



---

**Lecture title: Digestive System / The oral cavity**

**Lecturer Affiliation:** *Naziha Sultan Ahmed, BVMS, MSc*

Scientific degree(Assistant Prof.), *Department of Anatomy, College of Veterinary Medicine, University of Mosul, Mosul, Iraq*

<https://orcid.org/0000-0002-2856-8277>

[https://www.researchgate.net/profile/Naziha\\_Ahmed](https://www.researchgate.net/profile/Naziha_Ahmed)

## **The oral cavity**

### **1- Oral vestibule which consist of two parts:**

**a-Labial vestibule:** between lips and incisor teeth

**b-Buccal vestibule:** between cheeks and molar teeth.

The vestibule extends caudally toward the ramus of the mandible and the masseter muscle. The proportion of its walls formed by the lips varies with feeding habits; a wide gape is necessary in species that feed greedily or use their teeth to seize prey or in fight, whereas a smaller opening suffices in most herbivores and rodents.

**2-Oral cavity proper:** continue with the oral vestibule by the interdental space.

**Oral cavity proper** surrounded by the dental arches .The hard palate represent its roof.

Rostrally behind the upper incisor teeth there is incisive papilla, which surrounded the opening of incisive canal that connect nasal and oral cavities, (incisive canal closed in horse and opened in other animals).

Rostrally behind the lower canine teeth there are two sublingual



caruncles cover the opening of ducts of both mandibular and monostomatic sublingual salivary glands.

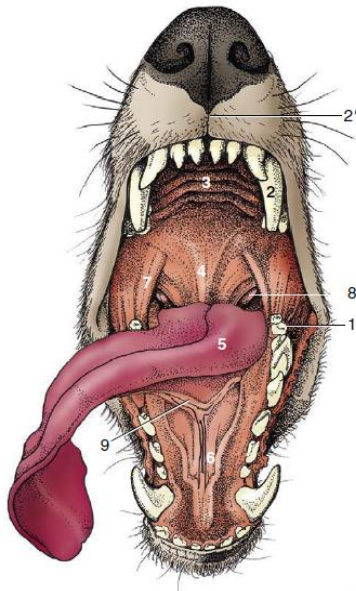
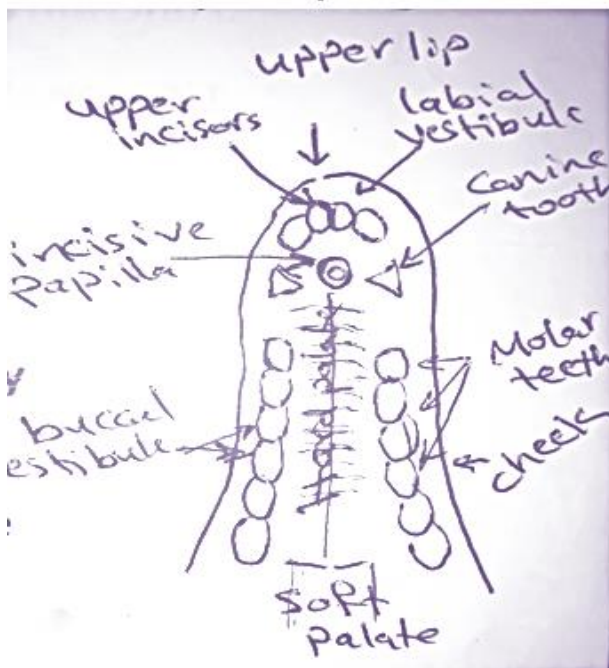
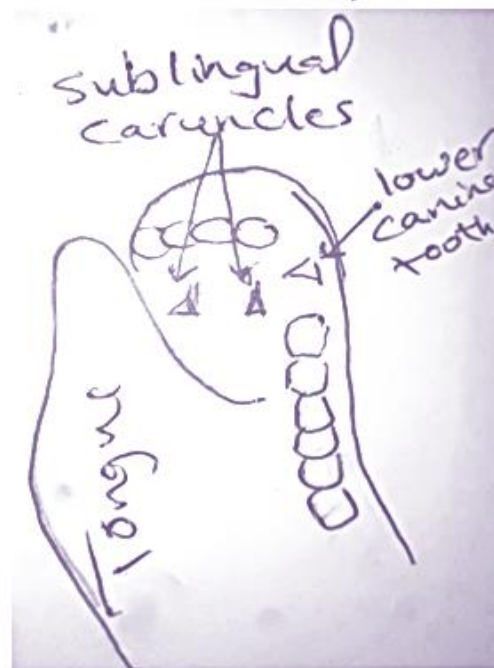


Figure 3-3 General view of the oral cavity of the dog.  
1, Vestibule; 2, canine tooth; 2', philtrum; 3, hard palate; 4, soft palate; 5, tongue; 6, sublingual caruncle; 7, palatoglossal arch; 8, palatine tonsil; 9, frenulum.

Roof of oral cavity



Flour of oral cavity





---

**\*The lips:** The lips are composed of skin, an intermediate layer of muscle called orbicularis oris , tendon, and glands, and the oral mucosa..

### **Anatomical variation of the lips**

#### **Anatomical variation of the lips:**

**1-Upper lip is quite mobile in horse, small ruminants and carnivora, but immobile in large ruminants and pigs.**

**2-Upper lip in large ruminants form the nasolabial plate (muzzle).**

**3-Upper lip in small ruminants and carnivore contains the philtrum which is a median fissure in the upper lip extend ventrally to nostrils in small ruminants & carnivore.**

**4-Lower lip of horse and ruminants present the chin (the mentum) .**

### **\*The cheeks ( bucca ) :-**

Represent the lateral wall of the oral cavity. It extend from the labial commissure (the angle of mouth) rostrally to the pterygo-mandibular fold caudally. The cheek consist of muscles covered externally by the skin and internally by the mucous membrane,

The cheeks (buccae), which tend to be most capacious in herbivores, have a similar structure. The principal support is the buccinator muscle, which has the important function of returning to the central cavity any food that has escaped into the vestibule. There are additional salivary glands, sometimes aggregated in quite large masses: the zygomatic gland of the dog, concealed below the zygomatic arch, has its origin in this way. The buccal mucosa must be sufficiently loose to allow the occasional maximal opening of the mouth while avoiding large folds that would at other times invite injury from the teeth ; it tends, therefore, to



be tightly anchored in some places. In ruminants, whose food may be dry and rough, additional protection is required; because a very thick and much cornified epithelium would limit flexibility, protection is provided by large, closely spaced, pointed papillae called buccal papillae

The orientation of the projections on the cheeks, palate, and tongue encourages the backward movement of material within the mouth; this, combined with the general insensitivity of the mouth parts and the copious salivary secretion, may explain the frequency with which cattle swallow foreign bodies concealed within their forage.

**\*The gum** :a smooth mucous membrane united to periosteum of alveolar processes of the jaws.

In ruminants gum is modified to form the dental pad which present instead of the upper incisors. A striking peculiarity in ruminants is the dental pad, a tough but yielding cushion in the position generally occupied by upper incisor teeth (lacking in these animals); the pad acts as a counterpart to the lower incisors in grazing

### **The hard palate :**

Represent the roof of the oral cavity and the floor of the nasal cavity

### **Hard palate consist of :**

**1-bony part** ( Horizontal plate of palatine bone , palatine process of maxillary bone and palatine process of incisive bone) .

### **2-membranous part(mucous membrane).**

Hard palate divided into two symmetrical halves by the median palatine raphe ( crest in dog but groove in horse & ruminants ) .

On both sides of the raphe the transverse palatine ridges are present.



---

## **The species variations of the hard palate :**

### **In horse :**

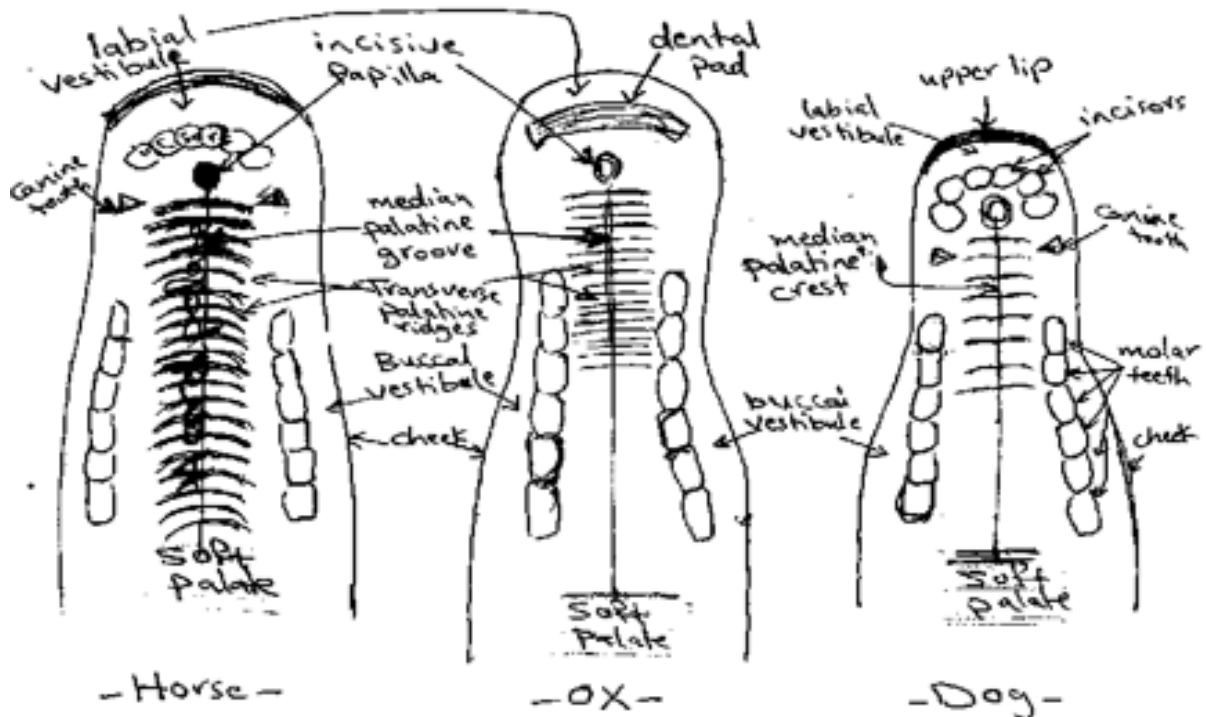
- 1-Hard palate has equal width along it's length.
- 2-Hard palate has median palatine groove .
- 3-It have 16-18 transverse palatine ridges .
- 4-Non glandular mucosa , but have venous plexus in rostral half .
- 5- Incisive papilla is closed .

### **In ruminants :**

- 1-Hard palate is narrow in the middle ,wide rostrally and caudally.
- 2-It has median palatine groove .
- 3-It have 15-19 transverse palatine ridges in the ox and 14 ridges in sheep and 12 in goat . In ruminants transverse palatine ridges bear papillae .
- 4-Glandular mucosa in the caudal third of the hard palate .
- 5-Incisive papilla is opened .

### **In the dog :**

- 1-Hard palate is narrow rostrally and wide caudally
- 2-Hard palate has median palatine crest .
- 3-It have 6-10 transverse palatine ridges .
- 4-Palatine mucosa is pigmented and glandular .
- 5-Incisive papilla is opened.



## Hard palate of farm animals

### The floor of the oral cavity :-

Consist of tongue and lower dental arch . The sublingual floor of the oral cavity is crescent in shape , it can be seen only when the tongue is elevated , this part is divided into 3 divisions :

**1-Prefrenular part :** rostrally to frenulum linguae , contain sublingual caruncles ,where ducts of both mandibular and monostomatic sublingual salivary glands open .

**2&3-Right & Left lateral sublingual recesses :** surrounded laterally by the buccal teeth and gum and surrounded medially by the lateral walls of the tongue .



Along the floor of each lateral sublingual recess ,the polystomatic sublingual salivary gland open..

