



► Interventions, Treatments and Standards Abound — What Matters Most is Achieving Treatment Goals



► Comorbidities Defy Classification — Treatment Does Not



► What's Clicking? When to Test Asymptomatic Adults

From Your Dentistry for Diabetics (DFD) Professional
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Informed

The truth about the diabetic & oral care

The Biggest Treatment Challenge: Helping Patients

If you have been treating patients with diabetes for any length of time, you know that patient self-management can be the most challenging part of treating this illness. And yet, as medical professionals, we cannot give up on the patient – even if the patient gives up on himself.

Facing a lifelong illness that requires continuing medical care and lifestyle adjustment is a sad and stark reality for many patients. And while it is important that they are treated with compassion, we cannot manage every aspect of the illness for them. One of the

best things we can do for our patients (as well as ourselves) is to avail ourselves of the resources that are available to help educate, monitor and motivate our patients.

This newsletter is a resource, intended to provide the latest information about oral and systemic treatment, and management practices from other experts in their field of diabetic care.



Did You Know?

The structural changes that characterize diabetic angiopathy include abnormal growth and impaired regeneration of vessels. The changes seen in the microvasculature of the retina, glomerulus, and other end organs in people with diabetic complications also occur in the periodontium.

Interventions, Treatments and Standards Abound — What Matters Most is Achieving Treatment Goals

Interventions, treatments and standards for diabetic care abound. Following thorough evaluation to determine the extent and nature of diabetic complications as well as history of treatment, the medical doctor crafts a management plan that includes patient self care, as well as continuing medical care to address the specific pharmacologic and therapeutic issues.

Diabetics are 2.8 – 3.4 times more likely to contract periodontal disease than are non-diabetics.

However, the real success in patient treatment is measured, not by the plan, but by how well the patient meets treatment goals. According to ADA (American Diabetes Association):

- Only 37 percent of adults with diagnosed diabetes achieved an A1C of 7 percent
- 36 percent had a blood pressure 130/80 mmHg,
- Just 48 percent reached the standard for cholesterol – 200 mg/dl.

What may be far worse is that only **7.3 percent** of the diabetic subjects **achieved all three treatment goals at once.**¹

These findings underscore the challenge individual diabetic care professionals face in treating and encouraging active participation and adherence by the patient to the self-management program. And so the answer to the patient care conundrum may lie, not in the minds and skills of the individual care provider, but in an alliance of diabetic care professionals working together to educate, test, treat and motivate the patient to self-manage.

By identifying other professionals to aid in multi-faceted treatment and program execution, medical professionals can increase the patient's success rate in achieving treatment goals by a large margin.

With the help of diabetic counselors, for example, medical doctors establish an ally in educating the patient in daily lifestyle changes. Nurses specializing in

diabetic care may help execute the medical treatment plan and also monitor cholesterol, blood glucose and blood pressure levels. Referral to a vision care specialist is key in the correct treatment of retinopathy and associated diseases of the eye. Referral to appropriate specialists and inclusion in the care team is also important when the patient shows signs of nephropathy, neuropathy, and macrovascular diseases.

This also holds true for a new kind of expert in the care of diabetic patients. The diabetic dentist is specifically trained to monitor oral health, and associated gingival and periodontal disease that is exacerbated in the diabetic patient (diabetics are 2.8 – 3.4 times more likely to contract periodontal disease than are non-diabetics).² The diabetic dentist first treats the acute symptoms (such as inflammation, bone loss and tooth detachment due to periodontitis, tooth decay due to xerostomia, etc.). Then he monitors and helps manage overall system health,

Did You Know?

In individuals with sustained hyperglycemia, proteins become irreversibly glycosylated to form advanced glycation end products (AGEs). These stable carbohydrate-containing proteins have multiple effects on cell-to-cell and cell-to-matrix interactions and are commonly thought to be a major link between the various diabetic complications. The formation of AGEs also occurs in the periodontium, and higher levels of periodontal AGE accumulation are found in those with diabetes than in non-diabetic subjects.

— Source: Advanced glycation endproducts (AGEs) induce oxidant stress in the gingiva. J Periodontal Res 1996;31:508-515.

performing A1C tests with each examination, and probing for oral infection as well as systemic inflammation — in order to help prevent further complications associated with diabetes.

What is crucial to the success of each of these individual aspects of diabetic care – and ultimately to the successful treatment of the diabetic patient – is to approach treatment from a collaborative point of view. Practicing open communication and referral among members of the treatment team, sharing patient histories and treatment changes – and perhaps

Comorbidities Defy Classification — Treatment Does Not

While it is well-documented that glycemic control is key to effective management of diabetes, there are other factors that affect the health and wellbeing of the patient. The best, most well-designed programs take into account lifestyle risks, patient preferences and comorbidities.

Because smoking, for example, can lead to insulin resistance or inadequate compensatory insulin secretion responses, it is believed it can accelerate the progression of diabetes. And so the effective treatment program for those who smoke should focus on reducing and ultimately eliminating smoking from the patient's lifestyle.

When considering the impact of comorbidity, focus is often placed on micro- and macrovascular complications. With vascular comorbidities including such chronic conditions as heart diseases (K74–K77), stroke (K90), retinopathy (E83), nephropathy (U99) and diabetic foot (S97). Without considering non diabetes-related comorbidities such as depression (P76), lung diseases (Chronic Obstructive Pulmonary Disease (COPD) (R91, R95) and asthma (R96)), musculoskeletal diseases, neurological diseases and cancer.

And while oral health complications such as periodontitis, gingivitis seemingly share many of the

most importantly delivering a pervasive and unified message of self-management – will enable health care professionals to better serve the patient. And the patient to better understand her role in her own health.

1. Standards of Medical Care in Diabetes—2007; Diabetes Care, American Diabetes Assoc. 2007. **Vol. 30 (Suppl. 1)**
2. Brian L. Mealey, Thomas W. Oates, Diabetes Mellitus and Periodontal Diseases; J. Periodontal, Aug 2006. **Vol. 77 No. 8**, 1292-1293

same drivers as the former list (such microvasculature changes in the periodontium similar to those seen retina, glomerulus, and other end organs of those patients with diabetic complications), categorization matters less than the facts do.

According to a multilevel regression study published in BioMed Central 2006, there is no difference between health care utilization for non-vascular comorbidities and vascular comorbidity for patients with diabetes. What's more, **patients with both vascular and non-vascular comorbidity showed the highest health care utilization pattern.** Which suggests that the sum of all comorbidity, whether vascular or non-vascular, has a greater impact than that of each individual complication alone. This also illustrates the importance of primary and secondary prevention of all comorbidities in patients with diabetes.

Whether or not diabetic foot, oral health or musculoskeletal disease is considered a direct or indirect complication of diabetes. Individually, each complication may cause pain, discomfort and suffering, but when summed together, their impact on the system and the health and well being of the diabetic patient can be devastating and far reaching.

Check it Out:

With the ongoing population aging of Western societies, not only the number of patients with diabetes is expected to increase, but also the number of patients with diabetes with comorbidity.

Going forward, in order to provide the diabetic patient with the best care regimen possible, focus and treatment should consider all comorbidities (whether vascular or non-vascular in nature) as part of one single interrelated system. Regular evaluative processes, referral to expert for appropriate short and long-term treatment and integration of treatments into a single diabetic care program is in the best interest of the patient.

1. Carole Willi, Patrick Bodenmann, William A. Ghali, Peter D. Faris Jacques Cornuz. Active Smoking and the Risk of Type 2 Diabetes: A Systematic Review and Meta-analysis, *JAMA*. 2007, **298** (22):2654-2664
2. Jeroen N Struijs, Caroline A Baan, Francois G Schellevis, Gert P Westert, Geertrudis AM van den Bos. Comorbidity in patients with diabetes mellitus: impact on medical health care utilization; *Biomedcentral Health Services Research*. 2006, **6**:84

What's Clicking? When to Test Asymptomatic Adults

As we all know, staying abreast of ever-changing patient needs is the key to early diagnosis and treatment that can make an immense difference in the quality of care, as well as the quality of life for the patient. Because the symptoms of diabetes mellitus in many ways mirror the effects of aging, it frequently goes undiagnosed in adult patients until complications are observed. And as many as one third of all diabetics go undiagnosed.¹

As many as one third of diabetic adults go undiagnosed.

For this reason patients, who fall into high-risk categories for diabetes, should be screened regularly using an FPG test or 2-h OGTT.

Perhaps more importantly than screening, however, is identifying high risk patients based on proven criteria. Provided below is a concise list of criteria to assess the risk of diabetes in asymptomatic adults.

1. Consider testing all adults at age 45 years and above, particularly those with a BMI ≥ 25 kg/m²* -- if patient results show normal, repeat testing every three years.
2. Testing should be considered at a younger age or be carried out more frequently in individuals who are

overweight (BMI ≥ 25 kg/m²*) WITH additional risk factors.

Risk factors include:

- Habitual physical inactivity
- A first-degree relative with diabetes
- Member of a high-risk ethnic population -- African American, Latino, Native American, Asian American, Pacific Islander)
- Delivered a baby weighing ≥ 9 lb or have been diagnosed with GDM
- Found to be Hypertensive ($\geq 140/90$ mmHg)
- HDL cholesterol level ≤ 35 mg/dl (0.90 mmol/l) and/or a triglyceride level ≥ 250 mg/dl (2.82 mmol/l)
- Polycystic Ovary Syndrome (PCOS)
- Previously tested positive for IGT or IFG
- Other clinical conditions associated with insulin resistance (e.g., PCOS or acanthosis nigricans)
- History of vascular disease

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