HUMAN FUNCTIONAL ANATOMY 213
THE MOUTH and NOSE

THIS WEEKS LAB:
Mouth and Mastication.

READINGS
Grant's Method:- Parotid, temporal and infratemporal regions
& Mouth tongue and teeth
Faiz and Moffat: mouth, palate and nose section 66
Stern: sections 45, 63 and 64

IN THIS LECTURE I WILL COVER:
Nerve supply to the mouth
General sensory
Taste
Parasympathetic
Teeth
Surface anatomy of the mouth
The palate
The floor of the mouth

MASTICATORY APPARATUS

Agnathia
Primitive jawless fish have no masticatory apparatus. Their pharyngeal arches make gills only. They have some sort of rasping or sucking mechanism for getting food

Fish, amphibia, reptiles.
Have mandible and maxilla. The jaw joint involves a number of bones between the mandible and the temporal bone: The quadrate and the articular.

There was a gradual change seen in early fossil mammals where the quadrate and articular gradually reduced in size. The joint was taken over by direct articulation between the temporal bone and mandible.

The quadrate, articular and another bone called the hypermandibula became the ossicles of the middle ear in mammals.

<table>
<thead>
<tr>
<th>Reptiles</th>
<th>Mammals</th>
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<tbody>
<tr>
<td>1st arch bones:</td>
<td>Quadrate</td>
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<td></td>
<td>Articular</td>
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<td>2nd arch bones:</td>
<td>Hypermandibular</td>
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SKELETAL ELEMENTS OF THE PHARYNGEAL ARCHES

NERVE SUPPLY OF THE MOUTH

GENERAL SENSORY
All trigeminal nerve
1. Maxillary division (all branches radiate from the pterygopalatine fossa)
   They supply the maxillary process of the 1st pharyngeal arch
   To the roof of the mouth
   Greater and lesser palatine nerves
   Nasopalatine nerve
   To the upper teeth and external aspect of the gums
   Anteriorsuperior alveolar nerves
   Posterior superior alveolar nerves

2. Mandibular division (all branches radiate from the foramen ovale)
   They supply the mandibular process of the 1st pharyngeal arch
   To the tongue and floor of the mouth:
   Lingual nerve
   To the lower teeth and gums:
   Inferior alveolar nerve
   To the cheeks:
   Buccal branch
Surface anatomy of the mouth

The mouth or oral cavity is surrounded by the cheeks and lips.

The cheeks (buccal) contain buccinator muscle.

The lips (labia) contain numerous muscles that control the mouth.

Vestibule is part of the cavity between the teeth and the cheeks or lips.

The Palatoglossal fold is posterior boundary of the mouth.

The Palatoglossus muscle can close the oro-pharyngeal opening.

The Palatine tonsils are behind the Palatoglossal fold.

The dorsum (top) of the tongue has a line of circumvallate papilae that separate the anterior 2/3s (oral portion) from the posterior 1/3 (pharyngeal part).

The floor of the mouth lies under the tongue.

The mylohyoid muscle forms the floor of the mouth.

Anterior belly of digastric is below the mylohyoid (both V3).

The geniohyoid and genioglossus muscles are above the digastric.

The submandibular gland runs by the submandibular gland and opens with a papilla on the frenulum of the tongue.

The frenulum of the tongue is a midline ridge formed by the genioglossus muscle.

The sublingual gland lies under the tongue.

The submandibular duct runs by the submandibular gland and opens with a papilla on the frenulum of the tongue.

The nasal cavity is surrounded by bone of the nasal, ethmoid, maxilla, palatine, sphenoid (body and medial pterygoid plates).

The nasal septum (ethmoid and vomer) divides the nasal cavity into two halves.

3 scroll-shaped conchae project into the nasal cavity from each side:

- Superior: between the nasal cavity and maxillary sinus
- Middle: between the nasal cavity and ethmoid sinus
- Inferior: between the nasal cavity and sphenoid sinus

The nasal septum is divided by the nasal septum. The superior and middle conchae are parts of the ethmoid bone. The inferior concha is a separate bone.

The nasal cavity and sinuses are lined with mucoperiosteum.

The function of sinuses is unclear (immune function, weight saving, resonance to the voice?)

Anteriorly the palate is hard and bony.

The soft palate contains glandular, aponeurotic and muscular tissue.

The uvula is the posterior end of the soft palate.

The soft palate contains 5 muscles and ends in the uvula.

Palatoglossus

- Lowers the palate and brings the tongue up

Palatopharyngeus

- Long muscle of pharynx

Levator palatei

- Raises the palate

Tensor palatei

- Stretches the palate (the muscle is in the lateral wall of the nasopharynx and the tendon passes through a pulley formed by the pterygoid hamulus - In the palate the tendons (aponeuroses) from the left and right sides join each other.)

Musculae uvulae

- Stiffens the uvula

All palate muscles except tensor palatei are supplied by the Vagus nerve (CNX).