



# Therapeutic Brief

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## Reducing the impact of medicine-induced dry mouth

Having a dry mouth from the use of medicines is common, particularly among older people.<sup>1-4</sup> If left untreated, dry mouth can interfere with oral health and function, affect general health and significantly impair quality of life.<sup>4-6</sup>

In 2017 the World Workshop on Oral Medicine VI documented a list of medicines that affect salivary gland function.<sup>7</sup>

This therapeutic brief focuses on medicines with strong evidence that cause salivary gland hypofunction (objectively measured decreased saliva) and xerostomia (subjective feeling of having a dry mouth) based on the World Workshop on Oral Medicine's list. The brief outlines strategies to reduce the impact of medicine-induced dry mouth.

**An estimated 50,000 DVA patients were dispensed medicines that can cause dry mouth\***

**73%**



73% were dispensed one medicine that can cause dry mouth

**22%**



22% were dispensed two medicines that can cause dry mouth

**5%**

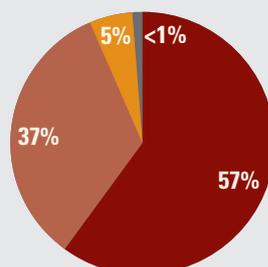


5% were dispensed three medicines that can cause dry mouth

\*Medicines are those included in the World Workshop on Oral Medicine's list categorised with a strong level of evidence.

The majority of DVA patients dispensed medicines that can cause dry mouth were aged 80 years or over

- Aged 80 years or older
- 61-80 years
- 41-60 years
- ≤40 years



### Inside

- Encourage your patients to have a dental check-up
- Ask your patient if they have dry mouth
- Review medicines that cause dry mouth
  - A guide to reducing the impact of medicine-induced dry mouth
- Talk to your patients about what they can do to reduce dry mouth
  - Oral health
  - Diet and lifestyle
  - Resources for patients

### Key points

- Most DVA patients are eligible to receive a funded annual dental check-up
- Encourage patients with dry mouth to seek advice from their dentist to help alleviate symptoms and avoid potential long-term effects
- Review medicines that cause dry mouth and, where possible, consider reducing the dose, changing the dosing time, stopping or changing the medicine



## ✓ Encourage your patients to have a dental check-up

In Australia, dental-related issues are the third most common reason for preventable hospitalisation.<sup>8</sup> During 2013-14, there were 63,000 dental-related preventable hospitalisations.<sup>9</sup> Early intervention can prevent hospitalisation for most dental problems.<sup>9</sup> Poor oral health is associated with major chronic diseases including cardiovascular<sup>10</sup> and respiratory disease,<sup>11</sup> and diabetes.<sup>5, 12</sup>

- Explain to your patients that good oral health is essential for good general health.<sup>5, 9</sup> Include an oral health check in your patient's GP management plan and other relevant health assessments. Encourage all your patients including those with dentures to have a dental check-up at least once a year.<sup>13</sup>
- Under DVA arrangements, DVA funds all dental services necessary to meet a clinical need for Gold Card holders. Dental treatment is provided for accepted disabilities for White Card holders. For further information, go to: [www.dva.gov.au/providers/dentists-dental-specialists-and-dental-prosthetists](http://www.dva.gov.au/providers/dentists-dental-specialists-and-dental-prosthetists)
- To find a dentist, go to the *Australian Dental Association* at: [www.ada.org.au/Find-a-Dentist](http://www.ada.org.au/Find-a-Dentist)
- If your patient has not been to the dentist during the last year, ask them the reason.
  - If anxiety associated with visiting a dentist is the reason, reassure them that it is worthwhile going and that

**Many eligible DVA patients dispensed medicines that can cause dry mouth are not having an annual dental check-up**



**3 in 5 women and 2 in 5 men**

dispensed medicines that can cause dry mouth  
HAVE NOT had a dental claim in the last two years

**1 in 2**



DVA patients aged 40 years and younger did not have a claim

**2 in 5**



DVA patients aged 41-80 years did not have a claim

**2 in 3**



DVA patients aged over 80 years did not have a claim

dentists are trained to help patients feel at ease with treatments.

- If transport is the reason, explain that DVA funds transport or provides reimbursement for travel expenses to eligible Gold and White Card holders to and from DVA funded health services. For further details, go to: [www.dva.gov.au/sites/default/files/files/health%20and%20wellbeing/healthservices.pdf](http://www.dva.gov.au/sites/default/files/files/health%20and%20wellbeing/healthservices.pdf)

- Write a referral to the dentist and ask them to report back after your patient has attended. Ensure your patient's medicines list is comprehensive and up-to-date. Note medicines that might require caution or stopping before dental procedures, including oral anticoagulants, antiplatelet agents, bisphosphonates and denosumab.<sup>14</sup>

## Saliva plays an important role in maintaining oropharyngeal health

If left untreated, dry mouth can lead to:

- dental pain and loss of teeth<sup>15, 16</sup>
- difficulty with chewing, swallowing and speech<sup>6, 15-17</sup>
- dental decay and caries<sup>6, 15-17</sup>
- periodontal and mucosal disease<sup>6, 15-17</sup>
- oral infections, e.g. candidiasis, gingivitis<sup>6, 15-17</sup>
- difficulty wearing dentures, denture sores<sup>6, 16, 17</sup>
- oral discomfort<sup>6</sup>
- halitosis<sup>17</sup>
- altered or reduced taste sensation<sup>15, 18</sup>

- dry and cracked lips<sup>17</sup>
- burning sensation of the mouth and tongue<sup>17</sup>
- disturbed sleep<sup>17</sup>
- pharyngitis and laryngitis<sup>15</sup>
- a loss of the buffering action that helps to prevent acid reflux and oesophagitis.<sup>15, 18, 19</sup>

Speech and eating difficulties can result in a loss of appetite and malnutrition, a reluctance to socialise, an inability to take medicines, diminished quality of life and poor general health.<sup>15, 17</sup>



**Figure 1:** Plaque, gum recession and calculus accumulations in a patient with severe dry mouth which can lead to loss of teeth.<sup>17</sup>

## ✓ Ask your patient if they have dry mouth

Patients might not report that they have dry mouth. Older patients might think having a dry mouth is a part of ageing, that it's not related to their medicines, or they might think it's a trivial problem.<sup>20</sup>

Ask your patient:

- Does the amount of saliva in your mouth feel too little e.g. thick or stringy?
- Does your mouth feel dry when eating a meal?
- Do you have any difficulty speaking due to a dry mouth?
- Do you sip liquids to help swallow dry foods?
- Do you chew gum or suck lollies to relieve dry mouth?<sup>3</sup>

Ask your patient if they breathe through their mouth when sleeping as this can contribute to a dry mouth. Explain that dry mouth also affects people with dentures. Explain that a check-up and early intervention by the dentist can help relieve the discomfort of a dry mouth and avoid potentially serious oral health problems.<sup>9, 17</sup>



## ✓ Review medicines that cause dry mouth

Medicines are a common cause of dry mouth.<sup>7, 15</sup> The quantity and quality of saliva, or the sensation of having dry mouth can be caused by the number, type and dosage of medicines, drug interactions and the duration of treatment.<sup>2, 3, 6, 21</sup> Reports of patients experiencing dry mouth as an adverse effect of medicines vary widely, from 7% of patients using cardiovascular medicines to 71% of patients using an antidepressant.<sup>6</sup> The likelihood of having dry mouth increases with the number of medicines used and with age (see Figure 2).<sup>2, 6</sup>

Medicines with anticholinergic effects commonly cause dry mouth<sup>1, 7, 15</sup> which might be due to an individual anticholinergic medicine, or from the cumulative effect of multiple medicines with varying degrees of anticholinergic properties.<sup>1, 4</sup> Of the 20 medicines most commonly used by DVA patients that cause dry mouth, 11 have anticholinergic effects (see Box 1).

Other medicines commonly associated with causing dry mouth include antihypertensive medicines, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, opioids and skeletal muscle relaxants.<sup>7, 22, 23</sup> The reason why some of these medicines cause dry mouth is not known.<sup>7</sup>

A Home Medicines Review (HMR) is an effective way to review your patient's medicines and identify which ones might contribute to your patient's dry mouth, and to assess the impact dry mouth has on their quality of life. In the referral, document the reason for the HMR to guide the pharmacist and gain the most benefit from the HMR.<sup>20</sup>

While medicines are the most common cause of dry mouth, consider other causes including systemic diseases and treatments.<sup>19</sup> To find out about other causes of dry mouth, go to: [www.racgp.org.au/afp/2016/july/dry-mouth-xerostomia-and-salivary-gland-hypofunction/](http://www.racgp.org.au/afp/2016/july/dry-mouth-xerostomia-and-salivary-gland-hypofunction/)

### Box 1 The 20 medicines most commonly used by DVA patients that can cause dry mouth\*

- furosemide
- tiotropium inhalation
- escitalopram
- amitriptyline
- sertraline
- buprenorphine
- venlafaxine
- citalopram
- verapamil
- oxybutynin
- duloxetine
- quetiapine
- fluoxetine
- paroxetine
- risperidone
- gabapentin
- solifenacin
- timolol eye drops
- olanzapine
- brimonidine eye drops

\*This list includes medicines from the World Workshop on Oral Medicine VI with strong evidence of causing dry mouth and does not include all medicines that affect salivary gland function.<sup>7</sup>

To access the full list of medicines by Wolff A et al. go to: <https://link.springer.com/content/pdf/10.1007%2Fs40268-016-0153-9.pdf>

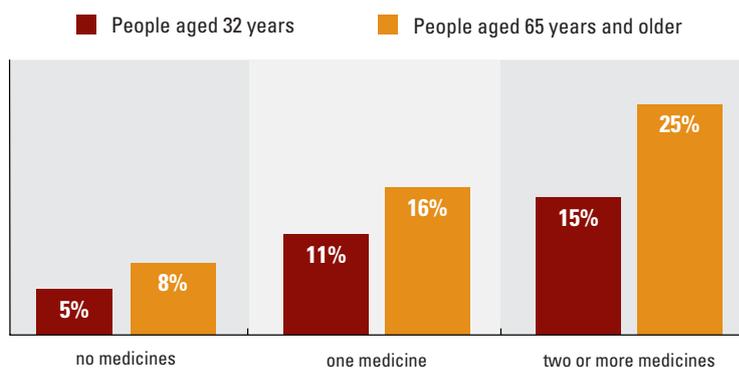


Figure 2: Estimated prevalence of dry mouth by age and number of medicines taken.<sup>1, 2</sup>

## Box 2 A guide to reducing the impact of medicine-induced dry mouth

Some medicines cannot be changed or stopped. For others, consider the following.

- Stop medicines that are not essential or are no longer of benefit to your patient for example try to cease amitriptyline or oxybutynin.<sup>24</sup> If your patient is taking multiple medicines, first consider medicines that have anticholinergic effects.<sup>24</sup> To find out which medicines have anticholinergic effects and how to reduce the load, go to the MATES topic: *Thinking clearly about the anticholinergic burden* at: [www.veteransmates.net.au/topic-39-therapeutic-brief](http://www.veteransmates.net.au/topic-39-therapeutic-brief)
- Replace a necessary medicine with another medicine that has fewer dry mouth effects.<sup>4, 20</sup> For example, replace oxybutynin with darifenacin or solifenacin as they have lower anticholinergic effects.<sup>4, 25</sup>

- Alter the time, dose or frequency:
  - Give the dose earlier in the day rather than at night when saliva production is lowest.<sup>4, 20</sup>
  - Reduce or divide the dose to avoid the adverse effects of a large single dose,<sup>3, 20</sup> or change from regular to 'as needed' use.<sup>24</sup>
  - Change from an immediate-release formulation to an extended-release formulation, where possible, to allow for once daily dosing which might help limit the severity of dry mouth.<sup>3</sup>
- Consider non-pharmacological treatments where possible. For example, consider referring your patient using oxybutynin for incontinence problems to a continence health professional at the

*Continence Foundation of Australia* to explore alternate management options: [www.continence.org.au/pages/health-professionals.html](http://www.continence.org.au/pages/health-professionals.html) Try to cease oxybutynin when a management plan is in place.

- Advise patients using inhaled medicines that good technique or use of a spacer, and rinsing their mouth with water immediately after use, can help to reduce the effects of dry mouth and potential oral health problems.<sup>28, 29</sup>
- Ask your patient about use of over-the-counter medicines that might contribute to dry mouth, e.g. antihistamines in cough and cold medicines, and eye drops, and encourage them to minimise use where possible.<sup>20</sup>

## ✔ Talk to your patients about what they can do to reduce dry mouth

Symptom relief is important for quality of life. Eligible DVA patients might benefit from working with other health professionals to reduce symptoms and maintain good oral health.<sup>18</sup> To find out about DVA funded health services, go to: [www.dva.gov.au/sites/default/files/files/health%20and%20wellbeing/healthservices.pdf](http://www.dva.gov.au/sites/default/files/files/health%20and%20wellbeing/healthservices.pdf)

### Oral health

- Explain to your patient that having a good oral hygiene regimen that includes brushing their teeth twice daily with fluoridated toothpaste and flossing daily, will help prevent dental-related problems.<sup>22, 28</sup> Encourage your patient to visit their dentist at least annually and to ask the dentist which products, techniques for brushing teeth or other oral aids are best to use.<sup>29</sup>
- Explain that increasing fluid intake or spraying water from an atomiser into the mouth can be helpful.<sup>4</sup> Some people find using a humidifier at night while sleeping can help lessen the symptoms of a dry mouth.<sup>28</sup> DVA does not fund humidifiers for dry mouth.

- Explain that a water-based lip moisturiser applied as necessary can help prevent dry and cracked lips.<sup>4</sup>
- Explain to your patients that there are oral lubricants available. Use only if non-pharmacological treatments are inadequate. They are not on the PBS or RBPS, can be expensive, and they need to be applied frequently.<sup>4</sup>

### Diet and lifestyle

- Highlight that the symptoms of a dry mouth can be reduced by not smoking.<sup>30</sup> Encourage patients who smoke to contact the national smoking *Quitline* for guidance and support on 13 7848 or go to: [www.quitnow.gov.au](http://www.quitnow.gov.au)
- Advise your patients that consumption of drinks which are acidic and high in sugar including alcohol and energy and sports drinks are likely to further contribute to poor oral health.<sup>31-33</sup>
- Explain that chewing foods such as sugar-free chewing gum or lollies, or celery can stimulate saliva flow.<sup>22, 34, 35</sup>
- DVA funds nutritional and dietetic services for eligible DVA patients which

might be helpful for patients with dry mouth. To find a dietician at *Dietitians Association of Australia*, go to: <https://daa.asn.au/find-an-apd/>

- DVA funds speech pathology services for eligible DVA patients which might be helpful for patients with dry mouth and who are experiencing speech and swallowing difficulties. To find a speech pathologist at *Speech Pathology Australia*, go to: [www.speechpathologyaustralia.org.au/find](http://www.speechpathologyaustralia.org.au/find)

### Resources for patients

- Encourage your patients to access the Department of Veteran's Affairs Journal, *Vetaffairs* article titled 'Prevent dry mouth from ruining your teeth' for more practical tips, available at: [www.dva.gov.au/sites/default/files/files/about%20dva/vetaffairs/2017/vol33No3.pdf](http://www.dva.gov.au/sites/default/files/files/about%20dva/vetaffairs/2017/vol33No3.pdf)

Full reference list available on the website: [www.veteransmates.net.au](http://www.veteransmates.net.au)



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