THE SCALP

Extent:
1. Anterior: the eye_brows (superior orbital margins)
2. posterior: to the superior nuchal line and external occipital protuberance
3. Lateral: The superior temporal lines and may extend downwards to the zygomatic arch.

Layers:
The SCLAP consists of five layers from outside inwards:

<table>
<thead>
<tr>
<th>S: Skin</th>
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<td>C: Connective tissue of superficial fascia.</td>
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<tr>
<td>A: epicranial Aponeurosis</td>
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<tr>
<td>L: Loose areolar tissue.</td>
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<td>P: Pericranium.</td>
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The skin:
- It is thick skin
- Tightly bound to the underlying two layers
- Pierced by the hair and rich sebaceous glands
- Site of alopecia and sebaceous cysts

Connective tissue of the superficial fascia:
- It binds the overlying layer( skin) to the underlying epicranial Aponeurosis
- It contains hair follicles, the blood vessels and the nerves
- Tightly conneted to the blood vessels and arteries
The Epicranial Aponeurosis (galea aponeurotica)

- The 3rd layer
- It is the deep fascia
- Lies ( ) the connective tissue and the loose areolar tissue
- It is adherent to the skin by the connective tissue layer.
- Gives attachment to the occipito-frontalis muscle

Attachment:

**Anterior:** split to enclose the frontal bellies

**Posterior:** pass ( ) the two occipital bellies to attached to the external occipital protuberance and the superior nuchal line.

**Laterally:** attached to the superior temporal line on each side

The loose areolar tissue (subaponeurotic space):

- Contains emissary veins
- Allow the movement of the three layer above over the skull
- Anterior, it extends downward into the eye lids, if bleeding occurs in this space, it extends around the eye to make **black eye Sign.**
- **It is the dangerous space of the scalp**

The pericranium:

- The outer fibrous layer covering the skull
- Carry blood supply to the skull bones

The Occipito-Frontalis Muscle

It consists of:

- Frontal belly and
- Occipital belly.

Origin:

- The frontal belly from the skin of the eyebrows and the forehead
- The occipital belly from the lateral part of the highest nuchal lines.
**Insertion:** in the epicranial aponeurosis.

**Nerve supply:** facial nerve.
1. The frontal bellies by the temporal branch
2. The occipital bellies by the posterior auricular branch

**Action:**
1. The frontal belly: elevates the eyebrows as in surprise.
2. The occipital belly: draws the scalp backward
3. Move the scalp in some individuals

**Blood supply of the Scalp**

**Arteries of the Scalp**

**A. In front of the ear**
1) **Supratrochlear Artery:** from the ophthalmic branch of internal carotid artery
2) **Supraorbital Artery:** from the ophthalmic branch of internal carotid artery.
3) **Superficial temporal artery:** one of the two terminal branches of the external carotid artery inside the parotid gland

**B. Behind the ear**
1) **Posterior Auricular Artery:** branch of the external carotid
2) **Occipital artery:** branch of the external carotid artery.

**Veins of the Scalp**

1. **The supraorbital vein**
2. **The supratrochlear vein**

They join together at the inner angle of the orbit to form the anterior facial vein
3. **The superficial temporal vein:** Unites with the maxillary vein inside the parotid gland to form the **retromandibular vein** = **posterior facial vein**

4. **The anterior facial vein** and anterior division retromandibular vein unite to form the **common facial vein**

5. **The posterior auricular vein:** Unites with the posterior division of the retromandibular vein to form the **external jugular vein**

6. **The occipital vein:** Drains into the suboccipital venous plexus and drains into the vertebral vein.

**Nerve Supply of the Scalp**

* In front of the ear:

1. **Motor:** temporal branch of the facial nerve

2. **Sensory**

   From the **trigeminal nerve** (ophthalmic, maxillary & mandibular nerves)

   1. **Supratrochlear nerve:** branch of frontal nerve of ophthalmic.
   2. **Supraorbital nerve:** branch of frontal nerve of ophthalmic.
   3. **Zygomatico-temporal nerve:** branch of zygomatic nerve of maxillary.
   4. **Auriculo-temporal nerve:** branch of posterior division of mandibular nerve
Behind the ear:

1) Motor: posterior auricular branch of the facial

2) Sensory: From cervical plexus:
   1. Great auricular nerve C2, 3)
   2. Lesser occipital nerve C2)
   3. Great occipital nerve C2)
   4. Third occipital nerve C3)

Lymphatic drainage of the scalp

A. The forehead and the anterior part of the scalp drain into the submandibular lymph nodes

B. The lateral part into the pre-auricular lymph nodes

C. The posterior part into the occipital or mastoid lymph nodes

These groups of lymph node form the horizontal chain around the neck

N.B.

1. Scalp wounds bleed profusely because the connective tissue of the scalp do not retract.

2. The loose areolar tissue is a potentially dangerous space because infection can pass to the cranial cavity by the emissary veins