

Oral Anatomy and Physiology

Ø Classification & structure of salivary glands:

1. Classification according to location:

- a. Oral vestibule: labial – buccal – parotid glands.
- b. Oral cavity proper: palatine – glossopalatine – lingual – sublingual – submandibular glands.

2. Classification according to size:

- a. Major salivary glands: parotid – submandibular – sublingual.
- b. Minor salivary glands: Labial and buccal glands – glossopalatine – von Ebner – weber – blandin Nuhn – minor sublingual glands.

3. Classification according to nature of secretion:

- a. Pure serous glands: parotid – von Ebner.
- b. Pure mucous: palatine – glossopalatine – weber – minor sublingual.
- c. Mixed glands: labial & buccal – submandibular – sublingual – blandin NUhn – parotid.

Ø Composition & Function of salivary glands:

1. Composition of saliva:

Composed of 99 % water and 1%: inorganic ions – organic substances – serum constituent.

2. Functions of saliva:

- a. Protective functions:
 - Saliva prevent desiccation.
 - Anti cariogenic effect.
 - The buffering capacity of saliva.
 - Help in reducing the effect of bacterial acids.
 - Inhibit the precipitation of calcium.
 - Saliva has antibacterial agent such as (peroxidase –lysozyme- lactoferrin)
- b. Taste functions:

Help in taste function by dissolving substances.
- c. Digestive functions:

Saliva helps in digestion of food by certain enzymes as (amylase - lingual lipase).
- d. Tissue repair:

Saliva help in formation of blood clot which allows for increased rate of wound contraction.

Ø Tooth eruption:

Is axial occlusal movement of the tooth from its developmental position within the jaw to its functional position in the occlusal plane.

1. Pattern of tooth movement:

a. Pre- eruptive phase:

Which begins in early bell stages & ends at the beginning of root formation.

- Eruption of deciduous teeth:

Crowding caused by excessive growing of deciduous tooth germ is relieved by: growth of jaws in length.

growth of jaw in width.

growth of jaw in height.

- Permanent teeth eruption:

They develop lingual to their predecessors, after their predecessor erupt they move in apical position to occupy their own bony crypt.

- Types of movement during pre eruptive phase are: bodily (drifting), or eccentric movement.

b. Eruptive phase:

Begins by root formation and ends when the tooth reaches the occlusal plane.

- Types of movement during the eruptive phase are: bodily (drifting), axial movement, tilting or tipping movement & rotating movement.

- Development changes during this phase:

- Root formation initiated by proliferation of Hertwigs root sheath.

- Supporting apparatus formation.

- Dentino-gingival junction formation.

c. Post- eruptive phase:

Begins when the tooth reaches the occlusal plane and ends with the life span of the tooth.

- Pattern of tooth movement in post eruptive phase: axial movement & mesial drift.

2. Mechanism of tooth movement:

There are four possible cause for eruption:

- a. Bone remodeling theory.
- b. Vascular pressure theory.
- c. Root formation theory.
- d. Periodontal ligament traction theory.

3. Shedding of deciduous teeth:

The physiologic process of eliminating the deciduous teeth after their root resorption and prior to the eruption of their permanent successor.

- a. Mechanism of resorption & shedding:
 - Resorption of hard dental tissues.
 - Resorption of soft dental tissues.
- b. Factors that determine pattern of shedding:
 - Genetic factors.
 - Local factors: local pressure – masticatory forces.