

Anatomy, Physiology and Common Disorders of Salivary Glands

Luke Pascall*

Department of Dental Surgery, University of Freiburg, Freiburg, Germany

Perspective

Received: 17-May-2024,

Manuscript No. JDS-24-139461;

Editor assigned: 21-May-2024, Pre
QC No. JDS-24-139461 (PQ);

Reviewed: 04-Jun-2024, QC No. JDS-
24-139461; **Revised:** 11-Jun-2024,
Manuscript No. JDS-24-139461 (R);

Published: 18-Jun-2024, DOI:
10.4172/2320-7949.12.2.004

***For Correspondence:** Luke Pascall,
Department of Dental Surgery,
University of Freiburg, Freiburg,
Germany

E-mail: lukepascall68@gmail.com

Citation: Pascall L Anatomy,
Physiology and Common Disorders
of Salivary Glands. RRJ Dental Sci.
2024;12:004

Copyright: © 2024 Pascall L. This is
an open-access article distributed
under the terms of the Creative
Commons Attribution License, which
permits unrestricted use,
distribution, and reproduction in any
medium, provided the original
author and source are credited.

DESCRIPTION

Salivary glands are essential components of the oral and digestive systems, responsible for producing and secreting saliva, which plays a vital role in oral health and digestion. These glands are divided into major and minor categories, each contributing to the complex functions of saliva.

Anatomy of salivary glands

The salivary glands are categorized into three major pairs and numerous minor glands

Major salivary glands

Parotid glands: These are the largest salivary glands, located near the ears, extending from the cheek down to the jawline. The parotid glands secrete a watery, enzyme-rich saliva through the stensen's ducts, opening near the upper second molar. They produce about 25% of the total saliva volume, primarily during meals.

Submandibular glands: Located beneath the lower jaw, these glands are responsible for producing about 60%-70% of saliva. They secrete a mixed serous and mucous saliva through Wharton's ducts, which open at the floor of the mouth behind the lower front teeth.

Sublingual glands: These are the smallest of the major glands, situated under the tongue. They produce a mucous-rich saliva through multiple ducts, collectively known as the ducts of rivinus, with the main duct being bartholin's duct. The sublingual glands contribute approximately 5%-10% of the total saliva.

Minor salivary glands

Scattered throughout the mucosa of the lips, cheeks, palate, and tongue, these glands are numerous but small. They produce a continuous low-level flow of saliva that helps maintain moisture in the mouth. The saliva from these glands is primarily mucous in nature, aiding in lubrication and protecting the mucosal surfaces.

Functions of saliva

Lubrication and protection: Saliva lubricates the oral tissues, facilitating speech and swallowing while providing a protective barrier against mechanical injuries and pathogens.

Digestion: Saliva initiates the digestive process by breaking down starches into simpler sugars through the enzyme amylase. It also helps form the food bolus for easier swallowing.

Buffering: Saliva maintains the pH balance in the mouth, neutralizing acids produced by bacteria, which helps prevent tooth decay and erosion.

Antimicrobial activity: Saliva contains various antimicrobial agents, such as lysozymes, lactoferrin, and immunoglobulins, which inhibit the growth of harmful microorganisms and support the immune defense system.

Remineralization: Saliva is rich in calcium and phosphate ions that aid in the remineralization of enamel, helping repair early tooth decay.

Taste: Saliva acts as a solvent for taste substances, enhancing the ability to perceive flavors.

Regulation of salivary secretion

Salivary secretion is primarily controlled by the Autonomic Nervous System (ANS). Both sympathetic and parasympathetic pathways influence the volume and composition of saliva produced.

Parasympathetic stimulation: This leads to the production of a large volume of watery saliva, essential for digestion and maintaining moisture. The stimulation usually occurs in response to the sight, smell, or thought of food.

Sympathetic stimulation: This typically results in the secretion of a smaller volume of saliva, which is thicker and more mucous-like, often associated with stress or fear.

Disorders of salivary glands

Salivary gland disorders can significantly impact oral health and quality of life. Some common conditions are listed below.

Xerostomia (Dry mouth): Often resulting from reduced saliva production due to aging, medications, radiation therapy, or systemic diseases such as Sjögren's syndrome. It can lead to difficulties in speaking, eating, increased risk of dental caries, and oral infections.

Sialolithiasis: The formation of calculi (stones) within the salivary ducts, which can obstruct saliva flow, leading to pain and swelling, particularly during meals.

Sialadenitis: Inflammation or infection of the salivary glands, often due to bacterial or viral causes. Symptoms include swelling, pain, and sometimes pus discharge.

Tumors: Both benign and malignant tumors can develop in the salivary glands, with the parotid gland being the most common site for these growths.

CONCLUSION

Salivary glands are integral to maintaining oral health, facilitating digestion, and protecting the oral cavity. Understanding their structure, function, and potential disorders explain their importance in both everyday life and clinical settings. Proper management and treatment of salivary gland conditions are important for preserving these essential functions and ensuring overall well-being.