The Face: Lec[1]

Skin of the face:

1. The skin of the face has numerous sweat and sebaceous glands.
2. Facial wrinkles lie at right angles to the line of pull of the underlying muscles.
3. There is no deep fascia on the face. Deep fascia is absent in the face, except over the parotid gland where it forms the parotid fascia & over the buccinator forms the bucco pharyngeal fascia.

Muscles of the face:

1. The muscles of ‘facial expression’ are all supplied by the facial nerve.
2. Functionally the muscles are differentiated to form groups around the orifices.
3. The orifices of orbit, nose and mouth are guarded by eyelids, nostrils and lips.
4. These muscles have bony origin but have no tendons and are inserted into the skin and lie in the superficial fascia.
Muscles of the eyelids: The palpebral fissure is surrounded by a sphincter, the orbicularis oculi, and has a dilator mechanism consisting of levator palpebrae superioris and frontalis which is part of the scalp. Orbicularis oculi has a palpebral part, and an orbital part.

The palpebral part consists of fibers that arise from the medial palpebral ligament, arch across both lids, anterior to the tarsal plates, and interdigitate laterally to form the lateral palpebral raphe.

The orbital part, arises from the frontal bone, and the frontal process of the maxilla, the fibers circumscribe the orbital margin in a series of concentric loops.

Nerve supply. By temporal and zygomatic (mainly) branches of the facial nerve.

Action. Contraction of the palpebral fibers closes the lids gently. Orbital and palpebral parts contracting together close the eyelids toughly. In normal closing of the eye, the lateral part of the upper lid comes down before the medial part, so helping to spread lacrimal secretion from the gland side (lateral) towards the nose.
Levator palpebrae superioris is the antagonist of the upper palpebral fibers of orbicularis oculi and occipitofrontalis opposes the orbital part.

Note:

The corrugator supercilii is a small, narrow, pyramidal muscle close to the eye. It is located at the medial end of the eyebrow, beneath the frontalis and just above orbicularis oculi muscle.

Action: The corrugator draws the eyebrow downward and medially, producing the vertical wrinkles of the forehead.

Muscles of the nostrils:
The procerus arises from the fascia covering the lower part of the nasal bone and upper part of the lateral nasal cartilage. It is inserted into the skin over the lower part of the forehead between the two eyebrows, its fibers merging with those of the frontalis.

**Action:** The procerus helps to pull that part of the skin between the eyebrows downwards. Procerus is supplied by temporal and zygomatic branches. Its contraction can produce transverse wrinkles.

The sphincter muscle of the nostril is the **transverse part of nasalis (compressor naris)**, which forms an aponeurosis over the bridge of the nose with its fellow of the opposite side. Its opponent is the **alar part of nasalis (dilator naris)**, which is inserted into the lateral part of the ala. Each arises from the maxilla. In addition, **levator labii superioris alaeque nasi** and **depressor septi** contribute to widening the nostril. **levator labii superioris alaeque nasi** arises from the frontal process of the maxilla and is inserted into the ala of the nose and the upper lip; it elevates both.

**Depressor septi** arises from the maxilla above the central incisor and is attached to the nasal septum. All these muscles are supplied by buccal branches of the facial nerve.
Muscles of the lips and cheeks

The sphincter is the orbicularis oris; the dilator mechanism consists of the remainder of the facial muscles, which radiate outwards from the lips.

**Orbicularis oris** consists of fibers proper to itself and fibers that are added to these from the dilators.

**Nerve supply.** By buccal and marginal mandibular branches of the facial nerve.

**Action.** Contraction of the orbicularis oris causes narrowing of the mouth (the whistling expression).

**Buccinator** has a bony origin from both jaws opposite the molar teeth.

1. horizontally on the maxilla.
2. from the oblique line of the mandible.
3. Between the tuberosity of the maxilla and the hamulus at the bottom of
the medial pterygoid plate (of the sphenoid), the muscle arises from a
fibrous band (the *pterygomandibular ligament*).

**Buccinator**

From the tip of the hamulus the *pterygomandibular raphe* extends to the
mandible just above the posterior end of the mylohyoid line. The buccinator arises
from the whole length of the raphe, along which it interdigitates with the fibers of
the superior constrictor.
Insertion:
The muscle converges on the modiolus to form the main part of orbicularis oris:

a. The uppermost fibers pass into the upper lip
b. The lowermost fibers pass into the lower lip
c. The middle fibers decussate so that the upper fibers pass into lower lip, while the lower fibers pass to the upper lip.

The muscle is pierced by the parotid duct opposite the upper 2\textsuperscript{nd} molar tooth. The duct also passes through the buccal fat pad which lies on the outer surface of buccinator. The buccal fat separates the muscle from ramus of mandible and masseter muscle.

\textit{Nerve supply.} By the buccal branches of the facial nerve.

\textbf{Action:} Compresses the cheeks and lips against the teeth.

\textbf{Dilator muscles of the lips}

\textit{Levator labii superioris alaeque nasi} arises from the frontal process of the maxilla and is inserted into the ala of the nose and the upper lip; it elevates both.
**Levator labii superioris** arises from the inferior orbital margin and is inserted into the remainder of the upper lip, which it elevates. The muscle overlies the exit of the infraorbital nerve.

**Levator anguli oris** arises from the canine fossa below the infraorbital foramen, the infraorbital nerve lies sandwiched between it and the overlying levator labii superioris. The fibers of this muscle, deep to the superficial sheet of muscle, converge to the modiolus and pass through it.

**Zygomaticus minor** from the zygomaticomaxillary suture and **zygomaticus major** further out on the surface of the zygomatic bone converge to the modiolus.

**Risorius** is a variable muscle that converges on the modiolus from the parotid fascia. All these muscles are supplied by buccal branches of the facial nerve.

**Depressor anguli oris** arises from the mandible below the mental foramen. It lies superficial, its fibers pass through the modiolus.

**Depressor labii inferioris** arises from the mandible in front of the mental foramen, deep to the former muscle; its fibers are inserted into the lower lip.

**Mentalis** is a muscle that arises near the midline of the mandible. Its fibers pass downwards to reach the skin. It is an elevator of the skin of the chin. These muscles are supplied by the marginal mandibular branch of the facial nerve.

**Nerve supply of face muscles**

The **facial nerve** emerges from the base of the skull through the stylomastoid foramen, near the origin of the posterior belly of digastric. It immediately gives off the **posterior auricular nerve** which passes upwards behind the ear to supply auricularis posterior and superior and the occipital belly of occipitofrontalis. A **muscular branch** is next given off which divides to supply the posterior belly of digastric and stylohyoid. The nerve now approaches the posteromedial surface of the parotid gland. Within the substance of the parotid gland divides and finally emerge from the parotid gland in five main groups of branches. These branches lies superficial to the retromandibular vein and the external carotid artery.
The **temporal branches** emerge from the upper border of the gland, cross the zygomatic arch, and supply auricularis anterior and superior[ear muscles], frontalis and orbicularis oculi.

The **zygomatic branches** cross the zygomatic arch and zygomatic bone. These branches supply orbicularis oculi.

The **buccal branches** run forwards close to the parotid duct, often one above and one below the duct. They supply buccinator and the muscle fibers of the nose and the upper lip.

The **marginal mandibular branch** is frequently single and runs forwards above, along, or below the lower border of the mandible. From below the mandible it crosses the inferior border of the bone to reach the face just beyond the anterior border of the masseter muscle, passing superficial to the facial artery and vein. The nerve is in danger when an incision is made at or near the lower border of the mandible.

The **cervical branch** passes downwards from the lower border of the parotid gland and supplies platysma.

**Note**: The details of the pattern of branching of the facial nerve differs in different individuals and even on the two sides of the face of the same person.