DIGESTIVE SYSTEM

To perform various functions of the body energy is required, which is obtained from food. The process of conversion of complex food material into simple and diffusible forms by hydrolysis is termed as Digestion.

The alimentary canal is tubular structure which extends from mouth to anus. It develops from ectoderm & endoderm. Mouth to anus. It develops from ectoderm & endoderm.

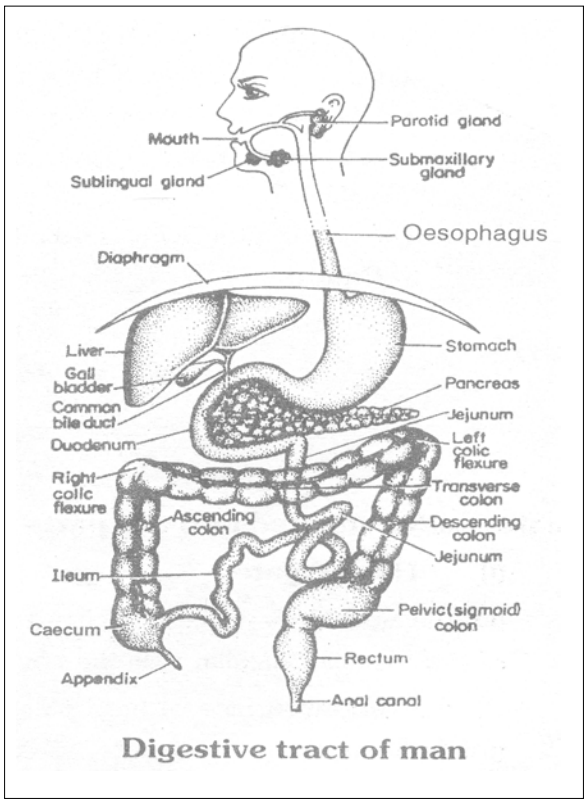
Ectoderm – upto hard palate

Endoderm- from soft palate to rectum

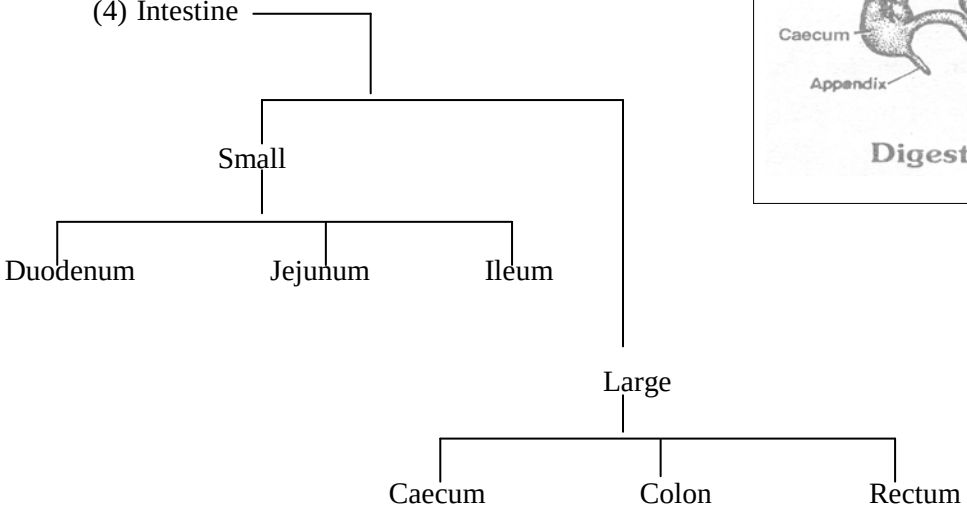
Ectoderm – from anal canal to Anus

The alimentary canal is divided into following parts-

(1) Mouth and Buccopharyngeal cavity
(2) Oesophagus
(3) Stomach
(4) Intestine



Digestive tract of man

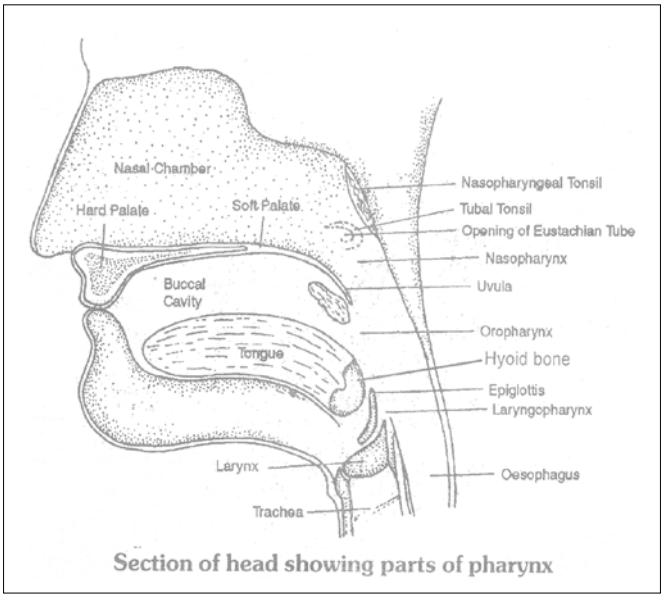


(1) Mouth and Buccopharyngeal Cavity-

Mouth is a horizontal transverse slite like aperture which is surrounded by upper and lower lip. (Orbicularis oris muscle). Sebaceous glands are found on the outer part of lip. Serous glands are found on the inner part of lip. Serous glands is the modification of mucus glands. Its secretory substance is watery.

In Rabbit a small cleft is found in the middle part of upper lip, such type of lip is called as Hare lip. Mouth open into Buccopharyangeal. Cavity, this cavity is divided into two parts.

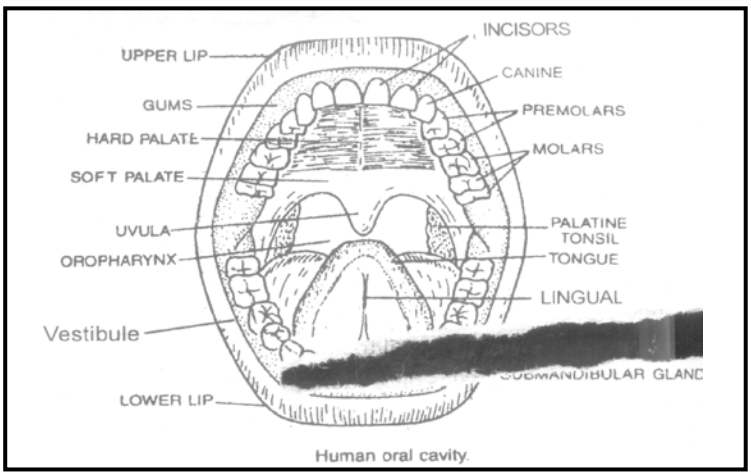
(i) Buccal vestibule – The space between the gums and cheeks where the food is stored temporarily for some time. It is peripheral part.



Section of head showing parts of pharynx

(ii) Oral cavity – It is inner & central part which is surrounded by upper and lower jaw. Lined by stratified squamous eptithelium. It is inner and central part. Upper Jaw is Fixed and lower Jaw is Movable.

The roof of oral cavity is called as Palate.



Human oral cavity.

Palate is differentiated into two parts:

(i) Hard Palate-

It is the anterior part of the palate. It is made up of Maxilla and palatine bone in human. But in Rabbit it is made of pre maxilla, maxilla, palatine bone.

On the ventral surface of hard palate, some projection or transverse ridges are present which are called as **Palatine rugae.**

These gugae prevent slip out of the food from buccal cavity during mastication.

These rugae are well developed in carnivorous animals.

In rabbit, one pair opening of Nasopalatine duct is present at the anterior part of hard palate, these connect the buccal cavity to the Nasal passage. In Rabbit some olfactory receptor are also found in nasoplatine duct which are called as Jacobson's organ. It makes them aware of the smell of food while chewing.

(ii) Soft Palate-

It is the posterior part of palate. It is made up of involuntary muscle fibrous connective tissues and mucous epithelium. (Stratified squamous epithelium)

The posterior part of soft palate becomes out grown and hangs down in the form of finger like process called as Uvula of Velum palate.

One pair of large lymph node is present on the posterolateral surface of soft palate, called as **palatine tonsil** or **Tonsils.**

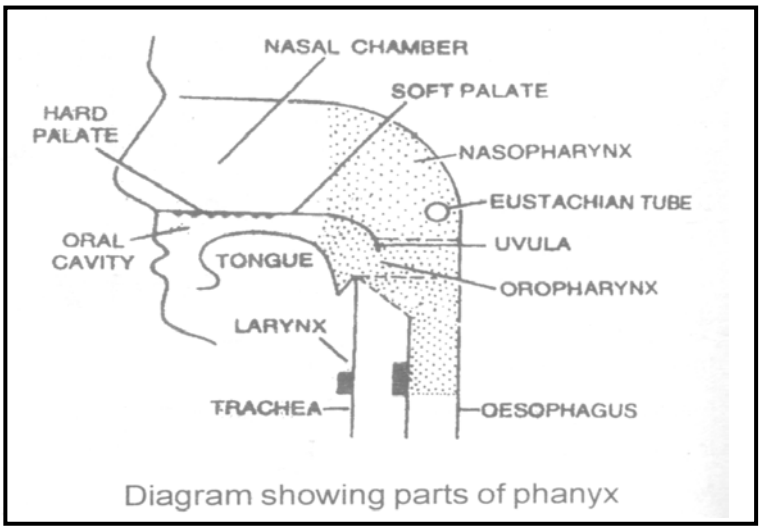
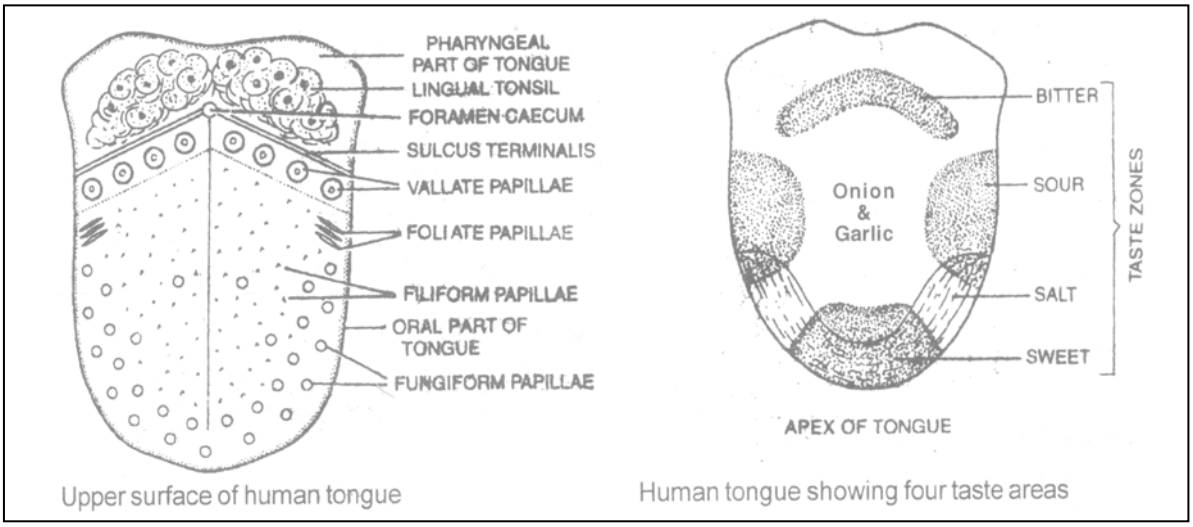


Diagram showing parts of phanyx

Soft Palate is situated in the pharynx and is divided into two parts. Upper part of pharynx is called as Nasopharynx which is related to the nasal chamber.

The lower part of pharynx is called oropharynx which is related to the oral cavity. One pair of openings of Eustachian tube is present in the nasopharynx. This Eustachian tube is related to the middle ear.

TONGUE:-



On the floor of oral cavity a muscular, flat, fleshy plate like structure is present which is called Tongue. The anterior part of tongue I s free while posterior part of Tongue is connected to the Hyoid bone. The surface of tongue is connected to the floor of buccal cavity through a very flexible membrane /ligamentous fold called as **Frenulum linguae.**

On the Dorsal surface of tongue, it is divided into two unequal parts by a V shaped sulcus, called as sulcus terminalis.

The two limbs of the 'V' meet at a median pit named Foramen Caecum. It is divided into two parts-

(I) Pharyngeal Part – It is the posterior 1/3 part of the tongue. Many small lymph nodes are present in this part which are called Lingual tonsil.

(II) Oral or papillary part – It is anterior 2/3 par of tongue. Four types of papillae are found in this part in which gustatory or taste receptors are present.

(i) Fungiform Papillae-

It is pink coloured, small & spherical in shape, It is found on the entire surface of tongue but mostly present at the anterior part of tongue. It is attached to tongue with the help of small pedicle. It provides pink colour to the tongue.

(ii) Filliform papillae (Conical papillae) –

They are thread like, white coloured & conical in shape. They are also fund on the entire surface of tongue. They are most numerous.

(iii) Foliate papillae-

They are found on the mid lateral surface of tongue. They are vestigial in the human. There structure is leaf like present in rabbit and other mammals.

(iv) Circumvallate papillae-

They are large spherical shape papillae which are found near to sulcus terminalis. They are least in number approx (8 to 12).

Two types of muscle present in tongue:-

1. Extrinsic muscle:-

- It is found on outer and superficial part of tongue.
- It helps in outward and inward movement of tongue.

2. Intrinsic muscle:-

- It is situated in the deep part of tongue.
- It help in the change of shape of tongue.