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Celiac Disease and Diabetes – What's the Connection?

Celiac disease is a digestive disease that damages the small intestine and interferes with absorption of nutrients from food. People who have celiac disease cannot tolerate a protein called **gluten**, which is found in wheat, rye, and barley. When people with celiac disease eat food containing gluten, their immune system responds by damaging the small intestine. The villi, the tiny fingerlike projections on the surface of the small intestine, are damaged or destroyed and, without the villi, nutrients cannot be absorbed and malnutrition follows.

Celiac disease is considered an **autoimmune disorder** because of the response of the immune system to the presence of gluten in the diet. People with celiac disease tend to have other autoimmune diseases as well – most common among them, **type 1 diabetes**.

Celiac disease is also a **genetic disease**, meaning it can run in families.

Diagnosis based on symptoms can be very difficult because the **symptoms vary widely from one person to another.** One person may have diarrhea and abdominal pain, while another has irritability or depression. Irritability is one of the most common symptoms in children.

The list of symptoms is long and ranges from varying degrees of gastrointestinal distress, muscle and joint pain, to delayed growth, weight loss and behavior change. The disease can also exist without symptoms, or with very subtle symptoms.

The good news is that within the last few years a series of blood tests have been developed to measure levels of antibodies to endomysium and tissue transglutaminase. An **Anti-tissue Transglutaminase Antibody (tTG), IgA** is the screening test for celiac disease and, if positive, that is usually followed by a biopsy the small intestine to check for damage to the villi.

Prevalence of celiac disease varies with populations, and is estimated at 1 in 133 Americans. It may be underestimated because the symptoms can be attributed to other problems. With the advent of the screening test for celiac disease, the prevalence among individuals with **type 1 diabetes** has been found to be much higher than previously expected.

Testing is warranted when symptoms suggest celiac disease or to help rule out celiac disease as a cause of one of the conditions that occur following undiagnosed celiac disease such as cancer, osteoporosis, anemia, and seizures. Screening may be suggested for first-degree relatives of people who have been diagnosed with celiac disease and for children diagnosed with **type 1 diabetes**.

Treatment is essential to manage the disease and prevent complications. **The only treatment for celiac disease is to follow a gluten-free diet** – that is, to avoid all foods that contain gluten. In most cases, improvements in the small intestine begin within days, but complete healing may take 3 months to 2 years. Certain complications such as stunted growth and tooth discoloration may not improve.

The gluten free diet is a lifetime requirement. The diet is complicated and requires a completely new approach to eating, and in food preparation. Strategies may include a separate set of cooking utensils for very sensitive individuals; or at least a policy of not "double-dipping" a utensil in products such as butter, peanut butter, jams, and mayonnaise. Purchasing gluten-free foods presents a real challenge, but can be addressed by enlisting the help of a dietitian or support groups. Eating out requires vigilant self-advocacy. Gluten is unexpectedly found in many processed foods, medicines, and even mouthwash because it is an ingredient in food additives, preservatives, and stabilizers.

Much of this article is excerpted from the website of the National Digestive Diseases Information Clearinghouse, National Institutes of Health..
http://www.digestive.niddk.nih.gov/ddiseases/pubs/celiac/

References:

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Fast Food and Weight Gain

An article in the January 1, 2005 issue of *Lancet* looked at fast food consumption and weight gain. The study included young black and white adults who were 18-30 year in l985-1986. The aim of the study was to investigate the association of reported fast food habits and changes in body weight and insulin resistance over a 15 year time period.

Fast food frequency was higher in black than in white people. Fast food frequency was higher in men than in women. Individuals with high fast food frequency (more than 2 times a week) were younger than those with low frequency (less than 1 time a week).

There were strong positive associations between frequency of visits to fast food restaurants and increases in body weight and insulin resistance. Study participants who had a high fast food restaurant frequency at both baseline and follow-up gained an extra 4.5 kg (9.9 lbs.) and had a 2 times greater increase in insulin resistance than study participants who had a low fast food restaurant frequency at both baseline and follow-up.

Reference: Fast-food habits, weight gain, and insulin resistance (the CARDIA study): 15-year prospective analysis from *The Lancet* Vol 365 January 1, 2005

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Health Literacy and Diabetes

Health literacy is defined as the ability to obtain, process, and understand health information and services to make appropriate health decisions. In the July 24/31, 2002 issue of the Journal of the American Medical Association there is an article on “Association of Health Literacy with Diabetes Outcomes”.

People with poor health literacy may have problems reading the directions on the label of a pill bottle or interpreting blood sugar numbers. They may have problems understanding an educational brochure or an informed-consent document. Yet people with a chronic condition such as diabetes are expected to have self-management skills.

Older people, those who have a low educational level, minorities, and immigrants are more likely to have poor health literacy. More than one third of Medicare managed care patients were shown to have poor health literacy in a recent study.

In the study reported in the JAMA article English and Spanish speaking patients with type 2 diabetes were given the short form of a Test of Functional Health Literacy in Adults. Research assistants recorded their answers to a questionnaire on demographics, current diabetes treatment, whether they had received

diabetes education, length of time with diabetes and presence of diabetes complications.

It was found that 38% of patients had inadequate health literacy and 13% had marginal health literacy. The mean A1c (average blood sugar test) of the study participants was 8.5. The American Diabetes Association recommends a target of 7 or below. In this study tight blood sugar control was an A1c of 7.2 or less. 20% of patients with inadequate health literacy had tight control while 33% of patients with adequate health literacy had tight control. Poor blood sugar control was an A!c of 9.5 or higher. 30% of patients with inadequate health literacy had poor blood sugar control, while 20% of patients with adequate health literacy had poor control.

At the September DAC (Diabetes Advisory Council) meeting Audrey Riffenburgh, M.A gave a presentation "Are your Diabetes Education Materials Easy to Read?" Some of her suggestions included using common, everyday words of mostly 1 or 2 syllables, what she calls living room language. She also suggests using short, direct sentences with an average of 10-15 words per sentence.

Other suggestions were including plenty of white space. The text should be chunked with headings and bulleted lists. She suggests using type that is at least 12 point and using both upper and lower case text.

For more information check out *Clear and Simple: Developing effective Print Materials for Low-Literate Readers*
This is a guide for writing handouts for people with low literacy skills. You can get the entire guide at: http://www.cancer.gov/cancerinformation/clearandsimple

Web Sites, etc.

F as in Fat: How Obesity Policies are Failing in America 2005
This is a report (148 pages) by Trust for America's Health. It recommends that individuals and families consider health concerns when making eating and exercise choices. It also recommends that communities provide access to physical activity; that schools adopt stricter nutrition standards and promote physical activity; that employers offer programs and benefits that help employees stay healthy; and health care providers routinely ask patients about their exercise habits and counsel them on the importance of fitness.
To download the report in pdf format go to:
http://healthyamericans.org/reports/obesity2005/Obesity2005Report.pdf

www.caldiabetes.org
This is the web page of the California Diabetes Prevention and Control Program. It has a check off list for A1c, blood pressure, lipids, flu shots, etc in English and13 other languages.

Pediatric Diabetes: Health Care Reference and Client Education Handouts
This is a new publication from the American Dietetic Association. It will come out in October. The catalog number is 4041. The price is $35 for members and $46 for nonmembers.

http://www.QuickandHealthy.net

This is the web site of Brenda J. Ponichtera, RD. After October 8 she will have a grocery list and grocery shopping tips on the web site. She also has a seasonal Recipe Master in PDF format. The recipe master has quick and easy recipes that can be reproduced free for classes, patients or clients. Individual recipes can be reproduced for publication as long as credit is given to her. All recipes have nutrition analysis. The Spring/Summer recipe master is on the web site currently. The Fall/Winter recipe master will be posted on the web site by October 8.

There is a Quick and Healthy Recipe and Tip each month for health professionals. This can be given to clients or used in publications as long as credit it given. To get on the e-mail list to receive the monthly Quick and Healthy Recipe and Tip e-mail her at scaledwn@gorge.net and put "recipe master" in the subject line.

"What's Missing in CholesterALL?" campaign is an educational program of the Preventive Cardiovascular Nurses Association. It's purpose is raise the awareness of women about heart disease. Go to:
http://www.raiseyourcholesterol.com/

www.diabetes.org/hypertension

An archived webcast of "Managing Hypertension in Adults with Diabetes" is available at this web page. Nurses and CDEs can get free CEUs and they have applied for CEUs for RDs.

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