

DIABETES IN CONTROL.com Newsletter

The Newsletter for Professionals in Diabetes Care

February 28, 2007 Issue #353

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Top Diabetes Stories:

Pre-Diabetes Gives Women Head Start on Heart and Diabetes Risk*

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4595>

More Fiber in Coffee Than Orange Juice*

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4594>

Pre-Pre Diabetes Linked to ApoC1*

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Add One More Study: Exercise Pivotal In Preventing And Fighting Type 2 Diabetes*

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Low Testosterone a Possible Risk Factor for Diabetes in Men*

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Muscle Contraction Increases Insulin Sensitivity*

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4586>

New Storage Instructions Approved For BYETTA(R)*

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4585>

Accumulation of Cholesterol Linked With Type 2 Diabetes*

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4582>

From the editor's desk

For those of you who have been smart enough to read **Dr. Sheri Colberg's**, features, on activity and outcomes, her *Other Tips for Optimizing Endurance Training* will make a lot of sense. If you wonder why these tips are important, [Click here](#) to read this and all of **Dr. Colberg's** features.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4596>

Have you ever heard of MAT or pulsed insulin therapy? **Lisa Iovino, Doctor of Pharmacy Candidate**, my current intern from the University of Florida, College of Pharmacy and I recently visited with an endocrinologist in our area who was using this therapy with patients. She has prepared an overview of how MAT works and even adds a way for you to explain it to your patients.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4597>



We need your help! For the past 6 ½ years Steve and I have provided you with the latest in news and tools for helping your patients, This year we ask you to support our JDRF Walk Team and our goal to raise 5000 dollars for the April Walk in Tampa Bay, and we really need your help. **Please click on this link to make your 5 or 10 dollar donation and support our team.** <http://walk.jdrf.org/index.cfm?fuseaction=extranet.personalpage&confirmid=86639759>

To ensure that you receive the **Diabetes in Control** newsletter arrives in your inbox, please add diabetes@topica.email-publisher.com to your Contact List, Safe List or Address Book.

Dr. Richard K. Bernstein's new book comes out today, Diabetes Solution New and Revised 2007, for more information and a special promotion, go to: <http://www.diabetes911.net/promos/promo.php>

If you haven't checked out our new partner PresentDiabetes.com, Please do! 100's of our readers have taken the opportunity to register at presentdiabetes.com. By simulating online the experience that we all have when we attend a live clinical conference, PresentDiabetes.com, combines a rich curriculum of free CME lectures with collaborative networking features that allow our members to interact in discussions online. [Please show your](#)

[support for Diabetes In Control and register for Present Diabetes. Check it out and Register today!](http://www.diabetesincontrol.com/issues/issue350/presentdiabetes.php)
<http://www.diabetesincontrol.com/issues/issue350/presentdiabetes.php>

dLifeTV for March 4, 7PM ET on CNBC

Gastric bypass surgery – last resort or best hope? Also, a soldier's battle with diabetes in Iraq; and a restaurant where the menu is 100% diabetes-friendly. Watch this new episode of dLifeTV on: Sundays on CNBC at 7 PM ET, 6 PM CT, and 4 PM PT Check your local listings for details.

We can make a difference!

This week's overview:

- Item #3: Periodontal Changes in Children and Adolescents With Diabetes**
- Item #7: Insulin Glargine With Nateglinide Not Very Effective**
- Item #8: Tailored Diabetes Care Gets Results**
- Item #9: Retinopathy Screening Not Needed in Some Diabetic Children**
- Item #12: Research Identifies Risk-Factor Genes For Type 2 Diabetes**
- Item #13: Study Of Diabetes And Race Reveals The Imperfect Science Of Defining Ethnic Groups**
- Item #15: Sleep Expert Issues Wake Up Call To Women Who Snore-Diabetes Is A Risk**

Check out this weeks **“Test Your Knowledge”** question.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4598>

Dave Joffe, Editor-in-Chief

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NEWS FLASH:

FDA requests more clinical data from Novartis for its DPP-IV inhibitor (2) Novartis has received an "approvable letter" from the US Food and Drug Administration (FDA) for Galvus (vildagliptin), under review for US approval as a new once-daily oral treatment for patients with type 2 diabetes. Vildagliptin is an inhibitor of dipeptidyl peptidase IV (DPP-IV). The FDA has requested additional data, including a clinical study to demonstrate the safety and efficacy of Galvus in specific patient groups with renal (kidney) impairment. Galvus was submitted for US approval in January 2006 as a new therapy to reduce blood sugar levels in patients with type 2 diabetes, both as a monotherapy and in use with other anti-diabetic medicines.

Dr. Richard K. Bernstein's 2007 Edition of Diabetes Solution comes out today, that includes a very special promotion. Check it out at: <http://www.diabetes911.net/promos/promo.php>

The American Clinical Board of Nutrition (ACBN) offers our readers the first NCCA recognized certificate in nutrition. [To learn more click here.](#)

<http://www.diabetesincontrol.com/ads/acbn/dest.shtml>

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Tools for your Practice:

Present Diabetes:

Present Diabetes combines a rich curriculum of free CME lectures with collaborative networking features that allow our members to interact in discussions online.

<http://www.diabetesincontrol.com/issues/issue350/presentdiabetes.php>

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New Study:

Testing Oral Insulin to Prevent Type 1 Diabetes

Researchers have begun a clinical study of oral insulin to prevent or delay type 1 diabetes in at-risk people, the National Institutes of Health (NIH) announced today. **Jay Skyler, M.D., University of Miami**, let us know that researchers are testing whether an insulin capsule taken by mouth once a day can prevent or delay diabetes in a specific group of people at risk for type 1 diabetes. An earlier trial suggested that oral insulin might delay type 1 diabetes for about four years in some people with autoantibodies to insulin in their blood.. Some scientists think that introducing insulin via the digestive tract induces tolerance, or a quieting of the immune system. To learn more go to: <http://www.diabetestrialnet.org/ooins1.html>

New Product: The New Luxura HD Pen: Delivers in half units.



Besides the New HumaPen Memoir Pen, Lilly also announced that it will launch an insulin pen that delivers Humalog in smaller increments, **HumaPen® LUXURA™ HD**, in April 2007. LUXURA HD is a reusable pen that can deliver from 1-to-30 units of Humalog in half-unit increments, beginning after the first unit. This type of pen may be attractive to people with diabetes that do not need large amounts of insulin, or parents of some children with diabetes. LUXURA HD will require a prescription.

This Week's Items:

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- 2. More Fiber in Coffee Than Orange Juice***
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<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4581>

ITEMS For The Week:

Pre-Diabetes Gives Women Head Start on Heart and Diabetes Risk

The countdown to diabetes and coronary heart disease may start earlier for women with prediabetes than for men.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4595>

The "diabetes clock" may start ticking in women years in advance of a medical diagnosis of the disease, new research has shown. Among healthy adults who developed prediabetes during a six-year period, women started off with greater endothelial dysfunction, more hypertension and a greater degree of thrombosis than did men, said Richard P. Donahue, Ph.D., M.P.H., of the State University of New York at Buffalo, and colleagues.

These results support the "ticking clock" hypothesis used to explain the higher coronary heart disease risk seen for women with diabetes than for men with diabetes. This hypothesis says the cardiovascular risk and diabetes may be linked more through longstanding atherogenic risk factors than hyperglycemia alone.

"Although observational studies cannot prove causality, our data add compelling new evidence that the clock may indeed start ticking earlier among women than among men," Dr. Donahue and colleagues wrote.

In the study, female gender was significantly linked to factors emerging as precursors of coronary heart disease and type 2 diabetes, including the endothelial markers E-selectin ($P=0.042$) and soluble intracellular adhesion molecule-1 ($P=0.011$), fibrinolysis/thrombosis marker plasminogen activator inhibitor-1 ($P=0.001$), and frequency of hypertension ($P<0.001$).

"These novel and important observations support a role for endothelial dysfunction in the progression to pre-diabetes," they added.

The researchers examined these and other factors among 1,455 healthy control subjects from the larger Western New York Health Study of alcohol consumption and cardiovascular risk. None of the participants had pre-diabetes, type 1 or 2 diabetes, or known cardiovascular disease. All were 39 to 79 years old. New-onset prediabetes was defined by normal fasting serum glucose of less than 100 mg/dl at baseline but elevated to between 100 and 125 mg/dl at follow-up a mean of 5.9 years later.

The 52 women and 39 men in the cohort who developed prediabetes were matched to three controls on the basis of sex, ethnicity, and year of study entry. Their frozen blood samples from baseline were used to determine levels of the endothelial markers.

For pre-diabetic women compared with controls, the findings adjusted for age, body mass index and homeostasis model assessment of insulin resistance.

In the same adjusted model, there were no significant differences between pre-diabetic men and their controls. Comparing the pre-diabetic women and men, the significant findings were:

- ?? Women had higher E-selectin levels (51.2 versus 40.5 ng/ml, $P=0.036$).
- ?? Women had higher levels of soluble intracellular adhesion molecule-1 (273.0 versus 254.8 ng/ml, $P=0.010$).
- ?? Women had higher plasminogen activator inhibitor-1 levels (34.6 versus 26.8 ng/ml, $P=0.001$).

The researchers highlighted that insulin resistance "failed to reduce or eliminate the sex differences in the risk factors of interest" though they noted that the measure of insulin resistance used is only modestly correlated with the gold-standard measure of insulin resistance, the hyperinsulinemic-euglycemic clamp method.

Further adjustment for high-sensitivity C-reactive protein levels had no effect, indicating the differences in endothelial function were not moderated by inflammation.

The findings were also unaltered by including weight change, family history of type 2 diabetes, physical inactivity, and use of lipid-lowering medications.

Take Away Information

- ?? Explain to interested patients that women with diabetes are known to have a higher risk of subsequent coronary heart disease than are men, which this study suggests may be partly due to longstanding endothelial damage.

?? Caution patients that further study will be required to be needed to confirm whether their findings in prediabetes are related to subsequent risk of heart disease.

Donahue RP, et al "[Sex Differences in Endothelial Function Markers Before Conversion to Pre-Diabetes: Does the Clock Start Ticking Earlier Among Women?: The Western New York Study](#)" Diabetes Care 2007 30: 354-359.

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Advertisement:

Breaking News from the American Diabetes Association 66th Scientific Sessions

Did you miss the ADA Scientific Sessions in Washington, DC? Get up to speed on the latest research and updates to current knowledge on diabetes and dyslipidemia-FREE CME Activities from the ADA Scientific Sessions are now available! Click here to access the interactive CME newsletter summary of several presentations relevant to clinical practice and the CME case-based slide and audio presentations on the real-world management of patients with diabetes and dyslipidemia recorded at the ADA meeting. Don't miss this opportunity to learn the latest clinical updates from one of the year's most critical diabetes events!

<http://www.cemedicus.com/diabetes>

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Item 2

More Fiber in Coffee Than Orange Juice?

Coffee, a well-established source of antioxidants, may also be a richer source of soluble dietary fiber than orange juice, researchers report.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4594>

"The dietary fiber content in brewed coffee is higher than in other common beverages such as wine (0.14 per cent) or orange juice (0.19 per cent)," stated the researchers.

Coffee, one of the world's largest traded commodities produced in more than 60, continues to spawn research and interest, and has been linked to improved cognitive performance and reduced risks of certain diseases, especially of the liver and diabetes.

Writing in the *Journal of Agricultural and Food Chemistry*, authors Elena Díaz-Rubio and Fulgencio Saura-Calixto from the Department of Metabolism and Nutrition at Madrid's Instituto del Frío, state that, while it is known that coffee beans contain dietary fiber, no study had ever investigated the presence of dietary fiber in coffee beverages. Indeed, food composition tables list coffee as containing zero dietary fiber.

In the new study, the researchers used a special technique for measuring dietary fiber in beverages such as wine and beer, and reports that brewed coffee contains between 0.47 and 0.75 grams of soluble dietary fiber (SDF) per 100 millilitres of beverage, which would equate to between 2.54 and 20 per cent of the powdered coffee bean.

This is more dietary fiber than found in other common beverages such as wine (0.14 per cent) or orange juice (0.19 per cent).

Interestingly, instant coffee contained more SDF (0.752g/100mL) than espresso or filter coffee (0.65 and 0.47 g/100mL, respectively). The main soluble dietary fibers in coffee are arabinogalactin type II (AGII), are galactomannan (GM).

"The average dietary fiber intake in Europe ranges from 16 to 21 grams per person per day; SDF in the Spanish diet is about seven grams per person per day," state the researchers. "The contribution of brewed coffee to the dietary fiber intake in a common diet may be significant; a moderate daily consumption of three cups of espresso coffee is equivalent to 0.66 g of SDF, which accounts for about 10 per cent of SDF intake in Spain."

Díaz-Rubio and Saura-Calixto state that a significant part of the antioxidant activity of coffee (between 87 and 105 mg/100mL) is associated with the dietary fiber content.

"This suggests that a fraction of the antioxidant polyphenols from coffee is bioaccessible in the small intestine, whereas the part associated with dietary fiber (30-51 per cent) will be bioaccessible in only the large intestine after fermentation by colonic microflora," they said.

The average worldwide daily coffee consumption is one and a half cups, while the US average is more than three and a half cups.

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DID YOU KNOW:

Snoring women have an increased risk for diabetes: "People with type 2 diabetes should consider they may have, or be at risk of sleep apnea." "Partners of men who snore, gasp and snort for breath during sleep are often kept awake at night," Professor Sullivan said. "Their own disrupted sleep often prompts them to encourage their partner to have a sleep assessment. "It is likely that more than half of the people with type 2 diabetes suffer from some form of sleep disordered breathing and up to a third have OSA at a level where treatment would be recommended". "Recent research indicates that untreated sleep apnea may make diabetes medications less effective.

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Item 3

Periodontal Changes in Children and Adolescents With Diabetes

Periodontal destruction can start very early in life in diabetes and becomes more prominent as children become adolescents.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4593>

In a current study, dental caries and periodontal disease were clinically assessed in 182 children and adolescents (6–18 years of age) with diabetes and 160 nondiabetic control subjects.

The results showed that there were no differences between case and control subjects with respect to dental caries. Children with diabetes had significantly higher plaque and gingival inflammation levels compared with control subjects. The number of teeth with evidence of attachment loss (the hallmark of periodontal disease) was significantly greater in children with diabetes (5.79 ± 5.34 vs. 1.53 ± 3.05 in control subjects, unadjusted $P < 0.001$). When controlling for age, sex, ethnicity, gingival bleeding, and frequency of dental visits, diabetes remained a highly significant correlate of periodontitis, especially in the 12- to 18-year-old subgroup. In the case group, BMI was significantly correlated with destruction of connective tissue attachment and bone, but duration of diabetes and mean HbA_{1c} were not.

The findings suggest that periodontal destruction can start very early in life in diabetes and becomes more prominent as children become adolescents. Previous studies in children with diabetes have indicated that gingival inflammation is significantly increased compared with nondiabetic control subjects, even after adjusting for oral hygiene levels. Programs designed to promote periodontal disease prevention and treatment should be provided to young patients with diabetes.

Diabetes Care 29:295-299, 2006

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Multivitamin Supplements & Diabetes:

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Item 4

Pre-Pre Diabetes Linked to ApoC1

University of Minnesota researchers have discovered a variant of a common blood protein, apolipoprotein C1, in people of American Indian and Mexican ancestry that is linked to elevated body mass index (BMI), obesity and Type 2 diabetes.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4592>

Lead investigator Gary Nelsestuen, a professor in the College of Biological Sciences' department of biochemistry,

said the abnormal protein may promote metabolic efficiency and storage of body fat when food is abundant. This could have provided a survival advantage to American Indians in the past when food was scarce. The discovery can be used to identify those who are at risk for diabetes and to guide diet and lifestyle choices to prevent diabetes.

Apolipoprotein C1 is a component of high density lipoprotein (HDL) and low density lipoprotein (LDL). HDL cholesterol is often referred to as good cholesterol, while LDL is called bad cholesterol. The common form of C1 tends to be found in the high-density protein complexes (HDL) that ferry cholesterol to storage depots in the body and are linked to lower cardiovascular disease risk. But the variant form of C1 tends to become part of low density protein complexes (LDL), which transport cholesterol to arterial walls and are associated with higher cardiovascular disease risk. Thus, having the variant could tip the balance of cholesterol carriers and lead toward depletion of HDL-also a risk factor for heart disease.

Among 1500 subjects from widely divergent genetic backgrounds, the variant was found in 35 of 228 persons with American Indian ancestry and in 10 of 84 persons with Mexican ancestry. The average body mass index (BMI) of persons with the variant protein was 9 percent higher and the diabetes rate 50 percent higher among study subjects and their parents. Parents were included because type 2 diabetes often doesn't appear until later in life.

The finding were published in the Feb. 20 online issue of the International Journal of Obesity.

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Start your own walking program



New StepTracker Available at special prices. See the results of the Step Program Study. <http://www.diabetesincontrol.com/programs/steps/index.shtml>
Purchase your own pedometers and receive the **Steps to Health** Program at no charge. <http://www.rx4betterhealth.com/steptracker/>
The Only Pedometer on the Market That Comes With a Program for Success!

DID YOU KNOW:

Stroke Prevalence in Middle-Aged Women Higher Than Men: A new study shows that stroke is more than twice as prevalent in middle-aged women as in men of the same age. Presented at the American Stroke Association's International Stroke Conference 2007, investigators at University of California, Los Angeles Stroke Center found that women between the ages of 45 and 54 had 2.5 times the risk of having experienced a stroke compared with their male counterparts. "This was a surprising finding. The conventional wisdom is that middle-aged women have the same risk or a lower risk for stroke than men, but this turned out not to be the case," the study's principal investigator, Dr. Amytis Towfighi, told Diabetes in Control. *International Stroke Conference 2007: Abstract 124.*

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Item 5

Add One More Study: Exercise Pivotal In Preventing And Fighting Type 2 Diabetes

This is one of many studies that shows that 15 minutes of physical activity can do more then any drug in the market place and do it for FREE!

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4591>

One in three American children born in 2000 will develop type II diabetes, according to the U.S. Centers for Disease Control and Prevention (CDC). A new study at the University of Missouri-Columbia says that acute exercise -- as little as 15 minutes a day -- can have a profound influence on preventing and fighting the disease.

This research adds to the body of evidence that indicates exercise can fight type II diabetes, one of the most widespread self-inflicted healthcare struggles in the United States, and could save Americans millions of dollars in pills, injections and medical treatment. Acute exercise is a bout of activity in which people actively participate, as opposed to activity resulting from everyday activities.

"Many people can fight type II diabetes through diet and exercise alone," said John Thyfault, professor in the MU College of Human Environmental Sciences' Department of Nutritional Sciences. "It is important to ward off diabetes early. Exercise has proven to be effective at all levels. At any stage of type II diabetes, from an obese child to a person dependent for 20 years on insulin injections, exercise could have a dramatic effect on improving

insulin sensitivity."

Type II diabetes results from a lack of insulin production and insulin resistance in skeletal muscle cells. Insulin is necessary to help drive glucose out of the blood and into the tissues of the body. As a result of insulin resistance, cells do not respond appropriately to insulin, causing more insulin to be released to have a measurable effect and ultimately causing insulin and glucose to build up dangerously in the blood.

Thyfault's study found that relatively short periods of acute muscle exercise in diabetic Zucker rats significantly increased insulin sensitivity in the previously insulin resistance skeletal muscles. Since 80 to 90 percent of all glucose goes into muscle after a meal, it is reasonable that more active muscles on a day- to-day basis will result in increased insulin sensitivity, Thyfault said.

"In relation to a person with type II diabetes, this would mean that they could lessen their dependence on insulin therapy to control their blood glucose levels or potentially control glucose levels without any drug by just increasing their daily activity levels in addition to the right diet," Thyfault said.

The study, "Contraction of insulin resistant muscle normalizes insulin action in association with increased mitochondrial activity and fatty acid catabolism," will be published in the American Journal of Physiology-Cell.



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<http://walk.jdrf.org/index.cfm?fuseaction=extranet.personalpage&confirmid=86639759>

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http://www.diabetesincontrol.com/annodyne/anodyne10_31_01.php

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Item 6

Low Testosterone a Possible Risk Factor for Diabetes in Men

Men with testosterone levels in the low normal range are much more likely to have diabetes than those with higher levels, independent of obesity, researchers report.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4590>

"Low testosterone levels are common among men with diabetes and there is growing evidence that low testosterone may be a risk factor for developing diabetes," Dr. Elizabeth Selvin from Johns Hopkins Bloomberg School of Public Health commented to Diabetes in Control.

She and her colleagues analyzed data on 1,413 men aged 20 years or older who participated in the Third National Health and Nutrition Examination Survey. Diabetes had been diagnosed in 101 men.

In analyses adjusted for age, race and adiposity, men in the lowest tertile of free testosterone were four times more likely to have prevalent diabetes compared with men in the highest tertile (odds ratio, 4.12).

Similar results were evident for bioavailable testosterone, where the odds ratio for diabetes was 3.93 for men in the lowest tertile relative to men in the highest tertile.

The association with low free testosterone persisted even after men with clinically low total and/or free testosterone levels were excluded, suggesting, the researchers say, that the association is not entirely driven by hypogonadal men.

"Obesity affects testosterone levels; testosterone levels drop in men who are overweight or obese," Dr. Selvin pointed out. Yet, "even after accounting for the effect of obesity, low testosterone levels still appear to be an important risk factor for diabetes," she said.

These data, the researchers write, "support the hypothesis that androgens may directly influence glucose metabolism and the development of insulin resistance, independent of the effects of obesity."

Dr. Selvin added, "An important message for clinicians is that low testosterone is a common finding among men with diabetes and may lead to other clinical problems."

Diabetes Care 2007;30:234-238.

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For the diabetic patient, it's not the cholesterol that's the problem. It's the number of LDL particles, especially small LDL particles. To see the real risk, use the NMR LipoProfile(r) test, the only test that directly measures the number of LDL particles and the number of small LDL particles - the particles shown to be more predictive of CHD events than LDL-C. Click here to learn more.
<http://www.diabetesincontrol.com/ads/liposcience/dest.php>

Item 7

Insulin Glargine With Nateglinide Not Very Effective

Helps only in the morning and some at lunch, but ineffective in lowering A1c

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4589>

To determine the effect of adding nateglinide to therapy with insulin glargine in adults with Type 2 diabetes previously treated with insulin and with poor blood glucose control. A 16 week-week, double-blind, placebo-controlled study, with people with Type 2 diabetes for 12 years and an average A1c of 8.2%, duration of insulin treatment 6.0 +/- 4.0 years] were transferred to single bedtime injection of insulin glargine for a titration period of 4 weeks, and then randomized to nateglinide or matching placebo before meals in addition to insulin glargine. Metformin was continued if taken. Doses of insulin and oral medication were titrated to protocol for the treatment period of 12 weeks.

The results showed that blood glucose concentration at 12 weeks was significantly lower with nateglinide + insulin glargine compared with placebo + insulin glargine after breakfast, before lunch, and after lunch, but not at other times. Baseline-adjusted HbA(1c) was not lower with nateglinide + insulin glargine as compared with placebo + insulin glargine.

From the results, Addition of nateglinide before meals to once-daily insulin glargine in people with long-standing diabetes already requiring insulin therapy improves blood glucose control in the early part of the day after breakfast and lunch, but does not provide good control of blood glucose levels overall.

Diabet. Med. Feb 12, 2007

Advertisement

Dr. Philip A. Wood has written a book for healthcare professionals and students of medicine, nursing, pharmacy, and graduate studies, as well lay people interested in understanding the influences of genetics, nutrition, activity level and drugs on diseases associated with excess fat such as obesity, insulin resistance, metabolic syndrome and type 2 diabetes. The book is composed of short, readable chapters with helpful figures to further explain the mechanisms discussed. For further information please click here.
http://www.amazon.com/exec/obidos/tg/detail/-/0674019474/qid=1132176956/sr=8-1/ref=pd_bbs_1/002-7853569-1175265?v=glance&s=books&n=507846

Item 8

Tailored Diabetes Care Gets Results

Culturally specific diabetes management programs work better than a one-size-fits-all approach, going by the results achieved with a program tailored to Latino patients.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4588>

"This diabetes management program works," Dr. Todd Gilmer of the University of California at San Diego, the study's lead author, stated that, "For the amount that this costs, you get valuable improvements in health."

A registered nurse runs the program, dubbed Project Dulce, meeting with patients as often as necessary, with the goal of helping patients keep their blood sugar levels, blood pressure, and cholesterol levels down long-term.

The program also includes a self-management training program run by a peer educator, or promotora, who comes from the Hispanic community.

"It's a collaborative education model so it's not just didactic," Gilmer explained. The promotoras "can address some misrepresented cultural beliefs...and hopefully connect to the patients on a peer level that complements the nurse management."

He and his colleagues used a computer model to project how 3,893 participating patients would fare over the next 40 years in terms of their health and life expectancy.

Based on their projections, Gilmer and his team found the program was most beneficial for uninsured patients, who gained an additional 1.1 years of life expectancy, compared to 0.6 years for patients with County Medical Services insurance, which covers low-income or indigent adults; 0.3 years for patients insured by Medi-Cal, a state program for low-income people; and 0.2 for patients with commercial insurance.

Uninsured patients tended to be younger than the other patients, Gilmer noted. "By addressing this early, you get a lot of long term benefits," he said.

The program was most cost-effective for the patients with the least insurance coverage, costing \$10,141 per year of life in perfect health gained, the researchers found.

The initiative is described in the latest online issue of the journal Health Services Research. Feb. 16, 2007

FACT:

Nearly 3 in 4 people with diabetes at high risk for amputation have diseased toenails. These are the findings of a recent study presented at the Council of Nail Disorders in advance of the American Academy of Dermatology in Washington, DC. "This study is something of a confirmation of what many have felt, but the ubiquity of the results is something of an eye-opener," noted Dr. Wu. "It appears that if you have certain pre-existing risk factors for amputation coupled with a clinically diseased nail, chances are you have a significant fungal infection based on laboratory cultures. It is our hope that this study will assist us in making more rapid assessments and embark on much-needed therapy for these high-risk patients."



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Item 9

Retinopathy Screening Not Needed in Some Diabetic Children

Current recommendations for diabetic retinopathy screening are not cost-effective for children with type 1 diabetes who successfully maintain strict glycemic control with intensive insulin therapy, report researchers.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4587>

As Dr. William V. Tamborlane noted in comments to Diabetes in Control, "Diabetic retinopathy screening recommendations date back to when you had worse glycemic control and more rapid onset of retinopathy."

It would be more cost-effective to limit regular retinopathy screening to those children who exhibit persistent elevations in hemoglobin A1C levels, hypertension, or microalbuminuria -- assessments that can be made during regular diabetes clinic visits, conclude Dr. Tamborlane and colleagues in the February issue of Diabetes Care.

The Yale group reviewed the results of retinopathy screening eye exams in 130 children with type 1 diabetes who met American Diabetes Association (ADA) screening criteria; i.e., they were older than 10 years of age and had diabetes for more than 3 years.

The researchers report that only three eye exams were positive for diabetic retinopathy. In one of the three, diabetic retinopathy was misdiagnosed; the other two cases were classified as possible transient microaneurysms in one eye each.

It is "striking," the authors say, that "none of the children had any verifiable or sustained evidence of early diabetic retinopathy."

Dr. Tamborlane concluded: "A lot of time, effort and money goes into screening diabetic children for early eye changes, and, as evidenced by our study, with very little yield, unless the children have other risk factors like high blood pressure, chronic elevations of A1C, and small blood vessel changes in the kidney."

Diabetes Care 2007;30:362-363.

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Item 10

Muscle Contraction Increases Insulin Sensitivity

In line with previous findings, acute muscle contraction or exercise can restore insulin sensitivity in insulin-resistant skeletal muscle, according to findings from a new study.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4586>

"Because skeletal muscle accounts for 80 to 90% of glucose disposal," lead investigator Dr. John P. Thyfault told Reuters Health, "this means that pre-diabetic or type 2 diabetic patients can aggressively influence blood glucose levels by increasing their daily physical activity."

The mechanisms by which exercise restores insulin sensitivity are unknown, Dr. Thyfault explained. "However, our study indicates that increased mitochondrial energy flux caused by acute exercise may play a role in the acutely improved insulin sensitivity."

Dr. Thyfault of the University of Missouri, Columbia and colleagues found that acute contraction restores insulin-stimulated glucose uptake to normal levels in muscle of obese Zucker rats.

The normalization of insulin action by contraction of muscle was associated with increased mitochondrial activity and fatty acid catabolism, they report in the February issue of the American Journal of Physiology - Cell Physiology.

In turn, these putative changes in mitochondrial energy metabolism and/or other contraction-induced events appear to circumvent upstream impairments in insulin signaling.

Thus, concluded Dr. Thyfault, "Daily physical activity or exercise acutely improves insulin sensitivity in previously insulin-resistant skeletal muscle."

Am J Physiol Cell Physiol 2007;292:C729-C739.

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Item 11

New Storage Instructions Approved For BYETTA(R)

As reported in last week newsletter, it is no longer necessary to refrigerate the Byetta pen after you begin to use it, which will increase compliance dramatically.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4585>

Amylin Pharmaceuticals, Inc. and Eli Lilly and Company announced that the U.S. Food and Drug Administration (FDA) has approved more convenient patient storage instructions for BYETTA(R) (exenatide) injection. BYETTA Pens can now be kept at a room temperature not to exceed 77 degrees F (25 degrees C) after first use.

With the updated label, refrigeration of BYETTA is no longer required after first use. Patients can now keep a BYETTA Pen at a temperature anywhere from 36 degrees F (2 degrees C) to 77 degrees F (25 degrees C) after first use. Until first use, BYETTA Pens must continue to be stored in a refrigerator between 36 degrees F (2 degrees C) and 46 degrees F (8 degrees C). These new, more convenient storage instructions will be provided to patients and healthcare professionals during the next few weeks. Patients now using BYETTA can immediately begin storing their current, in use BYETTA Pen at a room temperature not to exceed 77 degrees F (25 degrees C). BYETTA Pens should be protected from light and never frozen.

This change further enhances the convenience of BYETTA for patients. BYETTA is available in a simple-to-use 5 microgram and 10 microgram fixed dose pen device. Unlike insulin, the dose of BYETTA does not need to be adjusted based on the size of meals or amount of exercise, and no additional blood glucose monitoring is required.

"My patients already find BYETTA simple and easy to use," said Deborah Hinnen, RN, ARNP, CDE, BC-ADM, FAAN, Diabetes Nurse Specialist and Coordinator of Diabetes Education Services, Mid America Diabetes Associates, Wichita, Kansas. "The ability to store the BYETTA Pen without the need for refrigeration after first use is an improved convenience that makes it even easier for people with type 2 diabetes to take advantage of the unique clinical benefits of BYETTA."

<http://www.BYETTA.com>

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DID YOU KNOW:

According to the USDA, the average American consumes 74 pounds of sugar per year, or 23 teaspoons a day. That adds up to 460 calories of nothing but sugar. When you look at the Nutrition Facts panel on a food product, it tells you how many grams of sugar are in that food but it does not break the sugar down into natural sugars — such as those found in milk or fruit — and added sugars. In February 2006, the United States Department of Agriculture (USDA) released a comprehensive table that gives the added sugar count of more than 2,000 foods. The new table can help you find some surprising sources of added sugar, such as yogurt, salad dressings and even peanut butter, so you can know to look for brands that don't have it.

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Item 12

Research Identifies Risk-Factor Genes For Type 2 Diabetes

A new study led by researchers at the McGill University Health Centre (MUHC) has identified four genes that increase the risk of developing type 2 diabetes. This genetic discovery may help stem this rise in Type 2 diabetes.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4584>

Dr. Sladek and his colleagues systematically searched the entire human genome to identify genes that

predispose individuals to developing diabetes. By comparing hundreds of thousands of DNA fragments from patients with diabetes to those from non-diabetic individuals, they discovered that patients who developed diabetes shared common gene variants on chromosomes 8, 10 and 11.

"Of the four genes we have identified, two are involved in the development or function of insulin-secreting cells and one plays a role in the transport of zinc, an important mineral required for the production of insulin," says Sladek.

"We used a totally new concept and technology to look for the genes," says Polychronakos. "It worked very successfully and our findings are proof of principle that these approaches can be used to dissect the genetic component of other complex diseases and, eventually, other complex human traits."

Type 2 diabetes is the most common form of diabetes in adults and is becoming increasingly common in children. It is caused by the decreased production or effect of insulin, a hormone that is secreted by the pancreas and which regulates the amount of glucose in the blood. It has been known for some time that for Type 2 diabetes is caused by a combination of genetic and lifestyle factors. The group's new finding helps identify the population at the highest risk of developing this disease.

"In the last few years, advances in technology pioneered in Quebec, have made complex genetic analyses, such as those used in this study, possible," stated Genome Quebec President Paul L'Archev a que. "Without these advances and the collaboration between institutes, this research would not have been possible. The experimental approach used in this study, may help lead to the unraveling of other complex genetic diseases."

This genetic study, was led by MUHC endocrinologist Dr. Rob Sladek at the McGill University and Genome Quebec Innovation Centre together with Dr. Constantin Polychronakos at the MUHC and Dr. Philippe Froguel at the Pasteur Institute (Lille, France). The study also involved scientists at the University of Montreal, Imperial College (London, UK) and the Montreal Diabetes Research Centre.

Published in the journal Nature, Feb 2007

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Item 13

Study Of Diabetes And Race Reveals The Imperfect Science Of Defining Ethnic Groups

While previous biomedical research studies have found that genetics and race increase risk for some diseases, a new look into how researchers study genetic triggers of type 2 diabetes suggests that defining race remains an inexact science, with social and historic facts mixing with biology throughout the research process.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4583>

The new study by a UC Irvine anthropologist calls into question not only how race-specific information is being gathered and interpreted by the medical community, but how it is presented to the public through media and pharmaceutical marketing.

Anthropologist Michael Montoya followed the trail of DNA samples from the moment they were donated by people living along the U.S.-Mexican border, to the eventual publication of findings in scientific journals. Examining the work of biomedical researchers across the U.S. and in England who used the data, Montoya found the scientists used social and historical explanations -- not biological differences -- to define race and ethnicity in the research. For example, he quotes scientists who cite differences in skin tone or historic events, such as an island's native population being wiped out, as part of their reasoning for labeling and comparing specific ethnic groups. Genetic studies have sparked international headlines suggesting that Mexicans are predisposed to type 2 diabetes.

"Although it's true that certain ethnic groups have higher rates of diabetes, our social understanding of race is grafted into the scientific research," said Montoya, assistant professor of anthropology and Chicano/Latino studies. "Therefore, research that presumes race is biological may confuse matters instead of improving our understanding of the causes of chronic diseases like diabetes."

"Montoya's detailed ethnographic research on Mexican American diabetes shows us just how problematical it is to link health inequalities in any way to genetic variation rather than structural inequalities," said Alan Goodman, president of the American Anthropological Association and professor at Hampshire College.

Montoya found that some genetic scientists are concerned about how race is politicized in their research. He recounts the story of two genetic researchers in conflict with editors at a major scientific journal who insisted that the title of their article about diabetes and genetics specify that the findings were in "Mexican Americans." Later,

when the findings were replicated in white groups, the researchers were allowed to omit the ethnic label from the title. The implication, notes Montoya, is that to ethnically label the scientific discovery promotes the idea that the finding is not about universal human biology, but only about Mexican American biology, which he calls "scientific nonsense."

"Unfortunately, looking for genetic factors that influence diabetes in ethnic groups ignores the social factors like poverty and access to health care that have a much stronger correlation to the rates of diabetes among certain groups. And if we don't understand that those groups are not biological, we will look for biological explanations for their disease rates when we should be looking for social ones."

The study appears in the February issue of the journal Cultural Anthropology.

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FACT:

Hot Foot-Cold Foot Determines Risk for Amputation: If one foot's hot and the other's not, you might be developing a foot ulcer. Research published in the January 2007 issue of *Diabetes Care* showed that an infrared temperature-monitoring tool can reveal developing diabetic foot ulcers. The study randomly assigned 173 people with a previous history of diabetic foot ulceration to 15 months in one of three groups: standard, structured examination, and enhanced. Everybody received therapeutic footwear, diabetic foot education, and regular foot care. The group with the infrared skin thermometer ended up with fewer foot ulcers than either of the other two groups. Patients in the standard and structured groups were 4.37 and 4.71 times more likely to develop ulcers than patients in the enhanced therapy group. The researchers concluded that infrared temperature home monitoring may serve as a useful early warning sign of foot ulcers.

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Item 14

Accumulation of Cholesterol Linked With Type 2 Diabetes

An international team of scientists have discovered a possible link between accumulation of cholesterol –lipid toxicity and type 2 diabetes.

<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4582>

Type 2 diabetes is defined by two things. One is insulin resistance, and the other is reduced insulin production. The second is caused by reduction in insulin release by "beta cells" in the pancreas. Why this happens is poorly understood; however, it has been suggested that the build up of toxic lipids in the cells could be a reason.

Using mice, scientists showed that pancreatic beta cells, responsible for insulin release, begin to malfunction when their cholesterol levels build up.

They examined the role of a molecular transporter called "ATP-binding cassette transporter A1" (ABCA1). ABCA1 is important for "cholesterol homeostasis" which regulates cholesterol levels in cells. It also affects insulin secretion in pancreatic beta cells. The scientists used genetically engineered mice and switched off their ABCA1 genes.

They found that these mice had normal insulin sensitivity, but lower levels of insulin secretion and significantly impaired glucose tolerance, displaying one of the classic symptoms of type 2 diabetes. They effectively became diabetic.

When they examined the pancreas of the mice, isolated and tested the cells "in vitro", they found the cholesterol homeostasis was different to normal as was the secretion of insulin. They also found a significant accumulation of cholesterol in the beta cells.

Cholesterol plays a number of roles in the human body, and one of these is to keep cell membranes healthy so they allow the right chemicals to pass in and out of the cells. However, the levels of cholesterol have to be regulated precisely. In the case of the beta cells, if the cholesterol levels accumulate, they interfere with the secretion of insulin. This is the one of the possible explanations, say the scientists on this study.

However, there are competing theories. One is that amylin, one of the peptide hormones produced by the beta cells and secreted at the same time as insulin, builds up and interferes with insulin release. According to Dr Michael Hayden, in whose lab the study was conducted, more studies will be done this year to see if cholesterol regulation problems also occur in humans with type 2 diabetes.

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Item 15

Sleep Expert Issues Wake Up Call To Women Who Snore-Diabetes Is A Risk

New research shows that snoring doesn't have to be loud to cause health problems especially in women, according to sleep expert and Professor of Medicine at the University of Sydney, Colin Sullivan. [FDA](http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4581)
<http://www.diabetesincontrol.com/modules.php?name=News&file=article&sid=4581>

"Although women generally snore less and more softly than men, recent studies have shown they have a greater risk of some of the adverse effects of sleep apnea and may not know they have type 2 diabetes," he said.

Professor Sullivan's comments come on the eve of an international meeting in Sydney of 20 experts in the fields of diabetes, obesity, sleep medicine, cardiovascular medicine and epidemiology.

The meeting has been convened by the International Diabetes Federation (IDF) to develop a consensus statement on type 2 diabetes and sleep apnea to improve management for people with diabetes and sleep disorders and assist in future research directions.

Sleep apnea was previously thought to be mostly a disease of men but researchers are increasing their focus on women following studies that show snoring in women can accompany an almost silent struggle for breath during periods of apnea when the airway closes and breathing stops.

People with sleep apnea also tend to have risk factors for the metabolic syndrome, a condition characterized by abdominal obesity, high cholesterol, raised blood pressure and insulin resistance, which causes high levels of blood glucose and can lead to diabetes.

"Partners of men who snore, gasp and snort for breath during sleep are often kept awake at night," Professor Sullivan said. "Their own disrupted sleep often prompts them to encourage their partner to have a sleep assessment.

"However, because women's snoring is often much quieter and they tend to have partial or incomplete obstructions, their partner's sleep may not be disturbed and the sleep disorder may go unchecked.

Twenty of the world's leading diabetes and sleep medicine experts met at a summit in Sydney last week warning of the deadly combination of type 2 diabetes and sleep disorders. Convened by the International Diabetes Federation (IDF) Task Force on Epidemiology and Prevention of Diabetes.



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.....Steve Freed, Publisher www.diabetesincontrol.com

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