

# **Oral and General Health - Exploring the Connection**

*Research Review*

**August 2011**

## **Dry Mouth (Xerostomia): Diagnosis, Causes, Complications and Treatment**

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### **Saliva – Essential for oral health**

Saliva is critically important for maintaining good oral health. It helps keep the mouth clean by washing away debris, killing germs, and preserving and rebuilding tooth enamel. Saliva keeps the mouth wet and lubricated so a person can speak, taste, chew, swallow, and for those without teeth, to keep dentures in place. Saliva is produced by three pairs of major salivary glands (submandibular, parotid and sublingual) and hundreds of minor salivary glands scattered throughout the mouth. Most people take saliva for granted until it is lost or lacking. Lack of saliva can lead to severe tooth decay, gum disease and other oral infections. Increased disease and loss of mouth comfort can seriously affect one's quality of life.

### **Terminology**

Salivary dysfunction is a condition presenting decreased saliva production with characteristic signs and symptoms. Actual lack of adequate saliva is called hyposalivation. Some individuals have saliva in the normal measurable range but nevertheless have the subjective feeling of dry mouth. This condition is called “xerostomia.” Hyposalivation and xerostomia are often referred to together as simply, “dry mouth.”

**Causes of Dry Mouth (Xerostomia)** - Dry mouth can be caused by many factors. Xerostomia is a common complaint among middle-aged and older adults. Rather than an age-related condition per se, it is believed to be due mostly to the influence of chronic medical conditions and their treatment.

- ***Diseases and conditions*** - Dry mouth can be a side effect of general diseases and conditions such as diabetes, hypertension, HIV/AIDS, Sjögren's syndrome, Parkinson's disease and rheumatoid arthritis.

- ***Side effect of medications*** - Dry mouth is a common side effect from hundreds of prescription and over-the-counter medications including medications used to treat anxiety, allergies, depression, acne, asthma, convulsions, high blood pressure, sleep disorder, muscle cramps, pain, Parkinson's, stomach acid and many other diseases and conditions. Drug-induced xerostomia is often reversible.
- ***Cancer treatment*** – Head and neck irradiation for cancer treatment can irreversibly damage the salivary glands and cause lifelong partial to near complete loss of saliva. Chemotherapy can also cause dry mouth but salivary function typically returns over time.
- ***Other common causes*** - More simple common causes include smoking, mouth-breathing and dehydration.

### **Extent of the problem**

Dry mouth decreases the quality of life for up to 20 to 30 percent of the people in the United States. Around 40 percent of seniors suffer from dry mouth because of the many chronic diseases and treatments associated with aging. Oral and pharyngeal cancers are diagnosed in about thirty thousand people each year, and more than half receive radiation to their head and neck as part of their treatment.

Women tend to have dry mouth more often than men. For example, Sjögren's syndrome, which is characterized by dry eyes and dry mouth, is estimated to affect one to four million individuals in the United States, and women are affected nine to one over men. Most people with Sjögren's syndrome are diagnosed in their fifties, although symptoms can precede diagnosis by many years.

For some people dry mouth is temporary, manageable and treatable. For others, such as those with Sjögren's syndrome or persons who have received head and neck radiation, the damage to the salivary glands may be irreversible and a lifetime of vigilance and extra oral health care is required to prevent serious oral disease.

### **Oral problems from dry mouth**

Cavities and periodontal disease are more common in patients with dry mouth. Cavities often develop in unusual places, like on the tips or chewing edge of the teeth and wrapping around on the roots of the teeth at the gumline. These cavities can often be very difficult to restore properly. Yeast infections (candidiasis) are common in persons with dry mouth. Very careful care of the mouth is important to make up for the loss of the healthy actions of saliva in health.

## Helping People with Dry Mouth

- **Diagnosis** – Dentists and hygienists can often detect dry mouth even before the patient realizes that there is a problem. They may notice increased decay, patient complaints of difficulty swallowing their food or food sticking to their teeth more. People may complain about a burning feeling in their mouth, sensitivity to spicy or acidic foods, dry cracked lips, changes in their taste, or difficulty talking. To diagnose dry mouth the dentist will conduct a medical and medication history, assess signs and symptoms, and do a thorough oral evaluation. Complaints such as the person feels their mouth is dry while eating, has trouble swallowing dry foods or feels the need to sip liquids to swallow is highly suggestive of salivary dysfunction. If dry mouth is suspected additional testing may be necessary including a measurement of salivary flow rate, special imaging of the salivary glands, biopsy of minor salivary glands or other medical tests if the dry mouth is suspected to be related to another medical condition. These additional procedures are typically, but not always, referred to a physician and a timely, appropriate referral for the oral signs and symptoms of dry mouth may assist in the early diagnosis of related medical diseases or conditions.
- **Treatment** - If any of the saliva producing cells in the salivary glands are still working, there are drugs that may increase the amount of saliva in a patient's mouth. Two such medications that a doctor can prescribe are pilocarpine (Salagen®) and cevimeline (Evoxac®). Saliva substitutes that are sprays, gels or liquids, as well as sugarless candies or chewing gum may also help. Mouth rinses without alcohol and some toothpastes formulated and advertised for persons with dry mouth may be less irritating than regular products. If dry mouth is serious, a dentist should follow the patient closely and may prescribe a special higher strength fluoride toothpaste or gel to use daily to prevent cavities. They should also give guidance for careful home dental care, and recommend more frequent professional cleanings to cut down on the risk of caries and gum diseases.

### Guidance for patients

**See your dentist regularly** – Due to their increased risk for dental caries and other oral disease exams as often as every three months may be necessary.

**Talk to your physician and dentist about your medications** – If a medication or combination of medications taken for a medical condition is causing dry mouth a substitution may sometimes be made that has less of a drying effect.

***Practice excellent oral hygiene and use fluoride products*** – because patients with no or low saliva may be at very high risk for cavities daily use of prescription strength fluoride in trays or brush-on is often recommended. In addition, the dentist may recommend quarterly or more frequent application of topical fluoride gels or varnish.

***Diet is important*** – Frequent consumption of foods or beverages that are high in sugar or starches should be avoided, especially sticky foods.

***Stay well hydrated*** – Drinking water or other preferably sugar-free drinks with meals can help make the mouth more comfortable and allow easy swallowing of food. Frequent sipping of water or use of ice chips can help diminish the sense of dryness.

***Limit or avoid alcohol, caffeine, tea*** or other items that encourage urination (diuretics) and tend to dehydrate the body.

***Stimulate saliva with sugar-free gums or mints***. Sucking or chewing can stimulate saliva flow if there is any remaining salivary function. Avoid sugar-containing products. Products that contain xylitol as their primary sweetener may help prevent tooth decay.

***Use saliva substitutes or moisturizers*** to aid in lubricating, moisturizing and helping the mouth feel more comfortable. These products can be purchased over-the-counter. The results are temporary and these products need to be used frequently but bring relief to many dry mouth sufferers. Use alcohol free mouth rinses if you need to use a mouthwash.

Dry mouth can significantly affect a person's quality of life. To treat dry mouth and improve the quality of life for those affected, dentists, physicians, hygienists and patients have to work together.