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Review

The functions of human saliva: A review sponsored by the World Workshop on Oral Medicine VI



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ABSTRACT

This narrative review of the functions of saliva was conducted in the PubMed, Embase and Web of Science databases. Additional references relevant to the topic were used, as our key words did not generate references which covered all known functions of saliva. These functions include maintaining a moist oral mucosa which is less susceptible to abrasion, and removal of micro-organisms, desquamated epithelial cells, leucocytes and food debris by swallowing. The mucins form a slimy coating on all surfaces in the mouth and act as a lubricant during such processes as mastication, formation of a food bolus, swallowing and speaking. Saliva provides the fluid in which solid tastants may dissolve and distributes tastants around the mouth to the locations of the taste buds. The hypotonic unstimulated saliva facilitates taste recognition. Salivary amylase is involved in digestion of starches.

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Saliva acts as a buffer to protect oral, pharyngeal and oesophageal mucosae from orally ingested acid or acid regurgitated from the stomach. Saliva protects the teeth against acid by contributing to the acquired enamel pellicle, which forms a renewable lubricant between opposing tooth surfaces, by being supersaturated with respect to tooth mineral, by containing bicarbonate as a buffer and urea and by facilitating clearance of acidic materials from the mouth. Saliva contains many antibacterial, antiviral and antifungal agents which modulate the oral microbial flora in different ways. Saliva also facilitates the healing of oral wounds. Clearly, saliva has many functions which are needed for proper protection and functioning of the human body.

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1. Introduction

Saliva has a multitude of functions, many of which are described in two recent books.^{1,2} In addition there have been several papers which have summarised a number of functions of saliva.^{3–8} The World Workshop on Oral Medicine VI was held in Orlando, Florida, in April 2014, and one Group was asked to carry out a review of medication-induced salivary gland dysfunction. This was to include an updated and comprehensive assessment of the functions of saliva, since there have been several recent advances in our understanding of the role of saliva in oral health. This then was the objective of the present review.

2. Materials and methods

This paper was written by the Group on Medication-Induced Salivary Gland Dysfunction (MISGD) within the World Workshop on Oral Medicine VI (WWOM VI). The Group is comprised of five reviewers (AA, RJ, NN, YS and AlV), six consultants (senior experts in fields related to MISGD: DA, CD, JE, AMLP, GP and ArV), one research librarian (RM), a Group Head (AW), and two supervisors on behalf of the WWOM VI Steering Committee (SBJ and ARK). The mission of this Group was the preparation of systematic reviews of a variety of subjects

related to MISGD. The research method was based on the policies and standards set forth by a Task Force for WWOM IV⁹ and by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement,¹⁰ adapted to the current review. Thus, the work was divided into 6 steps:

Step 1 – Scope definition: the current review covered the question: what are the functions of saliva?

Step 2 – Keyword selection: keywords were selected for the research question (see Table 1).

Step 3 – Literature search: the initial literature search was conducted, until June 2013, in the PubMed, Embase and Web of Science databases, based on our chosen keywords, was not limited in languages and allowed identifying potentially relevant records and developing a

Table 1 – Key words for ‘Functions of Saliva’.

Keywords

Saliva AND Swallowing, Bolus formation, Lubrication, Buffering, Remineralisation, Tissue coating, Mucosal moistening, Food processing, Mastication, Chewing, Digestion, Starch metabolism, Fat metabolism, Enzymes, Taste, Antibacterial, Antimicrobial, Antifungal, Antiviral, Immunity, Clearance, Wound healing, Tissue repair, Dilution of strong tastants, Temperature modification of tastants, Speech, Denture wearing

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