Issue 2 | Monday | April 11, 2011

ASN EST. 1928
American Society for Nutrition
Excellence in Nutrition Research and Practice
www.nutrition.org

NutritionNotes Daily

2011 Scientific Sessions and Annual Meeting at Experimental Biology

Today's Highlights

G.A. Leveille Lecture: C. Weaver - "Discoveries at the Interface of Food Science and Nutrition"
12:45-1:45 p.m.
Convention Center
Ballroom A

Korean Nutrition Scientist Night
6:00-8:00 p.m.
Renaissance Grand
Ballroom Central

International Nutrition Council Business Meeting/ Lecture/Poster Event
6:30-8:00 p.m.
Renaissance Grand
Ballroom North

Francis Collins Plenary Lecture - "NIH and the Biomedical Research Community: Opportunities and Concerns"
6:30-7:30 p.m.
Convention Center
Ballroom C

twitter

Follow ASN @nutritionorg
Follow EB @expbio
Tweet about it with **#EB2011**

@ScritchfieldRD: doing a live tweet on the 2010 dietary guidelines report and future implications at #EB2011 @nutritionorg.

@holtme Off to @nutritionorg MNC Business meeting at #EB2011. MNC doing great things and I am so happy to work with them!

@BioactivesRIS Dr. Christofidou-Solomidou: Flax lignan increases survival decreases inflammation and fibrosis from radiation #EB2011

2011 Presidential Symposium

Biofortification Set to Help Relieve World Hunger

As skyrocketing population growth threatens the world's food supply, there is growing hope that biofortification will come to the rescue. A series of nutrition experts presented their crop fortification facts and theories during the Sunday morning "Presidential Symposium: Ameliorating Micronutrient Deficiencies Through Biofortification: The Science and Prospects."

Due to rising food prices for staples such as cereals and rice, it's estimated that a third of the world's population is at risk for a deficiency in iron, zinc or vitamin A, said Howard E. Bouis, director, HarvestPlus. Nobel Prize-winning economists have forecasted that biofortified crops are a cost-effective way to reduce those deficiencies, he said.

Biofortification targets the rural poor and focuses on women and children, whose nutrition requirements are highest. It works best in areas where women are farmers because women are more open to nutrition messages than men, Bouis said.

Noting that his organization has done trials to show that vitamin-fortified sweet potatoes, rice and wheat are effective, Bouis said "the technology is now on the shelf and it is ready to be implemented."

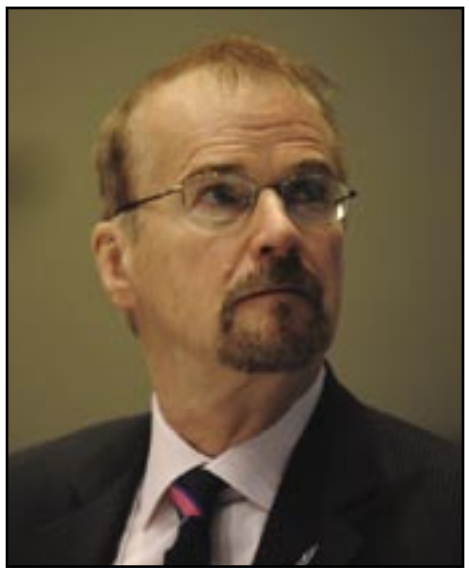
Peter Beyer, PhD, Albert-Ludwigs Universitat Freiburg, tackled the controversial subject of genetically modified crops. Genetic diversity is already created through breeding and selection, making it difficult to define the term genetic modification, he said. Consequently, genetic engineering, or the intentional transfer of genes from one organism to another by an asexual process called genetic transformation, is a more descriptive term, he said.

Peter Beyer, PhD

There can be unintended effects in both genetic engineering and breeding, Beyer said. Examples include decreased mycotoxins in Bt corn or lower yield caused by high lysine content in bred barley and maize. The belief that GE plans are not natural can be countered by the argument that any form of plant breeding can be regarded as unnatural, he said. In addition, GE plants can cross species, increasing genetic variability and boosting food production in a sustainable matter, he said.

"At the end, this is the message I'd like to drive home to you: Breeding where possible; genetic engineering where necessary," Beyer said.

Catherine A. Kandianis, PhD, Baylor College of Medicine, discussed techniques for testing bioavailability in foods, such as the carotenoid content in golden rice. The testing is needed to help determine appropriate target concentrations of nutrients in specific crops to be used in specific populations, and helps determine dietary intake recommendations, she said. Baylor uses stable isotopes for bioavailability testing, Kandianis said.



ASN President Robert M. Russell, MD

ASN CEO: We Are Accelerating Global Nutrition Activities

As food shortages and nutrient deficiencies grow around the world, ASN is committed to accelerating its activities as a global leader in nutrition through science, said ASN Executive Officer John Courtney, PhD.

"The challenge of nutrition just continues to become greater," he said. "There's such a disproportionately low amount of money spent on nutrition compared to the investments made in combating diseases, but nutrition's potential for preventative health care is immense. Our board of directors is committed to accelerating our global leadership in nutrition."

ASN has experienced tremendous growth in the last four years, particularly outside the U.S. There are now members from 72 different countries, Courtney said, and ASN is expanding its programming in Asia, Africa, Europe, the Middle East and Central and South America through professional development activities and greater distribution of its journals.

"Our three journals are leading the way, providing the best basic and clinical information and reviews of nutrition research and practice," he said.

In addition, the scientific sessions at this year's EB conference have drawn attendees from around the world, and February's Advances and Controversies in Clinical Nutrition conference had "tremendous success because the desire to integrate the latest clinical nutrition science into practice is so deep," Courtney said.

To better appeal to a global audience, ASN has evolved its processes and structure to expand its inclusiveness for researchers, physicians, dietitians, nutritionists and academics, as well as

Continued on page 3

Research Interest Sections Host Annual Lively, Focused Meetings

Thousands of EB attendees spent time meeting with their colleagues, evaluating posters and formulating business plans during this year's Research Interest Sections (RIS) meetings.

Fifteen meetings took place Friday through Sunday, with three more on Monday. Among them, the Energy and Macronutrient "Hot Topics" Seminar Saturday evening focused on research conducted by Rosalind Coleman, MD, University of North Carolina, titled "The Fate of Fat—the Use of Knockout Mice to Examine Lipid Partitioning."

Coleman said she and fellow researchers expected that with absent ACSL1 adipocyles, mice would have small fat pads, very little TAG in adipose tissues and resistance to weight gain in a high-fat diet. "We were wrong," she told a room packed full of attendees. She also concluded that it appears that ACSL1 directs fatty acids toward oxidation, and in order for fatty acids to be taken up and retained in the heart, they have to be metabolized.

The Aging and Chronic Disease RIS saw a rapid membership increase.

During the lunchtime Aging and Chronic Disease Business Meeting on Sunday, Chair Denise Huston said membership has more than doubled during the last year, from 261 to 581. Members also heard a presentation on how they can participate in the Women's Health Initiative (WHI) study. The follow-up period (2010-15) to the study is scheduled to enroll about 100,000 ethnically diverse women ages 62 to 96, making it particularly relevant to members of the Aging and Chronic Disease RIS. In fact, the first WHI centenarian is possible by 2014.

The WHI has recently opened up research opportunities in a variety of areas, including hormone therapy, calcium and vitamin D, and dietary modifications to prevent breast and colorectal cancers. In addition, there's an observational study of 91,000 women that collects a variety of data.

Four regional centers are now handling WHI research, including Wake Forest University, which is focusing on aging, cognition and mental states, and psychology and behavioral health; Ohio State University, focusing on genetics, proteomics and biomarkers, and health services and comparative effectiveness; Stanford University, focusing on cardiovascular disease, and physical activity and body composition; and the University of Buffalo, focusing on obesity and diabetes, and bone fracture and body composition.

The WHI is also considering large, simple trials on subjects such as physical activity interventions, vitamin D and resveratrol, driving and cognition, smoking cessation and the impact of caregiving roles. In addition, presenters said other ideas are also welcome.

To access and download current WHI data, visit www.whiscience.org, and for data and research grant information specifically on aging and function, contact Sally Shumaker at Wake Forest, https://whi-se.phs.wfubmc.edu/public.dsphome.cfm.

From the April 2011 *Journal of Nutrition:*

Whey protein decreases weight gain in mice eating a high-fat diet

There is overwhelming consensus that obesity and its related complications, such as cardiovascular disease and type 2 diabetes, represents today's most pressing health crisis. Researchers continue with their attempts to identify other dietary changes that might prevent excessive weight gain or help aid in weight loss among individuals who consume high-fat diets and choose sedentary lifestyles. One food component that has shown promise is the portion of milk protein called "whey." There are many individually-unique proteins in milk, some of which separate out and remain in the watery part of milk when it is made into cheese. It is these water-soluble proteins that make up the whey fraction. Numerous studies have provided evidence for health benefits of whey proteins, and whey protein products are readily available at most "health food" stores and pharmacies. The putative benefits include protecting from cardiovascular disease, modulating blood glucose, ramping up muscle synthesis, and reducing inflammation. It's possible whey protein might be beneficial in avoiding weight gain or shed extra pounds. In a study from April 2011 issue of *The Journal of Nutrition*, researchers from the University of Cincinnati and the University of Kentucky report the results of a study they conducted to investigate the effect of a diet high in whey protein on weight gain, body composition, and blood lipids in mice fed a high-fat diet.

For 11 wk, all mice were allowed free access to a high-fat diet (40% of calories from fat). The researchers also randomized the animals to receive regular tap water or water fortified with whey protein. Throughout the study, subsets of animals were used to determine body fat and lean mass. Food intake, body weight, and the efficiency by which dietary calories were used for energy and weight gain were also assessed.

Animals receiving the whey-fortified ration gained less weight, had lower percentage body fat, and put on more lean mass than those receiving the whey-free diet. This finding was interesting because calorie intake by both groups was similar throughout. Examination of the metabolic data showed that this finding was due, in part, to increased overall metabolic rates in the whey protein group. Consumption of whey protein also improved regulation of blood glucose. The authors concluded that there were consistent positive effects of whey protein consumption on a variety of biological variables, and postulated that whey protein supplements may help slow the development of fatty liver disease and type 2 diabetes. **Reference** Shertzer HG, Woods SE, Krishan M, Genter MB, Pearson KJ. Dietary whey protein lowers the risk for metabolic disease in mice fed a high-fat diet. *Journal of Nutrition* 141:582-587, 2011.

Global Focus

Continued from page 1

medical facilities, governments, foundations, industry and partner organizations working on nutrition, Courtney said. For example, the Society recently approved a bylaws change to add two at-large director seats to the board.

"Addressing and improving global health through nutrition science necessitates ASN convening all constituencies under a big tent," he said. "The board has approved new programs for grad students and young professionals that have resulted in tremendous growth. We are working hard to welcome and assist the next generation of global nutrition scientists."

Courtney said he'd also like to thank all ASN members for "developing and presenting excellent nutrition science at our meetings, publishing in our three excellent journals, volunteering and working so hard on our committees, and being passionate for nutrition science."

Noting that "we love hearing from our members," Courtney said "they should always feel free to contact me and our staff with opportunities, ideas and suggestions on how we can better meet our members' and prospective members' needs."

About *Nutrition Notes Daily*

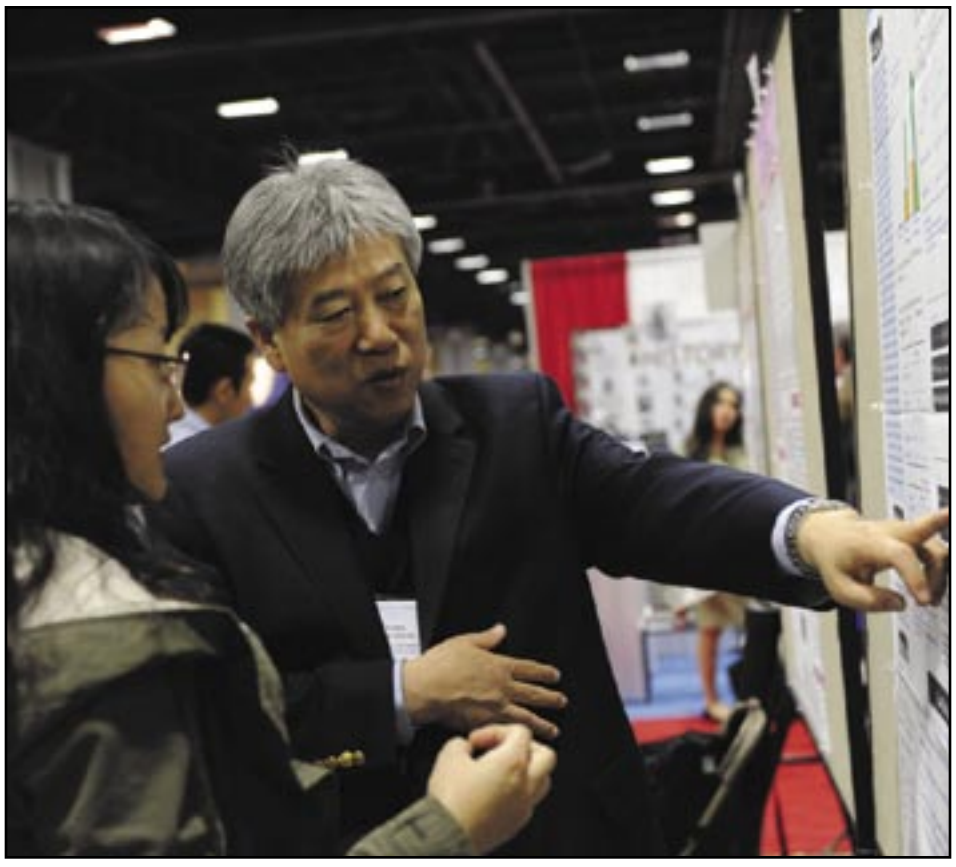
NutritionNotes Daily is the conference version of ASN's quarterly member newsletter, *NutritionNotes*. This publication may be printed during ASN's Annual Meeting, clinical nutrition program and/or various other activities which the Society organizes and hosts. ASN accepts advertisements and recruitment classifieds for publication in *NutritionNotes Daily*; all advertisements are subject to review. Please email meetings@nutrition.org to offer feedback on the *NutritionNotes Daily*, or to share suggestions to improve other aspects of EB 2011.

Today's Hours

ASN Member and Attendee Lounge, supported by Kraft Foods
7:30 a.m.-3:30 p.m.

ASN Booth (#104/106)
ASN History of Nutrition Booth (#110)
9:00 a.m.-4:00 p.m.

ASN Office (Renaissance, Room 15)
9:30 a.m.-11:30 a.m.
3:00 p.m.-6:00 p.m.



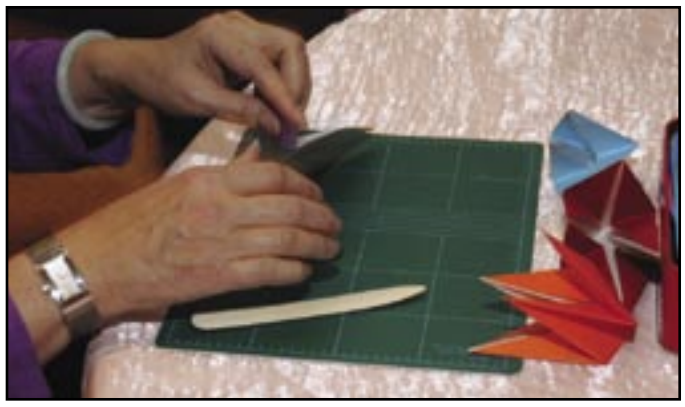
Nutrition researchers share their results in the ASN poster sessions which run through Tuesday. The posters are displayed in the convention center's exhibit halls A, B and C. Individual presentations are limited to one hour. A complete schedule of poster presentations indexed by subject and time are available in the EB 2011 Program Guide.

ASN at EB 2011 Kicks Off with Cherry Blossoms

Student Interest Group leaders: all smiles and T-shirts.

Many academic programs, departments and partners hosted networking tables.

Attendees from Johns Hopkins University socialize.



Attendees created origami sculptures to benefit Cranes for Kids, an Oshkosh B'Gosh program that provides new clothes to tsunami victims.

The party's theme was Washington in the spring.

Journal of Nutrition *Editor Cathy Ross with Tom Ziegler (left) and Bob Cousins.*

Representatives from the Canadian Institute for Health Research join the fun.

From the April 2011 *American Journal of Clinical Nutrition:*

Posting Calorie Counts and Imposing Junk-food Taxes: Do These Strategies Work?

The most effective solutions to obesity are consuming less and moving more, but getting people to make these lifestyle changes is exceedingly difficult. Two possible solutions aimed at changing purchasing behaviors among individuals who frequently eat out include taxation of high-calorie, nonnutritious foods and requiring calorie labeling at restaurants. But is there evidence that either of these strategies actually works? To help answer this question, researchers at Maastricht University and New Mexico State University documented what happens when calorie information is provided and "taxes" are imposed on high-fat foods. Their results, along with an editorial by George Loewenstein from Carnegie Mellon University, can be found in the April 2011 issue of *The American Journal of Clinical Nutrition*.

Study Design

A total of 178 university students (mean age: ~19 y) were asked 3 times to choose from a list of hypothetical lunch items, of which the high-fat choices had varying prices, and some participants were provided with calorie information whereas others were not. Subjects were also characterized as being restrained or unrestrained eaters—the former being those who habitually limit their caloric intake. Hypothetical calorie intakes were calculated, and statistical effects of food costs (comparable to calorie taxes) and calorie information were assessed.

Results

The researchers found that the expected inverse relation between price and caloric intake depended on a relatively complex (but common sense) interaction with 1) whether calorie information was provided and 2) if the subject reported restrained or unrestrained eating patterns. For instance, whereas price increases (ie, taxes) imposed on the high-fat items were associated with decreased caloric intake in unrestrained participants regardless of whether caloric information was made available, they reduced caloric intake in restrained participants only when caloric information was not provided.

Conclusions

The authors concluded that, although taxing high-fat items might positively alter food choices, combining this strategy with provision of calorie information might not work in some people. Loewenstein takes these findings one step further by asking whether calorie posting might even lead to increased calorie intake in some people, especially those at greatest risk of obesity. His argument that policy has, unfortunately, moved ahead more quickly than the "science" on which it is supposedly based is one that should be heeded by policy makers. Clearly, simply labeling foods will not solve today's obesity problem.

Membership Awards

In addition to the young investigator, scientific and lifetime acheivement awards presented at last night's awards ceremony, there will be two special awards presented at the ASN Business Meeting Tuesday at 6 p.m., Convention Center room 151B.

EB 2011 Press Room Hours

EB 2011's press room is located in East Registration, Salon D. The hours are:

Monday
7:30 am.-5:00 p.m.

Tuesday
7:30 a.m.-5:00 p.m.

Wednesday
7:30 a.m.-12:00 p.m.

Scientists Decode the Brave New World of Nutritional Genomics

Nutrigenomics is a new era of nutrition, and like any pioneer, it has great potential but also great challenges, presenters said during the Sunday afternoon session "Integrating Nutritional Genomics and Genetics in the 21st Century Nutrition Curriculum."

Jose M. Ordovas, PhD, Tufts University, kicked off the session by asking the question: Genomes are very plastic and able to modify very quickly, but how can this variability be identified? Tools include sequencing and GWAS analysis, but more participants need to be included in studies, particularly in gene-environment interactions, he said. Phenotypes also need to be standardized along the lines of the PhenX Project, which has the goal of providing a resource of standard phenotypic and environmental exposure measures that can be incorporated into study protocols.

Other challenges include an incomplete picture of the interplay between the brain, hormones, behavior genes and motivation, Ordovas said. Researchers also need to identify points of convergence among governments, academic research, pharmaceuticals, diagnostics, and food and drinks markets that may offer new opportunities for co-development and translation. "And in order to gain acceptance by peers and public, we need to avoid the snake oil syndrome," he said.

Marie A. Caudill, PhD, RD, Cornell University, followed with tips on how to teach genomics to students. A Journal of the American Dietetic Association study showed that current curricula provide little or no genetics content, she said. Another study showed that 50 percent of dieticians had minimal knowledge of nutritional genomics, but most agreed it has an important place in curricula.


Jose M. Ordovas, PhD

Learning objectives for a genomic approach to dietetic practice are to understand and use genetic technology and nomenclature, and to identify nutrient gene interactions as reported in the literature, Caudill said. Learning activities could include developing a case study based on a common critical disease with known genetic and nutrition risk factors, she said. Educators can use or modify an existing clinical scenario to address the learning outcomes relevant to nutritional genomics, such as a person with a family history of heart disease who presents gene information like cholesterol ester transfer protein and its variant.

A student presentation followed by a question and answer session can help an instructor evaluate the student's grasp on nutritional genomics, Caudill said. Limitations and challenges include the fact that studies to date are somewhat hindered because measuring the effects of diet on genes is hampered by the imprecision of measuring dietary intake. Never before has the gap between the quantity of information and the ability to interpret it been so huge, she said.