

Dry mouth in the elderly: the need for some mouth-watering relief

By Professor Gregory Peterson

Learning objectives:

After reading this article, the reader should be able to:

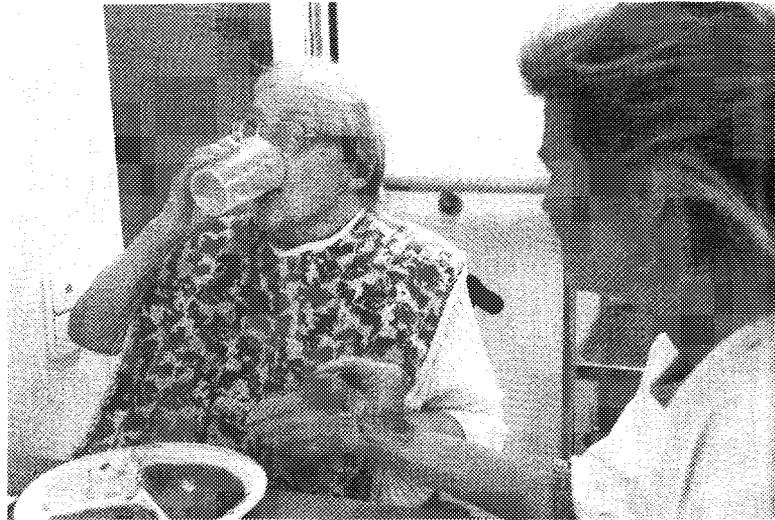
- Describe the impact that chronic dry mouth has on sufferers
- Identify medical conditions that can cause dry mouth
- Identify those drugs commonly associated with dry mouth in the elderly
- Describe appropriate management strategies for dry mouth.

Case studies

A 67-year-old man presents with a six-week history of dry mouth (xerostomia). He has prostate cancer, which has spread to his spine, and he takes opiates for pain relief. Recently, he started taking an antidepressant, escitalopram. He has had several episodes of oral candidiasis. He finds having a dry mouth frustrating as it interferes with his speech and chewing, and he can no longer taste his food.¹

A 79-year-old woman presented with symptoms of over-active bladder and incontinence, which had gradually worsened over a 10-year period. The patient was subsequently diagnosed with urge incontinence. Initial treatment comprised behaviour-modifying techniques and oral oxybutynin (2.5mg three times daily). At follow-up, one month later, her condition had moderately improved but she was experiencing marked dry mouth and mild constipation. After an additional month, the patient was still troubled by severe dry mouth. Her treatment was switched to transdermal oxybutynin 1 patch (3.9mg/day) twice-weekly (every 3-4 days). After another month, the patient reported continued improvement in incontinence, with no complaints of dry mouth or constipation.

Saliva is essential to oral health. The most important function of saliva is in swallowing and eating, for taste and to lubricate food and protect the mucosa and teeth.² Chronic dry mouth affects a substantial proportion of older people, and has been shown to significantly impact on sufferers' quality of life.³⁻⁶



Dry mouth can affect important aspects of life such as speaking, the enjoyment and ingestion of food, and the wearing of dental prostheses.³

Patients who have chronically decreased salivary flow suffer from lack of oral lubrication, affecting many functions, they may complain of dryness (xerostomia), and can develop dental caries and other infections (e.g. candidiasis or acute bacterial sialadenitis) as a consequence of the reduced defences.^{2,7} Patients may complain of thirst, or difficulties in speaking (dysphonia), chewing, tasting (dysgeusia) and swallowing (dysphagia).⁸ Dry mouth can affect important aspects of life such as speaking, the enjoyment and ingestion of food, and the wearing of dental prostheses.³ It can contribute to malnutrition in the elderly.

Reported estimates of the prevalence of dry mouth from epidemiological studies of non-institutionalised contents populations range from 12 to 39%.²

Dry mouth is not a normal consequence of ageing. Typically, saliva production does not appear to be impaired with ageing.^{6,9-11} Rather, the high prevalence of dry mouth in the elderly is related to the use of medications and the presence of causative medical conditions. In fact, drugs are the most common cause of dry mouth – particularly those with significant anticholinergic effects, such as the tricyclic antidepressants, antispasmodics, antipsychotics and antihistamines, but also opioids, diuretics and beta blockers (Table 1).^{6,7,9,12-14} As a result, the complaint of dry mouth is particularly common in patients treated for hypertension, and psychiatric or urinary problems.¹³



Table 1. Drugs commonly associated with dry mouth in the elderly^{1,2,10,13,14}

- Muscarinic receptor antagonists used in gastrointestinal conditions (e.g. hyoscine butylbromide, propantheline) or for Parkinson's disease (e.g. benztropine, biperiden)
- Muscarinic receptor antagonists used as bronchodilators (ipratropium and tiotropium)
- Muscarinic receptor antagonists for treatment of overactive bladder (e.g. oxybutynin, tolterodine)
- Tricyclic antidepressants
- Antihistamines
- Antipsychotics
- Alpha receptor antagonists for treatment of urinary retention (e.g. prazosin, terazosin)
- Antidepressants generally (e.g. SSRIs, venlafaxine)
- Diuretics
- Sympathomimetic drugs (e.g. decongestants)
- Appetite suppressants
- Opioids
- Cytotoxic drugs

Other causes of dry mouth include diabetes, anxiety or depression, Sjögren's syndrome, local radiation therapy of head-neck tumours, chronic obstruction of nasal breathing, salivary gland duct obstruction, dehydration, and chronic active hepatitis.^{7,12,14,15}

The most common cause is the use of certain systemic medications, which make the elderly at greater risk because they are usually more medicated.¹⁴

The management of dry mouth focuses on identifying and remedying any underlying cause, if possible, plus symptomatic therapies. Consideration should be given to replacing drugs that cause dry mouth with ones that cause this less frequently (e.g. replacing a tricyclic antidepressant with a SSRI).⁷ Non-drug approaches to managing dry mouth include:^{1,2,7,14}

- Increasing fluid intake, if possible (e.g. frequent sips of water, keeping water at bedside)
- Rinsing mouth with water after meals
- Assessing and treating underlying dehydration (caffeine intake can worsen dehydration)
- Assessing and treating anxiety
- Avoiding alcohol and smoking
- If the patient is mouth breathing at night, trying a short-term topical nasal decongestant
- Sucking ice chips or chewable vitamin C tablets/sugarless lollies/pineapple slices
- Avoiding dry or hard crunchy foods such as biscuits (or dunking in liquids)
- Eating soft creamy foods (casseroles, soups) or cool foods with a high liquid content (e.g. melon, grapes, or ice cream).

- Moistening foods with gravies, sauces, extra oil, margarine, salad dressings, sour cream, mayonnaise or yoghurt.
- Protecting the lips with a lip balm or petroleum jelly.
- Avoiding hot dry environments (e.g. consider a humidifier for the bedroom).

While useful for lubrication and to help clean teeth from bacteria and debris, the artificial saliva products, containing glycerin or carboxymethylcellulose and electrolytes (e.g. *Aquae, Oralube*), require frequent administration and are relatively expensive. These products are commonly used by patients at their bedside, when they awake during the night, or when talking.¹⁴ The entire oral mucosa should be covered and a small pool left under the patient's tongue.¹⁴ Patients should be advised not to rinse their mouth following administration. Pilocarpine eye drops (instilled in the mouth, for muscarinic salivary stimulation) are sometimes used after radiotherapy and to treat the symptoms of Sjögren's syndrome.¹

Since dental complications are common with dry mouth, patients should be encouraged to maintain good oral hygiene (e.g. low sugar diet, regular brushing and antiseptic mouth washes),⁷ and referral to a dentist may be required. Any underlying infection, such as candidiasis, should be treated. Candidiasis is probably a consequence of dry mouth but can exacerbate the sensation by coating the tongue and adjacent structures.¹

Treatment may include the use of salivary substitutes, salivary stimulants such as pilocarpine, ongoing dental care, caries prevention, a review of the current prescription drug regimen and possible elimination of drugs having anticholinergic effects.¹⁴

Gregory Peterson is Professor, Unit for Medication Outcomes Research and Education, School of Pharmacy, University of Tasmania.

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