



## From Basics Forward...

### Upcoming AADE Program

“From Basics Forward” offers a core of information about diabetes education and care. The program is designed to enable participants to expand their knowledge base in order to make more accurate assessments, individualize plans of care and evaluate the effectiveness of interventions.

*Upon completing the 2-day workshop, participants will be able to:*

- Differentiate between type 1 and type 2 diabetes as each relates to etiology, pathophysiology and current treatment strategies.
- Define the relationship between diabetes and obesity.
- Identify current approaches to medication therapy that optimize glycemic control.
- Design and interpret a blood glucose monitoring program that effectively assesses glycemic control.
- Identify strategies for overcoming resistance to change.... *to name a few.*

*Interested? Call the AADE Member Service Center at ☎1-800-338-DMED for further information.*

## Moving Diabetes Management into the Next Century

*A Professional Symposium  
April 22 & 23, 1999*

*Join us to learn about:*

- New technology for diabetes management
- Sexual dysfunction and diabetes
- Glycemic control
- Treatment for gastropathics  
& much more

*To get more information or to register, call the International Diabetes Center at ☎1-612-993-3393*



## Dental Disease & Diabetes

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It is well known that diabetes can lead to multiple oral complications, many related to hyperglycemia. Indeed, dental disease may be considered the sixth “opathy” associated with diabetes, following close on the heels of retinopathy, nephropathy, vasculopathy and peripheral and autonomic neuropathies. While about 80% of the population has periodontal disease (inflammation and destruction of the soft tissue and bones that surround the teeth), the incidence among people with diabetes runs as high as 95%. Because most tooth loss in people over 40 years of age is attributed to periodontal disease rather than dental caries, the implications for the 12 to 16 million individuals with diabetes in the United States is staggering.

The 1999 Standards of Medical Care for Patients with Diabetes Mellitus published by the American Diabetes Association, lists an oral examination as one aspect of the physical examination that requires special attention. A thorough periodic oral examination not only saves the teeth but also provides useful clues about coexisting diseases and secondary causes of diabetes.

### A Primer on Periodontal Disease and Tooth Decay

*Periodontal disease is actually a four-step process:*

- Step 1: gingivitis-** an inflammation of the collar of gum that is preventable and reversible with proper care (brushing, flossing and regular oral exams).
- Step 2: early periodontal disease-** deposits of calculus on the teeth and early destruction of the bone and ligaments that surround the teeth.
- Step 3: moderate periodontal disease-** increasing destruction of the surrounding bone and ligaments, but not to the point of tooth loss being inevitable.
- Step 4: advanced periodontal disease-** loss of 50% of the supporting bone, resulting in loose teeth which usually are lost.

To determine the level of periodontal disease, a “probing depth” test, available in the dental office, measures the distance from the gum margin to the first intact fibers of the ligaments surrounding the tooth. The greater the distance, the more severe the periodontal disease.

While periodontal disease affects the tissues surrounding or supporting the teeth, tooth decay or dental caries affects the tooth itself. Tooth decay is directly related to the amount of plaque present—a reflection of oral hygiene—and the quality and frequency of available carbohydrate in the diet. Decay occurs when the acidic by-products of bacterial plaque lower the pH of the mouth.

### Oral Effects of Diabetes

Studies have shown that gingivitis is more prevalent in children with diabetes. Also, periodontal disease increases in severity with elevated blood glucose levels, and “probing depths” are significantly greater in those with both type 1 and type 2 diabetes compared to the general population. In addition, periodontal disease tends to be more common and more severe in patients with other complications of diabetes, especially diabetic retinopathy.

Factors which may contribute to oral complications in diabetes include decreased polymorphonuclear leukocyte (PMN) function, abnormal collagen metabolism, and longer wound healing time. Diseases of the oral cavity may, in turn, be the reason for an unexplained rise in blood glucose levels often seen



## Mark Your Calendar!

Upcoming Meetings

### Juvenile Diabetes Foundation

29th Annual Conference

◆ June 2 - 6, 1999 - San Francisco, CA

### American Diabetes Association

(59th Annual Scientific Session)

◆ June 19-22, 1999 - San Diego, CA

### American Association of

**Diabetes Educators**

(26th Annual Meeting)

◆ August 18-22, 1999 - Orlando, FL

### Diabetes Camp for Adults

May 20 - 23, 1999

Holy Cross Retreat ◆ Las Cruces, NM

Weekend Retreat includes:

- Health Education
- Meal Planning Experiences
- Eye, Foot, Dental & Skin Screening
- Self Management Practice Sessions
- Exercise
- Stress Management
- Spousal Support Groups

\$225-\$240 private room/person

\$185-\$215 double/triple room/person

Make reservations by March 1, 1999!

For additional information & reservations

☎ 1-505-522-0787



## The WebMaster

Website Options For Inquiring Minds

[www.nalusda.gov/fnic/dga/dguide95.html](http://www.nalusda.gov/fnic/dga/dguide95.html)

◆ United States Department of Agriculture  
*Dietary Guidelines for Americans*

[www.joslin.org/managing/discussion.html](http://www.joslin.org/managing/discussion.html)

Joslin Diabetes Center Discussion Groups  
*Opportunity to talk with others who have diabetes  
and their families, throughout the world.*

*Continually changing topics will focus on the various  
lifestyle concerns involved with diabetes care.*

#### Recommended readings from "Dental Disease & Diabetes":

Finney LS, Finney MO, Gonzalez-Campoy JM.

What the Mouth Has To Say About Diabetes.

*Postgrad Med* 1997;102(6):117-126.

Tervonen T, Oliver RC, Wolff LF, et. Al. Prevalence of Periodontal Pathogens

with Varying Metabolic Control of Diabetes Mellitus.

*J Clin Periodontol* 1994;21(6):375-379.

Redman RS. Dental Aspects of Endocrinology. In: Becker KL, ed.

*Principles and Practice of Endocrinology and Metabolism.*

2nd ed. Phil: Lippincott, 1995:1821-30.

Submit items of interest for upcoming issues to:

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in those with diabetes. If there is no other apparent reason for the loss of control (e.g. insulin or medication omission, food binges, infections elsewhere in the body), "when in doubt, check the mouth".

### A Quick Screening for Dental Disease by the Diabetes Team

As a first step, the periodic oral examination done by the diabetes team should include the following questions:

- Do your gums bleed or do you have any sores in your mouth?
- Are you able to chew all foods comfortably?
- Do you anticipate any major dental work in the near future?
- Do you see a dentist regularly?
- Have you been instructed in the proper care of your teeth and gums?

The oral examination includes inspection (looking for abscesses, inflammation, hypertrophy, recession of gums, exposed root areas, excessive buildup of plaque, obviously decayed teeth and gross white or dark red discolorations between or surrounding the teeth), smell (tissue putrefaction associated with periodontal disease causes a characteristic halitosis), and palpation (investigating any areas of tenderness or abnormal masses or lesions). If the above screening uncovers signs or symptoms of dental or gum disease, promptly refer the patient to a dentist who is familiar with diabetes.

### Preventing Oral Disease for Those with Diabetes

Normalizing blood glucose levels is of utmost importance in controlling periodontal disease. Two other equally important factors are diet and oral hygiene. The following are dental tips for patients with diabetes:

- Be careful with between meal snacks. Drink liquids with meals and snacks.
- Avoid frequent use of glucose tablets, sugared or chewy candies, dried fruits, fruit roll-ups, etc. for treating low blood glucoses.
- Pay attention to your mouth. Notify the dental team if something doesn't feel right.
- See your dentist every 6 months or as recommended.
- Remove plaque after meals and snacks. Brushing is preferable. If not available, rinse with water or chew sugarless gum.
- Brush your teeth properly with a soft-bristled toothbrush.
- Floss between teeth at least once a day.
- Use other cleaning aids recommended by your dentist.
- Do not smoke or chew tobacco.

### Planning Dental Treatment

When patients with diabetes are scheduled for oral surgery or extensive dental work, the diabetes team should be consulted concerning the need for possible changes in insulin or oral medication if chewing ability will be compromised. Dentists who treat patients with diabetes on a regular basis should have blood glucose monitors, glucose tablets or gels, and glucagon available in their offices. Although hypoglycemia is usually avoidable with proper precautions, patients may wish to talk with their dentist about a possible hypoglycemia occurrence. Restorative dental work (dentures, bridgework, and tooth filling) may require a soft diet that minimizes biting or chewing immediately after treatment. If raw fruits or vegetables are normally part of a patient's meal plan, suggest cooked or canned choices until the swelling and soreness are gone. Patients with dentures initially need to avoid nuts and seeds that could become wedged under the prostheses. Sick-day management guidelines that incorporate carbohydrate replacement should be given to patients who feel too ill to consume even a soft diet after a dental procedure.

With dental and diabetes teams working together, we can promote the oral health of our patients and prevent any future problems.

See left column for recommended readings.

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