Parotid region
Parotid Gland

Largest of 3 paired salivary glands (submandibular; sublingual)

Masseter

Ramus of Mandible

Medial pterygoid

Cross section of mandible

SCM

Parotid Gland

Mastoid Process

Facial nerve and its branches
Parotid Duct

Parotid Duct

Buccal Branch of the Facial Nerve

Parotid Gland

Masseter

Buccinator

Parotid Duct
Parotid Duct

3 parallel structures!!

Transverse Facial Artery

Parotid Duct

Buccal Branch of the Facial Nerve

Retromandibular v.

Parotid Gland

Masseter

Buccinator

2nd Molar
Intraoral opening of the parotid duct (next to the upper second molar)
Innervation of the parotid gland
Boundaries of the Infratemporal Fossa:

- Temporal
- Parietal
- Frontal
- Greater wing of Sphenoid
- Maxilla
- Zygomatic Bone
- Infratemporal fossa
- Lat. Pterygoid Plate
- Roof
- Ext. Aud. Meatus
- Styloid process
Channels communicating with the infratemporal fossa:

- Inferior orbital fissure
- Frontal
- Grtr wing
- Sphenoid
- Temporal
- Pterygomaxillary fissure
- Zyg
- Maxilla

Foramen ovale + Foramen spinosum
Contents of the infratemporal fossa:

- Three (of four) muscles of mastication
- Mandibular nerve ($V_3$) + branches
- Otic ganglion
- Chorda tympani nerve (between facial and lingual nerve)
- Maxillary artery + branches
- Pterygoid plexus of veins
Muscles of Mastication:

- Temporalis
- Temporalis fascia
- Masseter
- Parotid duct
Muscles of Mastication:

- Medial pterygoid
- Lateral pterygoid
- Articular disk
- Head of mandible
- Medial pterygoid
Temporalis and Masseter muscles
Jaw opening muscles
Anterior belly of digastric muscle
Action of muscles of mastication on the mandible:

- **Depression** (open mouth): anterior belly of digastric, geniohyoid, lateral pterygoids (#3), mylohyoid (minor role)

- **Elevation** (close mouth, occlusion): masseter (#2), temporalis (#1), medial pterygoids (#4)

- **Protrusion** (protraction): mostly medial and lateral pterygoids (#3,4) + masseter (#2)

- **Retrusion** (retraction): temporalis (#1)

- **Lateral** (side to side) motion: lateral and medial pterygoids (#3,4)
**Temporomandibular Joint**: Articulation of condyle of mandible with mandibular fossa plus articular eminence of temporal bone.
TMJ: details of articulation

- Articular disc
- Lateral pterygoid tendon
- Mandibular fossa
- Upper synovial space
- Hinge Action
- Lower synovial space
- Condyle

Gliding Action
TMJ movement:

• **Initial** opening of mouth involves **rotation** of the condyle in the **lower compartment** of the TMJ. This is the **HINGE** motion.

• Further opening (beyond 20 mm.) requires **translation** of the condyle+articular disc on the articular eminence, which occurs in the **upper compartment**. This is the **GLIDING** motion.
Capsular ligament of the TMJ (enclosing the TMJ)
Ligaments of the temporomandibular joint
Review: Trigeminal nerve in middle cranial fossa:

V₁, V₂, V₃

V₃ Exits through **foramen ovale** to enter infratemporal fossa.
MANDIBULAR NERVE (V₃)

- **Mental n**
- **Mylohyoid n**
- **Lingual n**
- **Chorda tympani* n**
- **Buccal n**
- **Auriculotemporal**

SS (+ parastomal from otic ganglia (IX))

**SS**

**V₃** Somatosensory and somatomotor

- Inferior alveolar n
- Mylohyoid n
- SM to mylohyoid & anterior digastric mm

* Taste & parasympathetic pre-ganglionic

To go in and innervate cheek (don’t get confused with buccal branch of CNVII)
Chorda tympani

Ramus fractured
Maxillary artery
The pterygopalatine fossa is somewhat cone-shaped, located between the infratemporal fossa laterally and nasal cavity medially. It has six openings.
Six openings in to or out of the pterygopalatine fossa:

1. Foramen rotundum
   Maxillary (V2)

2. Pterygoid canal
   Greater petrosal nerve
   nerve of pterygoid canal (Vidian’s)

3. Greater palatine foramen
   Greater & lesser palatine n.

4. Inferior orbital fissure
   Infraorbital (V2) & artery

5. Pterygomaxillary fissure
   Maxillary artery

6. Sphenopalatine foramen
   Sphenopalatine artery

Nasal Cavity

Infratemporal Fossa
Maxillary Artery entering pterygopalatine fossa

Maxillary artery arising from external carotid artery

ECA

Maxillary artery arising from external carotid artery
Maxillary artery

Superficial temporal a

Maxillary a

Ext carotid a

Inferior alveolar artery and nerve
Maxillary artery entering the pterygopalatine fossa
Veins in the facial region