



▶ Aging, Periodontitis & Gingival Infection



▶ Aging & Xerostoma



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From Your Dentistry for Diabetics (DFD) Professional
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Informed

The truth about the diabetic & oral care

The Aging Diabetic: Frailty, Comorbidity & Oral Health

The longer the diabetic patient lives with diabetes, the more likely he or she is to develop complications from it, especially for those living with diabetes mellitus for more than 10 years. Frailty, greater existing comorbidity, and higher risk of cardiovascular complications are but a few of the sequelae facing the aging diabetic and the treating physician.

Risk of oral complication also increases with age, as does its potential to negatively impact systemic health. In this month's issue of *Informed*, we will examine

the affect aging has on oral health for the diabetic patient. We will review the host of oral health issues that confront the aging diabetic, beginning with the most well-documented forms of oral health disease, but also examining lesser-known complications. We will review what triggers these oral diseases, how they affect overall health. And how to prevent and treat them.



Did You Know?

Four out of every 10 adults in the United States over the age of 65 contracts diabetes mellitus or impaired glucose tolerance — a figure that has increased 30-40% in the last 20 years.

Aging, Periodontitis, and Gingival Infection

Periodontitis is the most-oft cited oral complication associated with diabetes mellitus. The reason is because it is so tightly tied to glycemic control.

Diabetic patients with poor glycemic control are three times more likely to contract periodontitis than non-diabetics, while those with good to very good control are only slightly more likely to contract periodontal disease. However, some researchers believe there is a reciprocal relationship between oral health and glucose management — meaning patients, with poor oral hygiene increase their risk of contracting periodontal disease. The associated inflammatory response places a burden on the system and impacts blood glucose levels. So as the patient ages, vigorous oral hygiene becomes key to preventing periodontitis, and helping to maintain target A1C levels.

Risks

Aging: The longer the patient lives with diabetes, the greater the risk of developing oral complications. A study performed on 263 Type 1 diabetics (13-18 years of age) reported a 13.6% incidence of periodontal disease. By 32 years of age the prevalence **increased to 39%**.¹

Poor oral hygiene: Periodontal disease is caused by bacterial infection that attacks gingival tissue, destroys attachment fibers and alveolar bone that hold teeth in place. As the disease reaches advanced stages, gums separate from teeth to form pockets. These pockets, in turn, fill with bacteria-building plaque, and the cycle of infection, destruction and attachment loss continues. The longer the cycle continues, the more severe the destruction.

Poor Glycemic control: Glycemic control is the single most important part of the diabetic's management program. As discussed above, poor glycemic control leaves the diabetic patient vulnerable to many of the complications of diabetes, and also slows healing. This is also true for periodontitis. In addition to contracting periodontitis 3X more often than their non-diabetic counterparts, those with poor glycemic control also suffer more advanced forms of periodontitis, including more interproximal attachment loss and bone loss, than well-controlled subjects.²

Impact on Overall Health

As with any infection for the diabetic, **gum disease can inhibit glycemic control**. Some research has shown that infection of the perio tissue can create an ongoing inflammatory burden on the host system – triggering a chronic cycle of inflammation and infection. This cycle can expose other tissue to gram-negative pathogens, LPS, etc. with the potential to trigger mediator expression and inflammation that can affect the integrity of other organs.³⁻⁵

Treatment & Prevention

Early diagnosis and treatment are key to preventing periodontitis and minimizing its negative effects. However, diagnosis can be difficult. While in advanced stages, attachment loss may be apparent, early stages often go undetected, due to the mild nature of symptoms (such as bleeding or inflamed gums).

That is why early referral to a dentist trained in oral care for diabetic patients is so important in a preventative management program – especially for those patients diagnosed more than 10 years ago.

Aging patients can be treated with many of the same drug regimens as younger patients, but special care is required in prescribing and monitoring drug therapy.

Treatment for diabetic patients with periodontitis will consist of:

- Removal of infected cementum and dentin
- Bacterial debridement
- Treatment of microbial population

Followed by an aggressive oral hygiene plan consisting of homecare, office visits **2-4** times per year to treat infection and inflammation, and to monitor glucose levels in accordance with the physician's plan.

Aging and Xerostoma

Known in layman's terms as "dry-mouth", xerostoma can be a catalyst for a long list of oral health problems, including tooth decay, abscess, periodontal disease, and more. Xerostoma disrupts the normal function of salivary glands, reducing salivary production, affecting the balance of bacterial populations, and inhibiting delivery of oral peptides and enzymes.

There are more than 500 prescription medications that can trigger xerostoma and its complications.

Reduction in salivary stores inhibits the body's ability to expel bacteria-producing plaque. This in turn increases risk of dental caries and may decrease integrity of epithelial and gingival tissue (making host tissue more susceptible to infection). Amylase, a digestive enzyme used to break down carbohydrates before they enter the stomach, is also inhibited, thereby affecting blood glucose levels. Lastly, salivitan (a dietary peptide), responsible for glucose-stimulated insulin release, is slowed -- further impairing management.

Risks

Prescription Drugs: In general, aging patients can be treated with the same drug regimens as younger patients (after accounting for the heterogeneity of the population). However, there are more than 500 prescription medications that can trigger xerostoma (as a side-effect). Many of these meds are used by medical doctors to treat various major and minor complications of diabetes mellitus.

Aging: As the diabetic patient ages, and medication becomes a greater part of their treatment program, the risk of developing xerostoma multiplies, as does the likelihood of degeneration of salivary glands.

Impact on Overall health

As mentioned above, reduction in peptides and digestive enzymes can complicate the patient's ability to manage glucose levels. In addition, the multitude of oral sequelae triggered by xerostoma may inhibit dietary and self management goals.

Oral complications resulting from xerostoma:

- Increased viscosity in saliva may impede speech and make it difficult for the patient to swallow
- Cracked, dry mouth, exposed gingival tissue and painful, loose teeth – all complications of xerostoma – may make eating painful and may detour the patient from consuming a diet rich in fruits, roughage, and other dietary staples.
- Prosthetic dental plates – inflammation and decreased saliva count affect soft and hard tissue surrounding dentures, creating discomfort and pain during mastication.

Treatment & Prevention

Treatment for symptoms of xerostoma will consist of saliva replacement therapies and prescription drug review, combined with an aggressive program of good oral hygiene, closely-monitored A1C control and regular examinations by a dentist trained in proper care of diabetic patients.

Did you know?

DentistryForDiabetes dentists will schedule exams up to four times a year (as is recommended by the American Academy of Periodontology) in which they probe for infection and decay, deep-clean teeth and also test A1C levels with each visit. They are available to patients and physicians on oral health issues affecting proper diet and systemic health, and (on your request) may collaborate with your physician on proper medications, and report variations in glucose level.

Aging, Yeast Infections, Dental Caries, Oral Ulcers, & Oral Prosthetics

While xerostoma and periodontal diseases are the primary complications associated with diabetes mellitus, the list of other oral complications grows as the patient ages.

Yeast infection, dental caries, ulcers, difficulty wearing oral prosthetics all affect the patient's health and wellbeing on multiple levels. Inflammatory response generated by oral infection has been shown to impact A1C levels and system-wide health. Pain, discomfort, reduced salivary enzymes and peptides affect dietary and nutritional management goals. At the same time, self-image and mental health are affected by the physical and aesthetic changes brought on by many visceral and epithelial infirmities.

Provided the oral health practitioner is trained in the complexities of diabetes mellitus, he may act as a consultant regarding drug therapy contraindication for oral disease (including xerostoma and oral fungus). He may also support the management program designed by the physician through monitor of glycemic levels and maintenance of oral health. The dentist accomplishes these goals through a vigorous program of oral hygiene, and regular oral examinations and treatment.

Working together, dentists and physicians may increase the overall health of the aging diabetic patient.

Keys to successful treatment of oral health issues confronting the aging diabetic:

- A disciplined and vigorous program of good oral hygiene
- Regular examination and treatment by an oral health expert
- Ongoing collaboration between physician and dentist to ensure drug therapies do not trigger oral diseases

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In Sum

As with all complications associated with diabetes mellitus, early diagnosis and intervention by an oral health practitioner is important in delaying onset or preventing dental comorbidity, as well as those systemic complications spurred by oral disease.

<p>From:</p>	<p>To:</p>
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