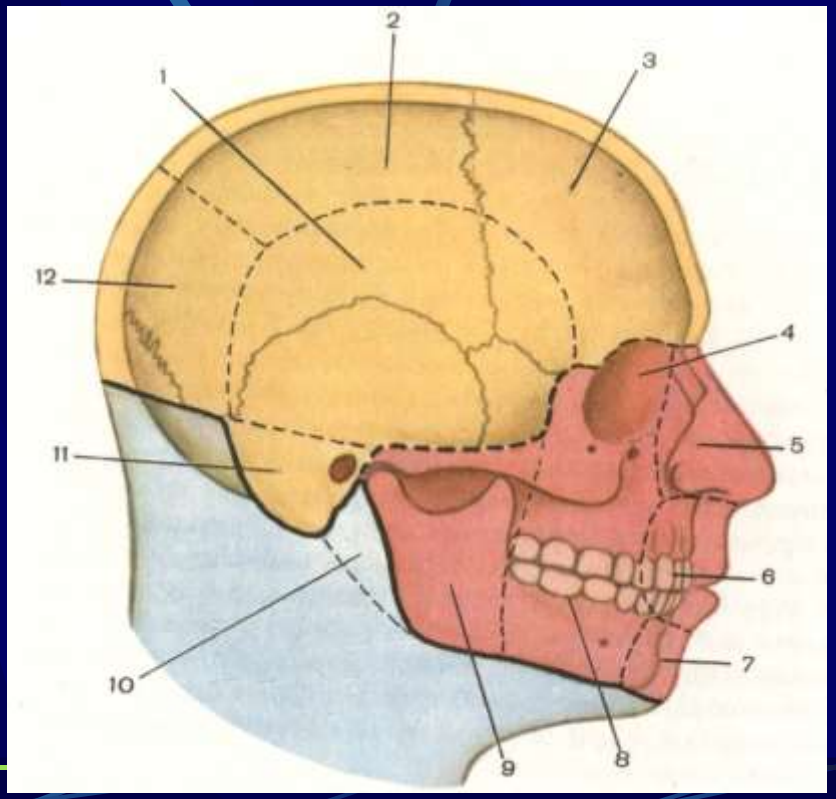
Clinical anatomy and operative surgery of the cerebral and facial regions of the head

CLINICAL ANATOMY OF HEAD

The border of the head, dissociating it from the neck, begins on a mental protuberance (protuberantia mentalis), proceeds on the base of the mandible (basis mandibulae), and ramus of the mandible (ramus mandibulae) to the external acoustic meatus. Further, it outlines a mastoid process and, along the superior nuchal line, achieves an external occipital protuberance (protuberantia occipilalis externa) or the high point of this protuberance - Inion, where connects with the same line of the opposite side.

The sizes of the head are the follows: length is an anterior-posterior size is the distance from the glabella to the highest point of an external occipital protuberance (Inion), hesitates from 17 to 22 sm., and the width of the head is the distance between parietal tubers. This size is equal to 14-16 sm. The height of the head is the distance from the basion to the highest point of the sagittal suture. This size equals 12-16 sm.

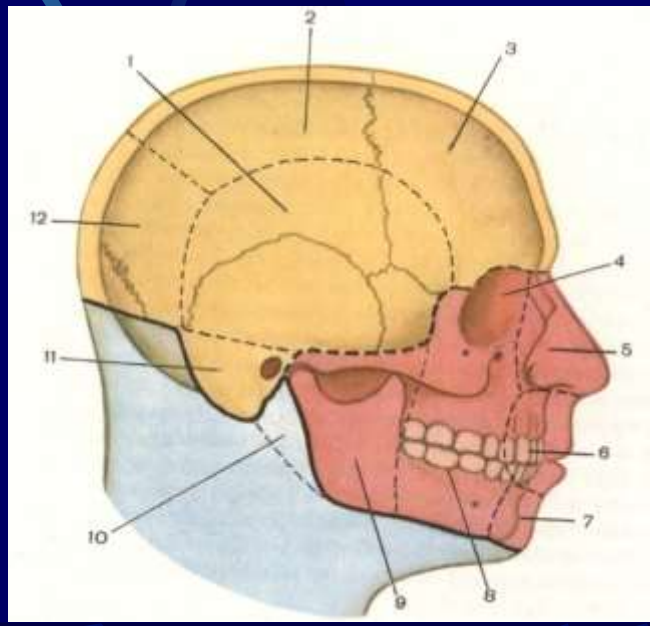


NEUROCRANIUM

The neurocranium is delimited from a viscerocranium by a line which passes along the supra-orbital margin of the frontal bone, on the upper edge of the zygomatic bone and zygomatic arch and further to the external acoustic meatus. The neurocranium is subdivided into the cranial base and calvaria. There are the following regions on the external surface of the neurocranium :odd - frontal-parietal-occipital (regio frontoparietooccipitalis); 2) pair - temporal region (regio temporalis) and 3) pair mastoid region (regio mastoidea).

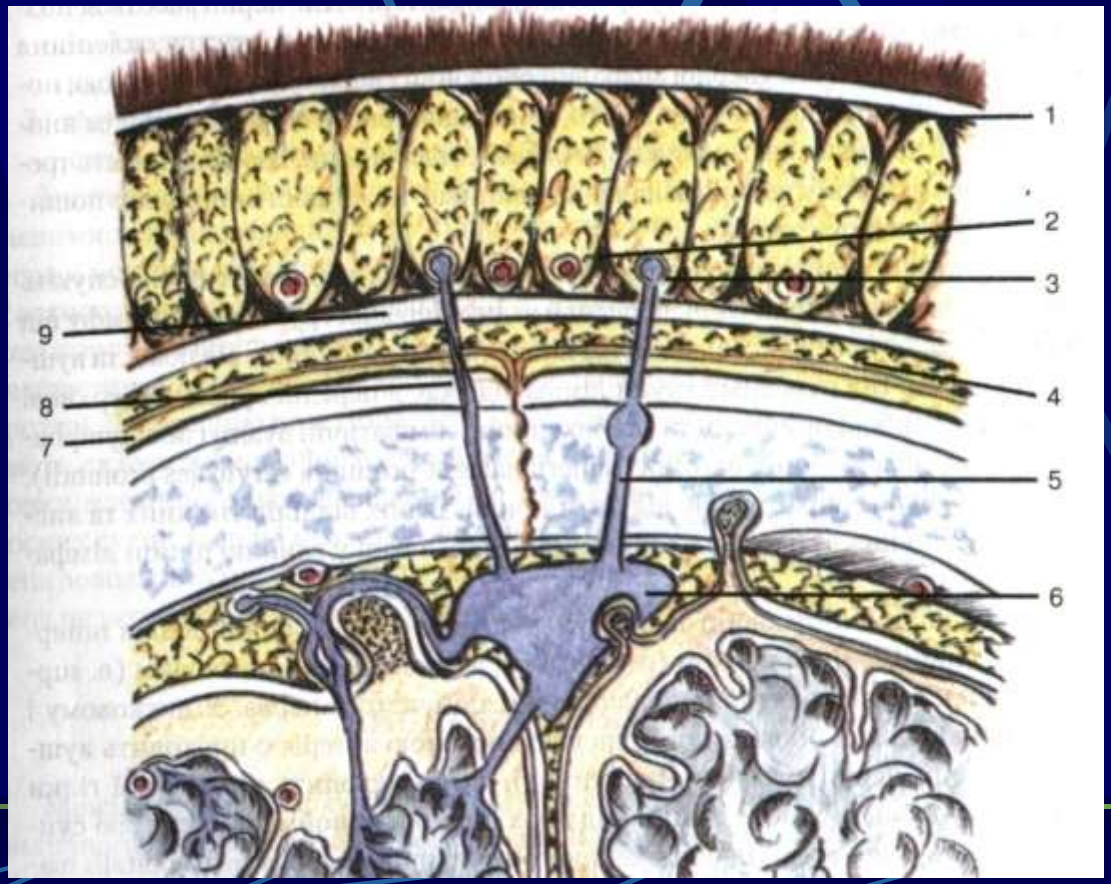
FRONTAL-PARIETAL-OCCIPITAL REGION (REGIO FRONTOPARIETOOCCIPITALIS)

This region includes frontal, parietal and occipital regions of calvaria. A region is limited at the front by the supra-orbital margin of the frontal bone and glabella, behind by a superior nuchal line, and from sides by a superior temporal line (linea temporalis superior).



Layers of Frontal-Parietal-Occipital Region:

1. Skin is dense, covered with hair and a large number of sweat and sebaceous glands.
2. Hypodermic cellulose is expressed well and parted on separate cells by the vertical septae, which have connective tissue fibres from the skin to a low layer – epicranial aponeurosis. Adventicia of vessels passing in hypodermic cellulose, usually related to these septae.

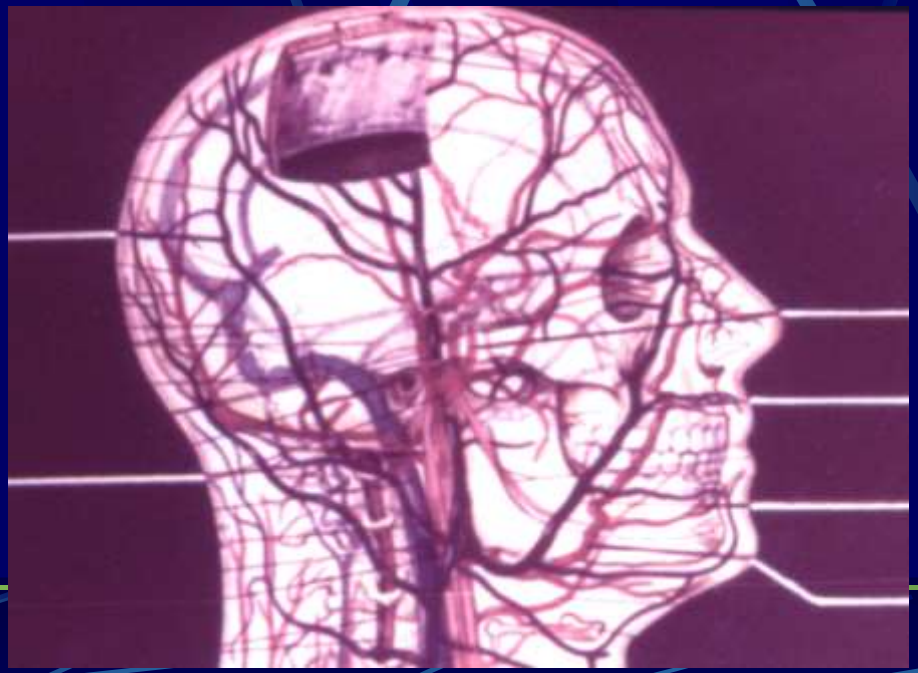


3. Epicranial aponeurosis is between the frontal and occipital belly of occipitofrontal muscle (m. occipitofrontalis). A skin densely accretes with lower layers and can not be taken in a fold. At the skin damage in the area of the forehead and occipitofrontal muscle, all three layers - skin, hypodermic cellulose, and epicranial aponeurosis move outside. At the damage of skin and occipital belly of muscle - tissues are moved in front of. The name of these wounds is scalped.
4. Subaponeurotic cellulose is loose. It does not have septae. Purulent processes or hematomas that occur there have poured character.
5. Pericranium is loosely connected to the bone, except for the suture area, where it fuses with it.
6. Subpericranial cellulose is well expressed. As a result, the periosteum is easily detached.

7. Bones of cranium are flat and consist of two tables - external (lamina externa) and internal (lamina interna). There is diploe between them. The internal one is thinner and more fragile. It is also called a lamina vitrea and can be damaged earlier than the external table. Diploe is well expressed and has diploic veins.

ARTERIAL BLOOD SUPPLY

Blood vessels are disposed of in a hypodermic cellulose. The common direction of vessels is radial. The supra-orbital artery and supratrochlear artery are located in the frontal region. They are branches of an ophthalmic artery from the internal carotid artery system. They anastomose wide with each other, and also with an angular artery from a facial artery and with the frontal branches of the superficial temporal artery. A superficial temporal artery passes in lateral regions. These branches anastomose wide between themselves, and blood supply proper regions. The temporal region also supplies blood by deep temporal arteries. In the occipital region of the head, blood is supplied by two large arteries: occipital and posterior auricular.

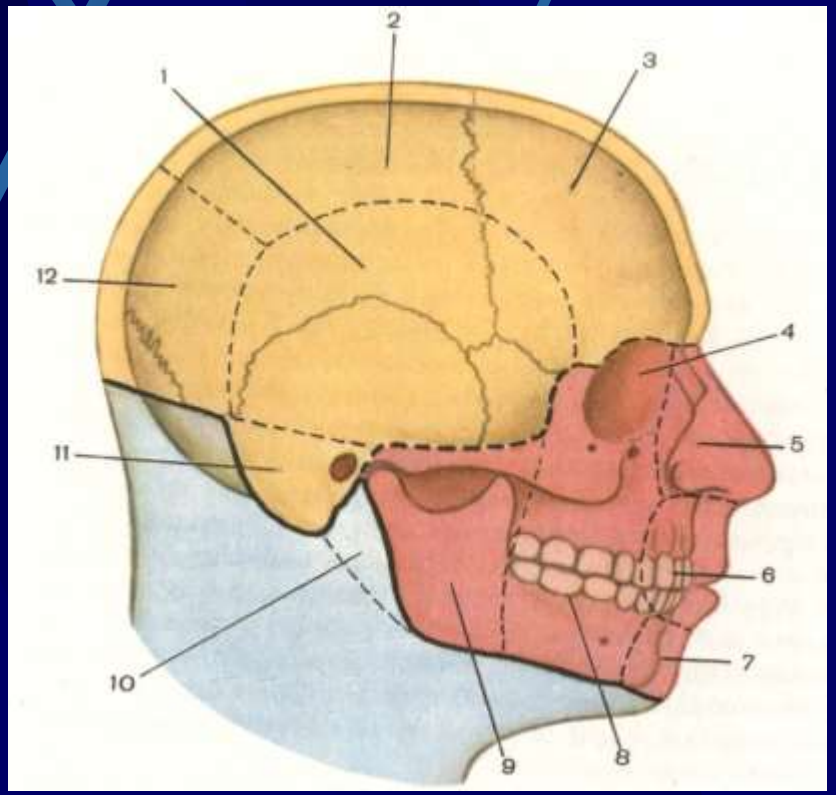


Viscerocranium

The upper border goes along the supra-orbital margin of the frontal bone, the zygomatic bone and the zygomatic arch and further to the external acoustic meatus; the lower one - proceeds on the base of the mandible and the ramus of the mandible.

Bone skeleton of viscerocranium consists of 14 bones:

- pair bones of 6: nasal, lacrimal, zygomatic, maxilla, inferior nasal concha, palatine;
- odd bones: mandible and vomer.



FASCIAL MUSCLES

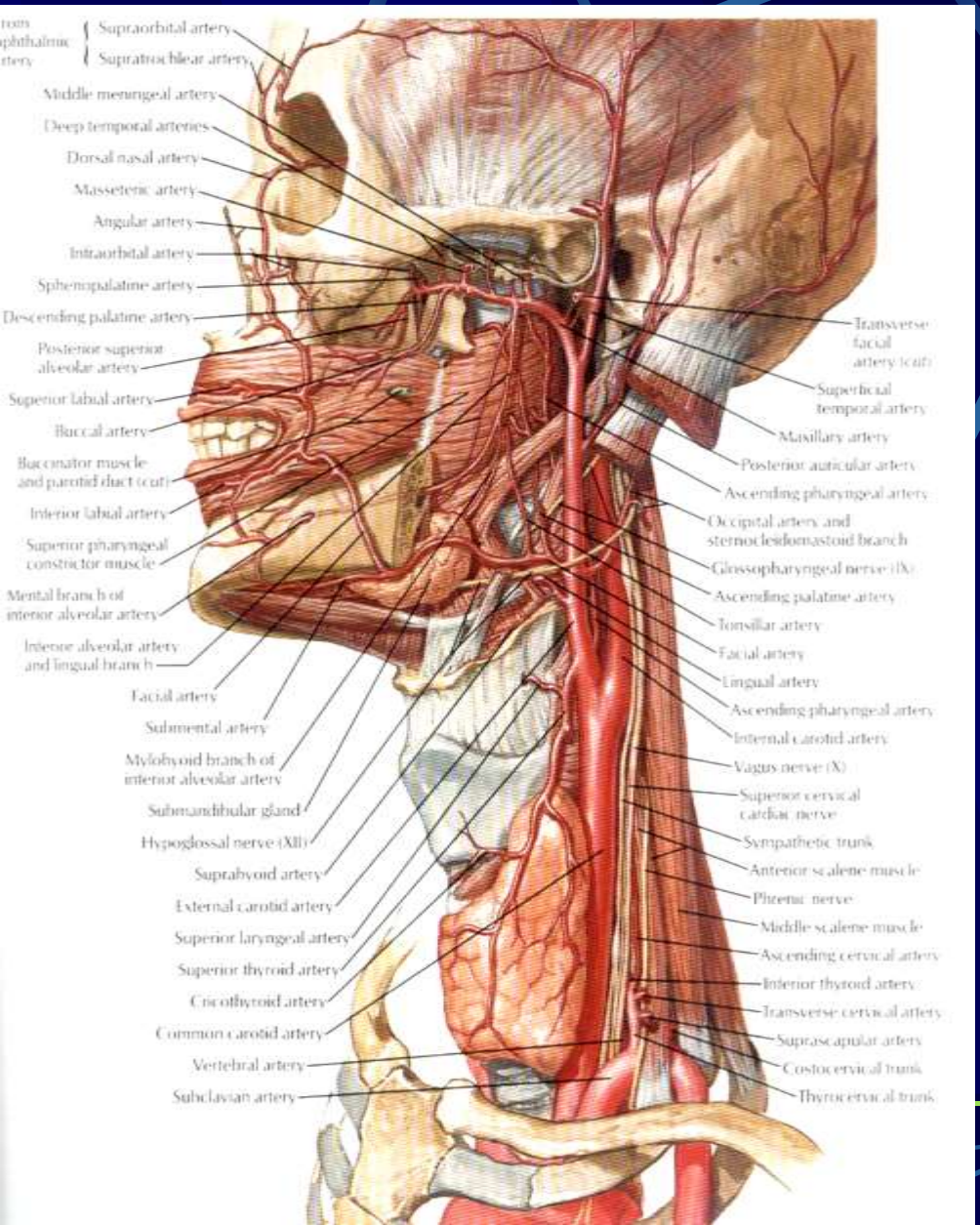
Orbicularis oculi (m. orbicularis oculi),
Corrugator supercilii (m. corrugator supercilii),
Orbicularis oris (m. orbicularis oris),
Levator anguli oris and Levator labii superioris (m. levator anguli oris, m. levator labii superioris), Depressor anguli oris and Depressor labii inferioris (m.depressor anguli oris, m.depressor labii inferioris),
Zygomatic minor and Zygomatic major (m.zygomaticus minor et major).

All of them innervate by a facial nerve

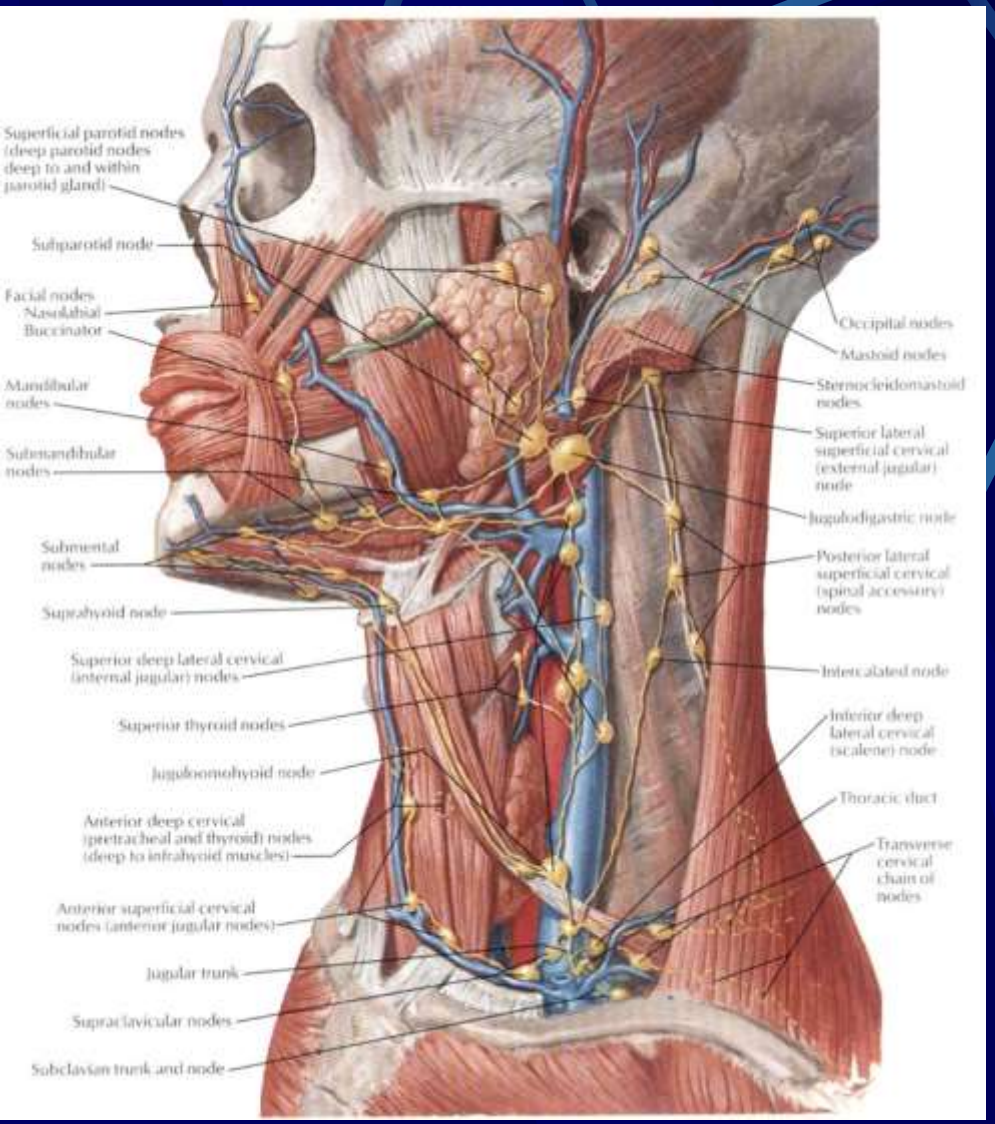
MASTICATORY MUSCLES

Temporalis (m. temporalis),
Masseter (m. masseter)
Medial pterygoid and lateral pterygoid (m.pterigoideus medialis et lateralis)
All of them innervate by a mandible nerve

Arteries of face

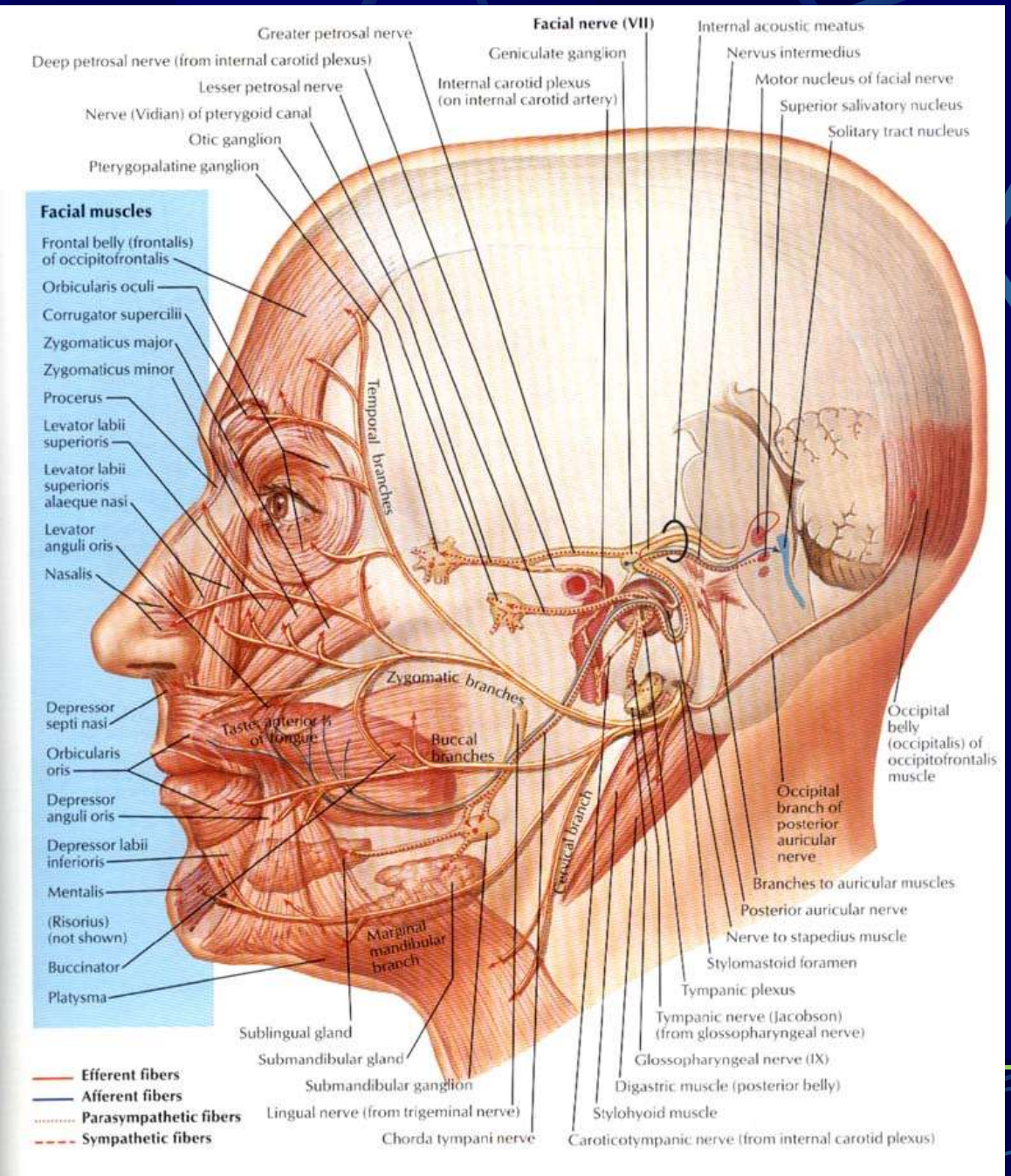


I. Facial artery (a. facialis)
II. Superficial temporal artery (a. temporalis superiicialis)
III. Maxillary artery (a. maxillaris)



Veins of face

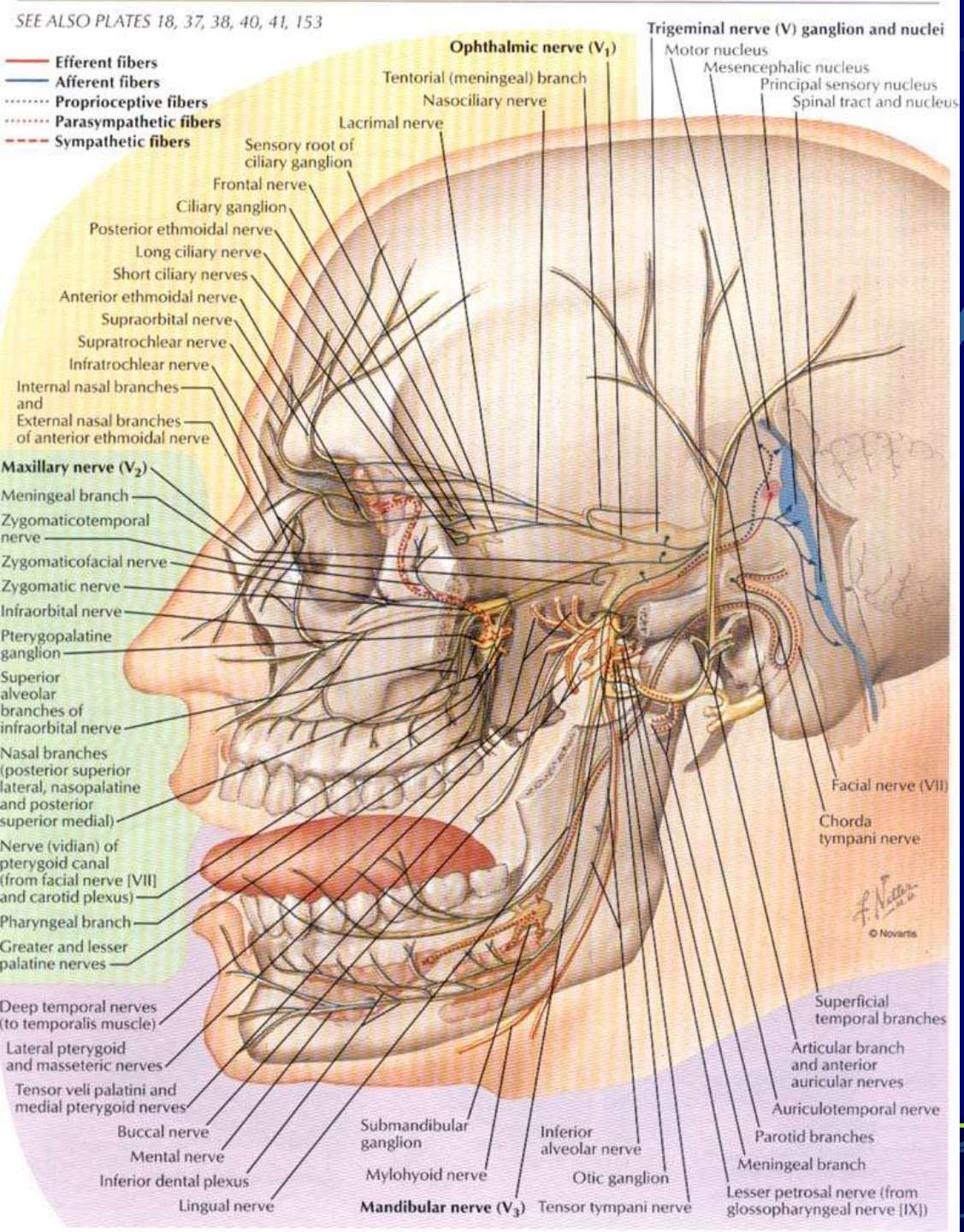
form two networks: superficial and deep. First - is by two veins: facial (v.facialis) and retromandibular (v.retromandibularis) A deep vein network is presented by pterygoid plexus



Facial nerve (n.facialis):

Braches on face:

1. temporal (n.temporales),
2. zygomatic (r. zygomatici),
3. buccal (r. buccales),
4. marginal mandibular branch (ramus marginalis mandibularis)
5. cervical (r. colli)



Trigeminal nerve:

- the first branch is ophthalmic nerve;
- the second branch is maxillary nerve
- the third branch is mandibular nerve

DEEP AREA OF FACE

Space, limited outside by the ramus of the mandible, from the front side - by the maxillary tuberosity, from the medial side by the - pterygoid process of sphenoidal bone, from above - the cranial base. It is filled by muscles, cellulose, vessels and nerves.

LITERATURE

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