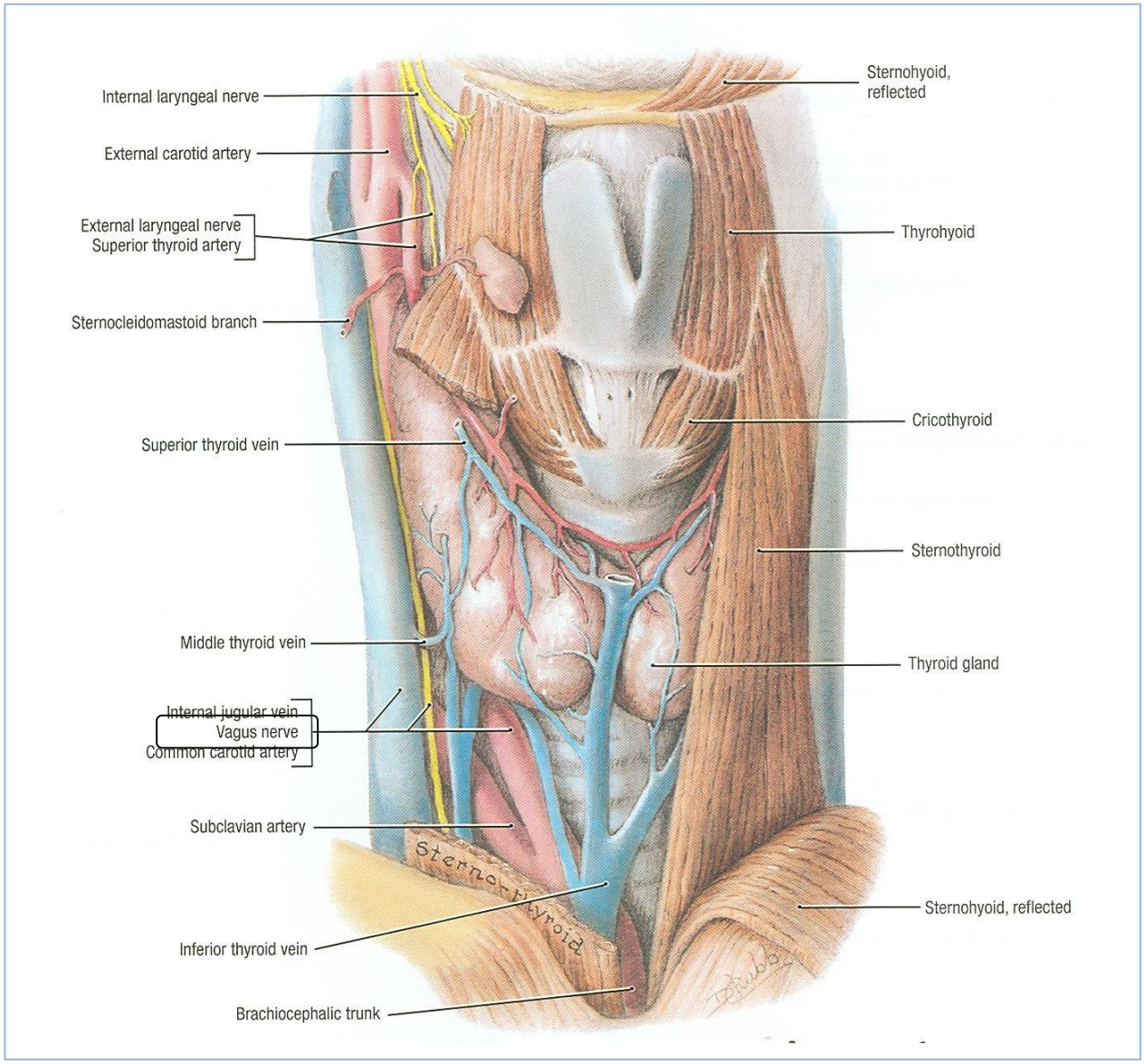
5.Occipital .

6.Posterior auricular .

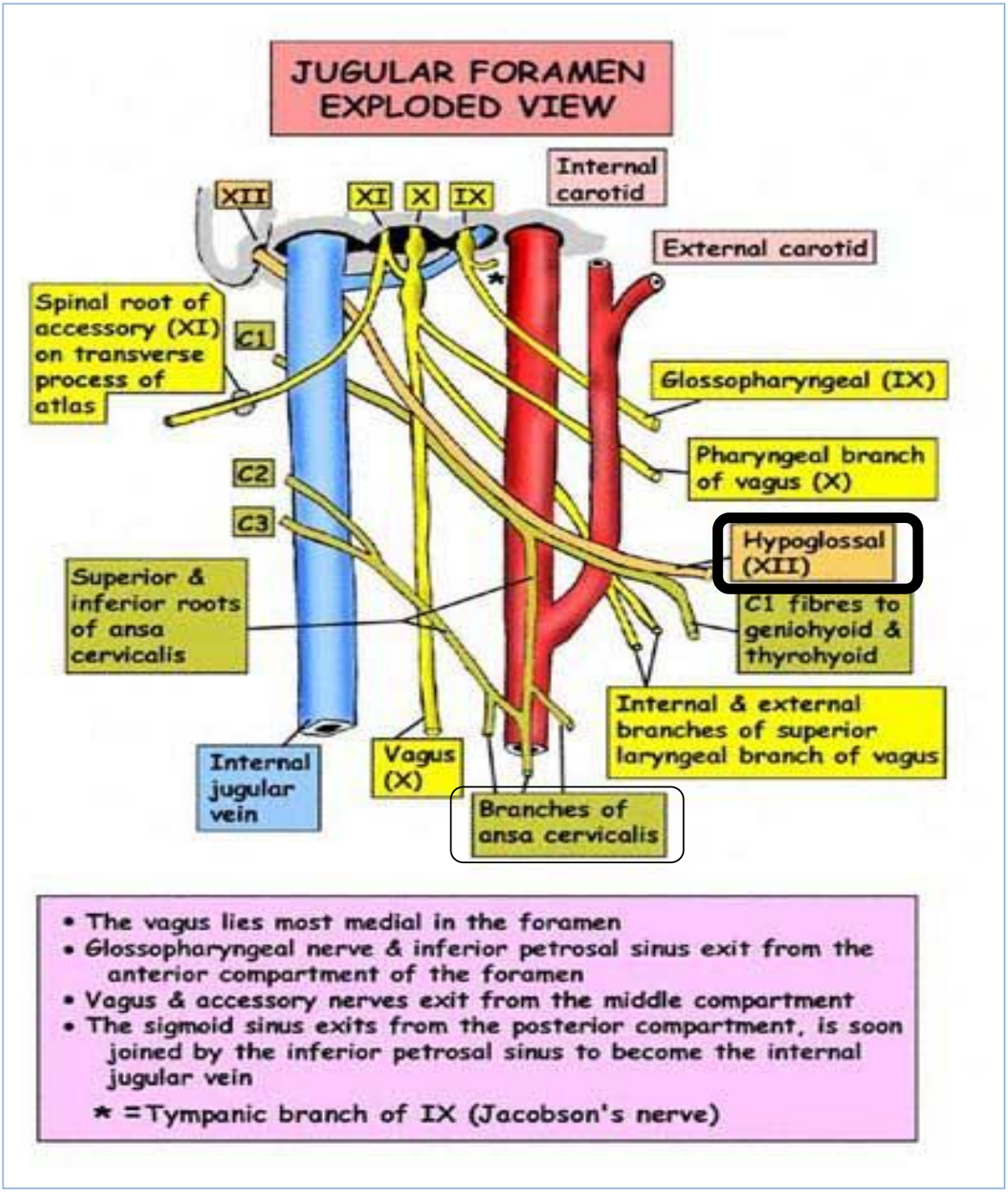
7.Superficial temporal .

8.Maxillary .

You should identify these nerves :

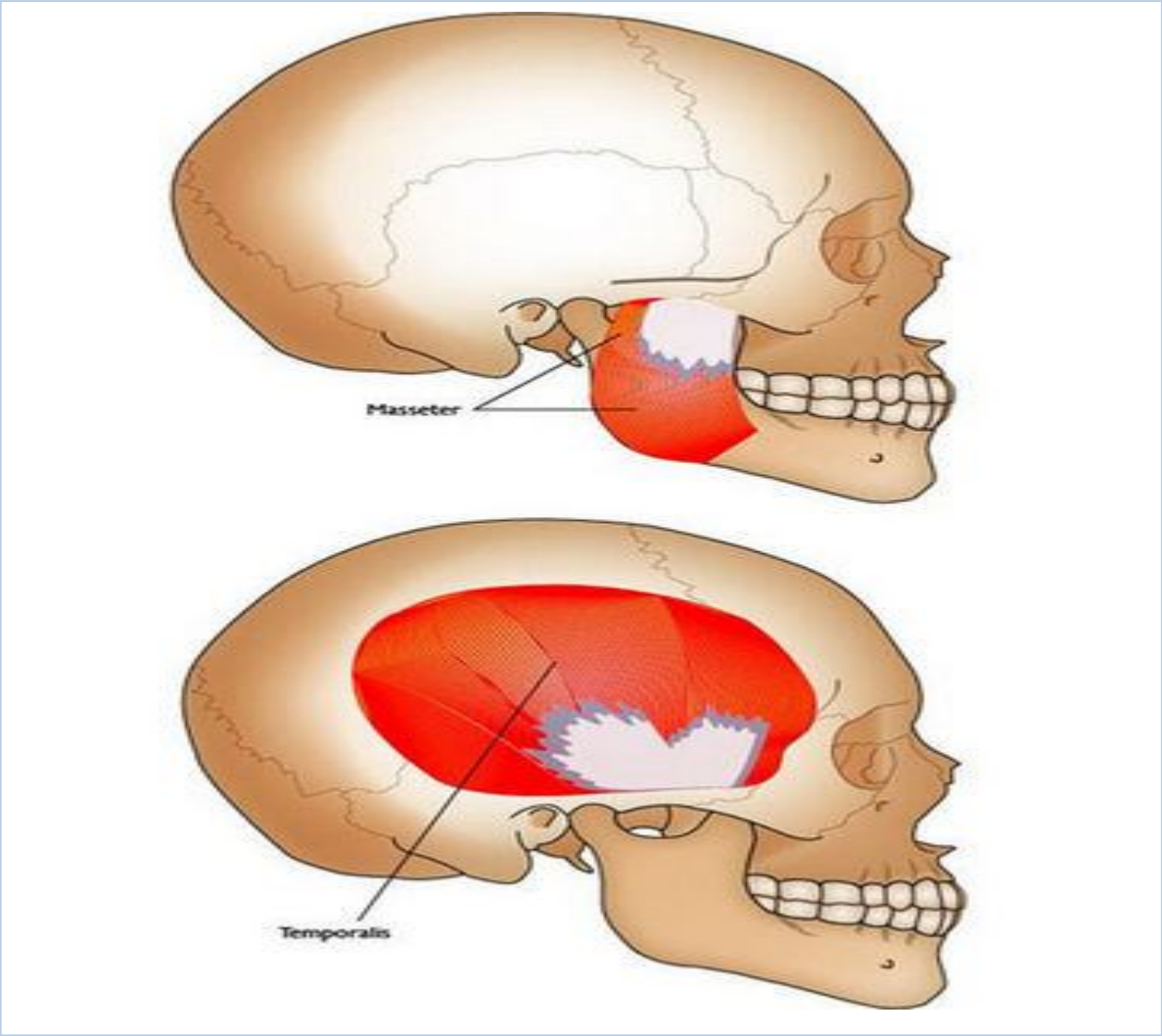


- Vagus n.
- Ansa cervicalis .
- Hypoglossal n. (very important)


JUGULAR FORAMEN
EXPLODED VIEW
XII
XI
X
IX
Internal carotid
External carotid
Spinal root of accessory (XI) on transverse process of atlas
C1
Glossopharyngeal (IX)
Pharyngeal branch of vagus (X)
C2
C3
Hypoglossal (XII)
Superior & inferior roots of ansa cervicalis
C1 fibres to geniohyoid & thyrohyoid
Internal & external branches of superior laryngeal branch of vagus
Internal jugular vein
Vagus (X)
Branches of ansa cervicalis
• The vagus lies most medial in the foramen
• Glossopharyngeal nerve & inferior petrosal sinus exit from the anterior compartment of the foramen
• Vagus & accessory nerves exit from the middle compartment
• The sigmoid sinus exits from the posterior compartment, is soon joined by the inferior petrosal sinus to become the internal jugular vein
* = Tympanic branch of IX (Jacobson's nerve)

Practical ► 7 ◄

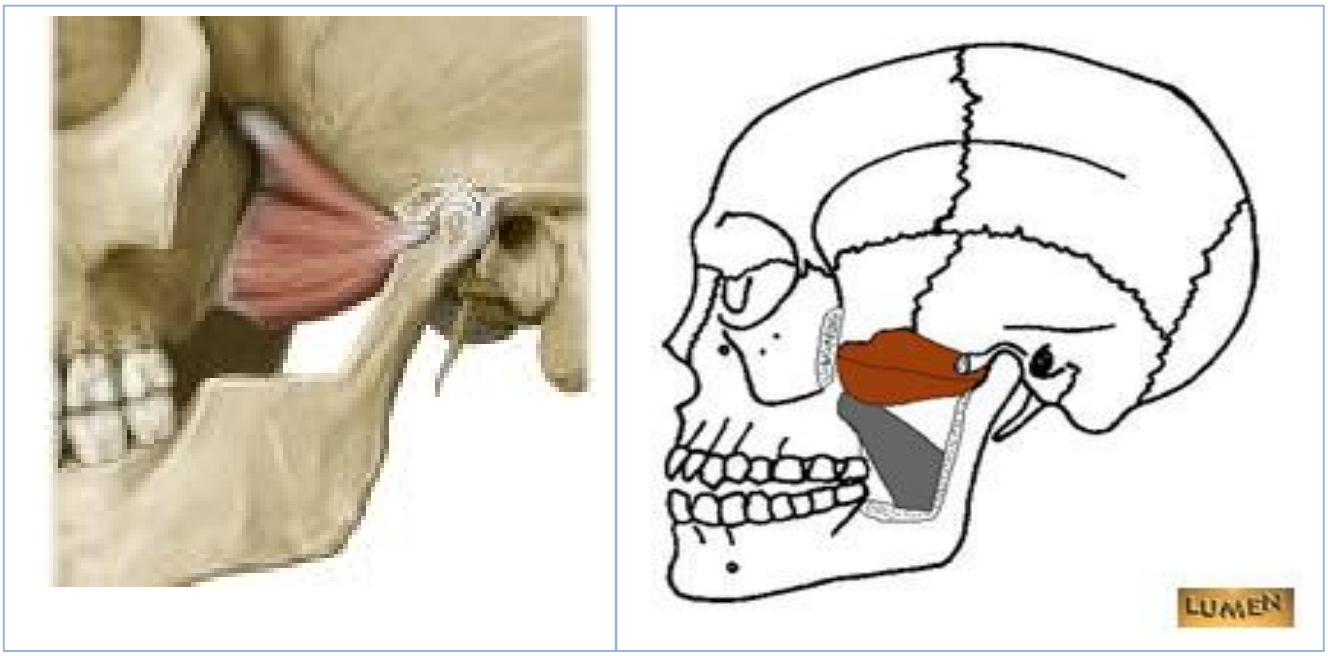
✖Infratemporal Fossa ✖



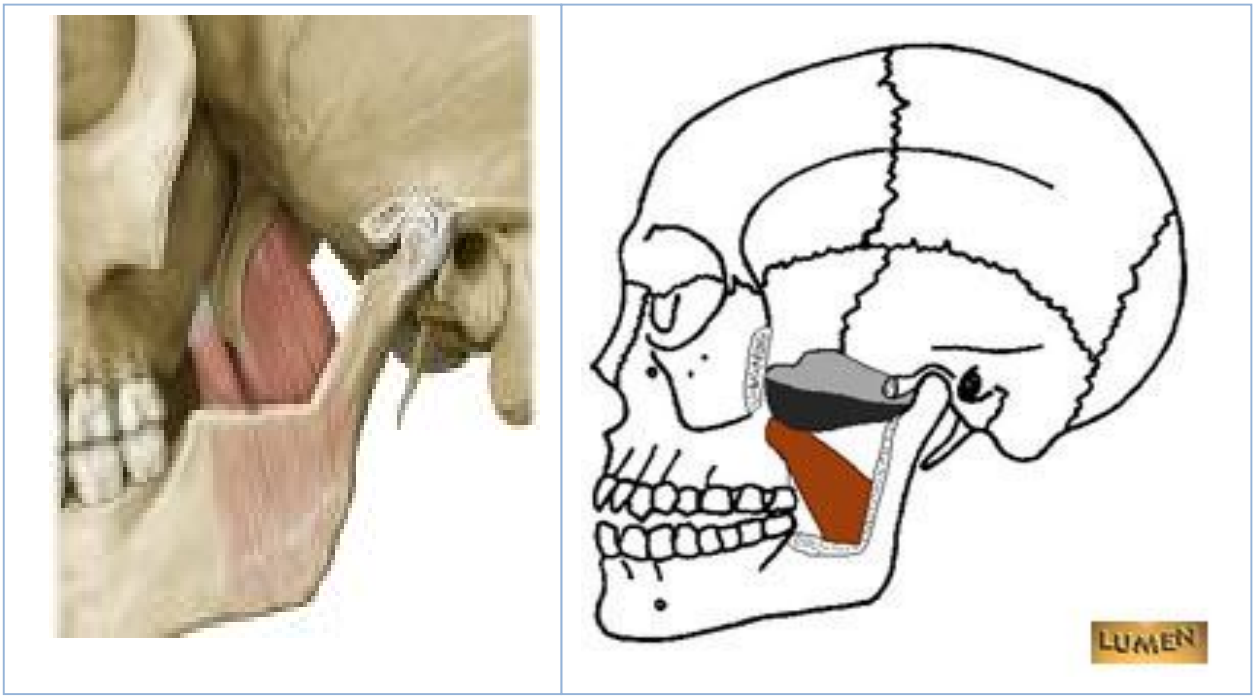
You should identify muscles of mastication wich are :

- Temporalis m.

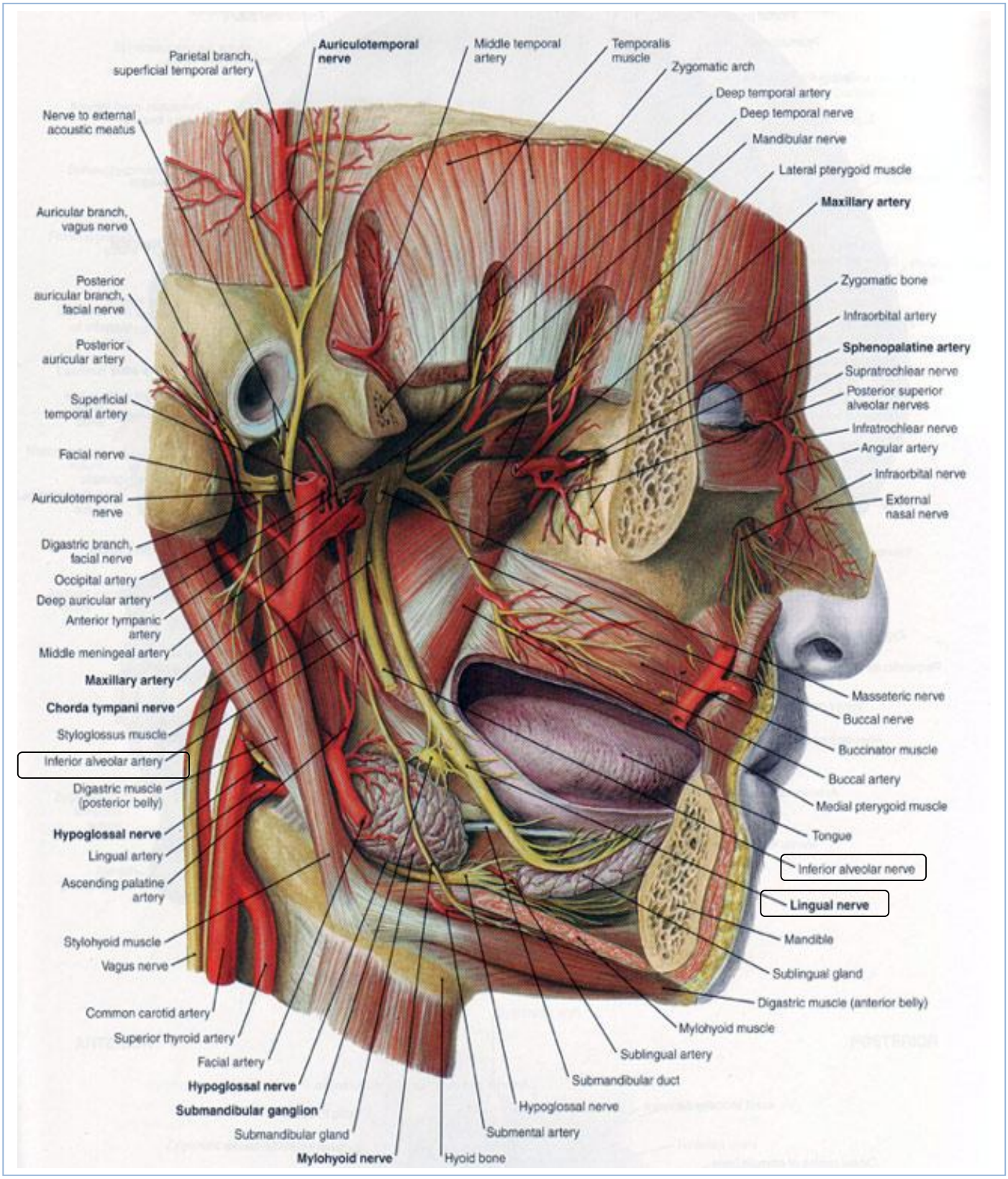
℘ Masseter m.



℘ Lateral Pterygoid m.



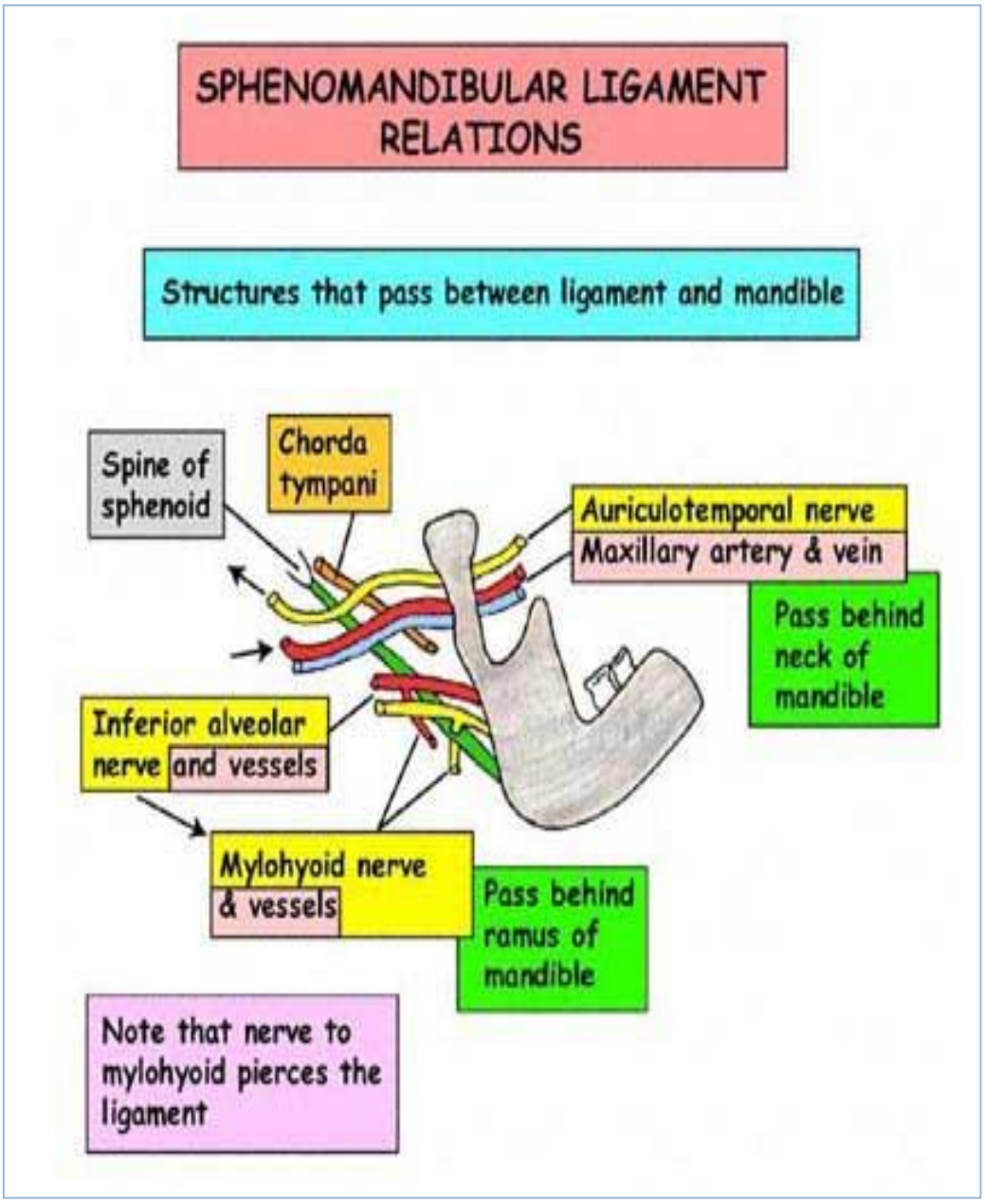
℘ Medial Pterygoid m.



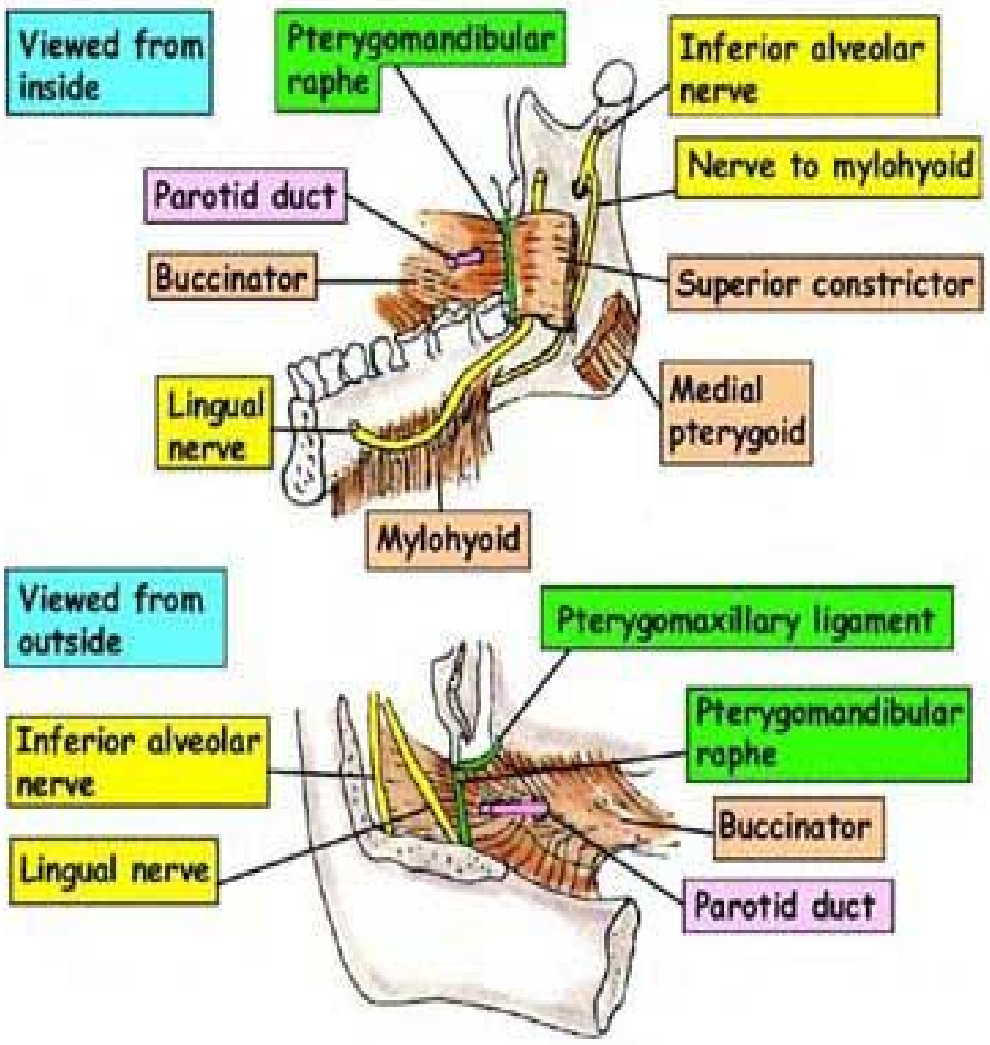
You should identify :

- Lingual nerve.
- Inferior alveolar nerve.
- Inferior alveolar artery .

You should know muscles attachments & structures related to the mandible (very important) :



BUCCINATOR



Origin: Both jaws opposite 1st molar teeth & pterygomandibular raphe & pterygomaxillary ligament
Insertion: Modiolus
Action: Helps chewing, returns food to mouth from cheek pouches
Nerve supply: Facial (VII - buccal branches). Proprioceptive afferent fibres via buccal branch of Vc