

Tear Trough Ligament

Orbicularis Retaining Ligament

Zygomatic-Cutaneous Retaining Ligament

Retaining Ligaments of the Face and Ageing

Lateral Cheek Septum

Nasolabial Fold

Masseteric Retaining Ligament

Mandibular Retaining Ligament

Middle Cheek Septum

Retaining Ligaments

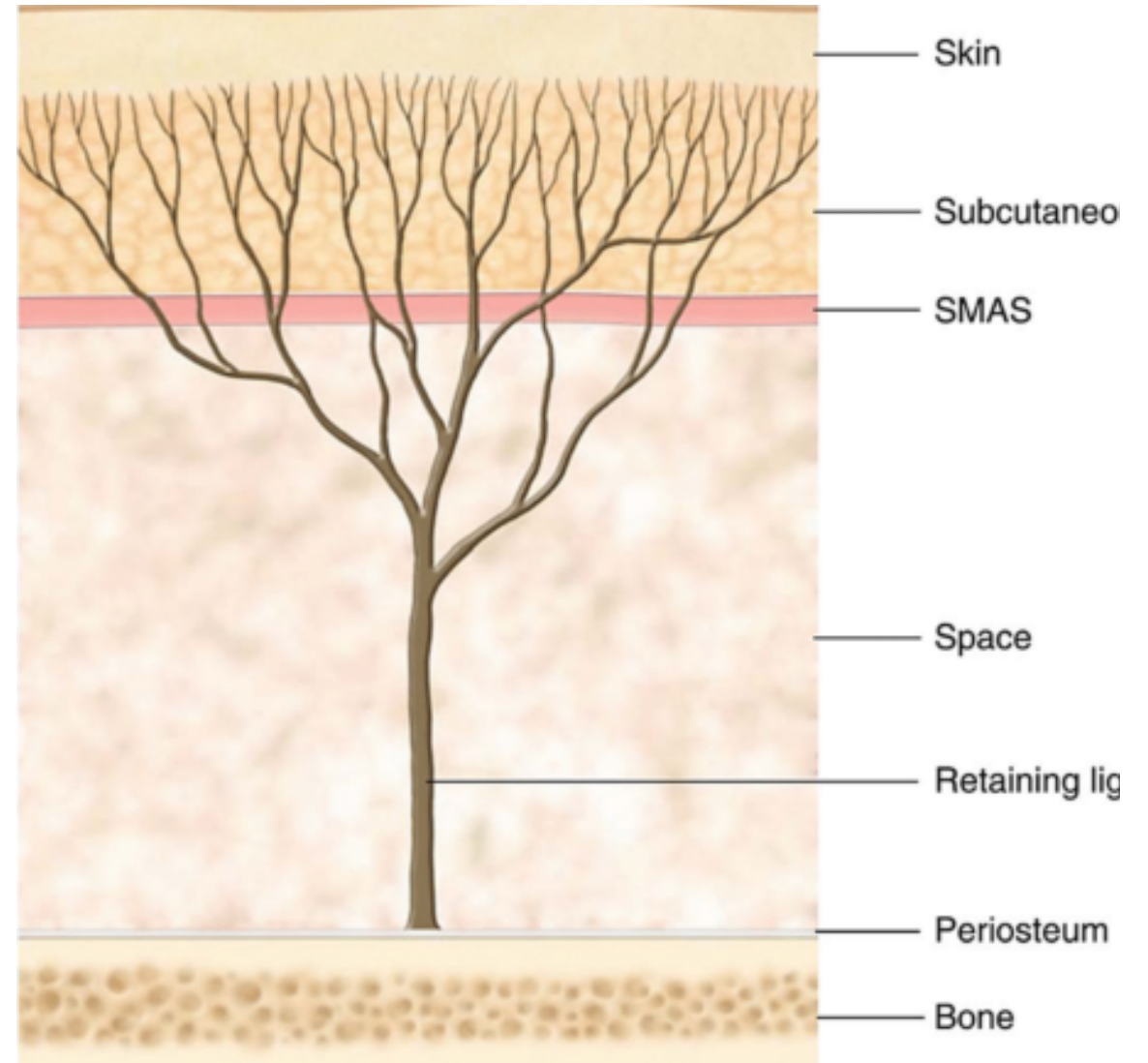
- Vital in our understanding of facial ageing and methods of rejuvenation.
- Located in predictable anatomical locations.
- They are deep fibrous attachments that run from periosteum or deep fascia travelling upwards to insert in the superficial tissue.
- They act as anchor points, stabilizing the superficial fascia from the effects of gravity.

Retaining Ligaments

- Their superficial extensions, known as the retinacular cutis, separate the facial fat compartments.
- Have an important relationships to nerves and blood vessels.
- These boundaries between superficial compartments are areas where blood vessels move from deep to superficial.
- They provide useful landmarks for the surgeon because of their close relationship to branches of the Facial Nerve.

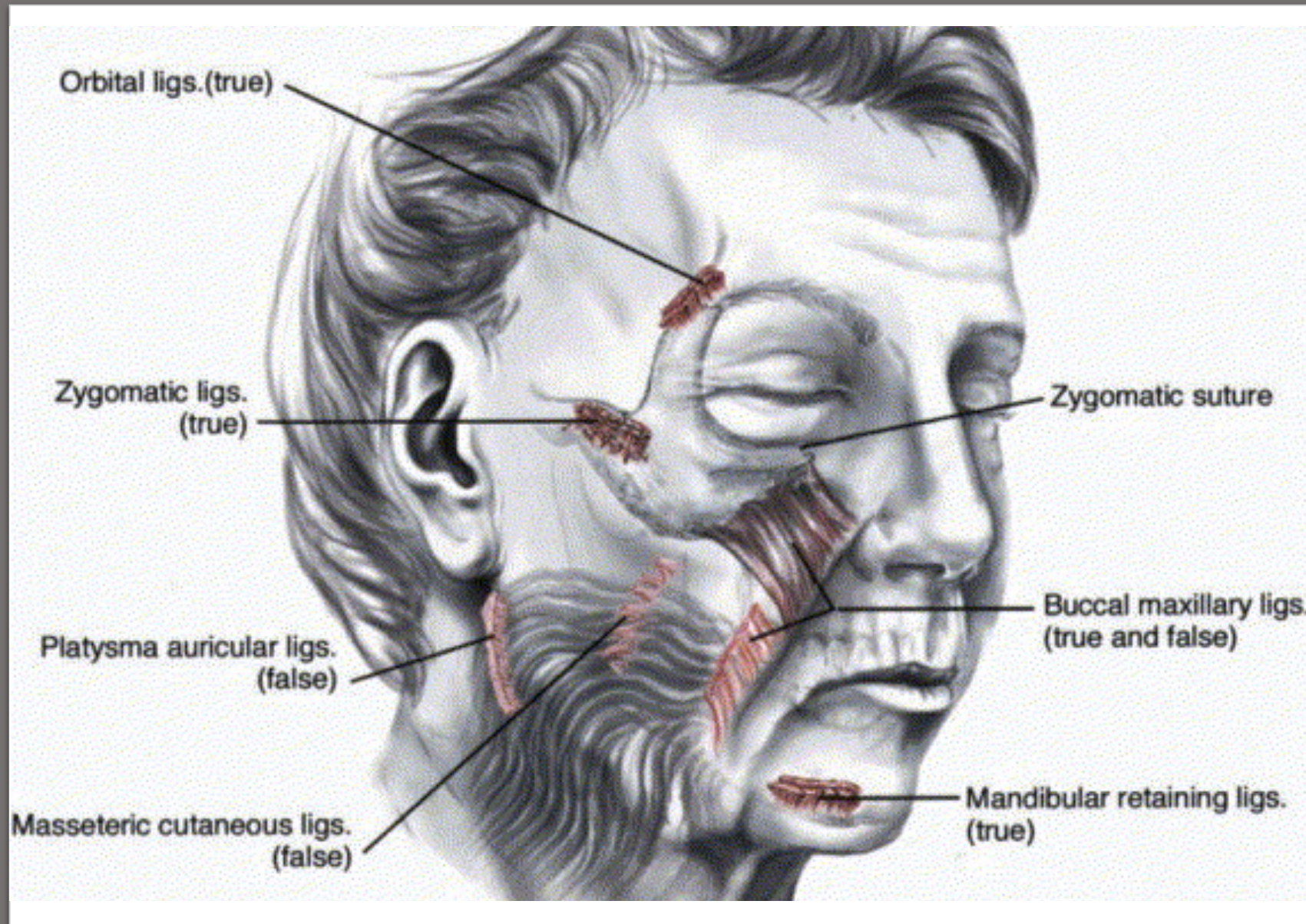
Structure

- Microscopically each ligament is rooted in a tree like structure.
- As it ascends it divides into number of branches eventually inserting into the dermis.
- This branching dermal network is known as the retinacular cutis.
- These branches contribute to the fibrous septae between the various superficial layers.



Classification

- This has been somewhat confusing in the past.
- However a generally accepted definition divides retaining ligaments into True ligaments and False ligaments.
- True ligaments are osteo-cutaneous. Originating from bone/periosteum and inserting into skin.
- False ligaments are fascio-cutaneous. These coalesce between deep and superficial fascia.
- Each series of ligaments is named on the anatomical location of the fibres.



True and False Ligaments of the Face

True
Ligaments
of the Face



Orbicularis Retaining
Ligament.

Zygomatic Cutaneous
Retaining Ligament.

Buccal Maxillary Retaining
Ligament.

Mandibular Retaining
Ligament.

False
Ligaments
of the Face

Platysma Auricular
Ligament/Parotid
Cutaneous Ligament.

Masseteric Cutaneous
Ligament.

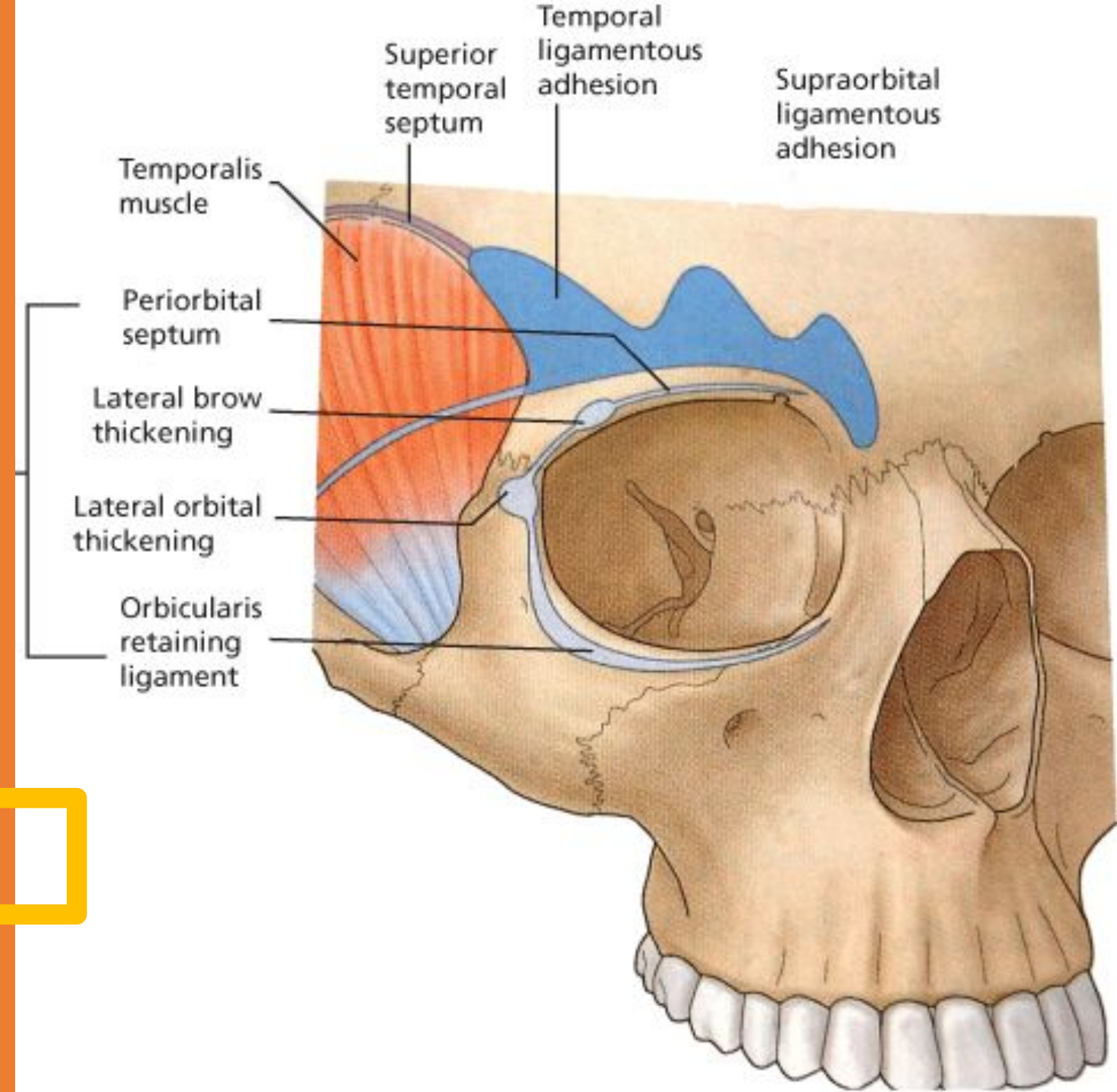
Temporal Zones of
Adhesion. Superior and
inferior temporal septum.

True Ligaments

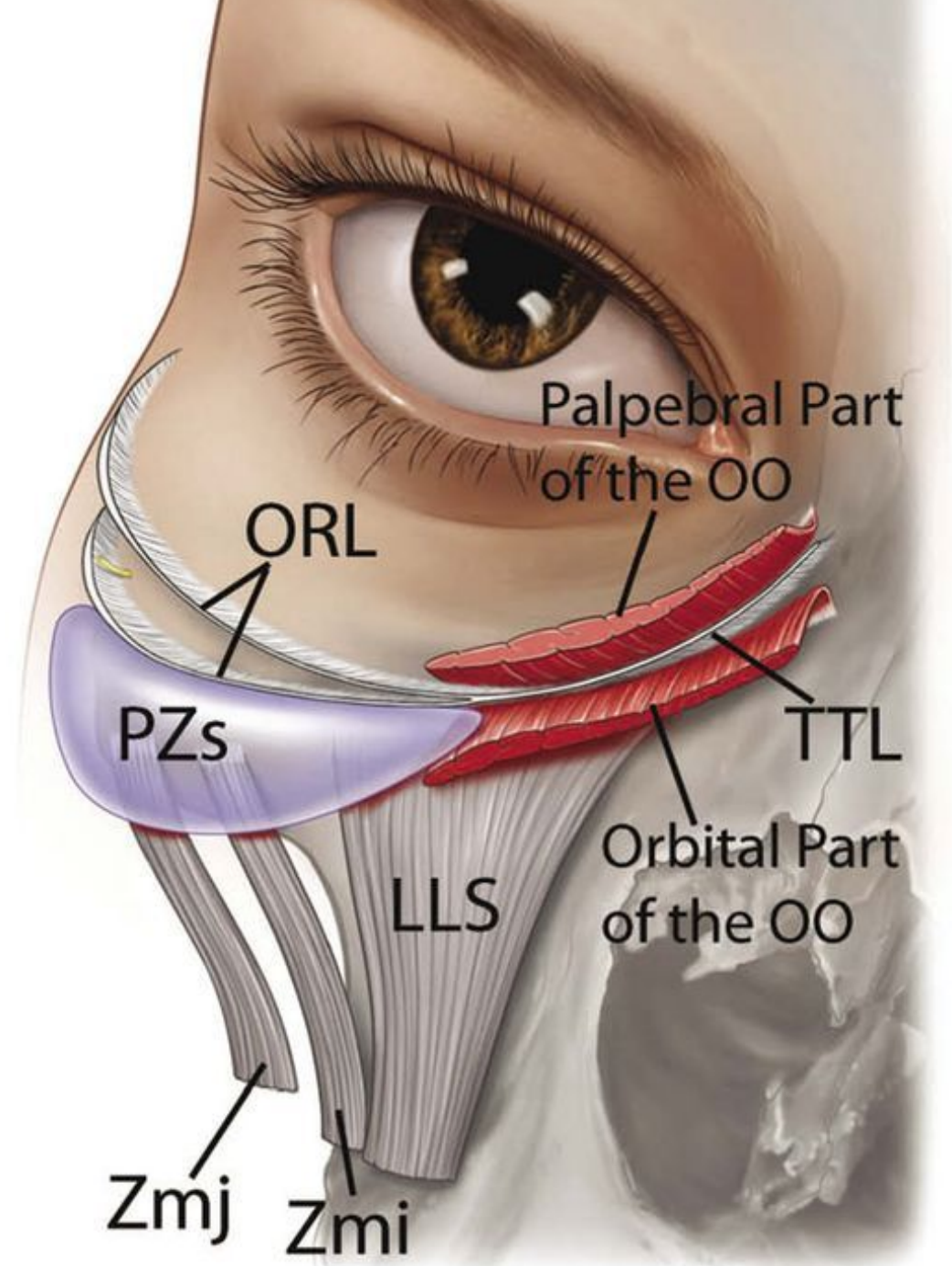
Orbicularis Retaining Ligament

- True ligament being osteo-cutaneous.
- Originates from the periosteum of the orbital rim.
- Inserts into the muscle and skin of the lid-cheek junction.
- Medially it is continuous with the Tear trough ligament.
- Orbicularis Oculi muscle tightly adherent to bone medially but separates from bone laterally.
- Ligament is sandwiched between the palpebral and orbital portions of the muscle.
- Purpose is to act as a fixation point for Orbicularis Oculi and as protection for the globe.

Orbicularis Retaining Ligament



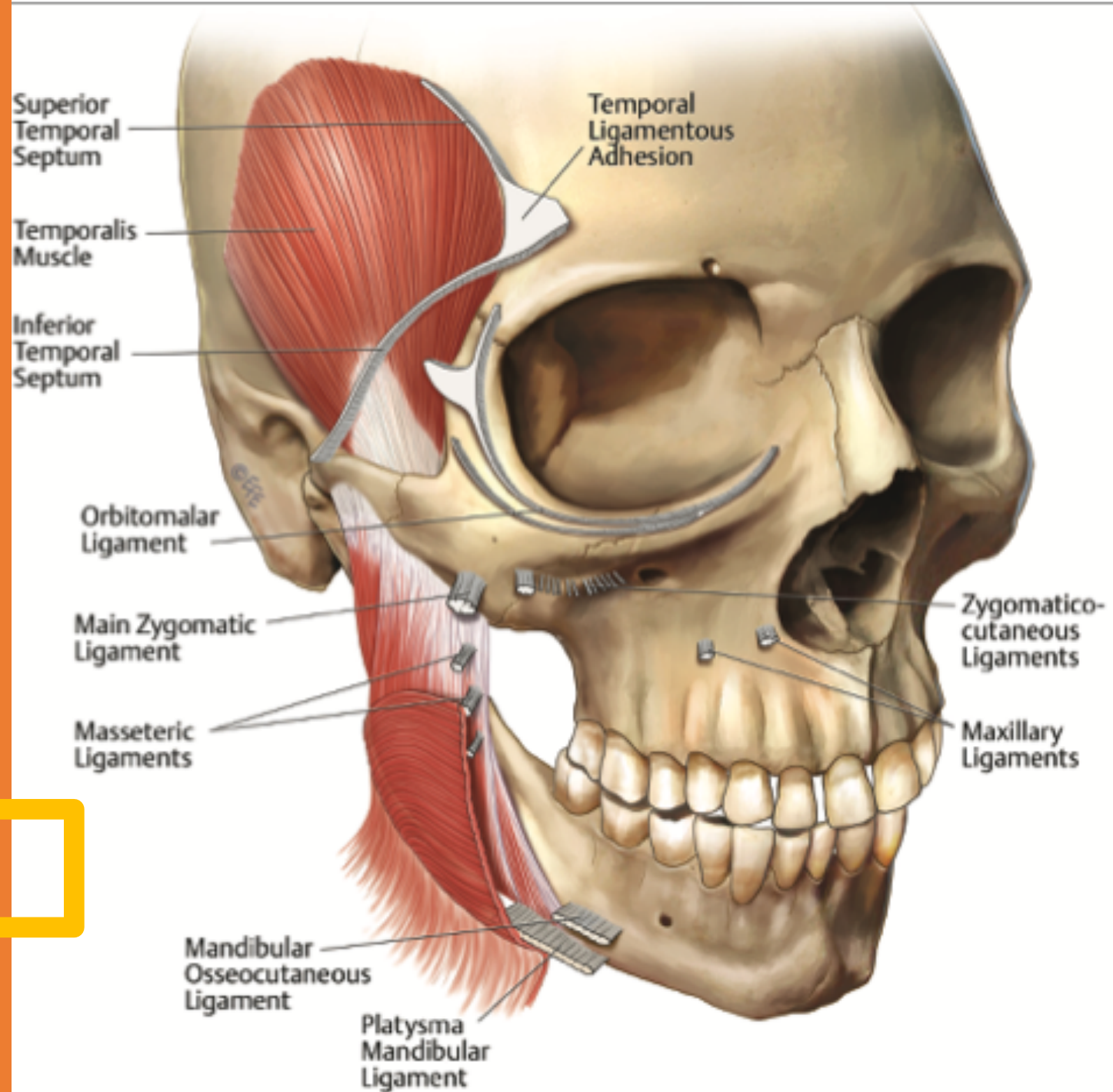
Orbicularis Retaining Ligament



Zygomatic Cutaneous Retaining Ligament

- True ligament being osteo-cutaneous.
- Originates from the periosteum of the lateral zygoma extending anteriorly to the zygomatic arch.
- Inserts in the skin of the malar region.
- Supports the tissue of the midface.
- Posteriorly they take the form of strong fibrous septae taking a cylindrical shape closer to the origin of zygomaticus major.

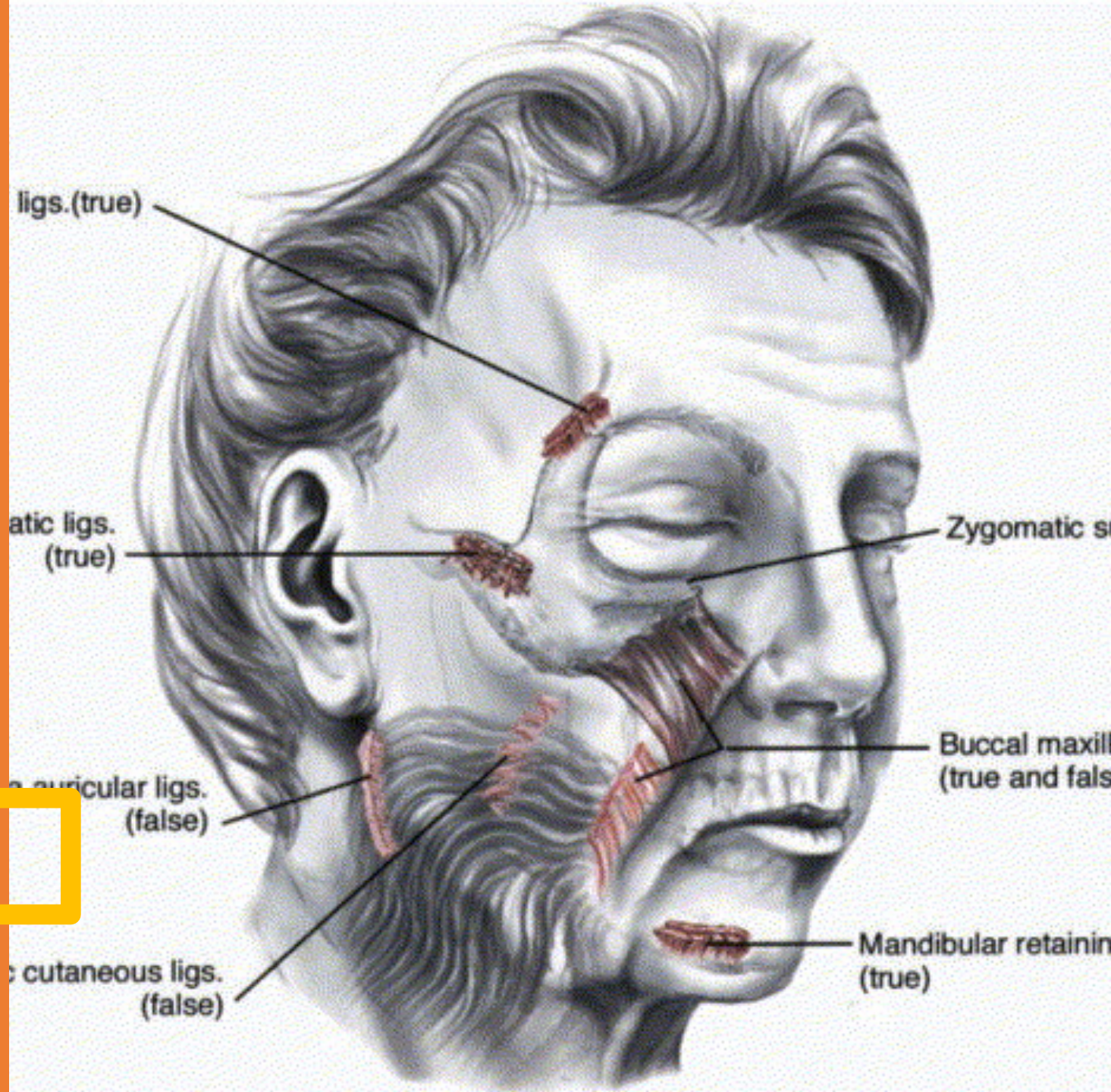
Zygomatic Cutaneous Retaining Ligament



Buccal Maxillary Retaining Ligament

- True ligament being osteo-cutaneous.
- Also also has a false component.
- True component originates from the periosteum over zygomatic-maxillary suture and inserts into the skin and soft tissue of the nasolabial fold.
- Provides support for the soft tissues of the anterior cheek.

Buccal Maxillary Retaining Ligament

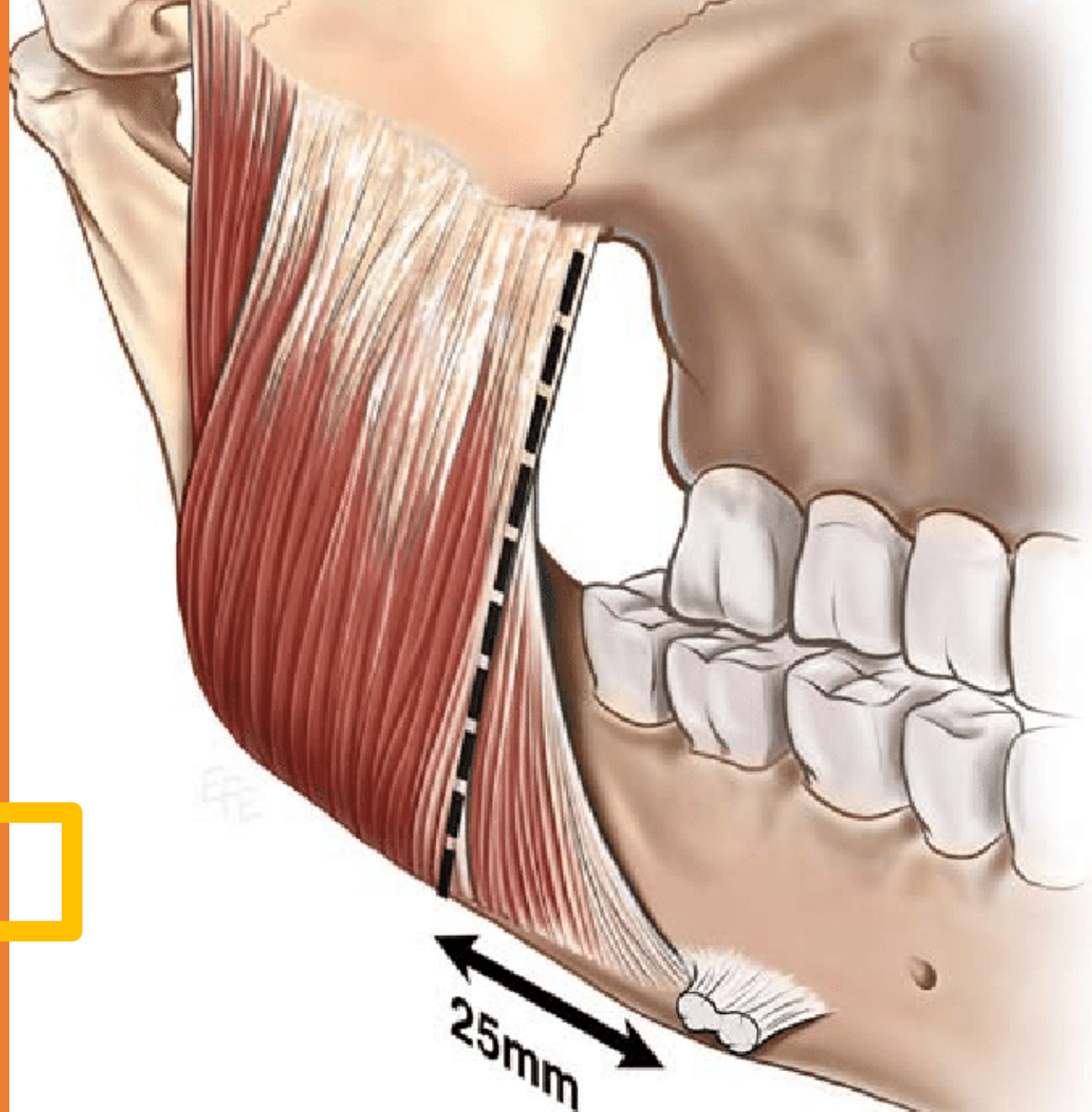


Mandibular Retaining Ligament

- True ligament being osteo-cutaneous
- Originates from the anterior third of the mandible.
- Inserts into the skin of the chin and DAO.
- Responsible for supporting the soft tissues of the chin pad.



Mandibular Retaining Ligament

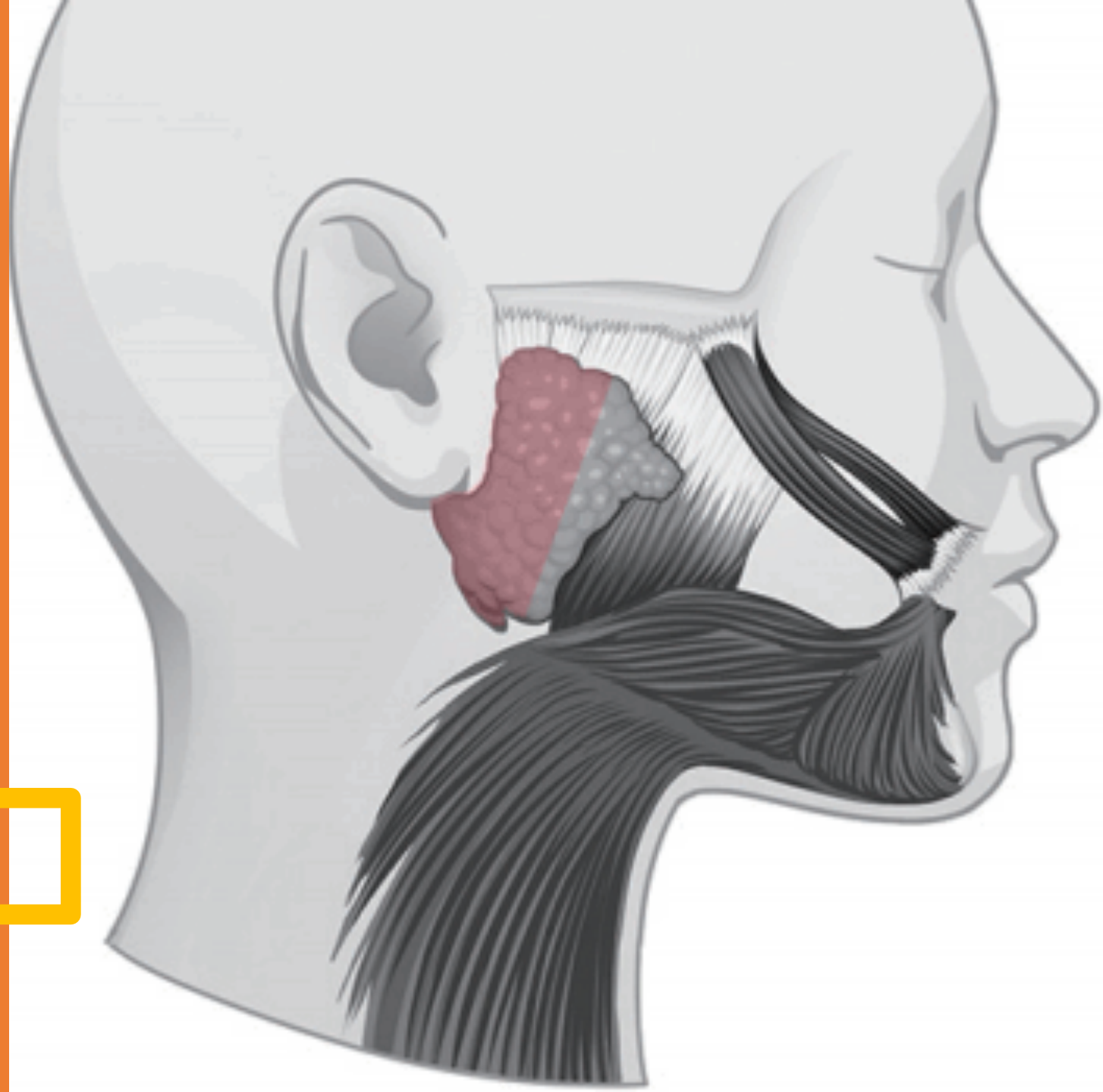


False Ligaments

Platysma Auricular Fascia

- False ligament being fascio-cutaneous.
- Confusion around some of the nomenclature relating to this area.
- This term has been used to lump a number of terms together under one umbrella.
- Platysma Auricular Ligament. Arises from the parotid fascia and anchors the posterior border of platysma to the preauricular skin.
- Parotid Cutaneous Ligament. Arises from the surface of the parotid gland and anchor lateral cheek to the parotid capsule.
- These ligaments are intimately associated with the lateral fat compartments.

Platysma
Auricular
Fascia



Masseteric Cutaneous Ligament

- False ligament being fascio-cutaneous.
- Originates from the entire anterior border of the masseter.
- Most discrete and dense fibres are noted at the upper border where they blend with inferior zygomatic ligaments.
- Insert into the soft tissues of the submalar region providing support.



Masseteric Cutaneous Ligament

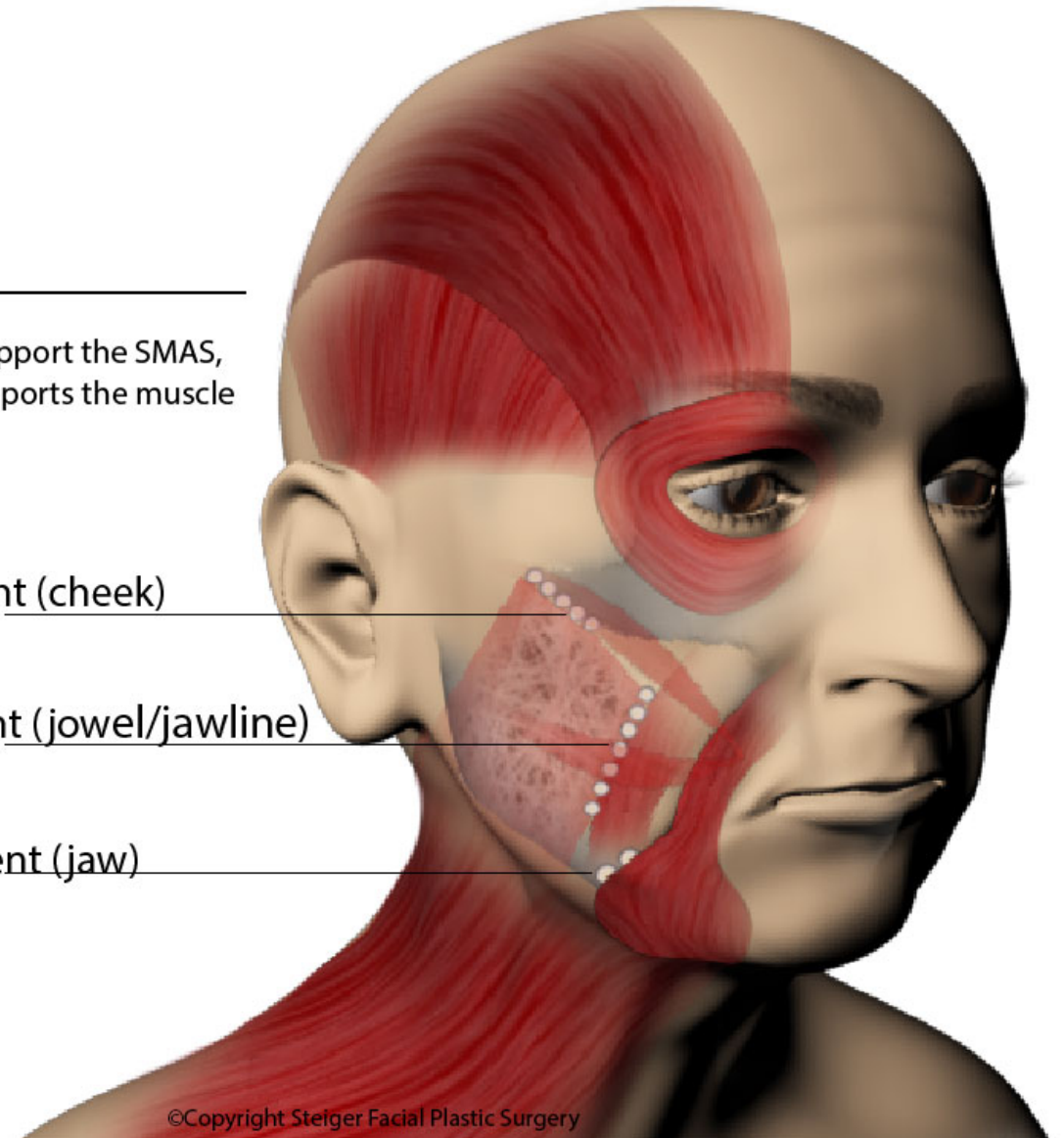
Ligaments

The ligaments support the SMAS, which in turn supports the muscle and skin.

Zygomatic ligament (cheek)

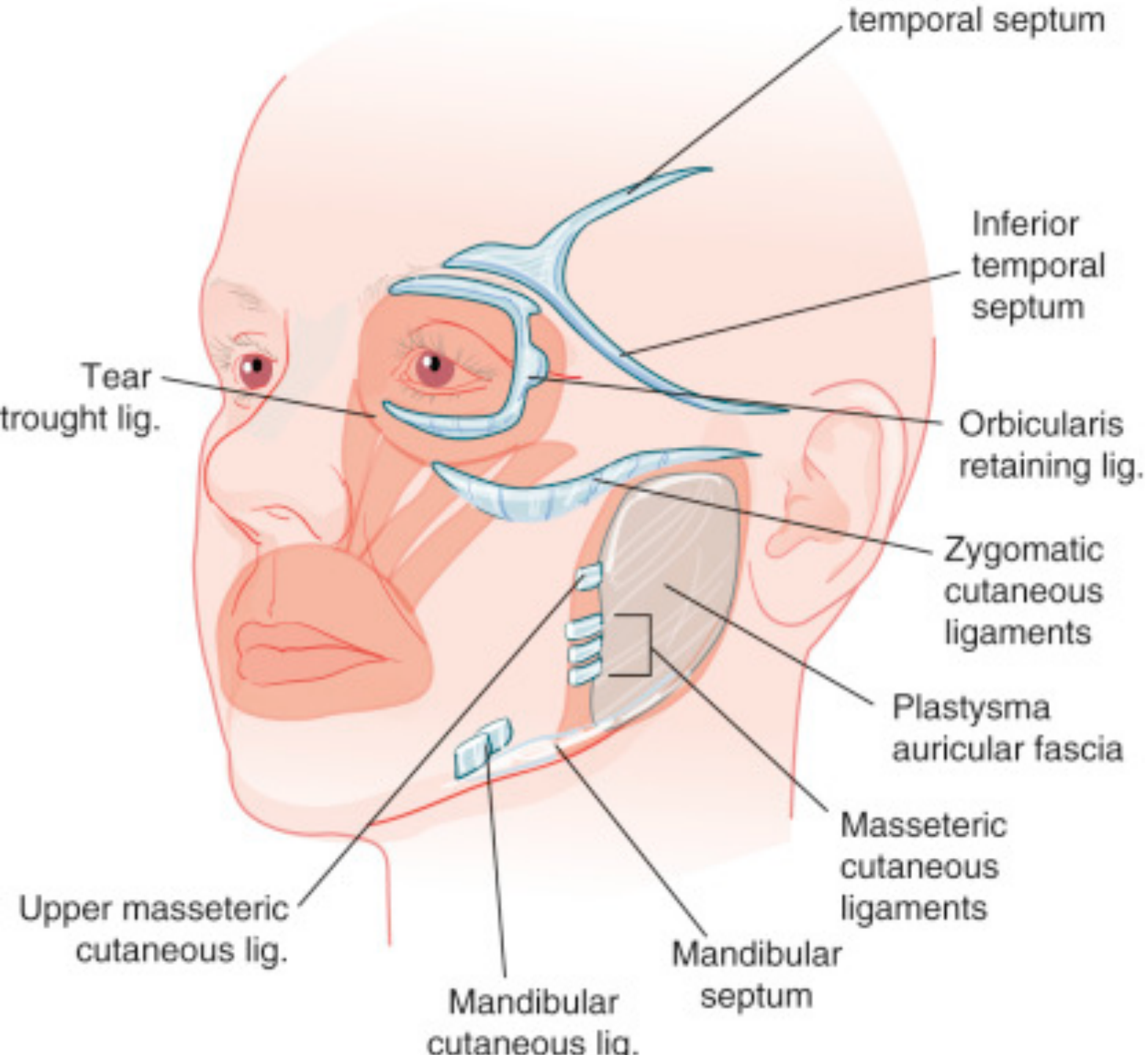
Masseteric ligament (jowel/jawline)

Mandibular ligament (jaw)



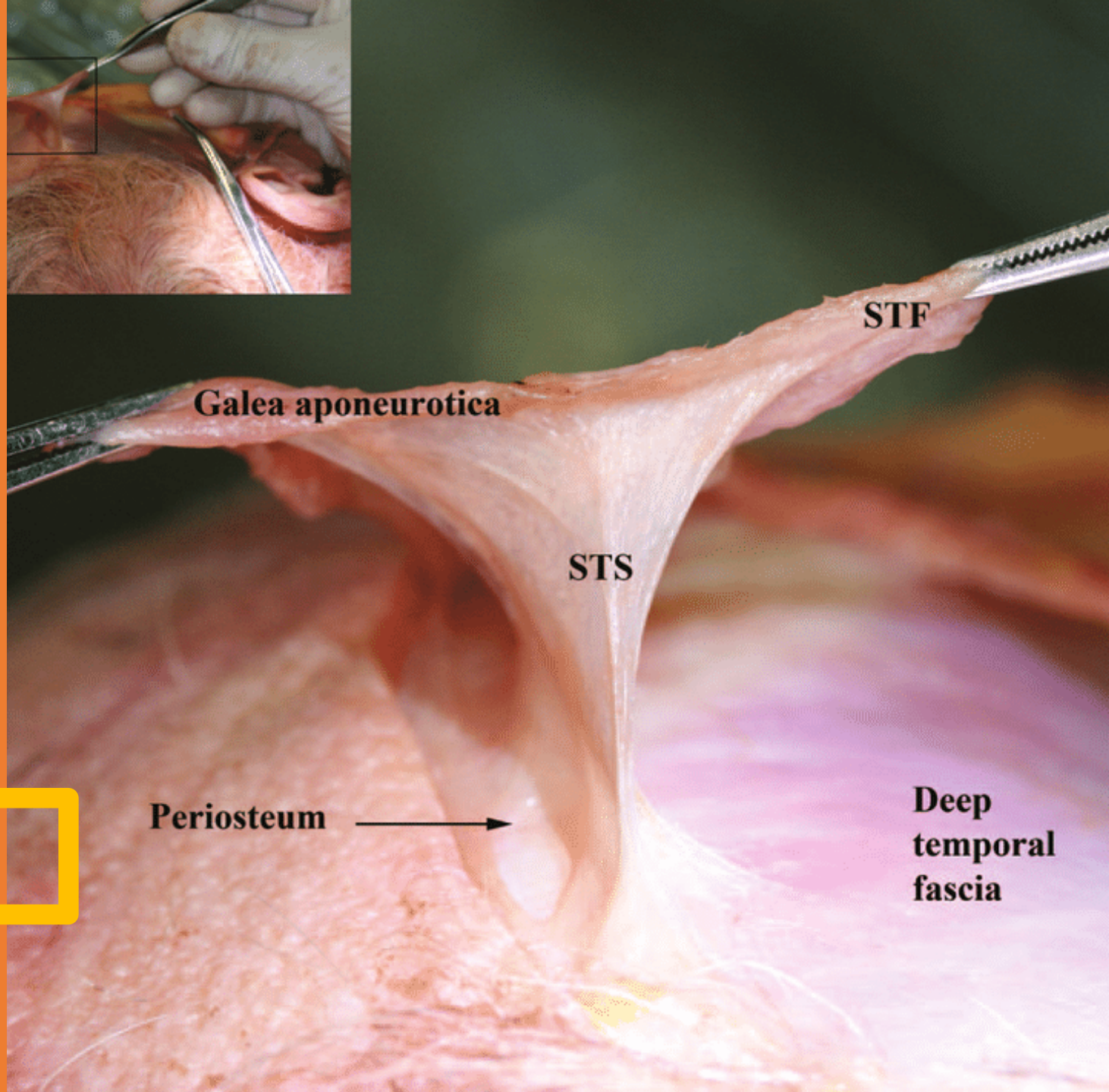
Temporal Zones of Adhesion

- Confusion and issues relating to nomenclature (adhesions, thickenings, zones of fixation)
- Some authors believing that the temporal area is devoid of ligaments.
- There is general agreement on the locations.
- Superior Temporal Septum.
- Inferior Temporal Septum.
- Separate the various fat compartments in the temporal region.



Temporal Zones of Adhesion

Temporal Zones of Adhesion






Retaining Ligaments and Ageing

Facial Ageing

- Boney resorption and remodeling.
- Volumetric deflation.
- Elastosis.
- Gravity.
- Repeated muscular activity.
- Soft tissue descent.

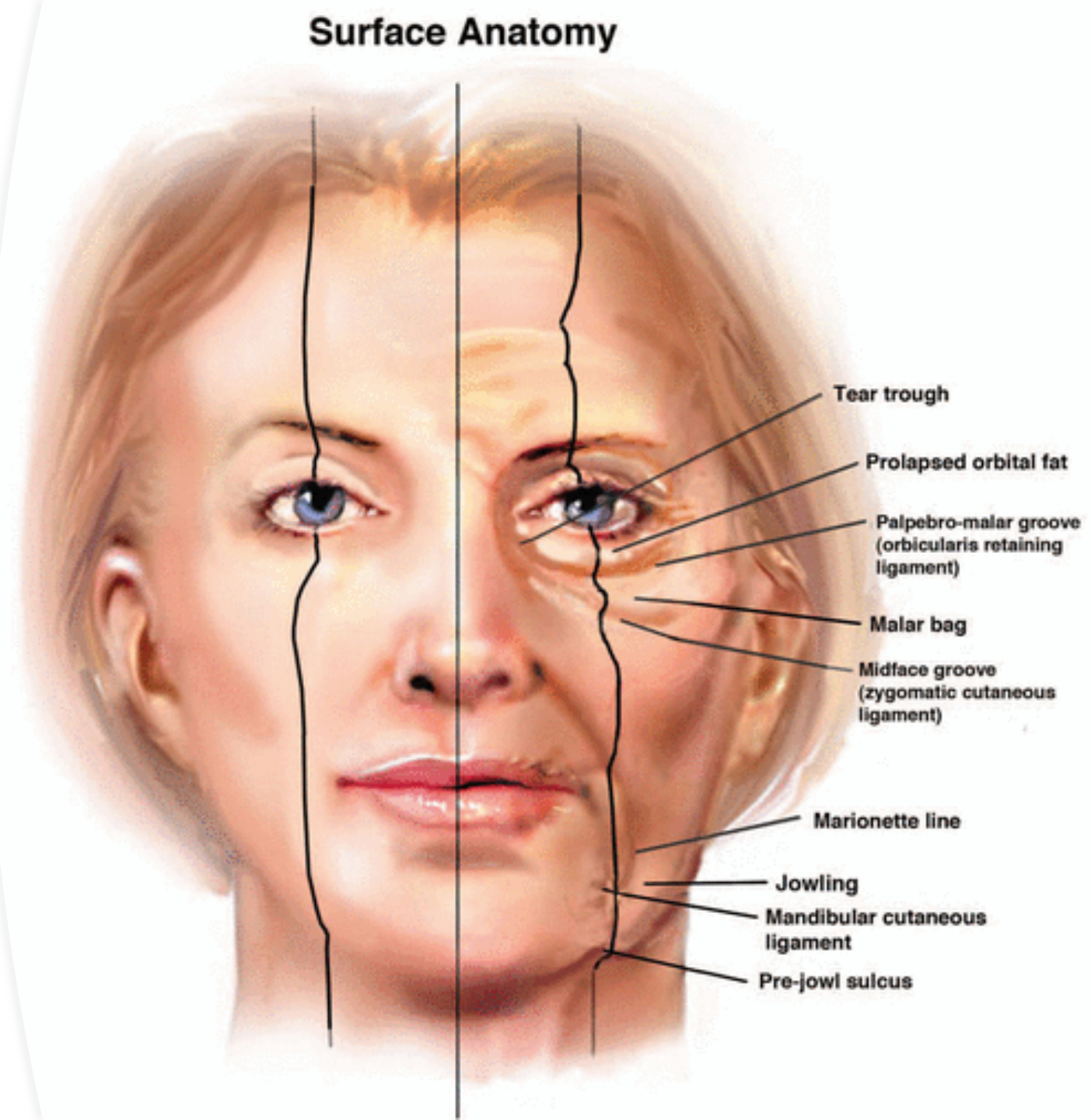


Role of Retaining Ligaments

- Not fully understood.
 - In youth the retaining ligaments are taut and keep the mobile superficial tissue firmly anchored to the underlying skeleton or deep fascia.
 - Some authors believe that these ligaments remain relatively strong and it's the unsupported tissue compartments that descend with time.
 - Whilst others believe that the ligaments attenuate and lengthen with age accounting for soft tissue descent.
- 

Role of Retaining Ligaments

- Either way, it seems clear that the gradual exposure of these retaining ligaments with age are responsible for the stigmata of facial ageing.



Ageing eyes



Weakness and bulging of the orbital septum.

Prolapse and herniation of the intra-orbital fat.

This presses anteriorly against the weak septum and inferiorly against the orbicularis retaining ligament.

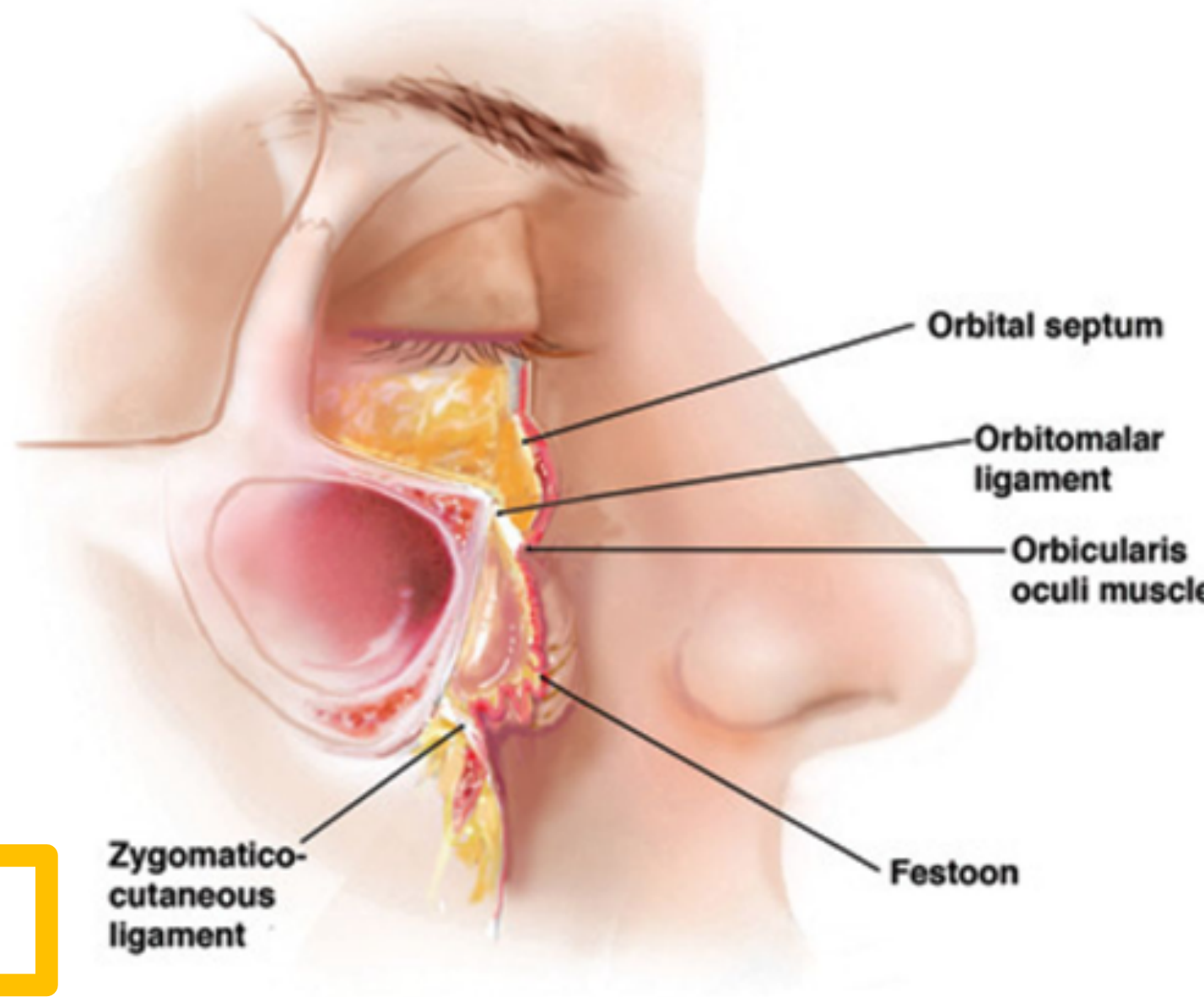
Resulting in eye bags.

Ageing Eyes

- In addition, the medial limb of the zygomatic cutaneous retaining ligament contributes to the formation of the mid-cheek or naso-jugal groove.
- The prezygomatic space is bound superiorly by the orbicularis retaining ligament and inferiorly by the zygomatic cutaneous ligament contributing to the formation of malar mounds or festoons.



Ageing Eyes

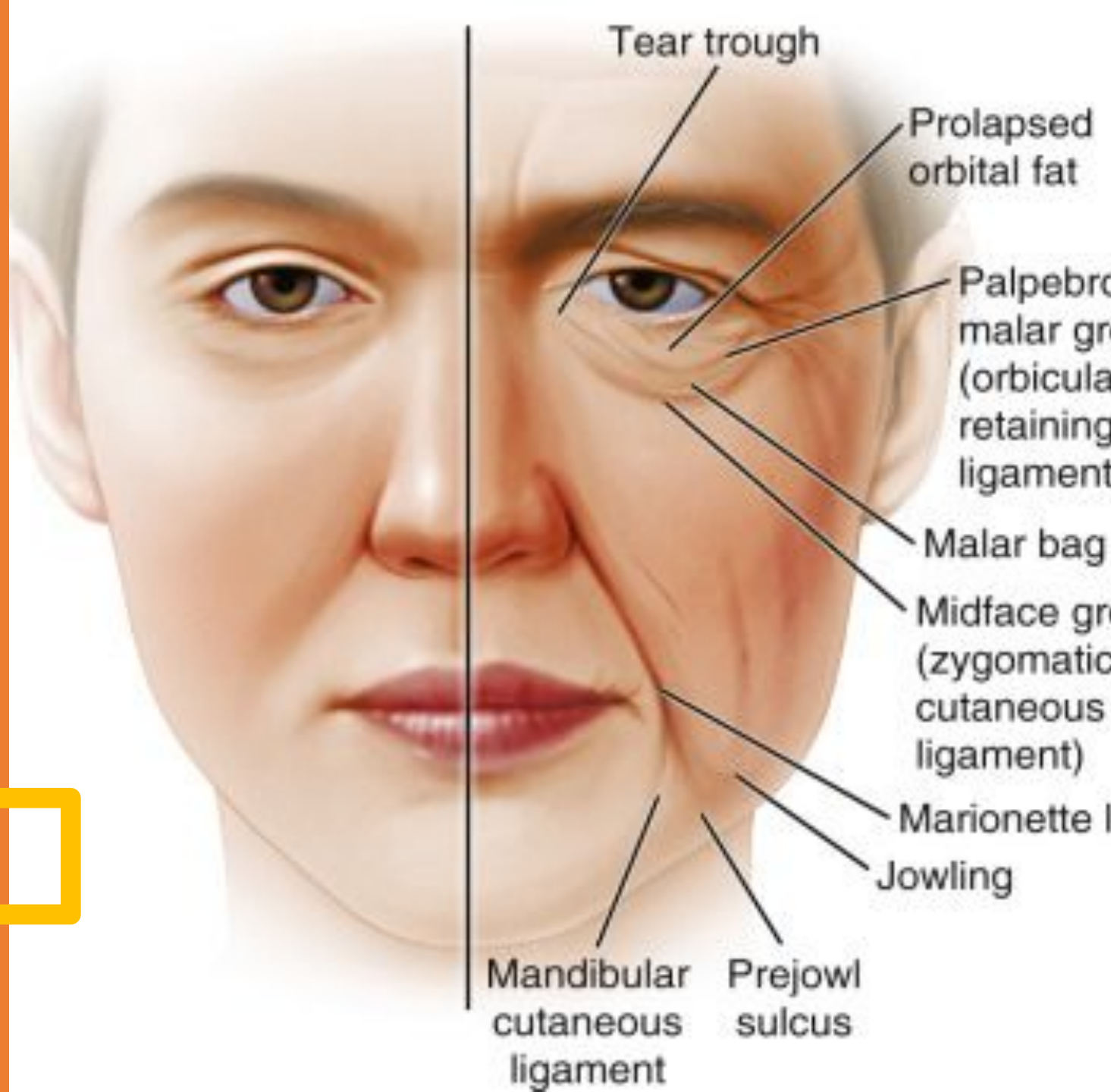


Winn

Ageing Lower Face

- Jowl formation.
- Descent of pre-masseteric tissue including jowl fat compartments.
- Anterior extension limited by the mandibular retaining ligament: pre jowl sulcus.
- Posterior extension limited by the masseteric cutaneous ligament.
- In addition a groove forms behind the mandibular ligament : melo-mental groove or marionette lines

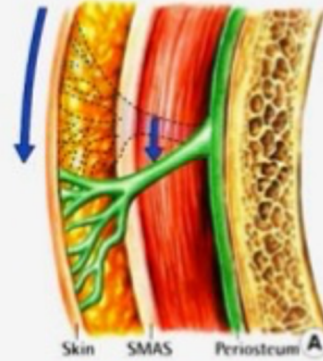
Ageing Lower Face



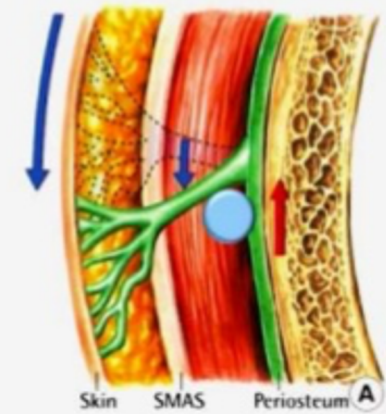
True Lift Technique

- Traditionally we have attempted to volumize the face.
- Filling in the compartments between the ligaments.
- Or alternatively, trying to fill in the grooves caused by exposure of the ligaments
- This technique takes into account the role played by the ageing retaining ligaments by trying to tighten and support the ligaments
- Achieved, by placing filler at the base of the ligaments to create support and indirect lifting by a cantilever effect.

Cantilever Effect



Byung Jun Kim. Development of Facial Rejuvenation Procedures: Thirty Years of Clinical Experience with Face Lifts. Arch Plast Surg 2015;42:521-532.



Byung Jun Kim. Development of Facial Rejuvenation Procedures: Thirty Years of Clinical Experience with Face Lifts. Arch Plast Surg 2015;42:521-532.



Thank you

