

Scalp

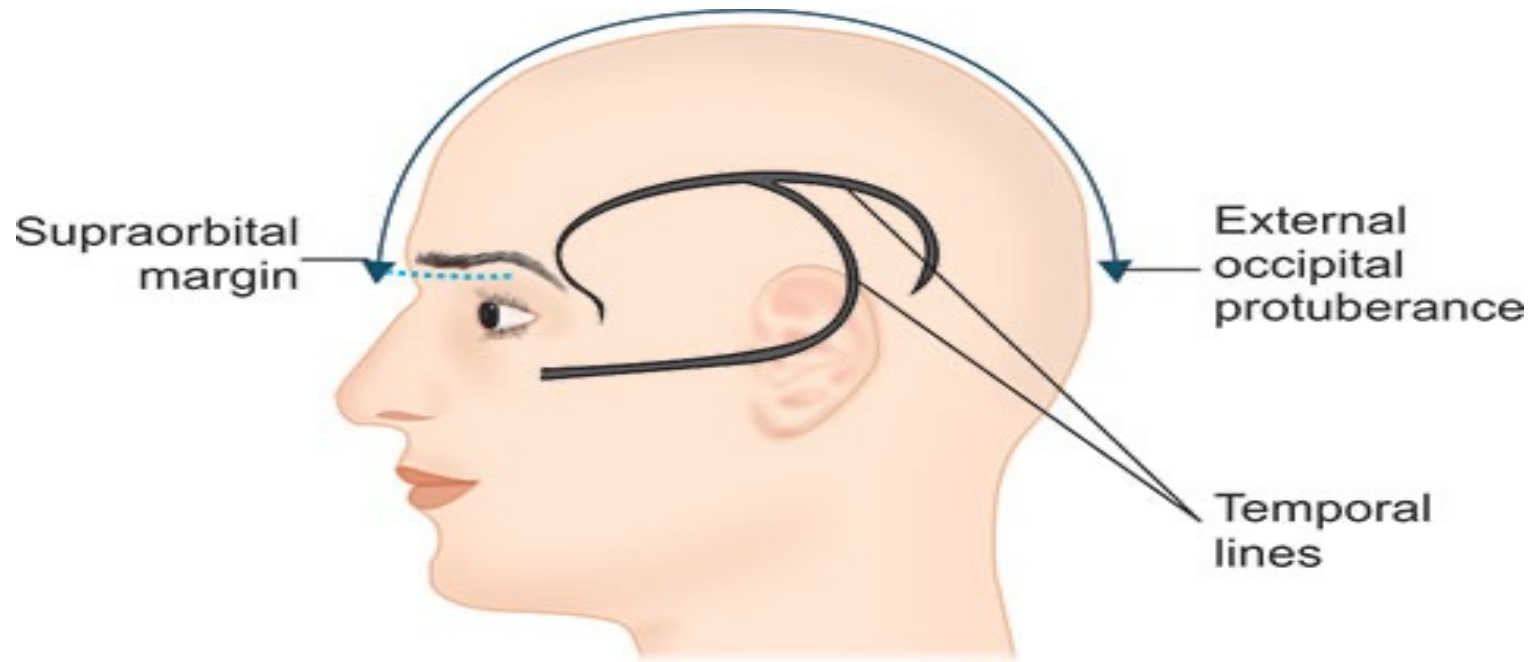
DR. AHMED SALMAN

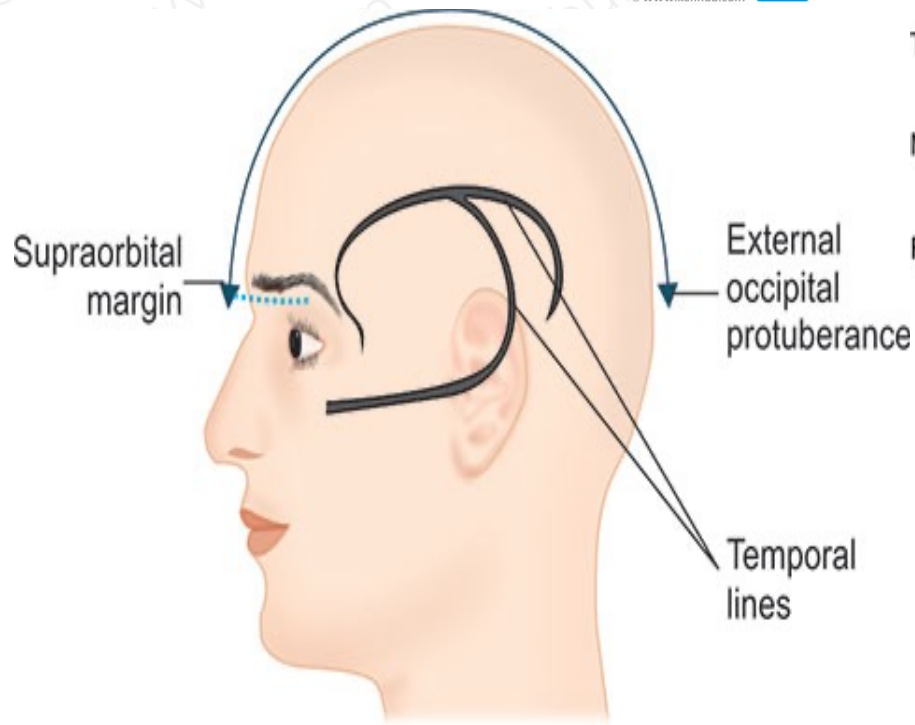
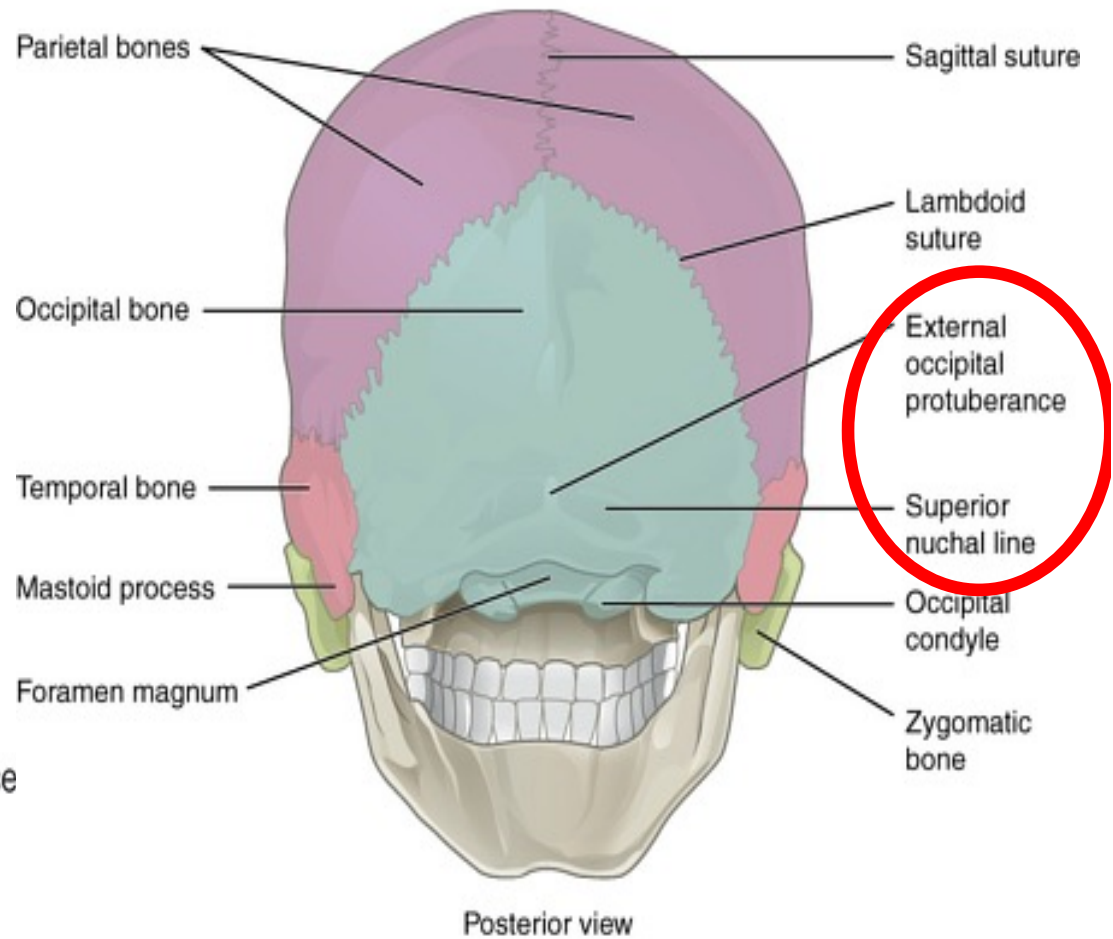
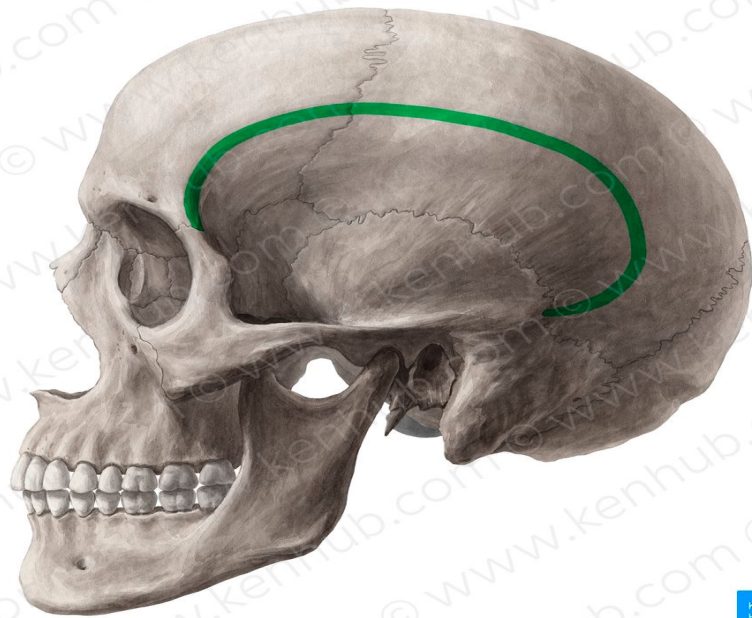
Associate professor of anatomy

Scalp is the soft tissue which covers the cranial vault of the skull

Boundaries :

- **Anteriorly** : The supraorbital margin (eyebrows) .
- **Posteriorly** : The level of the external occipital protuberance and the superior nuchal line
- **On either side** : to level of the superior temporal line but it continuous with the hairy area of the temple up to zygomatic arch

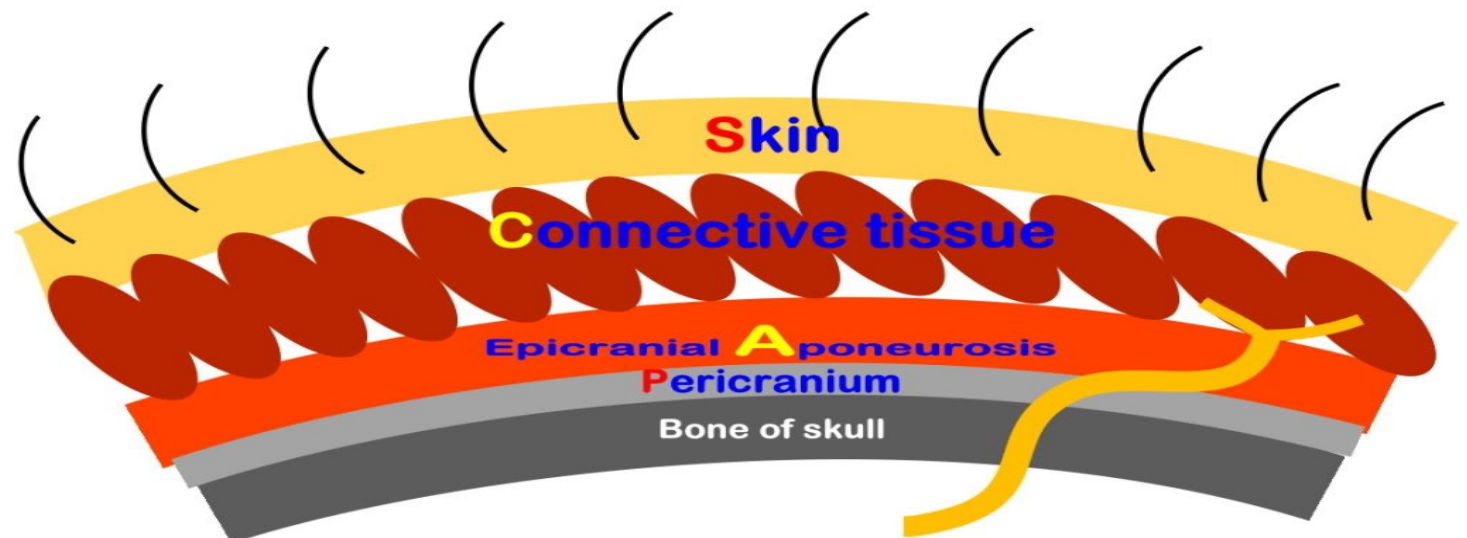




Layers of Scalp

S	S kin
C	C onnective tissue
A	A poneurosis (Epicranial)
L	L oose Areolar tissue
P	P ericranium

LAYERS OF SCALP

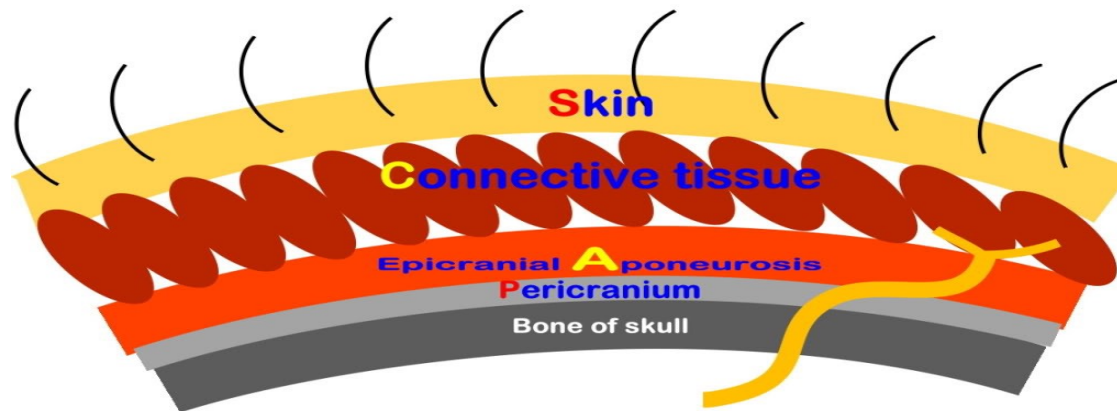


Layers of Scalp

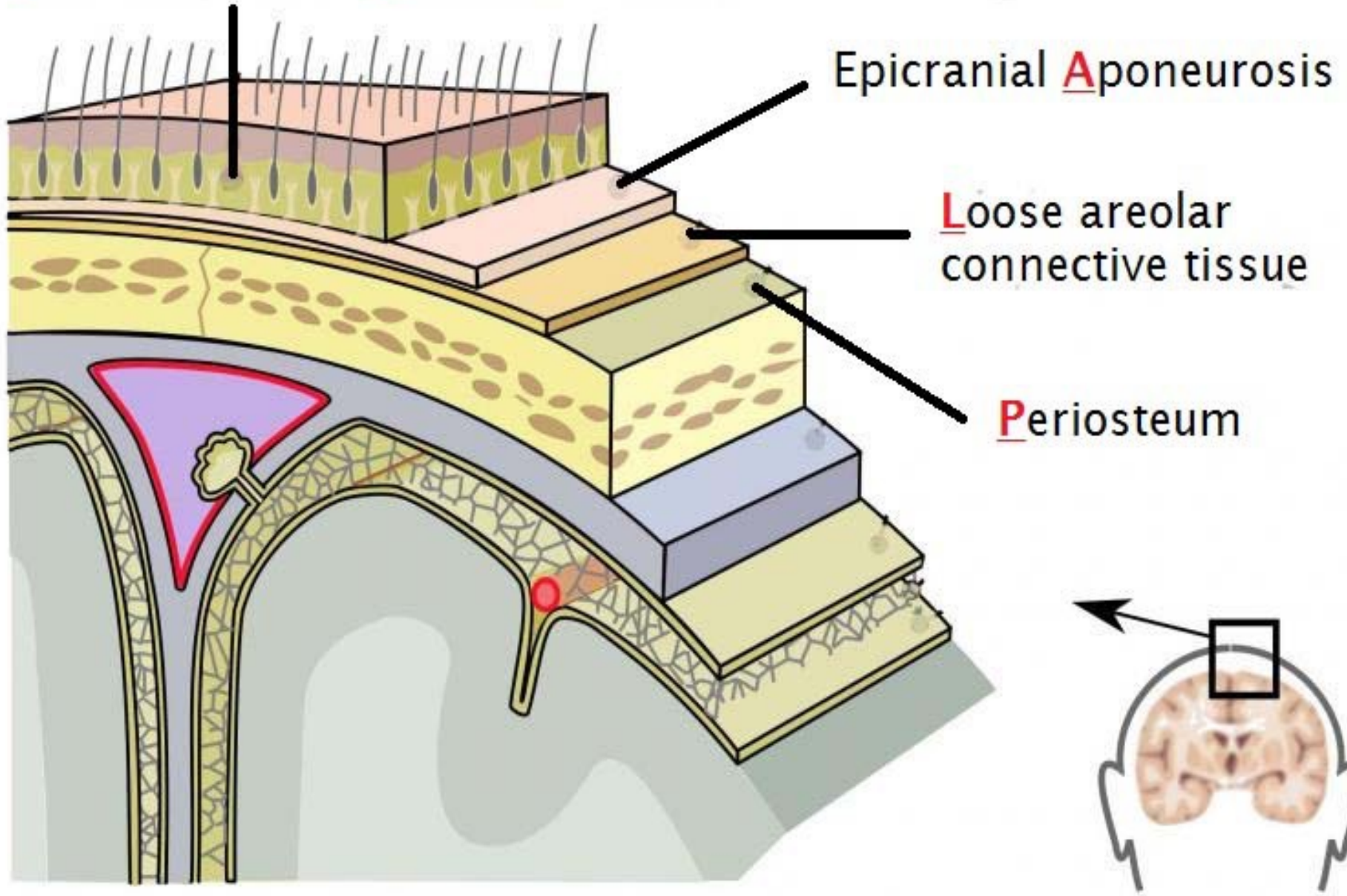
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LAYERS OF SCALP

N.B Scalp is commonest site of sebaceous cyst



Skin and Dense Connective Tissue



1- Skin

It is thick, hairy and adherent to the epicranial aponeurosis (3rd layer).

-It is rich in sebaceous glands, the scalp is a common site for sebaceous cysts.

2- Subcutaneous connective :

- It is fibrous, dense and connects the skin with the epicranial aponeurosis .

- It is rich in blood vessels and nerves.

- Wounds of the scalp bleeds profusely because the torn blood vessels are prevented from contraction and retraction by the closely attached thick fibrous septa.



3- Epicranial aponeurosis and Occipitofrontalis muscle

A. Epicranial aponeurosis:

- It is a flat tendon on the cranial vault.
- **It is *adherent*** to the first and second layers, so they form a ***unit*** moving on the pericranium.

Attachment

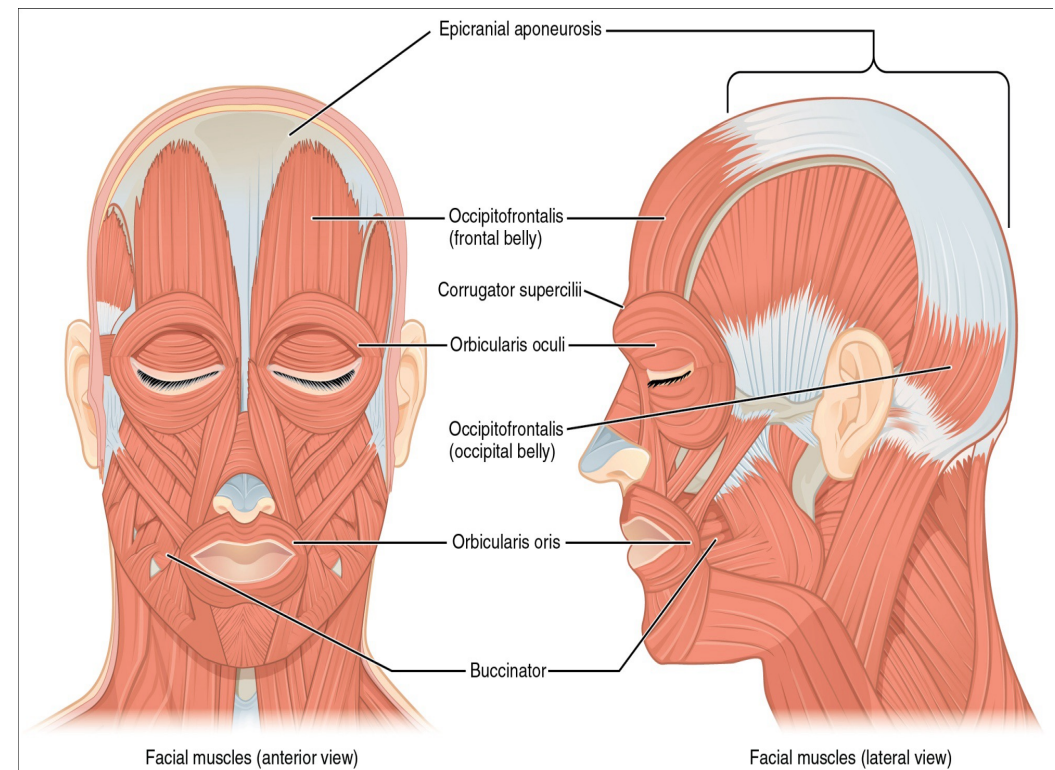
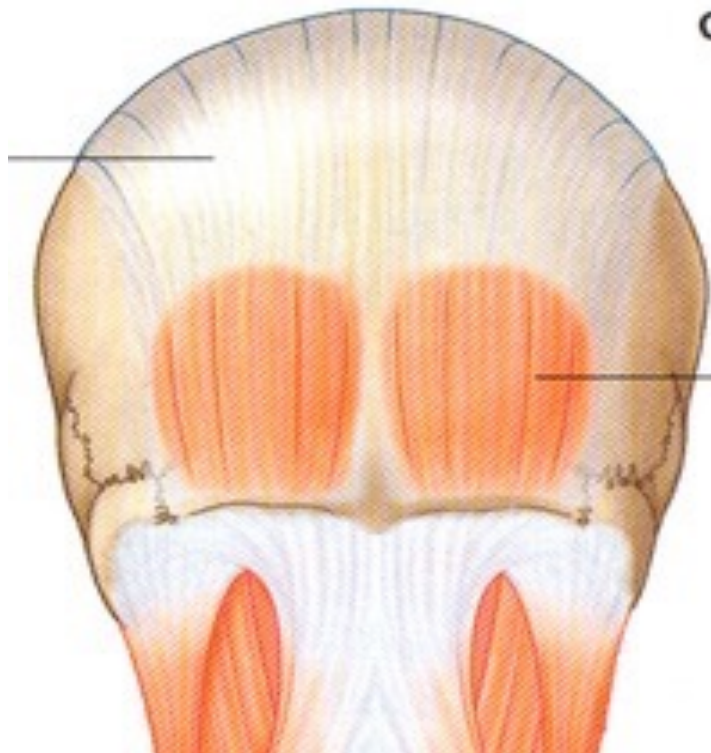
- Anteriorly:** it receives insertion of the frontal bellies of the occipitofrontalis muscle.
- Posteriorly:** it receives insertion of the occipital bellies of the occipitofrontalis and is attached to the external occipital protuberance and the highest nuchal lines.
- **On either side :** it is attached to the superior temporal line, but sends a thin extension down to the zygomatic arch.

B. Occipitofrontalis muscle

It has frontal and occipital bellies which are connected by the epicranial aponeurosis.

Frontal belly : Has no bony attachment ,It is attached to the subcutaneous tissue in the region of eyebrows

Nerve supply : Temporal branch of facial nerve



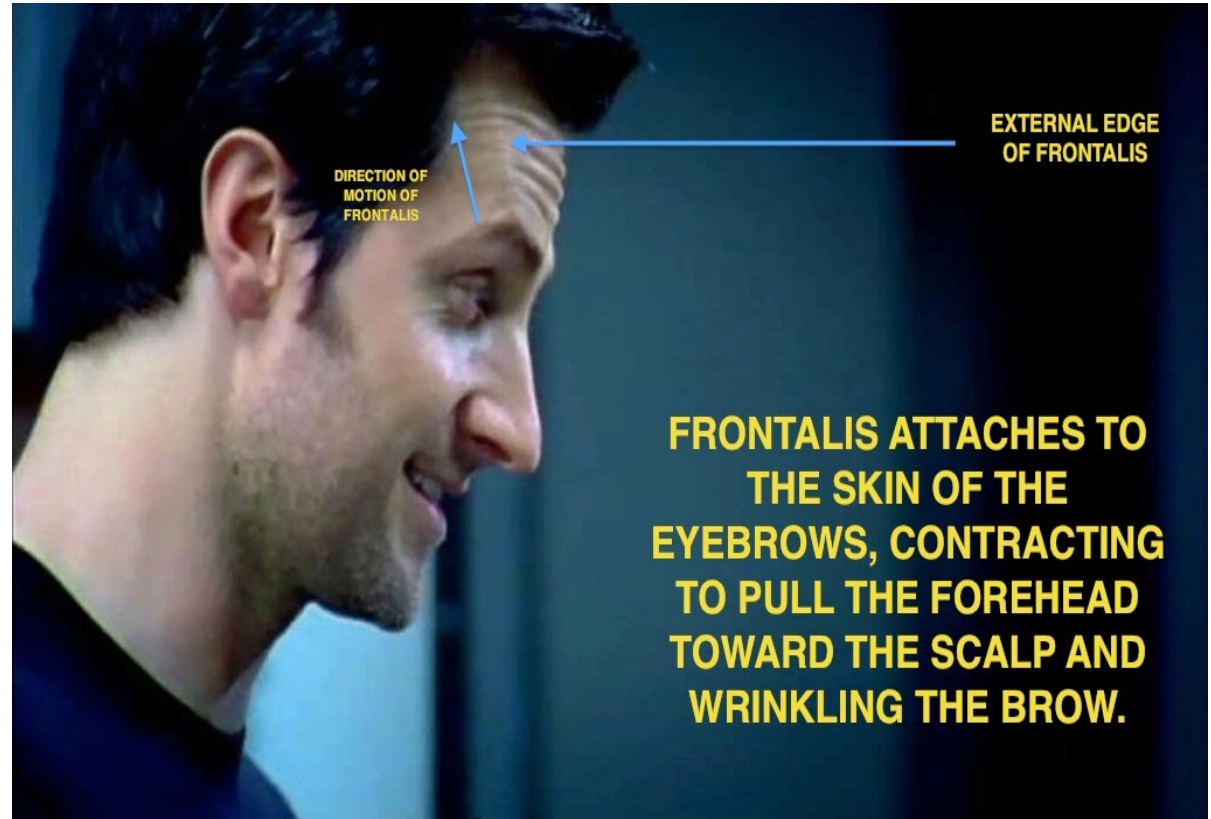
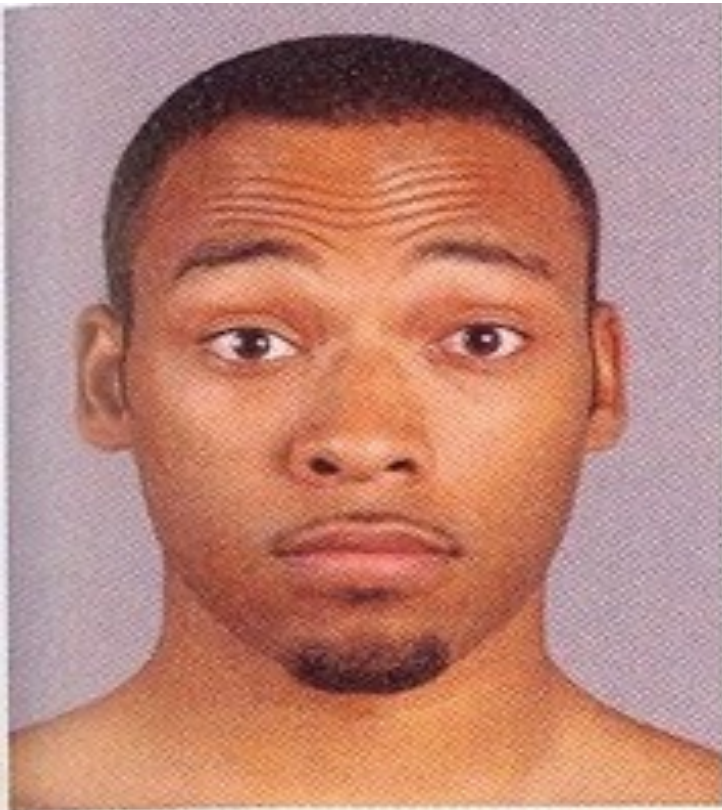
Facial muscles (anterior view)

Facial muscles (lateral view)

Occipital belly : each belly arises from the lateral 2/3 of the highest nuchal line.

Nerve supply : posterior auricular branch of facial N.

Action : 1-It produces transverse wrinkles in the skin of forehead.
2. It raises the eyebrows



Action of Occipitofrontalis muscle



4. Loose areolar tissue

- Is continuous with the loose tissue of the upper eyelid.
- It is the plane of movement for the first three layers of scalp.
- It is the ***dangerous layer of the scalp***;
 - its emissary veins spread infections from the scalp to:
 - ✓ the diploe of skull → *osteomyelitis*
 - ✓ or to the intracranial venous sinuses → *thrombosis*.
- Hemorrhage here gravitates down to the upper eyelid causing *black eye*.



N.B

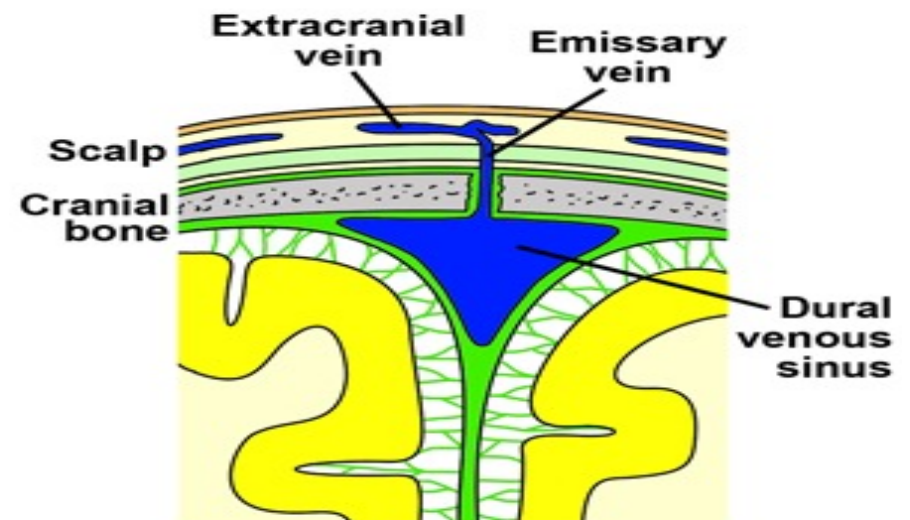
Emissary veins

Are valvless veins connects veins outside skull with venous sinuses inside the skull

It equalize venous pressure outside and inside the skull

5.Pericranium :

- Is *loosely* attached to the surface of the skull bones and could be easily separated from these bones.

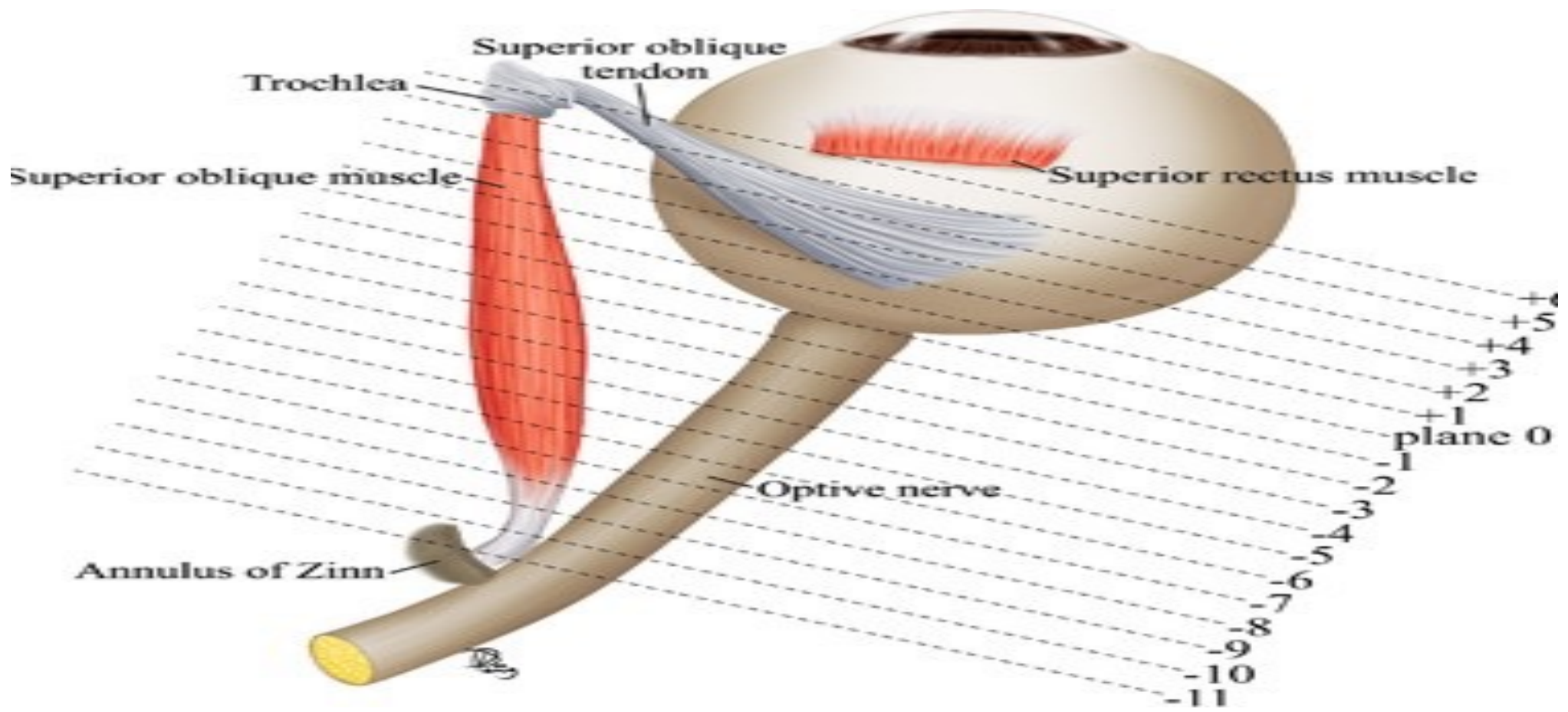


Clinical anatomy

1- Bleeding from scalp It is often difficult to stop the bleeding of a scalp wound because the arterial walls are attached to fibrous septa in the subcutaneous tissue and are unable to contract or retract to allow blood clotting to take place

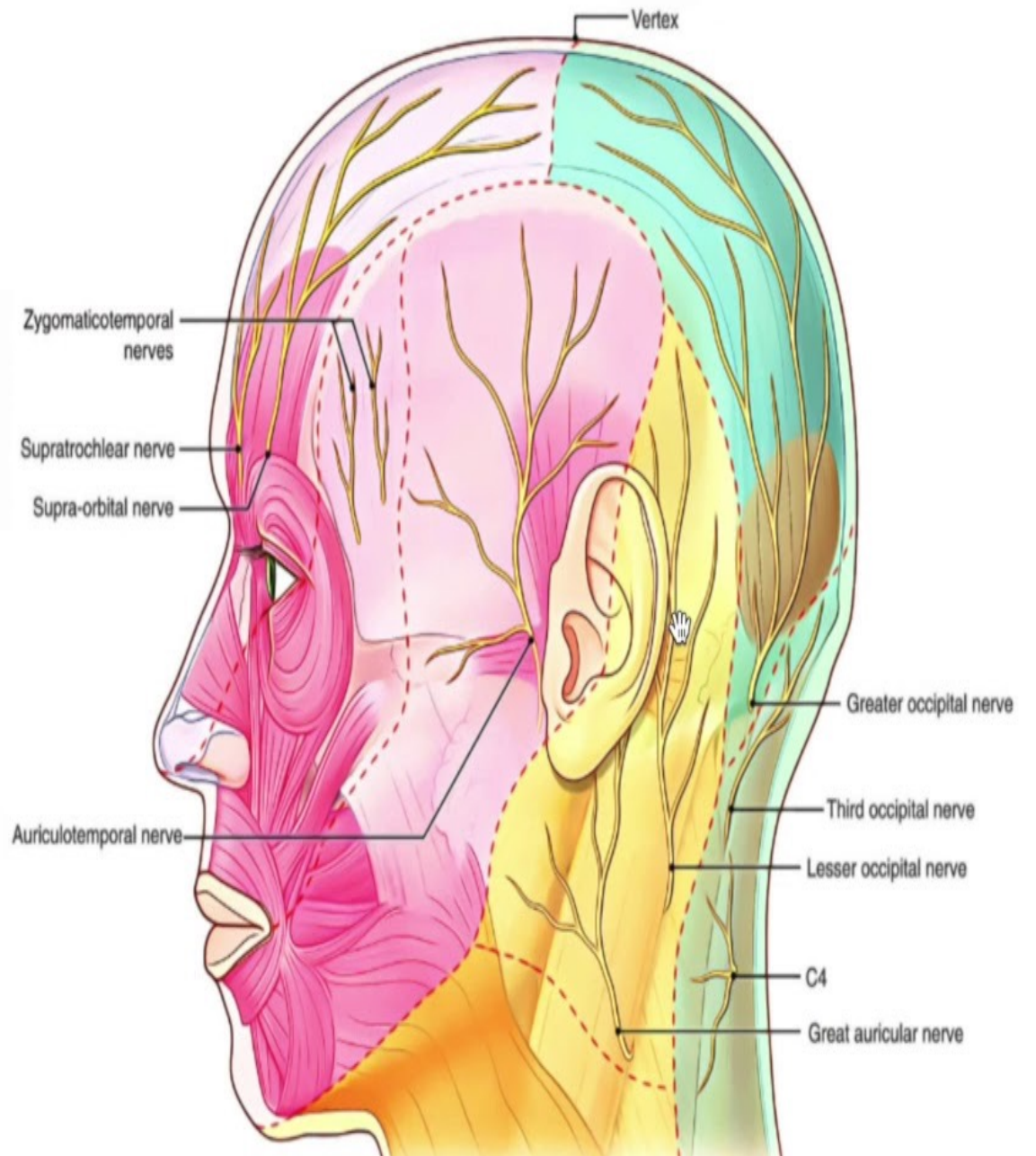
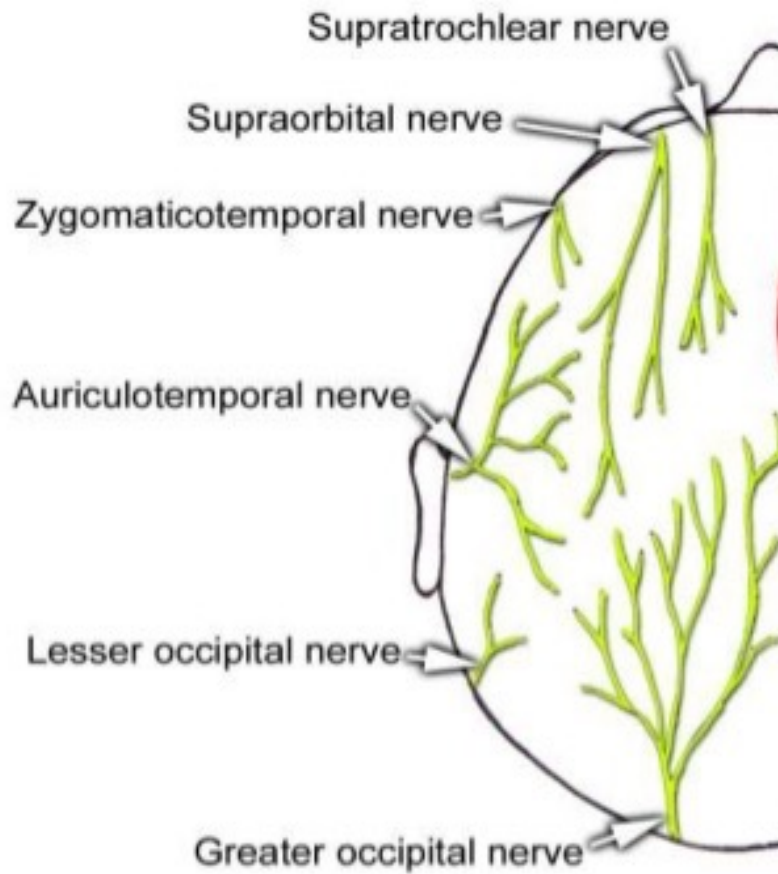
2-Infection of the scalp The Loose Areolar tissue allows spread of bleeding and infection



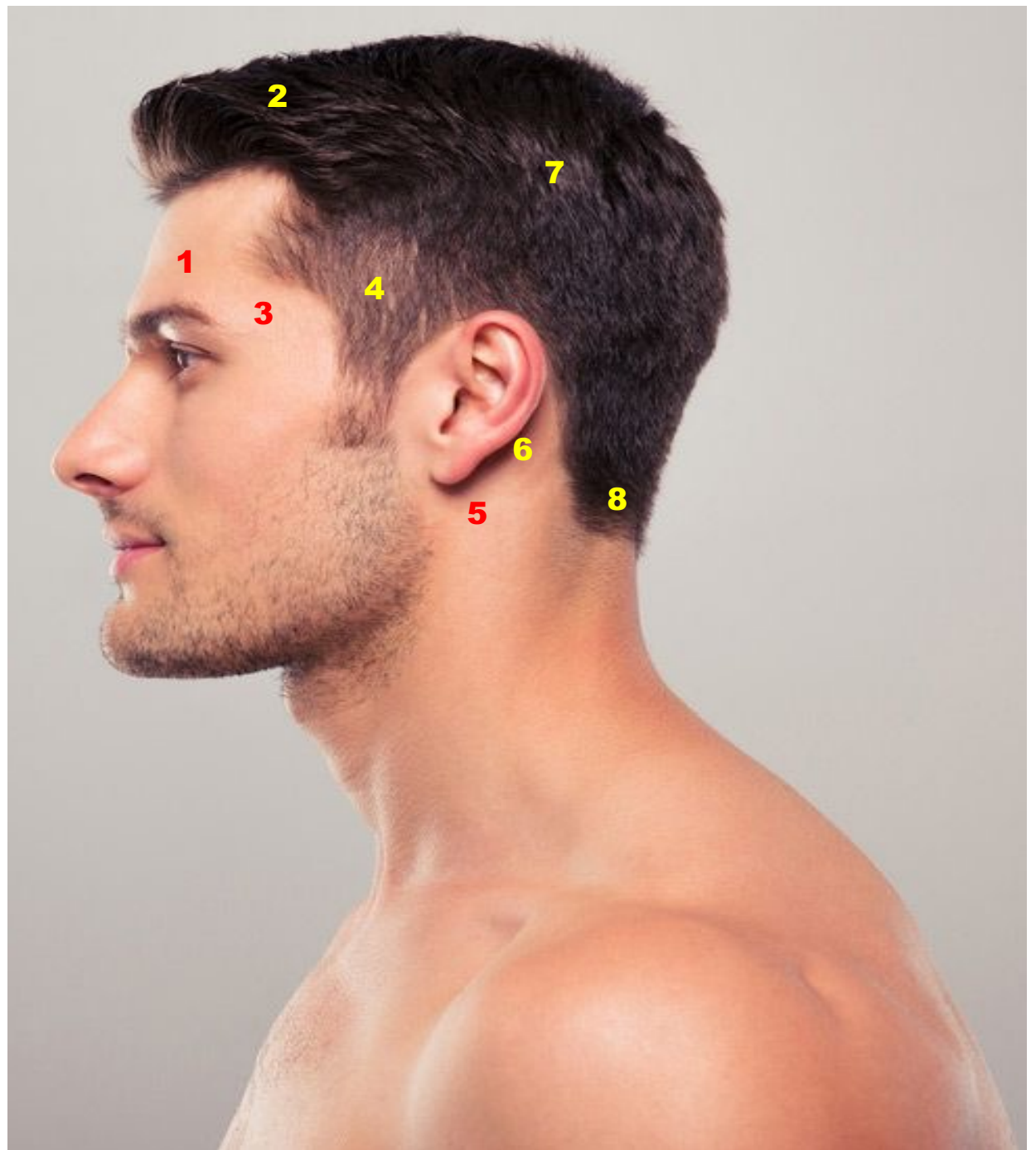


Nerve supply of the scalp

Anterior half of scalp	Posterior half of scalp
<p>Sensory : (Branches of trigeminal nerve)</p> <ol style="list-style-type: none">1. Supratrochlear N. → skin of the forehead.2. Supraorbital N. → skin of the forehead up to the vertex of scalp.3. Zygomaticotemporal → hairless area of the temple.4. Auriculotemporal → hairy area of the <i>temple</i>.	<p>Sensory : (Branches of cervical plexus)</p> <ol style="list-style-type: none">1. Great auricular N. (C_{2,3}) → skin over mastoid process.2. Lesser occipital N. (C₂) → scalp behind the auricle.3. Greater occipital N. (C₂ dorsal ramus) supplies the occipital scalp up to the vertex.4. Third occipital N. (C₃ dorsal ramus) supplies skin of the lower occipital region.
<p>Motor : Temporal branch of facial N. (motor) → frontal belly of occipitofrontalis muscle.</p>	<p>Motor : Posterior auricular branch of facial N. , (motor) → occipital belly of occipitofrontalis.</p>

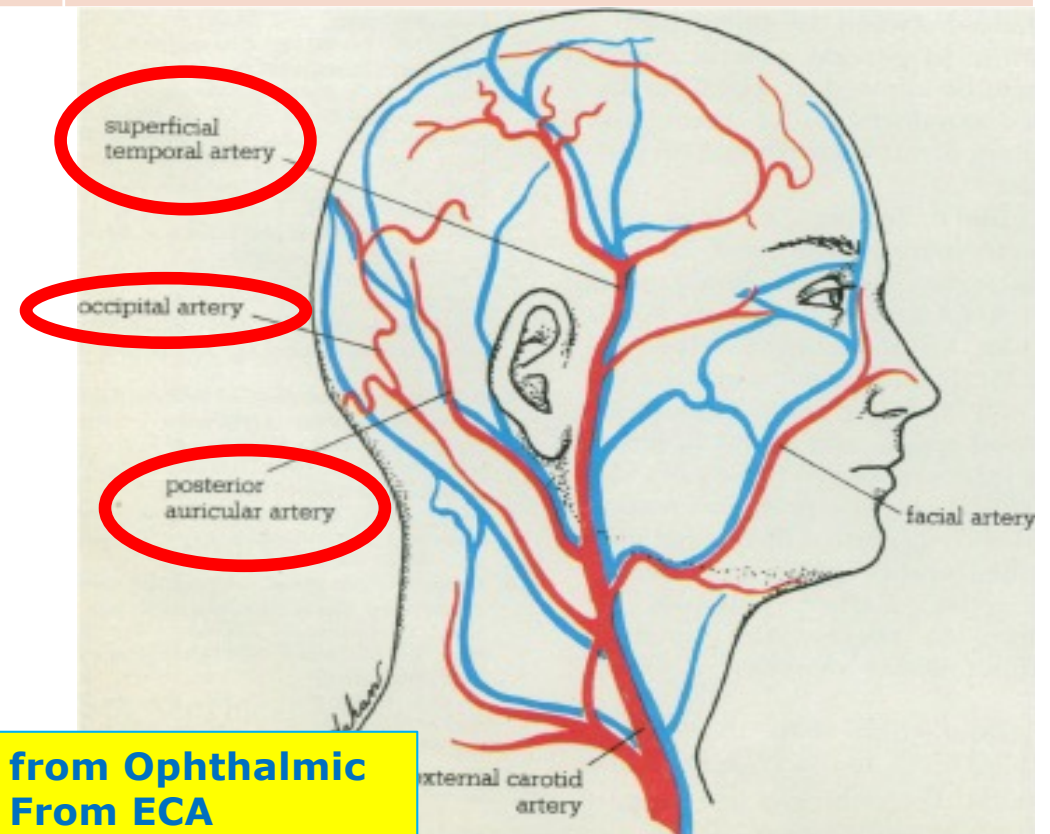
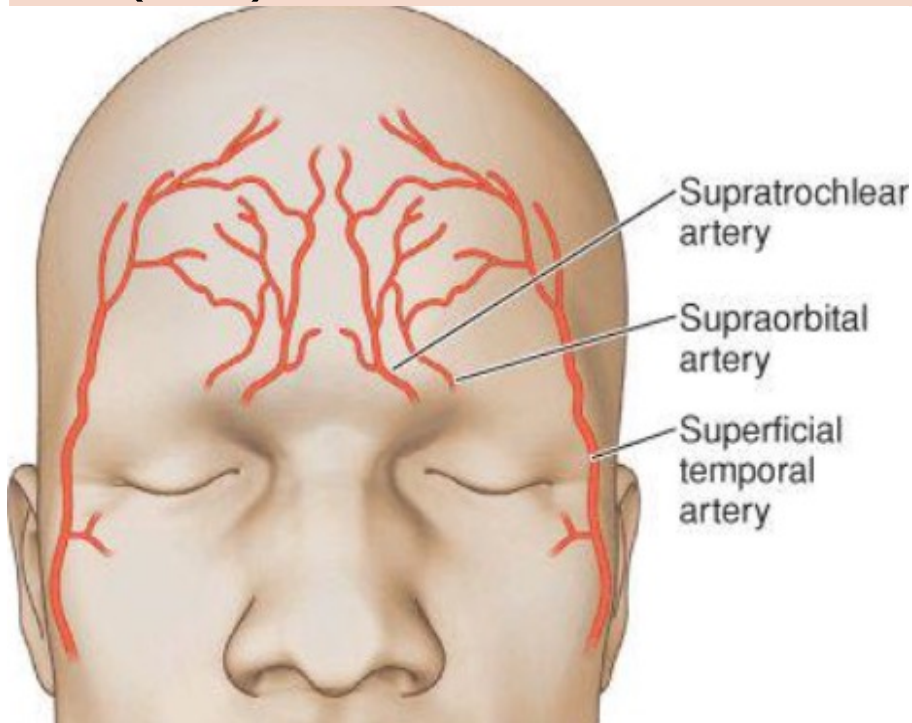


1. Supratrochlear
2. Supraorbital
3. Zygomaticotemporal
4. Auriculotemporal
5. Great auricular N.
6. Lesser occipital N.
7. Greater occipital N.
8. Third occipital N.



Blood supply of the scalp

Anterior half of scalp	Posterior half of scalp
<ol style="list-style-type: none">1. Supratrochlear branch of ophthalmic A.2. Supraorbital branch of ophthalmic A.3. Superficial temporal branch of (ECA)	<ol style="list-style-type: none">1-Posterior auricular (branch of ECA)2-Occipital (branch of ECA)



(ECA) is External carotid artery

2 from Ophthalmic
3 From ECA

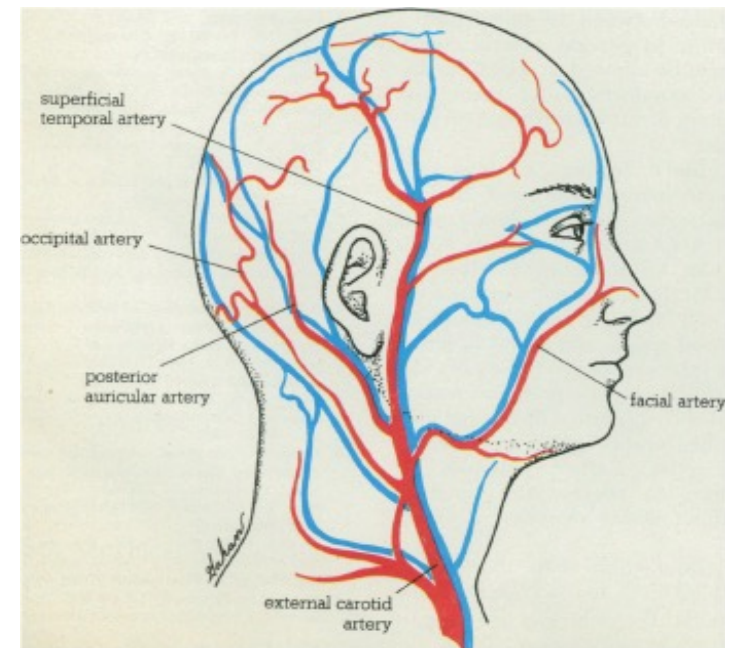
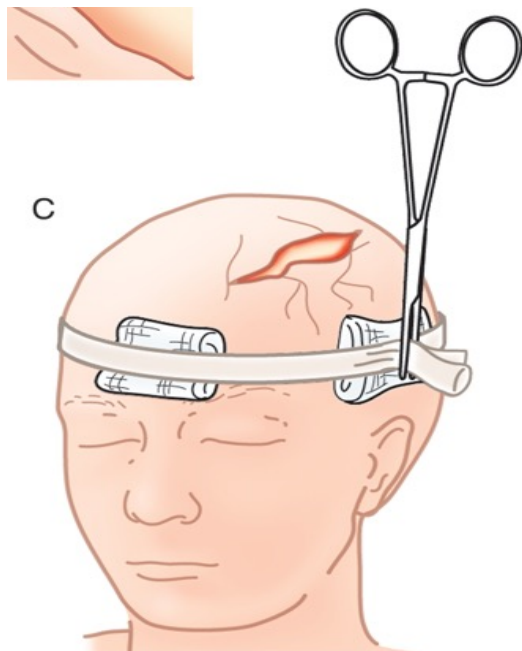
it is useful to remember in an emergency that all the superficial arteries supplying the scalp **ascend from the face and the neck.**

Thus, in **an emergency situation,**

Encircle the head just above the ears and eyebrows

with a tie, shoelaces, or even a piece of string and tie it tight.

Then insert a pen, pencil, or stick into the loop and rotate it so that the tourniquet exerts pressure on the arteries



Thank you!

