



# Diabetes & Dentistry YOU

## Diabetes and Dry Mouth: How it Adversely

Xerostomia, more commonly referred to as dry mouth, has numerous causes. It is frequently a side effect of taking medicines such as antihistamines, making it difficult for people with this condition to swallow, as their systems do not produce enough saliva. In diabetics, xerostomia is caused by degenerative changes in the salivary glands.

Xerostomia occurs when salivary glands do not produce enough saliva to keep the mouth moist. Dryness contributes to cavities and gum disease, because saliva helps wash away the bacteria that contribute to these conditions.

### Common symptoms of xerostomia:

- A sticky, dry feeling in the mouth and throat
- Frequent thirst
- Mouth sores, and sores or split skin at the corners of the mouth
- A burning sensation in the mouth, especially on the tongue
- Problems speaking
- Difficulties in tasting and chewing food and in swallowing
- Hoarseness and dry nasal passages
- Bad breath

### Why Xerostomia is a Growing Problem

There are an estimated 10 million people in the United States diagnosed with diabetes and another six million with the disease who remain undiagnosed, which makes xerostomia, as one of the inevitable side

effects of diabetes, a problem for a very large percentage of the American population.

Since the odds of developing diabetes increase with age, the fact that our population is an aging one is another factor in the increasing number of xerostomia sufferers. Four out of every 10 adults over the age of 65 years in the USA have diabetes mellitus or impaired glucose tolerance. There is a significant age-related increase in the prevalence of diabetes and impaired glucose tolerance, and the commonness of these disorders has increased 30-40% in the elderly over the past 20 years.

### How salivary glands work

Three pairs of salivary glands in the walls and floor of the mouth produce saliva, which contains a digestive enzyme called amylase that starts the breakdown of carbohydrates even before food enters the stomach. Saliva also reduces the number of plaque-causing bacteria in the mouth, thereby reducing the chances of dental cavities and mouth infections.

Xerostomia disrupts the normal saliva balance in the mouth, which leads to a number of oral and dental disorders such as changes in taste, speech, and the ability to eat in addition to increasing the risk of cavities and infections. Xerostomia also causes mouth tissues to become inflamed and sore, which in turn can make chewing, tasting and swallowing difficult and possibly lead to difficulties in controlling diabetes because of a reduced interest in eating and thus, an inability to properly maintain stable blood sugar levels.

### How Xerostomia Affects Oral Health

When the normal environment of the mouth is altered due to a decrease in salivary flow or alteration in salivary composition, a healthy mouth becomes is not only at risk for tooth deterioration, but can suffer from dry, cracked oral tissue as well, which leads to mouth ulcers; an inflamed tongue and inflamed mucosal tissues lining the mouth more likely.

### Additional Helpful Measures

While keeping stable blood sugar levels is undoubtedly the best means of controlling xerostomia and its complications, here are a few additional measures that may help relieve the discomfort xerostomia causes:

- Suck on sugar-free candy or chew sugar-free gum
- Drink plenty of water to help keep your mouth moist
- Protect your teeth by brushing with a fluoride toothpaste, using a fluoride rinse
- Visit your dentist regularly
- Breathe through your nose, not your mouth, as much as possible
- Use a room vaporizer to add moisture to bedroom air

In addition to adversely affecting salivary glands, diabetes causes blood vessels to thicken, which in turn slows down the flow of blood to body tissues, including the gums and dental bones. Good blood flow is essential to provide important nutrients and eliminate

## Diabetes and Oral Health:

Gum disease is common in people with diabetes, and nearly one-third of diabetics have severe periodontal diseases with significant loss of attachment between gums and teeth of five millimeters or more.

From:

To:

harmful wastes from body tissues, including tissues of the mouth. Lowered blood flow causes the gum and bone tissue that support the teeth to become less healthy and less resistant to infection from the bacteria found in dental plaque.

Because the role of saliva is so critical to oral health, scientists agree that more research is needed on this topic, including studies to characterize the changes in saliva and major and minor salivary glands in diabetic patients and animal models.

#### **Xerostomia Research**

Recent research indicates that diabetic xerostomia is a typical syndrome in diabetic complication and that salivatin, a peptide found in human saliva, plays a role in making glucose-stimulated insulin release possible. Salivatin is believed to lower blood sugar after a meal and helps keep blood sugar levels even,

a function that appears to be damaged by diabetes. Xerostomia can actually make diabetes worse.

The breath of people with diabetes often smells fruity, which may be a result of xerostomia or a change in the thickness of saliva in diabetics. Xerostomia leads to a marked increase in tooth decay. Unfortunately, caring for the mouth is often overlooked when trying to control other problems associated with diabetes. Good oral hygiene combined with good glycemic control can prevent many of dental problems.

#### **Controlling Xerostomia**

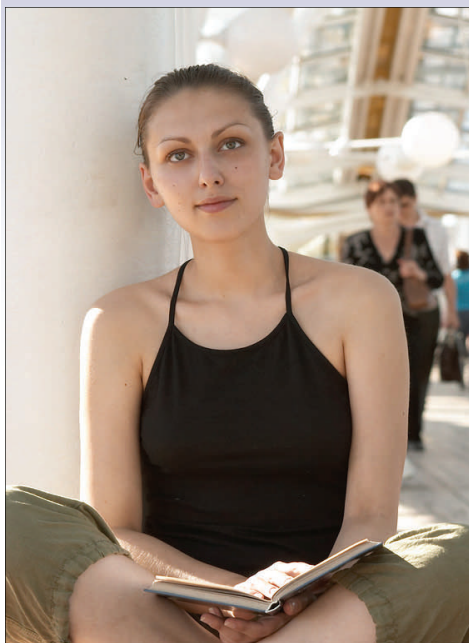
Your dentist can provide topical treatments such as fluoride-containing mouth rinses and salivary substitutes that can help to minimize the discomfort that xerostomia causes. However, ultimately your best defense is regular control of your blood sugar levels.

## **Affecting a New Generation**

Though nationally representative data that would be needed to monitor Type 2 diabetes trends in people under 20 years of age, it is estimated that about 176,500 people aged 20 years or younger have diabetes, a figure that represents 0.22 percent of all people in this age group.

Indeed, improved blood sugar control plays a major role in reducing the occurrence of other complications from diabetes including yeast infections (candidiasis) lichen planus, difficulty in wearing dentures, and a myriad of difficulties associated with periodontal disease.

## **The Road Less Traveled for Diabetics: Preventative Maintenance and Education Pay Off**



If there is one health condition in which preventive maintenance can spell the difference between keeping your teeth and losing them, it is diabetes. Learning how diabetes affects your teeth and the overall oral health of your mouth can prevent problems down the road, or at least significantly reduce severity.

Diabetes has numerous implications for your oral health. Unfortunately, most diabetics do not pay enough attention to the increased need

for oral care and the potential for dental problems that accompany this disease.

The first oral complication of diabetes is periodontal disease, which stems from a chronic inflammation caused by various types of bacteria and microbes in the mouths of diabetics. In fact, periodontal disease is frequently referred to as “*the sixth complication of diabetes*”.

The first stage of periodontal disease is gingivitis, which occurs when the bacteria in dental plaque irritate the gums and cause infection, to which your body responds by causing the gums to become red and swollen and bleed easily. Gingivitis only rarely causes discomfort, and therefore, it is especially important that diabetic patients train themselves to be aware of even slight changes in gum tissue and consult with their medical and dental care providers.

It is important to note that gingivitis in diabetics is a direct result of poor glycemic control, and is not because of higher levels of plaque accumulation. Diabetes does not significantly increase plaque. Getting and keeping your blood sugar level even will go a long way toward solving your gingival problems.

Research indicates that the risks of developing periodontal disease appear to increase over time for those with diabetes; while those who have had diabetes for fewer than 10 years are less likely to lose teeth due to the complications of their disease.

Improving control over blood sugar levels is the best way a person with diabetes can improve overall oral health, because diabetes weakens the body’s normal defenses against disease. Diabetes also adversely affects salivary gland production, causing xerostomia, or dry mouth, which leads to having higher concentrations of glucose in saliva and bacteria in the mouth. Elevated salivary glucose and dry mouth both increase the likelihood of dental cavities.

Diabetics also face increased susceptibility to getting other nasty dental health problems such as oral yeast infections, gum abscesses, lichen planus, burning mouth syndrome and possible difficulties in wearing dental prosthetics.

Though diligent blood sugar control is the most important factor in maintaining diabetics’ oral health, rigorous dental hygiene is also imperative for those with this disease, for without it oral health problems can multiply exponentially. No one should smoke cigarettes, and this is especially true for diabetics. Smoking is injurious to gums and mouth tissues and only adds to diabetic dental health problems.

If all of this sounds like bad news, there is an upside: Diabetics who keep their blood sugar levels in check can usually receive any dental treatments that patients without diabetes can receive, which is especially important if you want to undergo cosmetic dental procedures to improve your smile.

## **Ethnic Risks with Diabetes:**

Both clinically based reports and regional studies suggest that Type 2 diabetes, although still rare among children, is occurring more frequently than it used to in both young children and adolescents, especially those of Native American, African American, or Hispanic/Latino origins.