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## Review

# Dry mouth: A critical topic for older adult patients



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## ABSTRACT

**Purpose:** Diminished salivary flow, or dry mouth impacts the oral health of many older adults, dentate and edentulous. As a result typical oral conditions can prove more challenging to both the patient's comfort and home care and the treatment selected by the clinician. This paper will review issues of dry mouth from a clinical and symptomatic perspective and will include the condition's causes, treatment and prevention.

**Study selection:** We performed a review of PubMed using the words: older adults, dry mouth, xerostomia, radiation-induced xerostomia, and salivary gland hypofunction. We selected 90 articles with a clinical application perspective.

**Results:** When it comes to treatment of dry mouth conditions, either objective or subjective, there are no easy answers as to the best course of action for a specific individual. While most of the cited studies have examined the most difficult cases of dry mouth (e.g. Sjögren's syndrome, and that seen during and post head and neck cancer treatments), there are many older adults who demonstrate dry mouth from the use of multiple medications. This paper presents a summary of the etiology, diagnosis, prevention, and pharmacological and non-pharmacological treatment of dry mouth (salivary hypofunction and xerostomia in older adults).

**Conclusions:** It is important to understand the causes of dry mouth and to educate our patients. Starting a prevention program as early as possible considering the most practical, cost effective and efficient treatments with the best risk-benefit ratio will help to diminish dry mouth symptoms and sequelae.

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### 1. Overview of older adults and oral conditions

The proportion of older adult people in developed countries has increased considerably during the last few decades and is expected to increase further in the next years. This is a result of what has been called the “demographic transition,” a term used to describe the increasing life expectancy and concurrent fall in the birth rate occurring in industrialized nations [1]. Japan has led the way in this shift with people aged 65 years or more currently comprising 23% of the Japanese population and projected to increase to 38% of the population by 2050 [2]. Although this growth in the percentage of elderly in the population may not be as marked in other developed countries, the same trends are evident. In China, the equivalent estimates are 8% currently with 23% being projected for 2050; in Europe, the equivalent proportions are 16% and 27%; in North America, 13% and 22% and in New Zealand, 14% and 25%. This demographic shift to greater percentages of older adults will have important implications for health care services. Larger populations of elderly often mean greater numbers of the oldest of the old: that is, people 80 years of age and older, who frequently are frailer and face more morbidity and disabilities. Consequently, an increasing proportion of health care services will be required for these individuals than is routinely needed for younger elderly, the 65–79 year olds [3].

Advances in oral health care and treatment during the past few decades have resulted in a reduced number of edentulous with the proportion of adults who retain their teeth until late in life increasing substantially [2,4]. The numbers of older people with oral related problems, including those who are dentate has also increased. The complexity of oral health status, numerous co-existing systemic diseases and the use of multiple medications make older people more vulnerable to oral problems when compared to younger groups. This is even truer for those elders who are cognitively impaired [5,6]. Recent literature has described the relevant medical characteristics of old age, including the multi-morbidity, poly-pharmacy, frailty, disability and care dependency as the “geriatric syndrome” [7]. Van der Putten and de Baat suggested that weakened oral health has the potential to become a component of the geriatric syndrome [8].

The oral health of older people has warranted considerable research attention in the last two to three decades. In discussing the epidemiology of oral conditions among this group, Murray included the following listing of findings: tooth loss, dental caries, periodontitis, dry mouth, oral pre-cancerous or cancerous lesions and oral health related quality of life [9]. Van der Putten and de Baat added to this list the findings of substantial tooth wear, oral implants and sophisticated tooth and implant supported removable dentures and/or fixed dental prostheses [8], concluding that older adults are in continuous need of preventive and curative oral health care.

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