

جامعة ساوة الاهلية
كلية التقنيات الصحية والطبية
قسم التخدير - اللجنة العلمية



Salivary Gland

جامعة ساوة

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قسم تقنيات التخدير

المرحلة (الثالثة)

Salivary Glands

In humans, the saliva is secreted by three pairs of major (larger) salivary glands and some minor (small) salivary glands in the oral and pharyngeal mucous membrane. **The major glands are:**

1. Parotid glands
2. Submaxillary or submandibular glands
3. Sublingual glands.

4. Parotid glands

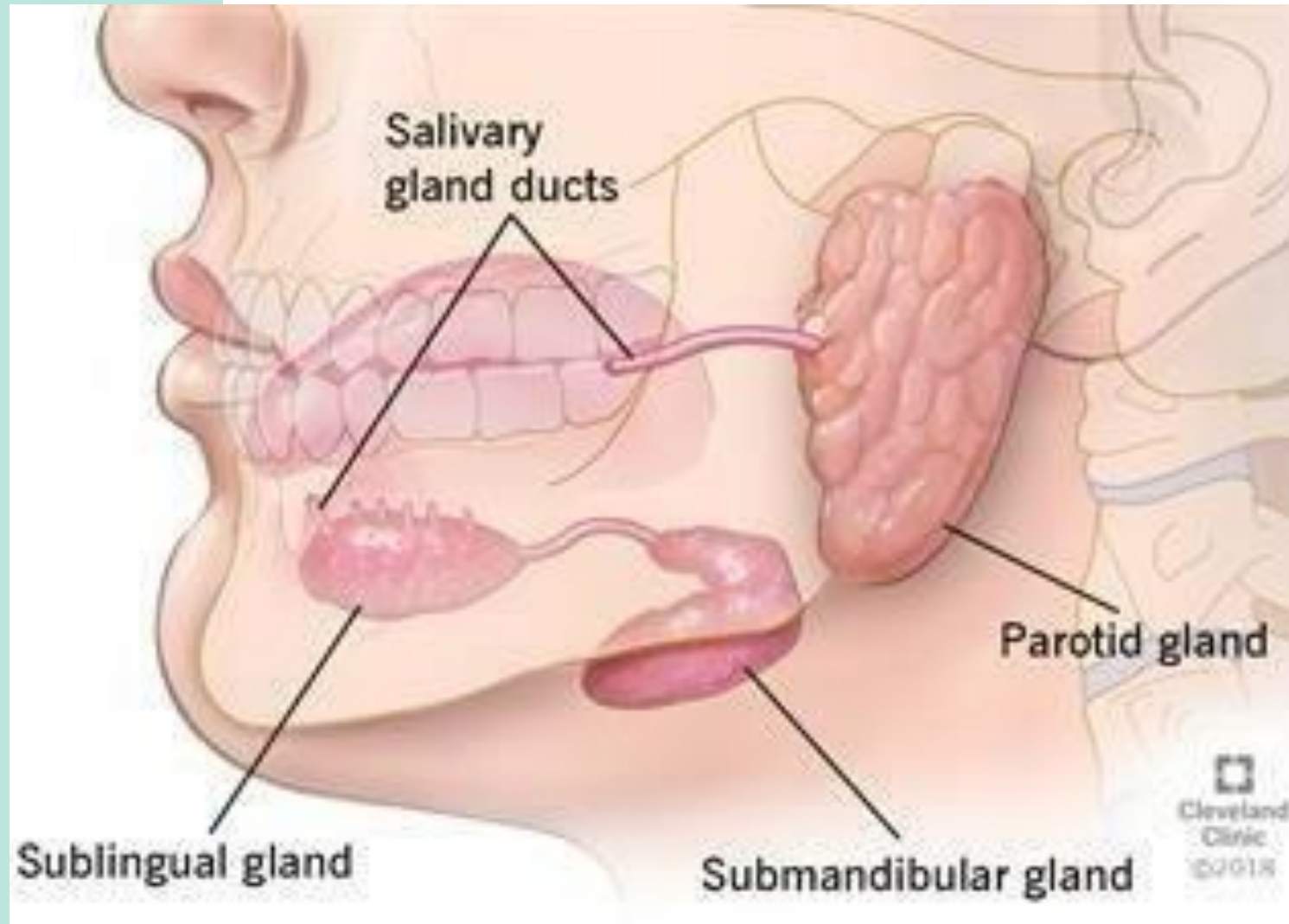
Parotid glands are the largest of all salivary glands situated at the side of the face just below and in front of the ear.

2. Submaxillary glands

Submaxillary glands or submandibular glands are located in submaxillary triangle medial to mandible.

3. Sublingual glands

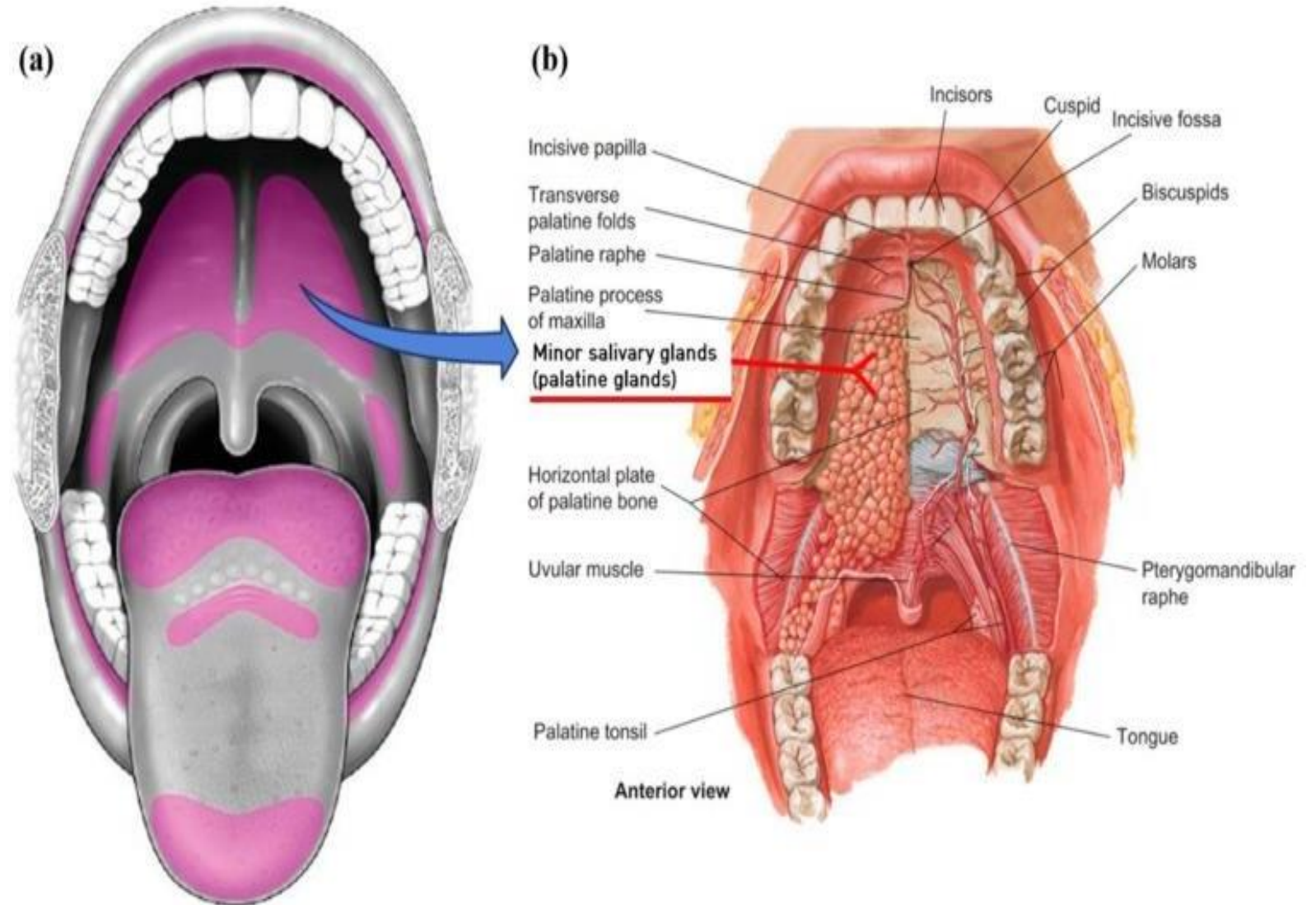
Sublingual glands are the smallest salivary glands situated in the mucosa at floor of mouth.



Major salivary glands

Minor salivary glands

1. Lingual mucus glands situated in posterior 1/3 of the tongue
2. Lingual serous glands
3. Buccal glands
 - 4. Labial glands
 - 5. Palatal glands.



Classification of salivary glands

Salivary glands are classified into three types based on the type of secretion.

1. Serous Glands

This type of glands are predominantly made up of **serous** cells. These glands secrete thin and watery saliva. Parotid glands and lingual serous glands are serous glands.

2. Mucus Glands

This type of glands are made up of mainly the mucus cells. These glands secrete thick, viscous saliva with high mucin content. Lingual mucus glands, buccal glands and palatal glands belong to this type.

3. Mixed Glands

Mixed glands are made up of both serous and mucus cells. Submandibular, sublingual and labial glands are the mixed glands.

Structure and duct system of salivary glands

Salivary glands are made up of acini or alveoli. Each acinus is formed by a small group of cells which surround a central globular cavity. The central cavity of each acinus is continuous with the lumen of the duct. The fine duct draining each acinus is called intercalated duct. Many intercalated ducts join together to form intralobular duct. Few intralobular ducts join to form

which unite to form the main d

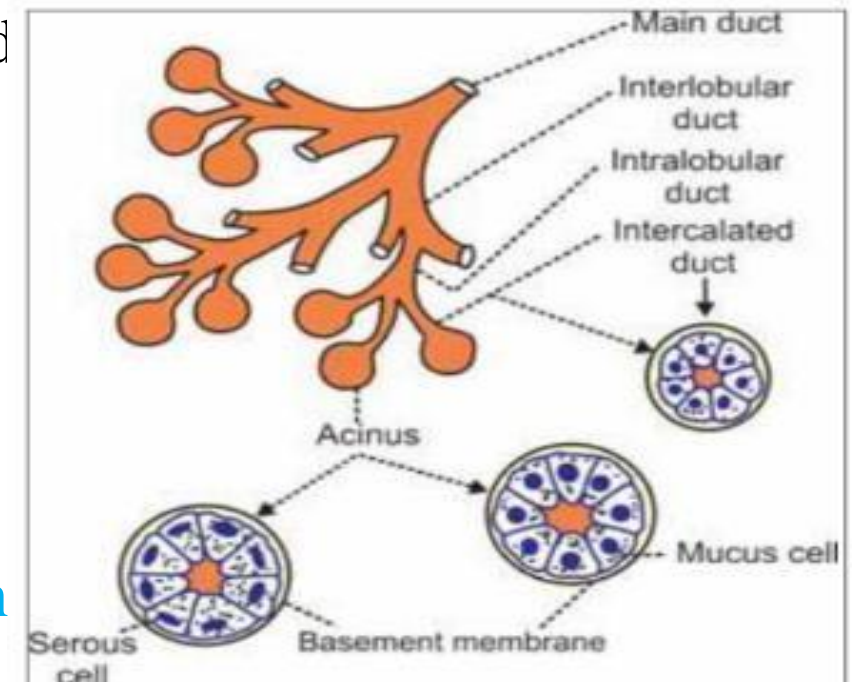
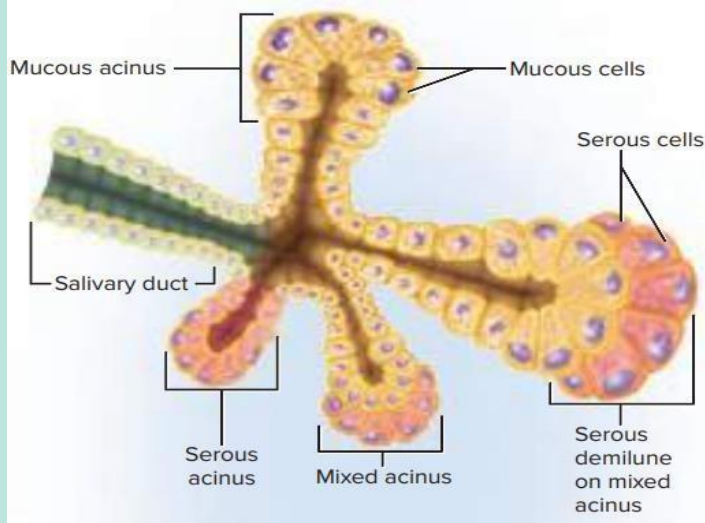


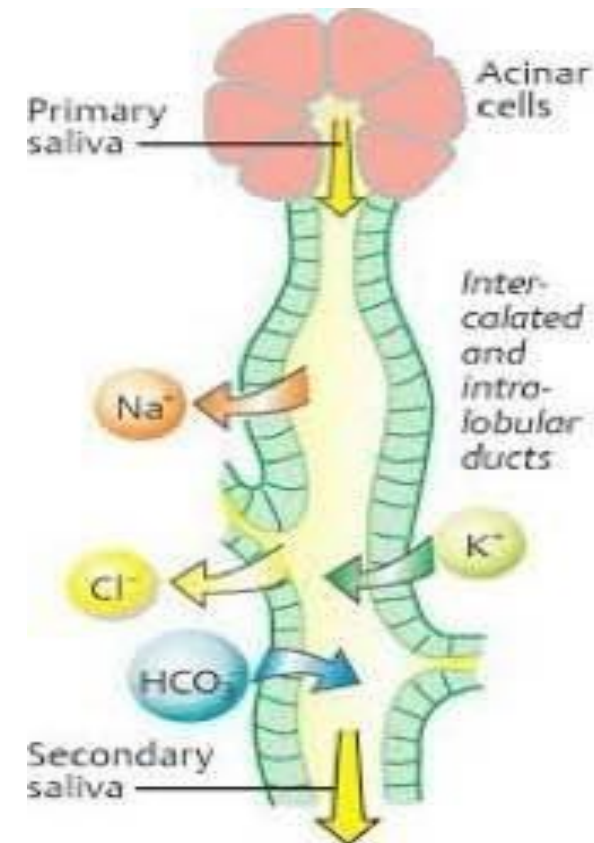
Diagram showing acini and duct system in salivary glands

Control of salivary gland:

It is completely under the control of autonomic nervous system:

a. Parasympathetic nervous signals from the salivatory nuclei that located at the juncture of the medulla and pons → increase salivary secretion by stimulating the muscarinic receptors due to the release of acetylcholine and the parasympathetic stimulation is initiated by the presence of food in the mouth. Drugs that block muscarinic receptors like atropine inhibit salivary secretion and leads to dryness of the mouth.

b. Sympathetic stimulation → will decrease salivary secretion as in fear so person can not speak normally.



Development of salivary glands

Parotid: 4-6th week of I.U. life.

Submandibular :6th week of I.U. life.

Sublingual and minor salivary gland : 8th week of intrauterine life.

Maturity of secretory end piece: During last 2 months of gestation.

Secretory component of Gland continues to grow postnatally while as ductal, connective tissue component and vascular component decreases- up to two years of age.

Systemic Diseases and Nutrition

In some chronic diseases such as: pancreatitis, diabetes mellitus, renal insufficiency, anorexia, bulimia, and celiac disease, the amylase level is high.

- Alterations in the psycho-emotional state may alter the biochemical composition of saliva. Depression is accompanied by diminished salivary proteins.
- Nutritional deficiencies may also influence salivary function and composition.

Clinical Significance Since many oral and systemic conditions manifest themselves as changes in the flow and composition of saliva.

Regulation of Salivary Secretion

Secretion of saliva is continuous, but the amount varies in different situations.

The presence of food (or anything else) in the mouth increases saliva secretion.

This is a parasympathetic response mediated by the facial and glossopharyngeal nerves.

The sight or smell of food also increases secretion of saliva.

Sympathetic stimulation in stress situations decreases secretion, making the mouth dry and swallowing difficult.

Factors Influencing Salivary Flow and Composition

- Several factors may influence SF and its composition. As a result, these vary greatly among individuals and in the same individual under different circumstances.

Individual Hydration

- The degree of individual hydration is the most important factor that interferes in salivary secretion. When the body water content is reduced by 8%, SF virtually diminishes to zero, whereas hyperhydration causes an increase in SF. During dehydration, the salivary glands cease secretion to conserve water.



I. Pharmacologic agents

- Barbiturates, antihypertensive, antihistamine drugs - decrease the flow of saliva
 - patients taking the drugs causes xerostomia (depleted salivary flow).
 - Soreness and lesions is usually found in the mouth due to irritation
- Geriatric patients
- Ill-fitting denture



2. Psychological



- Fear or pain would have increase in salivary flow
- Anticipate pain (body is tensed) - produces more saliva

3. Size of gland

- The **bigger** the gland, the more secretion it produces



4. Interference with taste perception

- Eating stimulates salivation
- Problem with taste buds - depletes the secretion of saliva



5. Age changes

YOUNG
WILD
FREE &



- Younger = more saliva



6. Systemic diseases

- Decrease the flow of saliva (hypothyroidism)

7. Disease of the salivary gland

- Obstructed gland
- Tumors





8. Irradiation of glands

- Radiation therapy
(decrease, dry mouth)



SCAN TO GET THE LECTURE

