



▶ Periodontitis and NIDDM: Studies probe connections



▶ Periodontal disease, NIDDM share patient demographics



▶ What's Clicking? Physician-Dentist Patient Information Sharing System

From Your Dentistry for Diabetics (DFD) Professional Share this newsletter with other health professionals in your office

Pass it on!

Informed

The truth about the diabetic & oral care

ADA, JAMA and DFD Respond to Oral Health and Diabetes Research

According to research, 1.5 million new cases of diabetes mellitus are diagnosed each year in the United States. In parallel with the growing number of diabetic patients, the number of patients diagnosed with periodontal disease is also growing.

While many researchers have claimed a two-way confounding relationship between the two diseases, it is sometimes unclear precisely what the relationship is and what

physician response should be. This month's issue of *Informed* will review the most recent studies concerning the relationship between periodontal disease and diabetes mellitus.

We will also report what the American Diabetes Association, JAMA and DentistryForDiabetes are saying AND doing about oral health and diabetes.



Did You Know?

A study sponsored by Blue Cross Blue Shield in 2008 found medical cost savings in the range of 3% to 8% for individuals who were receiving regular dental care each year compared with those who were not recipients of any preventive or periodontal services.

Periodontitis & NIDDM: Studies Probe Connections

Is there a connection between periodontal disease and non-insulin dependent diabetes mellitus?

Of all the statements made with regard to the affects of periodontal disease on diabetes mellitus, there is none more succinct and direct than this by Dr. George Taylor, DrPH, DMD, associate professor of dentistry at the Schools of Dentistry and Public Health at the University of Michigan in Ann Arbor.

“Periodontal infection affects, the health of the teeth and gums,” says Taylor. “But the body’s response to infection, we believe, is systemic.”

In a 2008 report co-authored with researcher Wenche Borgnakke, Taylor found that bacterium from periodontitis, when released into the bloodstream, may worsen the affects of diabetes. ¹

Taylor and Borgnakke are not alone in their findings. A study by Wu and Genco, published in the *Journal of Epidemiology* (2000) , found that patients with periodontitis, particularly those colonized by Gram-

negative organisms such as *P. gingivalis*, *Tannerella forsythensis*, and *Prevotella intermedia*, have higher serum markers of inflammation such as C-reactive protein (CRP), IL-6, and fibrinogen than subjects without periodontitis.² All of which may contribute to inhibited glycemic control for diabetic patients and worsening patient health. Those factors may also contribute to thickening of arterial walls and clot formation, precursors to cardiovascular disease. Studies published in the *Journal of Periodontology* (2000, 2001) confirmed these findings. ³

In addition, those research results appear to be accepted by the American Diabetes Association (ADA). The December issue of the *Journal of the American Medical Association* reported that the ADA is now recommending that physicians, who are treating diabetic patients, ask those patients when they last visited a dentist.⁴

Further, if they have not seen a dentist in the last year, the treating physician should recommend the patient for evaluation by a qualified dentist.

Periodontitis, NIDDM Share Patient Demographics

What makes periodontal disease even more germane to the discussion, diagnosis and treatment of diabetes mellitus is its similarities in patient population demographics to that of diabetes.

Like NIDDM, the risk of developing periodontal disease grows with age. According to Oliver, Brown and Loe (*Journal of Periodontolog*, 1998) and Albandar et al (*Journal of Periodontology*, 1999),

more than half of adults over the age of 35 are already in the early stages of periodontal disease. While the most recent statistics compiled by the National Diabetes Information Clearinghouse (2005), say that 1.5 million new cases of diabetes were diagnosed in Americans over the age of 20, a trend that promises to continue. ⁵

Did You Know?

Periodontitis is a local inflammatory process mediating destruction of periodontal tissues — triggered by bacterial insult. However, this disease is also characterized by systemic inflammatory host responses that may contribute, in part, to the higher risk for cardiovascular disease (CVD) among patients with periodontitis.

**People with gum disease
are 270% more likely to suffer a
heart attack than those with
healthy gums**

**An issue that may be compounded
by the fact that 2/3 of all people
with diabetes die of cardiovascu-
lar-related issues.**

In addition, the longer the patient lives with either of these diseases, the greater the probability the diseases will advance – potentially creating a cascade of more severe and perhaps life-threatening complications. Those patients living with diabetes mellitus often find it more difficult to manage blood glucose via lifestyle and dietary choices. While patients with periodontitis (left untreated) increase their risk of tooth loss, alveolar bone loss and other oral complications.

When found together, each disease may multiply the negative affects of the other. Diabetic patients are 2.8—3.4 times more likely to develop gum disease than non-diabetic subjects. **6** In addition, when the symptoms of untreated periodontal disease progress to an advanced-stage infection, along with tooth and bone loss, the result may be devastating.

In order to avoid the pain and discomfort resulting from missing teeth and painful infection, the diabetic person may choose softer, more highly-processed, less acidic foods. Those choices often carry with them higher sugar content, higher carbohydrate count and lower levels of dietary fiber – the converse of recommended nutritional regime for those with diabetes.

Therefore, in addition to the inflammatory burden placed on the body by perio infection, the patient may

also lack the fundamental dietary ingredients needed to help balance glycemic levels. Ultimately, the overall system health of the patient may suffer.

The point is this

Periodontal disease by itself does not cause diabetes mellitus. However, as with all infections for diabetic patients (or those populations vulnerable to diabetes), the risk of early onset, glycemic management or additional diabetic complications is amplified with periodontal infection. The American Diabetes Association, researchers, as well as some dentists and physicians recognize those increased risks and are acting to reduce them.

1. Taylor GW and Borgnakke WS. Oral Dis. 2008;14[3]:191-203
2. Wu T, Trevisan M., Genco R.J., Falkner K.L., Dom J.P., Sempos C.T., Examination of the relationship between periodontal health status and cardio vascular risk factors: Serum total and density lipoprotein cholesterol, C-reactive protein, and plasma fibrinogen. *Am J Epidemiol*, 2000; **151:273-282**.
3. Noack B., Genco R.J., Trevisan M., Grossi S., Zambon J.J., De Nardin E. Periodontal infections contribute to elevated system C-reactive protein level. *J Periodontal*, 2001; **72: 1221-1227**
4. Loos B.G., Craandij J., Hoek F.J., Werthein-van Dillen P.M.E., van der Velden U., C-reactive protein and other markers of systemic inflammation in relation to cardiovascular diseases are elevated in periodontitis. *J Periodontal* 2000; **17:1528-1534**.
5. Tracy Hampton Studies Probe Oral Health_Diabetes Link. *JAMA*. 2008;300(21):2471-2473
6. National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institute of Health, 2005.
7. Campus G, Salem A, Uzzau S, Baldoni E, Tonolo G. Diabetes and periodontal disease: A case-control study. *J Periodontol* 2005;76:418-425.
8. Nelson RG, Shlossman M, Budding LM, et al. Periodontal disease and NIDDM in Pima Indians. *Diabetes Care* 1990;13:836-840.

Check it Out:

Inflammatory response caused by periodontitis has been proven to produce pro-inflammatory proteins tumor necrosis factor-alpha (TNF- α), interleukin-1 beta (IL-1B), interleukin-6 (IL-6).

What's Clicking? Physician-Dentist Patient Information Sharing System

One of the challenges physicians and dentists face when trying to collaborate on diabetic care programs for their patients is that the two disciplines have incompatible record systems. Recognizing that obstacle to collaboration, the *DentistryForDiabetes*SM organization developed comprehensive patient information sharing system (including HIPAA release) for use by *DentistryForDiabetes* dentists, physicians, dieticians and other diabetic care specialists.

The complete system includes:

- Physician-to-Dentist HIPAA release form
- Dentist-to-Physician HIPAA release form
- Observed health indicators review form
- Metabolic syndrome indicators form
- Diabetes patient stats and communication log

Excerpts from *DentistryForDiabetes* Information Sharing System:

For more information about the *DentistryForDiabetes* Information Sharing System, contact the dentist who sent you this newsletter.

<p style="text-align: center;">Indicators for Oral Diseases</p> <p>.....</p> <p>When is it time to refer diabetic patients to a <i>DentistryForDiabetics</i>-certified dentist? Below is a short list of oral health disease indicators. When patients present with any of the following, it is recommended you refer them to a diabetically-aware dentist.</p> <ul style="list-style-type: none"> • Complaint by patient they are having trouble swallowing • Dry mouth • Cracked lips, including corners of mouth • Loose teeth • Receding gums • Pain when chewing • Red, inflamed gums • Bleeding gums • Complaints that prosthetic teeth (or dentures) don't fit anymore • Oral Candida fungus • Oral lesions • Out-of-control glycemic levels with unknown source <p>.....</p> <p><i>DentistryForDiabetics</i> dentists are focused on the oral health aspects of diabetic care. They are trained in pharmaceutical, clinical and lifestyle counseling specifically for the diabetic. This training ensures that they understand the complex, interrelated nature of diabetes and how dentistry can support other aspects of diabetic patient care.</p> <div style="background-color: #e6f2ff; padding: 5px; text-align: center;"> <p>For more information, contact:</p> <p><<Name>></p> <p>Ph:</p> <p>E-mail:</p> <p>Website:</p> </div>	<p style="text-align: center;"><u>HIPAA RELEASE Continued</u></p> <p>II. Name and address of person or category of person to whom this information will be sent:</p> <p>NAME _____</p> <p>ADDRESS _____</p> <p>III. Specific information to be released:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>a. MEDICAL RECORDS:</p> <p>FROM ___/___/___ TO ___/___/___</p> </td> <td style="width: 50%; border: none;"> <p>b. INCLUDE (Indicate approval by initialing):</p> <p>_____ Alcohol or Drug Treatment</p> <p>_____ Mental Health Information</p> <p>_____ HIV-related Information</p> </td> </tr> </table> <p>IV. Authorization to discuss health information:</p> <p>By initialing here _____, I authorize _____</p> <p style="text-align: center;"><small>(initials) (name of individual health care provider)</small></p> <p>to discuss my health information with other health care providers listed here:</p> <p style="text-align: center;">_____</p> <p style="text-align: center;"><small>(health care provider authorized to receive information)</small></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <p>V. Reason for release of information:</p> <p><input type="checkbox"/> At request of individual</p> <p><input type="checkbox"/> Other _____</p> </td> <td style="width: 50%; border: none;"> <p>VI. Date on which the authorization will expire:</p> <p>___/___/___</p> </td> </tr> </table> <p>VII. If the patient is not signing, provide the name of representative signing:</p> <p>_____</p> <div style="background-color: #e6e6e6; padding: 5px;"> <p>All items on this form have been completed, and my questions about this form have been answered.</p> <p>Patient Signature: _____ Date: _____</p> </div>	<p>a. MEDICAL RECORDS:</p> <p>FROM ___/___/___ TO ___/___/___</p>	<p>b. INCLUDE (Indicate approval by initialing):</p> <p>_____ Alcohol or Drug Treatment</p> <p>_____ Mental Health Information</p> <p>_____ HIV-related Information</p>	<p>V. Reason for release of information:</p> <p><input type="checkbox"/> At request of individual</p> <p><input type="checkbox"/> Other _____</p>	<p>VI. Date on which the authorization will expire:</p> <p>___/___/___</p>
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