A review on role of Saliva in Prosthodontics

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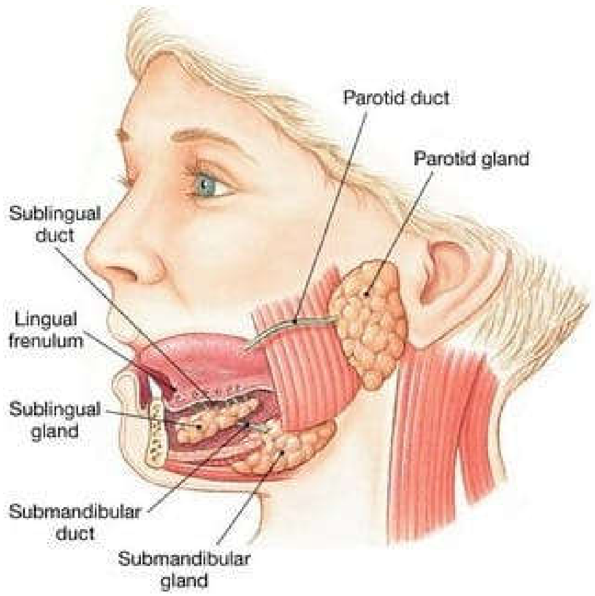
Abstract

Saliva plays a critical role in maintaining oral health and significantly impacts prosthodontic treatment outcomes. Its composition, viscosity, and flow rate influence denture retention, stability, and overall oral hygiene. Saliva aids in microbial defence, pH balance, enamel remineralization, and digestion, while also serving as a diagnostic tool for systemic and oral diseases. Salivary dysfunction, including xerostomia and sialorrhea, can complicate prosthodontic care, affecting denture comfort and longevity. Additionally, saliva interacts with dental materials, influencing their mechanical properties and biocompatibility. Effective management of salivary dysfunction through pharmacological agents, salivary substitutes, and lifestyle modifications enhances prosthetic success. Furthermore, saliva plays a role in microbial colonization, taste perception, and denture-associated biofilm formation, impacting both oral health and prosthodontic longevity. Understanding the multifaceted role of saliva in prosthodontics is essential for optimizing treatment outcomes and patient comfort.

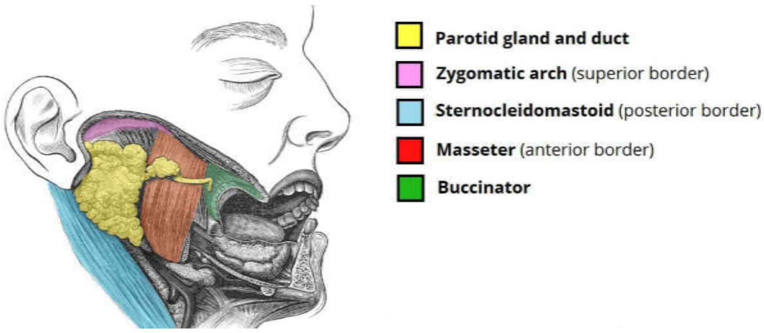
Keywords: Saliva, Prosthodontics, Denture Retention, Xerostomia, Microbial Colonization

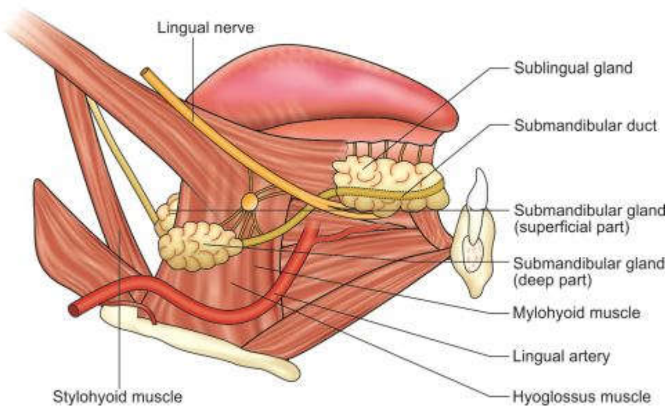


Introduction

Saliva is a vital biological fluid that plays an indispensable role in maintaining oral homeostasis and significantly impacts prosthodontic treatment outcomes. Its composition, viscosity, and flow rate influence various aspects of oral health, including lubrication, digestion, and protection against microbial pathogens. In prosthodontics, saliva is particularly important for denture retention, stability, and overall oral hygiene, ensuring the success and comfort of prosthetic devices[1]. Saliva is secreted by salivary glands. Saliva is of two types such as Thick Viscous saliva (mucous saliva) composed of high concentration of glycoproteins and smaller amount of water, electrolytes, enzymes, immunoglobulins and other proteins and Watery saliva (serous saliva) composed of mostly water, electrolytes and proteins.

Patients with xerostomia, such as those suffering from Sjögren's syndrome or those undergoing radiation therapy for head and neck cancers, often experience a reduced salivary flow, which increases their susceptibility to dental caries, oral infections, and mucosal discomfort, complicating prosthodontic care. The presence of key salivary constituents, such as mucins and enzymes, helps maintain the integrity of oral tissues, reducing friction and irritation caused by prosthetic appliances while also aiding in the proper functioning of these devices. Additionally, the physical properties of saliva, including its ability to create a thin film over oral surfaces, are essential for the adhesion and retention of removable dentures, making it imperative for prosthodontists to assess salivary flow and composition during treatment planning[2]. Beyond its direct impact on prosthodontic treatment, saliva also interacts with dental materials, such as cobalt-chromium alloys, influencing their mechanical properties, corrosion resistance, and biocompatibility.

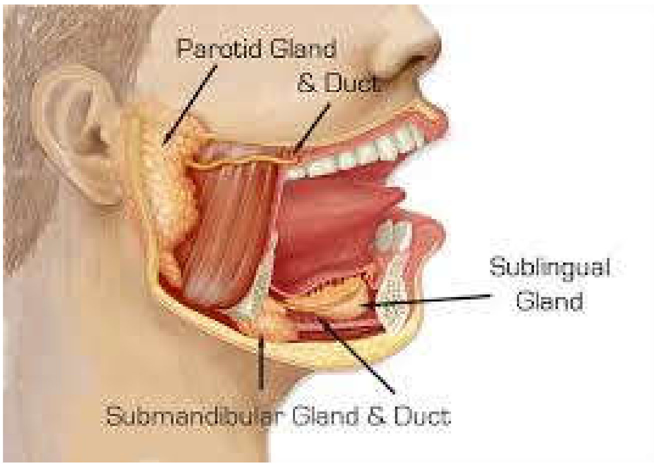




The longevity and success of prosthetic devices can be affected by these interactions, emphasizing the need for careful material selection based on the patient's salivary characteristics. Moreover, saliva serves as a valuable diagnostic tool, containing biomarkers that can aid in the early detection of oral diseases, systemic conditions, and potential complications that may affect prosthodontic outcomes. The assessment of salivary biomarkers can offer insights into a patient's overall health, guiding clinicians in tailoring their treatment plans to optimize oral and prosthetic function[3]. Management strategies for salivary gland dysfunction, including the use of salivary substitutes, pharmacological agents, and lifestyle modifications, play a crucial role in enhancing prosthodontic care and improving patient comfort. Conversely, excessive salivation, or sialorrhea, can pose challenges in prosthodontics by affecting denture retention, leading to difficulties in speech, swallowing, and overall oral comfort. Striking a balance in salivary function is therefore fundamental to ensuring the effectiveness and longevity of prosthetic appliances[4]. This article provides a comprehensive overview of the multifaceted role of saliva in prosthodontics, highlighting its physiological significance and clinical implications.

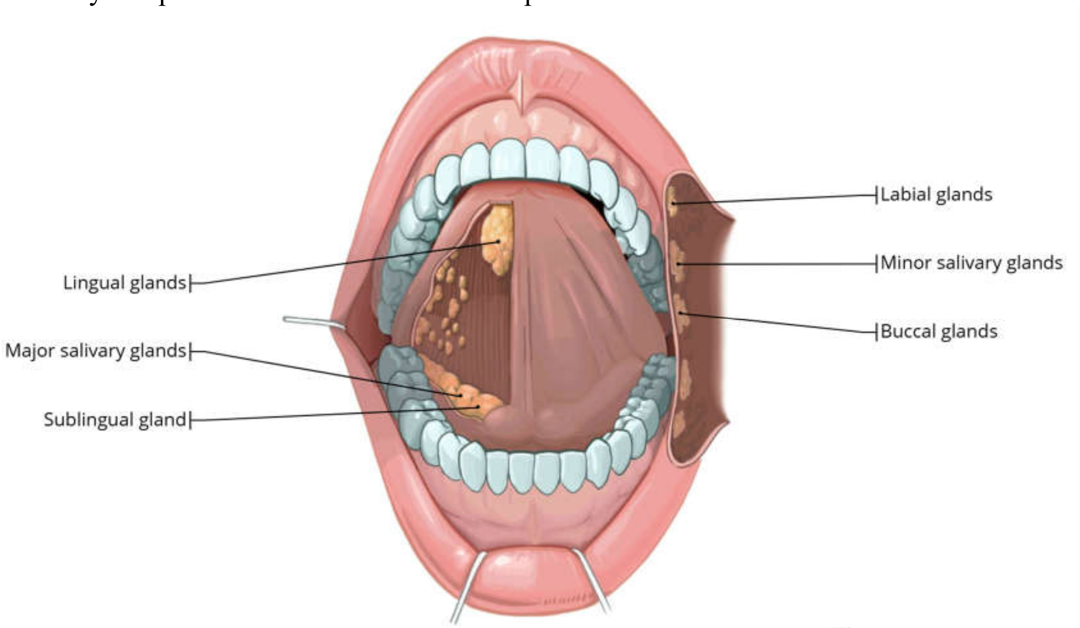
Major Salivary Glands

There are three pairs of major salivary glands: the parotid, submandibular, and sublingual glands. The parotid glands are the largest and are located near the mandibular ramus, just in front of the ears. These glands primarily secrete serous, or watery, saliva that is rich in enzymes, particularly amylase, which begins the process of starch digestion. The submandibular glands, found beneath the lower jaw, are smaller than the parotid but produce a mixed secretion of serous and mucous saliva. These glands are responsible for approximately 70% of the total saliva output, making them the most productive among the three. The sublingual glands, located under the tongue, are the smallest and predominantly produce mucous saliva, which contributes to lubrication and protection of the oral tissues. Together, these major glands play a vital role in oral function, hygiene, and comfort.



Minor Salivary Glands

In addition to the major glands, there are hundreds of minor salivary glands scattered throughout the oral mucosa. These glands are found in areas such as the lips, cheeks, palate, floor of the mouth, and tongue. Notably, they are absent in the gingiva and the anterior hard palate. Minor salivary glands secrete mainly mucous saliva and contribute about 10% of the total saliva volume. Despite their small size and scattered distribution, they play a significant role in maintaining oral moisture, especially in areas not directly served by the major glands. Their secretions help in the continuous lubrication of the oral cavity and provide localized antimicrobial protection.



Role of Saliva in the Oral Cavity:

Saliva plays a crucial role in maintaining oral health through its diverse functions, contributing to antimicrobial defence, buffering capacity, tooth integrity, digestion, taste perception, and tissue protection. Its antimicrobial properties stem from a range of proteins such as lysozyme, lactoferrin, peroxidase, immunoglobulins, and secretory leukocyte protease inhibitors, which help control microbial colonization and exhibit antiviral activity. Saliva also maintains oral pH balance through its buffering system, primarily driven by bicarbonate, which neutralizes acids produced by cariogenic bacteria, protecting teeth from demineralization and decay.

Saliva is composed of serous and mucous secretions, each with distinct characteristics and functions. Serous saliva, primarily produced by the parotid gland and partially by the submandibular gland, is watery and rich in enzymes such as amylase, which aids in carbohydrate digestion, and lipase. It contains proteins like proline-rich proteins, lactoferrin, and lysozyme, along with essential ions such as sodium (Na^+), potassium (K^+), calcium (Ca^{2+}), and phosphate (PO_4^{3-}). Additionally, it has antimicrobial agents like Immunoglobulin A (IgA) and lysozyme, which contribute to oral defense. In contrast, mucous saliva, mainly secreted by the sublingual gland and partially by the submandibular gland, is thick and rich in mucins, particularly MUC5B and MUC7, which aid in lubrication and barrier function. It also contains glycoproteins that enhance viscosity and protection, along with electrolytes that differ slightly from serous saliva, with higher potassium and lower sodium levels.

Additionally, salivary proteins like sialin and urea contribute to pH regulation by generating ammonia, further stabilizing the oral environment. Beyond buffering, saliva is rich in calcium and phosphate ions, which are essential for maintaining the demineralization-remineralization balance, with proteins such as statherin, proline-rich proteins, and histatins aiding in stabilizing these mineral components and enhancing enamel resistance to acid attacks. The presence of fluoride in saliva further promotes enamel remineralization and strengthens tooth structure. In taste perception, saliva solubilizes food substances, allowing taste receptors to detect different flavors, with proteins near circumvallate papillae facilitating this process.[5]

The salivary protein gustin plays a key role in the growth and maturation of taste buds, while saliva also protects taste receptors from mechanical, chemical, and microbial damage. In digestion, saliva facilitates food bolus formation, lubricating and aiding in swallowing, while enzymes like amylase and lipase initiate carbohydrate and fat digestion in the oral cavity. Saliva also plays a protective role by flushing away debris and non-adherent bacteria, while mucins and glycoproteins form a lubricating barrier, reducing friction, preventing tissue adhesion, and protecting against microbial toxins, trauma, and dehydration. Additionally, the formation of a salivary pellicle on the tooth surface shields enamel from damage. Saliva further contributes to tissue regeneration, containing biologically active peptides and growth factors that aid in wound healing and repair. The immunological function of saliva is supported by secretory immunoglobulin A (IgA), which neutralizes bacterial toxins, aggregates bacteria to prevent adhesion, and provides immune defense. Non-immunologic salivary proteins, including lysozyme, lactoferrin, peroxidase, mucins, histatins, proline-rich proteins, statherins, and cystatins, offer antimicrobial properties, inhibit bacterial adherence, and modulate oral microbial colonization.[6,7]

Specific proteins such as lactoferrin, peroxidase, and histatins exhibit antibacterial, antifungal, and antiviral activity, while proline-rich proteins and statherins regulate calcium phosphate precipitation, preventing salivary and dental calculus formation. Cystatins help control proteolytic activity, and salivary agglutinin facilitates bacterial aggregation, further contributing to microbial control. Saliva also serves as an important diagnostic tool, containing biomarkers that reflect both oral and systemic health conditions. These biomarkers offer non-invasive, rapid, and early detection of various diseases, making saliva an invaluable resource for disease monitoring and diagnosis. Through these multifaceted functions, saliva plays a fundamental role in preserving oral health, facilitating essential physiological processes, and serving as a protective and diagnostic medium within the oral cavity.[8]

Category	Description
Salivary Transcriptomic Biomarkers	Messenger RNA (mRNA) is a precursor of proteins, with levels generally correlated in cells and tissues. Identified using microarray technology and validated by quantitative PCR.
Exosomes	Small (30–100 nm) vesicles secreted by cells. Derived from multi-vesicular bodies and protect salivary mRNA from ribonucleases. Play a role in regulating the cell-cell environment and gene expression in oral diseases.
Salivary microRNA (miRNA)	Encoded by genes but not translated into proteins. Involved in cell growth, differentiation, apoptosis, stress response, immune response, and glucose secretion. Used for assessing drug efficacy and toxicity in therapeutic applications.

Table 1: Salivary Biomarkers

Saliva and Its Role in Denture Wearers

Saliva plays a crucial role in maintaining denture integrity by keeping the prosthesis clean and aiding in oral hygiene by flushing away food debris. It also facilitates smooth movements of the lips, cheeks, and tongue, ensuring proper speech, mastication, and swallowing. Denture retention is largely dependent on saliva, as it enhances adhesion between the denture base and the oral tissues through ionic interactions between salivary glycoproteins and the mucous membrane. The consistency of saliva significantly impacts denture stability—thin but slightly mucous saliva provides the best adhesion, whereas excessively watery or thick, ropy saliva may reduce retention. Cohesion, or the attraction between saliva molecules, further contributes to denture stability by maintaining an interposed fluid layer between the denture base and oral tissues.[8]

Surface tension also plays a role, especially in maxillary dentures, by creating a pressure differential through the formation of a concave meniscus at the fluid's surface. A well-fitted denture maximizes these forces, enhancing retention. Xerostomia, or reduced salivary flow, often seen in elderly patients or those on medications such as sedatives, antihypertensives, antidepressants, and antihistamines, can significantly affect denture retention and overall comfort. Systemic conditions such as diabetes, Sjogren's syndrome, rheumatoid arthritis, and deficiencies in vitamins A and B can also contribute to dry mouth. Additionally, radiation therapy to the head and neck can damage salivary glands, leading to reduced secretion. Identifying these factors before denture fabrication is essential, and consultation with a physician may be necessary to manage medication-induced hypo-salivation. New denture wearers may experience an initial increase in salivary secretion due to the prosthesis being perceived as a foreign object, but this is temporary and diminishes over time. Patients should be advised against compulsive rinsing or spitting, as it can destabilize the denture. Prosthodontists should consider both the quality and quantity of saliva in denture fabrication to ensure optimal retention, stability, and comfort for patients.[9]

Role of Saliva in Complete Denture

Saliva plays a crucial role in the retention and stability of complete dentures. It acts as a natural adhesive by forming a thin film between the denture base and the oral mucosa, which facilitates both cohesion (between saliva molecules) and adhesion (between saliva and denture/mucosa surfaces). This adhesion is essential for keeping the denture securely in place during functions like speaking and chewing. Moreover, saliva contributes significantly to patient comfort and protection by lubricating the mucosa and minimizing friction. This helps to prevent sore spots and irritation caused by the denture. Additionally, saliva supports tissue health by maintaining moisture and aiding in the healing of any trauma or ulcerations beneath the denture. During impression making, the viscosity and flow characteristics of saliva can influence the accuracy of impressions and the final fit of the prosthesis. For patients suffering from xerostomia (dry mouth), specialized dentures with salivary reservoirs can be used to deliver artificial saliva, improving both comfort and functionality.

Role of Saliva in Removable Partial Denture (RPD)

Saliva is equally important in the use of removable partial dentures (RPDs). It enhances retention by creating a thin film between the RPD and the oral tissues, allowing adhesion and cohesion forces to work in securing the prosthesis. This helps the RPD remain stable during mastication and speech. Furthermore, saliva acts as a lubricant, reducing friction between the prosthesis and the soft tissues, which minimizes irritation and tissue trauma. Saliva also plays a pivotal role in maintaining oral health. It contains antimicrobial components that help control the microbial flora in the mouth and support the health of the soft tissues and any remaining teeth. Healthy soft tissue and oral hygiene are vital for the long-term success and comfort of RPDs.

Role of Saliva in Implants

In the context of dental implants, saliva contributes significantly to the healing and long-term success of the implant. Adequate salivary flow enhances healing and osseointegration (the bonding of the implant with the bone) by keeping the implant site moist and reducing the risk of infection. Saliva carries enzymes and immune factors that protect the tissues around the implant by neutralizing harmful acids, flushing away debris, and providing antimicrobial action. These properties help prevent peri-implant diseases, such as mucositis and peri-implantitis. From a surgical standpoint, careful consideration must be given to avoid damaging major salivary glands during implant placement. Injury to these glands can compromise saliva production, leading to xerostomia and negatively affecting implant health and function.

Role of Saliva in Maxillary Prosthesis

Saliva is essential in the retention of maxillary prostheses, such as complete upper dentures or obturators used in patients with maxillary defects. The fluid forms a seal between the prosthesis and the mucosa through mechanisms of surface tension, adhesion, and cohesion, all of which are vital in keeping the prosthesis securely in place. In maxillary dentures, minor salivary glands, particularly those located on the palate, are critical because they secrete saliva directly onto the tissue surface that contacts the denture. This ensures sufficient moisture to maintain the suction and retention needed for proper function. For patients experiencing xerostomia, maxillary prostheses can be modified to include salivary reservoirs, which can release artificial saliva over time. This adaptation greatly improves the comfort, speech, mastication, and overall function of the prosthesis in such patients.

Salivary Gland Dysfunction: Causes, Effects, and Management

Salivary gland dysfunction refers to any quantitative or qualitative change in saliva production, manifesting as either increased (hyperfunction) or decreased (hypofunction) secretion. Hyposalivation, a measurable reduction in salivary gland function, can result from medications such as antidepressants, diuretics, antihypertensives, antipsychotics, chemotherapy, radiotherapy to the head and neck, and surgical trauma. Autoimmune diseases like rheumatoid arthritis and Sjogren's syndrome, neurological disorders such as cerebral palsy and depression, hormonal imbalances like diabetes and thyroid disorders, hereditary conditions like cystic fibrosis and ectodermal dysplasia, as well as metabolic disturbances including malnutrition, dehydration, and vitamin deficiencies, are also common causes. Additionally, local salivary conditions such as sialoliths and sialadenitis can contribute to decreased salivary flow. Xerostomia, or dry mouth, often results from medication use, systemic diseases, salivary gland pathologies, or radiotherapy. Certain drugs, particularly anticholinergic and antimuscarinic agents, reduce salivary secretion by blocking acetylcholine activity. Antidepressants, including fluoxetine, and antihypertensive drugs like captopril and enalapril, are also known to cause xerostomia.[10]

Radiotherapy of the head and neck leads to both acute and chronic complications, including mucositis, dysphagia, and irreversible salivary gland damage, with significant reductions in salivary flow occurring within the first few weeks of treatment. Conversely, drug-induced sialorrhea, or excessive saliva production, can result from direct muscarinic agonists like pilocarpine. The management of xerostomia primarily involves palliative measures to alleviate symptoms and prevent complications. Patients should avoid alcohol-based mouthwashes, sugary diets, and harmful habits like smoking and alcohol consumption. Sialogogic drugs, which stimulate saliva production, include pilocarpine, cevimeline, and bethanechol chloride, which are used in conditions such as Sjogren's syndrome, radiation-induced xerostomia, and medication-induced dryness. Intraoral devices can also be employed to release saliva substitutes like Oralbalance gel, K-Y jelly, and Orthana artificial saliva, with some prosthetic structures incorporating these substitutes for prolonged relief.[11]

Neuroelectric stimulation techniques, such as intraoral electrostimulators and transcutaneous electrical nerve stimulation (TENS), have shown effectiveness in increasing salivary secretion. Patients experiencing sialorrhea may suffer from perioral dermatitis, cheilitis, fungal infections, and speech difficulties due to continuous forced swallowing of excess saliva. Atropine, when administered sublingually, can help reduce drooling. In cases of oral candidiasis, topical antifungals such as miconazole and nystatin, or systemic antifungals like fluconazole and ketoconazole, may be required for treatment, particularly in immunocompromised patients. Symptoms of oral dryness can also be alleviated through the use of mouth gels, sprays, and artificial saliva, providing relief and improving the quality of life for affected individuals.[12]

Hypersalivation and Saliva Control in Prosthodontic Procedures

Hypersalivation is characterized by an increased function of one or more salivary glands, leading to an elevated flow rate. The viscosity and flow rate of saliva play a crucial role in denture construction, as a medium-viscosity flow at a normal resting rate aids in mucosal lubrication and denture retention. However, excessive salivation can complicate impression-making during denture fabrication. Patients of denture-wearing age often take medications that reduce salivary secretion, while those who have undergone radiation therapy affecting the salivary glands experience glandular destruction and diminished flow. Long-term use of a complete maxillary denture can lead to palatal gland atrophy due to pressure exerted by the prosthesis, particularly in cases of lost residual alveolar ridge support. A temporary increase in salivary flow is common when new dentures are inserted, and the consistency of saliva can vary from thin and serous to thick and ropy, with the latter making dentures difficult to wear.[13] Effective impression-making requires consideration of saliva quantity and consistency. Pre-impression strategies include administering atropine sulfate orally, massaging the palate to encourage gland emptying, wiping the palate with gauze, and using astringent mouthwash for irrigation. Warm gauze pads can be used to milk the palatal glands, while cold pads help constrict gland openings. For xerostomic patients, a gentle approach is essential to prevent mucosal trauma. Lips should be coated with petroleum jelly for easier retraction, and gloved fingers should be moistened to prevent adherence to soft tissues.[14]

Silicone impression materials are preferable as they are less traumatic, while materials like zinc oxide eugenol and plaster of Paris may cause irritation and mucosal adhesion. Controlling saliva during removable partial denture impressions using irreversible hydrocolloid requires pre-rinsing with astringent mouthwash followed by cold water, as well as gauze packing in the buccal vestibule and along the palate or lingual sulcus. The "tandem" impression technique, which involves taking an initial impression to absorb excess saliva followed by a second for accurate tissue recording, can also be utilized. Additionally, a combination of 15 mg propantheline bromide, mouth rinses, and gauze packing can help reduce salivary flow but should be avoided in patients with glaucoma, prostatic hypertrophy, or cardiac conditions where an increased heart rate is undesirable. For fixed partial denture impressions, saliva control measures include using rubber dams, high-volume vacuum suction, saliva ejectors, svedopters, and antisialagogues. Medications such as Methantheline bromide (Banthine) and Propantheline bromide (Pro-Banthine), taken in appropriate doses before appointments, effectively reduce salivary flow. Clonidine hydrochloride is another alternative antisialagogue used for saliva management during dental procedures.[15]

Force	**Description**
Adhesion	The attraction between dissimilar molecules. A layer of saliva between the denture base and mucosa enhances adhesion. Effectiveness depends on close adaptation and the area covered by the denture. Serous saliva aids adhesion, as it allows a thin layer to form rather than droplets.
Cohesion	The attraction between similar molecules. Cohesion occurs in the salivary layer between the denture base and mucosa, contributing to retention. This force is proportional to the denture's surface area.

Interfacial Surface Tension	The force maintaining the continuity of a fluid's surface. Salivary pellicle reduces the surface tension of denture materials, enhancing their contact with saliva and the mucosa. The thin fluid film between the denture base and mucosa provides a retentive force due to saliva's tendency to maximize surface contact.
Capillarity	A force caused by surface tension that allows liquids to rise in small spaces. When the denture base closely adapts to the mucosa, the thin saliva film (around 0.1mm or less) functions as a capillary tube, aiding retention. The narrower the space, the stronger the attraction, facilitating denture stability.
Atmospheric Pressure	The external atmospheric force that helps retain dentures when dislodging forces act upon them. Atmospheric pressure (14.7 lb/in^2) is proportional to the denture's coverage area. A perfect border seal enhances this effect. It serves as an emergency retention mechanism, maintaining denture position even when other forces are compromised.

Table 2: Physical Forces of Saliva in Denture Retention

The Role of Saliva in Taste Perception and Denture-Associated Biofilm Formation

Taste perception can be influenced by various factors, including age and saliva composition. While aging slightly reduces the ability to perceive salty and bitter tastes, it has little to no effect on sweet and sour taste perception. Since taste substances must be dissolved to interact with taste receptors, saliva acts as a solubilizing medium. Patients with dry mouth (xerostomia) often experience taste alterations, though conditions like Sjögren's syndrome and radiation therapy have been linked to direct taste cell damage. However, short-term decreases in saliva due to medication do not significantly affect taste sensitivity. Salivary composition also plays a role, as higher sodium levels correlate with increased salt taste thresholds, while glucose levels do not impact sweetness perception. Zinc deficiency in saliva has been associated with hypogeusia (reduced taste sensitivity), which can be improved through zinc supplementation. Despite various studies, no single factor, including dentures or salivary changes, has been conclusively linked to altered taste perception, though dentures may indirectly influence salivary characteristics, affecting taste.[16]

Saliva also plays a key role in plaque formation on dentures. Upon denture insertion, a thin salivary layer known as the acquired denture pellicle (ADP) rapidly forms on its surface, providing a medium for microbial attachment rather than direct adhesion to the denture itself. The pellicle's composition varies between the tissue-contacting and polished surfaces of the denture, influencing microbial adherence. The minor salivary glands in the palatal mucosa are a significant source of ADP on the maxillary denture's tissue side due to their proximity and the denture's border seal, which limits salivary flow. This creates distinct microenvironments within the oral cavity, influencing microbial colonization.[17]

Denture plaque, similar in composition to dental plaque, is formed on non-shedding surfaces such as dentures, implants, and restorations. The primary bacteria in denture plaque include facultative anaerobic Gram-positive cocci, particularly streptococci, which make up 40–50% of the cultivable population, with relatively few Gram-negative bacteria and yeasts. However, plaque composition varies by denture location, with more yeast accumulation on the fitting surface due to limited saliva flow and a more acidic environment. Plaque formation begins with the adsorption of a pellicle onto the denture surface, which differs from natural tooth enamel due to its chemical composition and potential tissue exudates from ill-fitting dentures. Early bacterial colonizers, mainly Gram-positive rods and cocci, facilitate further microbial attachment, and within 24–48 hours, plaque becomes several micrometers thick. Staphylococcus aureus and transient bacteria like Streptococcus pneumoniae, Haemophilus influenzae, and Neisseria meningitidis have been found on dentures, often due to poor hygiene or immunosuppression in elderly wearers. Dentures removed from the mouth may become contaminated by non-oral microorganisms, further emphasizing the need for proper denture hygiene.[18]

Role of saliva in microbial colonization and implant failures

Saliva plays a crucial role in the microbial colonization of dental implants by forming a protective pellicle that mediates bacterial adhesion. This biofilm, composed of salivary glycoproteins, facilitates the initial attachment of non-virulent bacteria like Streptococcus and Actinomyces, which help maintain implant stability. However, if plaque accumulates, the saliva-coated surface can also serve as a medium for pathogenic bacteria such as Prevotella and Porphyromonas, contributing to peri-implantitis and implant failure. Saliva's composition influences bacterial adherence, with variations between individuals affecting microbial colonization. Additionally, reduced salivary flow or altered salivary properties may impair natural cleansing mechanisms, increasing the risk of peri-implant disease. Maintaining proper oral hygiene and ensuring optimal salivary function are essential for preventing microbial buildup and preserving implant longevity.[19,20]

Conclusion

Extensive research highlights the critical role of saliva in maintaining oral health, particularly in individuals with dental prosthetics. A thin layer of saliva is essential for the comfort of the mucosa beneath a denture, aiding in denture retention and stability. Beyond mechanical support, saliva is also a key factor in both preventing and contributing to oral health conditions. It helps regulate microbial balance, yet its presence also influences plaque accumulation, which can lead to denture-induced stomatitis—a common condition among complete and partial denture wearers. Additionally, saliva is involved in the deposition of calculus and stains on denture surfaces, impacting aesthetics and hygiene. Furthermore, it plays a vital role in essential oral functions such as taste perception, speech, and swallowing.

Despite these well-established functions, research into salivary physiology and biochemistry remains in its early stages. A deeper understanding of saliva's composition and its interactions with oral prosthetics could lead to more effective treatments for individuals suffering from salivary gland dysfunction. Current management primarily relies on artificial saliva, but future advancements may offer more targeted therapeutic solutions to enhance saliva production and its protective functions, ultimately improving oral health outcomes for prosthetic patients.

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