by R. Sanderson

Dry mouth is a common complaint

Drs. Ava J. Wu (professor of orofacial sciences) and Troy E. Daniels (professor of oral medicine and pathology) at the University of California, San Francisco and contributors to *The Sjögren's Book*, Chapter 16 on "The Dry Mouth", report that 15% of adults in the U.S. suffer from dry mouth. Dry mouth is a common problem for people with Myalgic Encephalomyelitis or Myalgic Encephalopathy (ME) /Chronic Fatigue Syndrome (CFS) and Fibromyalgia (FM), often as a side effect from medications used for symptom management. Antidepressants (especially those in the tricyclic family), muscle relaxants, antihistamines, some pain medications, and agents for overactive bladder are some of the drugs that cause dry mouth. This group of medications have anticholinergic properties — they work by targeting certain chemicals within the nervous system and their mechanism has an increased potential for certain adverse affects, including but not limited to the regulation of salivary function. This type of dry mouth is classified as "medication-induced" and it has become increasing more frequent, even in the general population. Patients should report this side effect to their doctors and see if other medications can be substituted. If switching medications does not help or if patients need to use certain medications, then it is very important to add adjunct therapies, partly for comfort but also to lessen long-term effects of continued dryness.

Dry mouth can also be a sign of underlying disease

Sicca syndrome or sicca symptoms are often listed as additional features in ME/CFS or FM — the term "sicca" refers to dryness of the eyes and mouth (i.e., it describes a symptom). When problems with dryness become chronic and are accompanied by other symptoms or new problems, including noticeable changes in dental/oral health, patients should be professionally evaluated to determine its cause. The reason to do so is because dry mouth can be a sign of many underlying diseases such as certain types of diabetes or central nervous system diseases, infections, amyloidosis, sarcoidosis, and autoimmune disorders. For example, dry mouth and dry eyes are the hallmark symptoms of Sjögren's Syndrome (SS) and dryness, in this case, is usually the result of disruption or malfunction of exocrine gland secretion. It can affect other organs and lead to serious problems without medical intervention and follow-up.

SS may be accompanied by other illnesses (i.e., connective tissue diseases, certain thyroid problems, celiac disease, and other autoimmune disorders), including FM. Although FM is not an autoimmune illness, about half of the patients with SS will report symptoms of FM (i.e., as exacerbation of pain, fatigue and cognitive dysfunction). A comorbidity between FM and SS has been established (i.e., several studies show it may affect 47 to 55 percent of patients); therefore, it is not unreasonable that patients who develop new symptoms or worsening of existing symptoms get worked up for other potential conditions (i.e., doctors should not attribute everything to FM nor any other existing primary diagnosis).

[*Comment: Even though ME/CFS is not mentioned as one of the diseases or conditions associated with SS in the book used for this article, leading researchers/clinicians have found SS in a subset of ME/CFS patients. The same advice would apply to patients with ME/CFS.*]

Important functions and properties of saliva

The importance of saliva and adequate salivation is a health issue that often goes unnoticed. In SS literature, saliva/salivary gland function is well covered (to a large extent due to its significant role in that illness) and is held with great regard as something that can greatly diminish one's quality of life once it is lost or severely impaired. Saliva is essential in so many daily functions: eating, tasting food, chewing, swallowing and digestion. Lack of saliva or adequate lubrication makes speaking more difficult and voice quality can suffer. Protein components in normal saliva have antibacterial, antifungal or antiviral properties which can decrease the bacteria that can stick to teeth. Normal salivary flow has the ability to naturally wash away acids and bacteria and it provides a buffer against acidity, including gastric reflux. Moreover, normal saliva contains beneficial levels of calcium and phosphate that help to replenish these elements to the surface of teeth. When this wonderful biologic fluid becomes compromised, so might be a person's health and well-being.

Problems caused by lack of saliva or chronic dryness

The more serious consequences/complications of poor salivation and chronic dryness may not be immediately recognized. Patients may find their mouth has become sensitive or painful, which could be caused by the thinning and irritation of oral mucosa. Patients may find redness and crusting in the corners of their lips. They may suffer frequent fungal infections (i.e., patients with SS tend to present more often with erythematous candidiasis than typical "thrush"). In susceptible individuals, an overgrowth of this organism can cause their tongue to become red,

grooved and feel raw (i.e., burning tongue). Bad breath (halitosis) can develop from a build-up of odor-causing bacteria. People may have trouble with dentures because their tongue, from lack of oral lubrication, keeps pushing them out of place. Progressive deterioration of teeth, increased cavities, particularly those found along the gum line of teeth, and increased periodontal disease are other frequent problems linked to chronic dry mouth.

Treatments to alleviate dry mouth and associated problems

Although dry mouth can have many diverse causes and require individualized treatments, most treatment strategies focus on improving oral comfort, alleviating symptoms, and finding ways to reduce further damage to teeth and oral tissues. Patients should always consult with their health care provider before initiating treatments on their own. Current management recommendations include the following:

• Hydrate — drink water, in frequent, small sips that will help to hydrate and cleanse the mouth. Consume small amounts of water and limit total intake (to an amount that still provides adequate hydration) throughout the day, which may reduce frequent urination (i.e., it is not necessary to consume huge amounts of water for this type of hydration).

• Moisturize — try some of the products promoted for dry mouth, like rinses, gels, sprays or lubricants that are applied inside of the mouth or to the lips. These can be especially soothing when applied at bedtime, when traveling in a dry car or public transportation, or whenever water is not readily available.

• Chew — chewing gum or sucking lozenges helps to stimulate saliva production. The chewing motion by the jaw is therapeutic because it actually helps to activate the glands that will start to release saliva. Gum sweetened with Xylitol is generally recommended because bacteria in the mouth will not respond to Xylitol as it would to simple, refined sugar. (But do not use Xylitol in excess, as it can trigger gastrointestinal problems).

• Humidify — set up a room humidifier while sleeping because salivary function is decreased at night, plus there is a tendency for more mouth breathing at night.

• Oral hygiene — strict adherence to daily oral hygiene is strongly advised in order to remove bacteria/plaque throughout the day (so brush after meals and use floss). Sonic brushes are preferred to clean teeth and tongue. It may be necessary to see the dentist more often for check-ups and cleanings. (Some patients may go as often as every 3 months).

• Fluoride — use of high-concentration fluoride toothpaste (some need a prescription), topical fluoride applications (creams or gels that can be applied at home) and fluoride treatments (applied by the dentist) are recommended treatments because fluoride can repair and strengthen the surface of teeth. Remineralizing solutions, with high concentrations of calcium and phosphate, have been shown to repair mucosal tissues as well as repair/prevent dental caries. Most of these products are available by prescription and the prescribing dentist or oral specialist will examine the patient and determine if these products are actually helping.

• Stimulate — salivary output can be further increased with medications (i.e., pilocarpine or cevimeline). These are available only by prescription and may not be suitable for patients with certain conditions. Relief is usually temporary and dose-related.

• Dietary changes — minimize sugar/sugary foods, especially sticky sweet foods, spicy and salty foods. Avoid acidic and caffeinated beverages, alcohol and tobacco.

• Treat — identify/treat fungal infections. If patients have persistent burning sensation in their mouth, they should be cultured and treated with topical antifungal preparations.

Where can patients find help for dry mouth

Very often, dentists will be the first health care providers to pick up on signs of dry mouth. They often receive samples of over-the-counter products formulated for dry mouth and may be more familiar with the newer topical fluoride products or moisturizing agents. They can help to select the most effective products. More often than not, if other prescription medications are needed, they will refer patients to their primary care providers. These drugs (pilocarpine or cevimeline) have side effects and must be used with caution in some patients; therefore, it is better for the patients if these are prescribed and monitored by the primary doctor who is more closely involved with their medical history. However, most doctors should be able to provide a basic screening for dry mouth by asking questions about when and how dry mouth bothers the

patient. They can check their salivary glands for tenderness or enlargement and order lab tests to screen for certain antibodies associated with some autoimmune disorders.

Patients may be referred to ear, nose and throat (ENT) specialists or oral surgeons for further evaluation of dry mouth. Oral surgeons (or other oral specialists) can perform tests to measure salivary flow rate, examine the quantity and quality of saliva produced, and if warranted, do a biopsy of the minor salivary gland (along the inside of the lower lip) to check for presence of lymphocytes, a component of SS and other diseases. Lastly, there are Dry Mouth Clinics available at some of the larger medical centers, dental schools, and hospitals that do a lot of research.

[*Comment: The majority of the information presented in this article on Dry Mouth is based on the book cited below. However, some personal experiences and suggestions are included in the last section for patients and where they can go for help. The Sjögren's Book is recommended reading material and the clearly marked chapters help patients hone in on specific topics.*]

Source:

1. Frederick B. Vivino, "Diseases Associated with Sjögren's Syndrome," in *The Sjögren's Book*. ed. Daniel J. Wallace, M.D. (New York: Oxford University Press, 2011), 144-146.
2. Ava J. Wu and Troy E. Daniels,"The Dry Mouth," in *The Sjögren's Book*. ed. Daniel J. Wallace, M.D. (New York: Oxford University Press, 2011), 157-167.
3. Philip C. Fox, Mabi L. Singh, and Athena S. Papas, "Treatment of Dry Mouth", in *The Sjögren's Book*
. ed. Daniel J. Wallace, M.D. (New York: Oxford University Press, 2011), 201-209.

For additional information

National Institute of Dental and Craniofascial Research (NIDCR) provides information about Sjögren's Syndrome, ongoing research and the newest diagnostic criteria. (http://www.nidcr.nih.gov/OralHealth/Topics/SjogrensSyndrome/)

The Sjögren's Syndrome Foundation (SSF) is a credible source of information and it offers brochures, pamphlets, and information sheets that can be downloaded.

(http://www.sjogrens.org/)