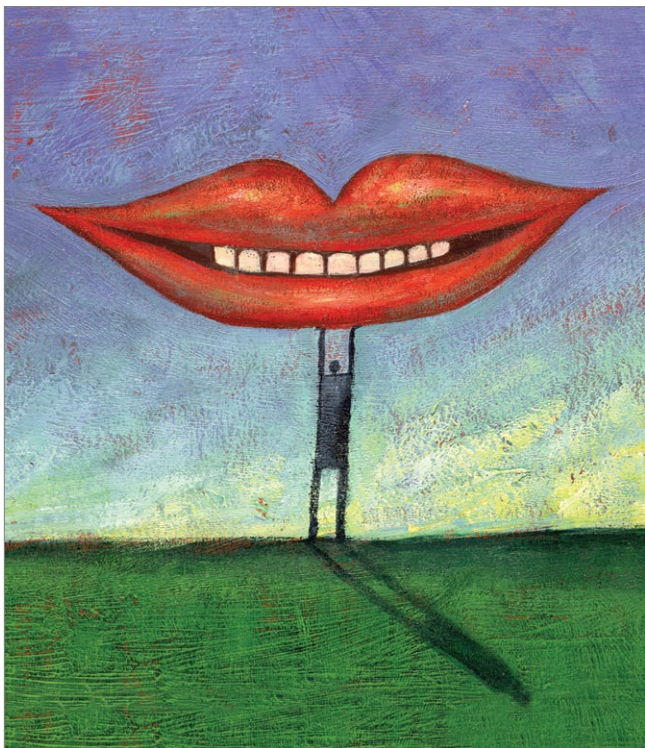


# Psychotropic-induced dry mouth: Don't overlook this potentially serious side effect



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## Routine screening, education can help patients avoid substantial sequelae

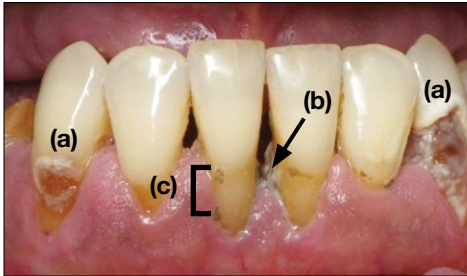
Xerostomia, commonly known as “dry mouth,” is a reported side effect of >1,800 drugs from >80 classes.<sup>1</sup> This condition often goes unrecognized and untreated, but it can significantly affect patients’ quality of life and cause oral and medical health problems.<sup>2,3</sup> Although psychotropic medications are not the only offenders, they comprise a large portion of the agents that can cause dry mouth. Antidepressants, anticonvulsants, anxiolytics, antipsychotics, anticholinergics, and alpha agonists can cause xerostomia.<sup>4</sup> The risk of salivary hypo-function increases with polypharmacy and may be especially likely when  $\geq 3$  drugs are taken per day.<sup>5</sup>

Among all reported side effects of antidepressants and antipsychotics, dry mouth often is the most prevalent complaint. For example, in a study of 5 antidepressants 35% to 46% of patients reported dry mouth.<sup>6</sup> Rates are similar in users of various antipsychotics. Patients with severe, persistent mental illness often cite side effects as the primary reason for psychotropic noncompliance.<sup>7-9</sup>

Few psychiatrists routinely screen patients for xerostomia, and if a patient reports this side effect, they may be unlikely to address it or understand its implications because of more pressing concerns such as psychosis or risk of suicide. Historically, education in general medical training about the effects of oral health on a patient’s overall health has been limited. It is crucial for psychiatrists to be aware of potential problems related to dry mouth and the impact it can have on their patients. In this article, we:

- describe how dry mouth can impact a patient’s oral, medical, and psychiatric health

Photo 1



This patient complained of dry mouth and exhibits dental decay (a) and evidence of periodontal disease. Plaque and calculus is present (b), along with gingival recession from the loss of attachment and bone (c). This patient was taking venlafaxine, zolpidem, and alprazolam

- provide psychiatrists with an understanding of pathology related to xerostomia
- explain how psychiatrists can screen for xerostomia
- discuss the benefits patients may receive when psychiatrists collaborate with dental clinicians to manage this condition.

### Implications of xerostomia

Saliva provides a protective function. It is an antimicrobial, buffering, and lubricating agent that aids cleansing and removal of food debris within the mouth. It also helps maintain oral mucosa and remineralizing of tooth structure.<sup>10</sup>

Psychotropics can affect the amount of saliva secreted and may alter the composition of saliva via their receptor effects on the dual sympathetic and parasympathetic innervations of the salivary glands.<sup>11</sup> When the protective environment produced by saliva is altered, patients may start to develop oral problems before experiencing dryness. A 50% reduction in saliva flow may occur before they become aware of the problem.<sup>12,13</sup>

Patients may not taste food properly, experience cracked lips, or have trouble eating, oral pain, or dentures that no longer fit well.<sup>14</sup> Additionally, oral diseases such as dental decay and periodontal disease (*Photos 1 and 2*), inflamed soft tissue, and candidiasis (*Photo 3*) also may occur.<sup>10,15</sup> Patients may begin to notice dry mouth when they wake at night, which could disrupt sleep. Patients with xe-

Photo 2



Dental cavities were restored with tooth-colored restorations (arrows) on this patient, who has xerostomia. Every effort must be made to manage this patient's dry mouth or the restorations may fail due to recurrent decay

Photo 3



This partial denture wearer, who complained of dry mouth, has evidence of palatal irritation and sores as a result of xerostomia and use of a partial denture. This patient was taking bupropion, esomeprazole, and tolterodine

rostomia can accumulate excessive amounts of plaque on their teeth and the dorsum of the tongue. The increased bacterial count and release of volatile sulfide gases that occur with dry mouth may explain some cases of halitosis.<sup>16,17</sup> Patients also may have difficulty swallowing or speaking and be unaware of the oral health destruction occurring as a result of reduced saliva. Some experts report oral bacteria levels can skyrocket as much as 10-fold in people who take medications that cause dry mouth.<sup>18</sup>

Infections of the mouth can create havoc elsewhere in the body. The evidence base that establishes an association between periodontal disease and other chronic inflammatory conditions such as diabetes,

### Clinical Point

Psychotropics can affect the amount of saliva secreted and may alter the composition of saliva



## Psychotropics and dry mouth

### Clinical Point

Untreated xerostomia can result in major dental problems and chronic systemic inflammatory conditions

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Table 1

### Screening questions for xerostomia

Does the amount of saliva in your mouth seem to have decreased?
Do you have any trouble swallowing, speaking, or eating dry foods?
Do you sip liquids more often to help you swallow?
Do you notice any dryness or cracking of your lips?
Do you have mouth sores or a burning feeling in the mouth?
When was the last time you saw your dentist? (Patients with xerostomia may need to see their dentist more frequently)
Are you aware of any halitosis (ie, mouth odor)?

Source: Reference 14

cardiovascular disease, cancer, and rheumatoid arthritis is steadily growing.<sup>19-22</sup> Periodontal disease also is a risk factor for preeclampsia and other illnesses that can negatively affect neonatal health.<sup>23,24</sup>

Failure to recognize xerostomia caused by psychotropic medications may lead to an increase in cavities, periodontal disease, and chronic systemic inflammatory conditions that can shorten a patient's life span. Recognizing and treating causes of xerostomia is vital because doing so may halt this chain of events.

### Psychiatric patients' oral health

Psychiatric patients' oral health status often is poor. Several studies found that compared with the general population, patients who have severe, persistent mental illness are at higher risk to be missing teeth, schedule fewer visits to the dentist, and neglect oral hygiene.<sup>25-28</sup> Periodontal disease also could be a problem in these patients.<sup>29</sup> Although some evidence suggests mental illness may make patients less likely to go to the dentist, psychotropic medications also may contribute to their dental difficulties.

### Screening for xerostomia

Simply advising patients of the problems related to xerostomia and asking several

questions may help prevent pain and deterioration in function within the oral cavity (Table 1).<sup>14,30</sup>

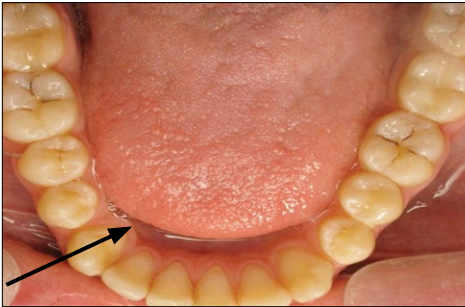
You can perform a simple in-office assessment of the oral cavity by visual inspection and by placing a dry tongue blade against the inside of the cheek mucosa. If the blade sticks to the mucosa and a gentle tug is needed to lift it away, xerostomia may be present.<sup>30</sup> Conversely, a healthy mouth will have a collection of saliva on the floor of the oral cavity, and pulling a tongue blade away from the inside of the cheek will not require any effort (Photos 4 and 5).

### Treatment options

Patients who have reduced salivary flow as a result of a medication may become so affected by dryness that their drug regimen may need to be changed. However, the greatest concern is for deteriorating oral health among patients who may be unaware xerostomia is occurring.<sup>31</sup>

Counsel patients who take medications that can affect their salivary function about the importance of seeing a dentist regularly, and provide referrals when appropriate. Depending upon the patient's oral health, dentists recommend patients with xerostomia have their teeth cleaned/examined 3 or 4 times per year, rather than the 2 times per year allowed by third-party payers (ie, insurance companies). Also advise patients to be diligent in their oral hygiene practices, including flossing and brushing the teeth and tongue, and to avoid foods that are sticky and/or have high sucrose content (Table 2). Recommend using a toothpaste containing fluoride—preferably one free of sodium lauryl sulfate, which could contribute to mouth sores<sup>14</sup>—and drinking fluoridated water. Explain to patients that their dentist may recommend in-office high-fluoride applications, high-fluoride prescription toothpaste, and/or "mouth trays" that contain high fluoride gel. Tell patients to avoid cigarettes and caffeinated beverages, which can increase dryness. Alcohol use should be minimized and mouth rinses containing alcohol should not be used.

Photo 4



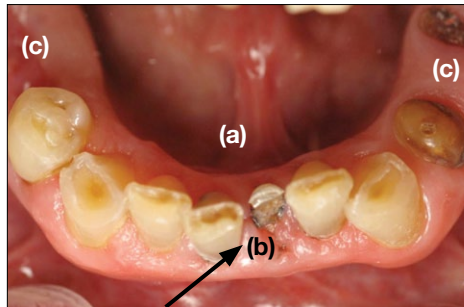
The arrow shows the normal appearance of saliva collecting on the floor of the mouth

Many over-the-counter products are available to address xerostomia, including toothpastes, mouth rinses, and gels. Salivary substitutes—which are available as sprays, liquids, tablets, and swab sticks—imitate saliva and may provide a temporary reprieve from dryness. Although none of these products will cure dry mouth, they may help manage the condition. Advise patients to eat foods that stimulate saliva production, such as carrots, apples, and celery, and to chew sugarless gum and candies, which also will stimulate salivary flow.

The FDA has approved 2 prescription drugs for treating xerostomia: cevimeline and pilocarpine. Cevimeline is approved for treating dry mouth associated with Sjögren's syndrome and pilocarpine is approved for treating dry mouth caused by head and neck radiation therapy; however, these medications' role in treating dry mouth in psychiatric patients has not been investigated. Both agents are contraindicated in patients with narrow-angle glaucoma, uncontrolled asthma, or liver disease, and should be prescribed with caution for patients with cardiovascular disease, chronic respiratory conditions, or kidney disease.<sup>32</sup>

Acupuncture and electrostimulation are being studied as a treatment for xerostomia. Trials have found acupuncture improves symptoms of xerostomia,<sup>33,34</sup> and 1 study found electrostimulation improved xerostomia in patients with Sjögren's syndrome.<sup>35</sup> Both approaches require more study to confirm their effectiveness.<sup>33-35</sup>

Photo 5



This patient complained of dry mouth. Note the floor of the mouth is free of saliva (a). Decay is present (b), and the patient is missing posterior teeth (c). This patient was taking clonidine, metoprolol, hydrochlorothiazide, amlodipine, and irbesartan

Table 2

### Managing dry mouth: What to tell patients

**Oral hygiene.** Tell patients to be diligent in their oral hygiene practices, including brushing and flossing. They should use a toothpaste containing fluoride—preferably one free of sodium lauryl sulfate—and schedule regular dental visits, where they can receive high-fluoride applications or be prescribed high-fluoride prescription toothpastes

**Diet.** Advise patients to avoid foods high in sucrose content, rinse their mouth with water soon after eating, and drink fluoridated water regularly. Tell them that they may be able to stimulate saliva flow with sugarless gum, candies, and foods such as celery and carrots

**Drying agents.** Instruct patients to avoid cigarettes, caffeinated beverages, and mouth rinses that contain alcohol. Explain that some patients may benefit from sleeping in a room with a cool air humidifier

**Over-the-counter products.** Suggest patients try salivary substitutes, which are dispensed in spray bottles, rinses, swish bottles, or oral swab sticks. In addition, products such as dry-mouth toothpaste and moisturizing gels also may help relieve their symptoms

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### Clinical Point

Over-the-counter products, including toothpastes, mouth rinses, and gels, can aid in treating xerostomia



## Psychotropics and dry mouth

### Clinical Point

Advise patients to chew sugarless gum and candies and eat foods such as carrots, apples, and celery to stimulate saliva production

### Related Resources

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### Drug Brand Names

Alprazolam • Xanax	Irbesartan • Avapro
Amlodipine • Norvasc	Metoprolol • Lopressor,
Bupropion • Wellbutrin,	Toprol
Zyban	Pilocarpine • Salagen
Cevimeline • Evoxac	Tolterodine • Detrol
Clonidine • Catapres, Kapvay,	Venlafaxine • Effexor
others	Zolpidem • Ambien
Esomeprazole • Nexium	

### Disclosure

The authors report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

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## Bottom Line

Many psychotropics medications can cause xerostomia (dry mouth), which if untreated can have serious adverse effects on patients' overall health, including chronic systemic inflammatory conditions. Screen patients for xerostomia, educate them about treatment options, and refer them to dental clinicians when appropriate.