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Clinical Conference and Other ASN Updates

Advances and Controversies in Clinical Nutrition
The program for ASN's topical conference on Advances and Controversies in Clinical Nutrition, organized by the Medical Nutrition Council, is available online. You can view a PDF of the complete program, containing the schedule, continuing education credit details, general information, abstract submission instructions, and registration, hotel & travel specifics. Email us to request a hard copy of the conference program. In addition, summaries of each lecture, session and workshop have been posted.

Attendees can receive FREE AMA PRA Category 1 CME for Physicians, CPE for Registered Dietitians or Category 1 CECH in Health Education for CHES.

Featured sessions include:

Saturday, Feb. 26, 9:20-10:00 am: *"The Benefits and Risks of Calcium Supplementation."* John Baron, MD, Professor of Medicine and of Community and Family Medicine at Dartmouth College. Calcium supplements are routinely taken, mostly by women and children, as a preventive for the loss of bone. Recent data, however, suggests that supplementation is associated with excess cardiovascular disease. Is there a true cause and effect between calcium and heart disease? Are calcium pills worth the risk? Who should and should not be taking calcium? Dr. Baron will explore these and other issues related to calcium supplementation.

Sunday, Feb. 27, 9:20-10:00 am: *"Nutrition Interventions to Prevent Muscle Loss."* Sreejumaran Nair, MD, PhD, Endocrinology Researcher, Mayo Clinic. Dr. Nair, an internationally known expert in metabolism, will discuss how various foods directly influence muscle metabolism. Although seemingly esoteric, the implications of this subject have very practical application, and will stimulate more thought on what is the appropriate diet for Americans at various ages.

Abstract submission deadline - December 29.
Early **registration** deadline - January 14. **Join** ASN and save $50-$125 on registration.
Hotel **reservations** deadline - February 2.

Travel Awards Deadlines
The following awards to fund student and young professional travel to ASN's annual meeting require application and/or submission of an abstract by the dates noted.

-International Nutrition Council Kellogg International Student Prize - January 15
-International Nutrition Council Junior Faculty Award - January 15
-ASN Minority Access to Research Careers Awards - February 9
-ASN Student Interest Group Travel Award - February 9
Do you know a student or emerging investigator who would benefit from these travel awards? Forward this newsletter today - click on "Send to a Colleague" at

November 2010

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The American Society for Nutrition (ASN) is a non-profit organization dedicated to bringing together the world's top medical practitioners, researchers, policy makers and industry leaders to advance our knowledge and application of nutrition for the sake of humans and animals. Our members work on chronic disease, diet and cancer, public health and health care reform, and more – in the United States and around the world.

Join nearly 4,000 colleagues in ASN today! Members receive benefits ranging from publications, reduced registration rates and

right.

Scientific Sessions and Annual Meeting
ASN's Scientific Sessions and Annual Meeting at Experimental Biology 2011 will be held April 9-13, 2011. This meeting is a multi-society, interdisciplinary conference featuring plenary and award lectures, symposia, oral and poster sessions, career services, and exhibits of scientific equipment, supplies, and publications.

Late-breaking abstract submission deadline - February 9.
Early **registration** deadline - February 9. **Join** ASN and save up to $115 on registration.
Hotel reservations deadline - March 4.
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Headlines

Selected Highlights From ASN Journals

American Journal of Clinical Nutrition (AJCN) - November 2010
Journal of Nutrition (JN) - November 2010

Interview

"Interview With *Advances in Nutrition* Editor Dr. John Suttie"

Medical Nutrition Highlights

"Trends in 24-H Urinary Sodium Excretion in the United States, 1957-2003: A Systematic Review"
"Excess Leucine Intake Enhances Muscle Anabolic Signaling But Not Net Protein Anabolism in Young Men and Women"
"Effect of DHA Supplementation During Pregnancy on Maternal Depression and Neurodevelopment of Young Children"
"Lack of Association Between Serum Magnesium and the Risks of Hypertension and Cardiovascular Disease"

Selected Highlights From ASN Journals

***American Journal of Clinical Nutrition* (AJCN) - November 2010**

Genetics May Exacerbate Effect of Low Vitamin C Intake on Antioxidant Status

Background Physiologists have long recognized that genetics can modify the relation between nutrient intake and health. Only recently, however, have scientists been able to pinpoint how differences in genetic make-up interact with dietary choices to influence disease. One example is the discovery that a common variation (polymorphism) in the gene responsible for haptoglobin (a protein that binds excess hemoglobin) can influence how much vitamin C a person needs. This is because some forms of haptoglobin are less effective than others. Gene pairs containing 2 Hp1 polymorphisms (Hp1-1) are the most effective in terms of producing a haptoglobin protein that binds hemoglobin; those containing 2 Hp2 polymorphisms (Hp2-2) are the least functional; and those constituting one of each type of gene (Hp1-2) are intermediate. The inability of ineffective haptoglobin to bind hemoglobin can lead to oxidative damage, which in turn increases the body's requirement for the antioxidant functions of vitamin C. However, whether increased consumption of vitamin C can compensate for the less effective forms of haptoglobin has not been studied in a rigorous way. To help fill this knowledge gap, researchers from the University of Toronto documented the associations between genetic haptoglobin variants, vitamin C intake, and vitamin C status in a group of healthy men and women. Their results are published in the December 2010 issue of *The American Journal of Clinical Nutrition*.

Study Design Subjects (n = 1277) were participants in the Toronto Nutrigenomics and Health Study, a cross-sectional examination of young adults (mean age: ~23 y) recruited from the University of Toronto campus between 2004 and 2009. Usual vitamin C intake was assessed by using a 196-item food-frequency questionnaire, and fasting blood samples were analyzed for their vitamin C content. Serum vitamin C concentrations were considered adequate if they were >28 μmol/L,

networking among our Research Interest Sections and Councils. Whatever your research or clinical specialty, ASN can keep you informed and advance your career. For more membership information, visit: www.nutrition.org/join or e-mail newmem@nutrition.org.

The Medical Nutrition Highlights e-newsletter is an abbreviated version of the ASN Medical Nutrition Council's periodic member e-newsletter. The member e-newsletter contains a larger number of news briefs and is an exclusive member benefit. If you would like to receive the Council e-newsletter, apply for ASN membership.

Has the IOM report about Vitamin D changed the advice you give your patients?

Vote and see results

Upcoming Events

December 7 - ASN, IFT and IFIC Proposal Writing Tailored to the U.S. Department of Agriculture (USDA) Webinar - Online.

December 16 - ASN, American Society of Bone & Mineral Research and Institute of Medicine (IOM) Dietary Reference Intakes for Calcium and Vitamin D: IOM Report Highlights and Discussions about Research Needs and Applications Webinar - Online.

February 17-21 - American Association for the Advancement of Science Annual Meeting - Washington, DC.

February 25-27 - Advances and Controversies in Clinical Nutrition organized by ASN and the Medical Nutrition Council - San Francisco, CA.

March 10-13 - American Medical Student Association Annual Meeting Washington, DC.

March 11-12 - ASN and Tufts University New

suboptimal if between 11 and 28 µmol/L, and deficient if <11 µmol/L. The gene variants coding for haptoglobin were characterized via molecular techniques.

Results Overall, individuals not consuming the recommended amount of vitamin C were 2.8 times as likely to be vitamin C deficient than those consuming adequate amounts. Importantly, however, participants with the Hp2-2 genotype were 4.8 times as likely to be vitamin C deficient if they did not consume the recommended vitamin C intake, whereas individuals with at least one Hp1 gene were not likely to be vitamin C deficient even when consuming vitamin C–poor diets.

Conclusions This study provides intriguing observational evidence that long-term vitamin C requirements might be higher in people with the Hp2-2 genotype. This might have important implications in terms of chronic disease prevention, because low vitamin C status has been associated with several conditions such as type 2 diabetes and cardiovascular disease.

Reference

Cahill LE, El-Sohemy A. Haptoglobin genotype modifies the association between dietary vitamin C and serum ascorbic acid deficiency. *American Journal of Clinical Nutrition* 2010;92:1494-500.

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***Journal of Nutrition* (JN) - November 2010**

Vitamin D Status Related to Complex Variable Set Including Ethnicity and Season

Vitamin D, an essential nutrient that can also be made in the skin via exposure to ultraviolet light, has historically been known for its importance in calcium absorption and bone strength. Recent evidence also suggests that vitamin D plays a role in preventing various chronic diseases such as cancer and type 2 diabetes, prompting a renewed interest in delineating optimal vitamin D status. Many factors influence vitamin D status, including vitamin D consumption, sunlight exposure, skin pigmentation, and ethnicity. However, no study has comprehensively assessed all of these factors together. In response, researchers documented the associations among seasonality, dietary intake, and ancestry on vitamin D status in young adults living in Toronto. Their results are published in the December 2010 issue of *The Journal of Nutrition*.

Young adults (n = 351; mean age: ~21 y) participating in the study were asked to complete a general questionnaire providing information concerning ancestry (characterized as East Asian, European, or South Asian) and overall health. They were studied twice, first in the early fall and again in mid-winter. Skin pigmentation in each season was assessed objectively using reflectometry. At each time point, vitamin D consumption was documented via food-frequency questionnaire, ultraviolet light exposure estimated also using a questionnaire, and blood samples collected for later analysis of vitamin D. The researchers then statistically analyzed the data to find out which variables were related to circulating vitamin D levels in each season.

As expected, circulating levels of vitamin D were lower in winter than fall (38.4 vs. 54.4 nmol/L, equal to 15.4 vs. 21.8 ng/mL), with Europeans experiencing the largest seasonal decline. Overall, South Asians and East Asians had substantially lower levels of vitamin D than their European counterparts, regardless of season. The researchers also found that total vitamin D intake levels (from diet and supplements) in the winter were slightly lower than in the fall, suggesting that subjects were not able to compensate through diet for the lack of synthesis of vitamin D in the skin during the winter in a high-latitude city such as Toronto.

When they examined all of the risk factors for vitamin D deficiency together, the scientists concluded that these relationships were quite different in the fall than in the winter. For example, skin pigmentation was the major factor influencing circulating vitamin D levels in the fall (explaining 14% of the variation), whereas vitamin D intake (from diet and supplements) was the most important factor in the winter. The results from this study confirm that serum vitamin D concentrations undergo strong seasonal variation (at least at high latitudes) and are influenced by a cocktail of factors including vitamin D intake, skin pigmentation, and sun exposure. The researchers also concluded: “Current recommendations of vitamin D intake for young adults are not sufficient to ensure optimal vitamin D levels in many individuals.”

Reference

Developments in Carotenoids Research - Boston, MA.

April 8 - EB 2011 Pre-Conference: Heart Healthy Omega-3s for Food: Stearidonic Acid (SDA) as a Sustainable Choice - Washington, DC.

April 9-13 - ASN Scientific Sessions and Annual Meeting at Experimental Biology - Washington, DC.

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Gozdzik A, Barta JL, Weir A, Cole DE, Vieth R, Whiting SJ, Parra EJ. Serum 25-hydroxyvitamin D concentrations fluctuate seasonally in young adults of diverse ancestry living in Toronto. *Journal of Nutrition* 140:2213-2220, 2010.

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Interview

Interview With *Advances in Nutrition* Editor Dr. John Suttie

Information, Inc. (11/10/10)

Dr. John Suttie knows something about being a pioneer. When he began investigating the workings of Vitamin K in the 1960s, very little was known about its effects. Through his research, Dr. Suttie was able to explain Vitamin K's operation as a cofactor in glutamate carboxylation in prothrombin.

Dr. Suttie chaired the Department of Nutrition at the University of Wisconsin-Madison for many years. He now serves there as a Professor Emeritus of Biochemistry. He is also the author of Vitamin K in Health and Disease (Oxidative Stress and Disease).

In addition to these pursuits, Dr. Suttie has recently taken on a role that will see him once again leading the way in nutrition science- working as the first editor of ASN's latest publication- *Advances in Nutrition*. Dr. Suttie was kind enough to talk with us about what members can expect from the new publication and to offer up experience gleaned from his years of study in nutrition and biochemistry.

Click to read the full interview with Dr. John Suttie

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Medical Nutrition Highlights

Trends in 24-H Urinary Sodium Excretion in the United States, 1957-2003: A Systematic Review

American Journal of Clinical Nutrition (11/10) Vol. 92, No. 5, P. 1172 Bernstein, Adam M.; Willett, Walter C.

A recent study examined temporal trends in 24-hour urine sodium excretions to estimate temporal trends in the U.S. population's overall sodium intake. Investigators looked at 38 studies, including 26,271 participants, that reported collections of 24-hour urine sodium excretions in the United States, estimating mean urine sodium excretions over time for all studies and demographic subgroups. The studies were dated from 1957 to 2003, and estimated a mean 24-hour urine sodium excretion per person of 3,526 mg Na. The study year was not associated with any significant change in sodium excretions. Over the entire study period of 46 years, studies with participants over age 50 years had significantly lower sodium excretion amounts than studies with younger participants, and men tended to have significantly higher excretion amounts than women. In subgroup analyses, researchers found no significant temporal trend in male, female, black, or white study participants. Based on their results, the researchers concluded that sodium intake in the U.S. adult population is higher than current guidelines recommend and does not appear to have declined.

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Excess Leucine Intake Enhances Muscle Anabolic Signaling But Not Net Protein Anabolism in Young Men and Women

Journal of Nutrition (11/10) Vol. 140, No. 11, P. 1970 Glynn, E.L.; Fry, C.S.; Drummond, M.J.; et al.

University of Texas Medical Branch, Galveston, researchers sought to determine the effect of two different leucine concentrations on muscle protein turnover and associated signaling in 14 young men and women. The study subjects ingested 10 g essential amino acids (EAA) in one of two groups: composition typical of high quality proteins (CTRL), which included 1.8 g leucine, or increased leucine concentration (LEU), which included 3.5 g leucine. The investigators studied the participants for 180 minutes post-ingestion, assessing fractional synthetic rate and leg phenylalanine and leucine kinetics on muscle biopsies, using stable isotopic techniques. The results showed that arterial leucine concentration and delivery to

the leg increased in both groups but was significantly higher in LEU than in CTRL. Transport into the muscle and intracellular availability was not significantly different between the two groups. Both groups experienced similar muscle protein synthesis (MPS) increase 60 minutes post-ingestion. Muscle protein breakdown (MPB) decreased at 60 minutes only in LEU, but both groups experienced similar improvements to net muscle protein balance. The LEU group saw improvements in components of mammalian target of rapamycin (mTOR) signaling, but there were no changes observed in ubiquitin-proteasome system signaling. A higher concentration of leucine in 10 g of EAA slightly prolongs insulin response, possibly contributing to a decrease in MPB. The researchers concluded that, "in 10 g of EAA, the leucine content typical of high-quality proteins (about 1.8 g) is sufficient to induce a maximal skeletal muscle protein anabolic response in young adults, but leucine may play a role in autophagy regulation."

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Effect of DHA Supplementation During Pregnancy on Maternal Depression and Neurodevelopment of Young Children
Journal of the American Medical Association (10/20/10) Vol. 305, No. 15, P. 1675 Makrides, Maria; Gibson, Robert A.; McPhee, Andrew J.; et al.

There is still uncertainty about the benefits of dietary docosahexaenoic acid (DHA) for pregnant women and their children, although international recommendations say that pregnant women should increase their DHA intakes. Researchers report on a study to determine whether increasing DHA during the last half of pregnancy will reduce the number of women with high levels of depressive symptoms and enhance the neurodevelopmental outcome of their children. The study was conducted in five Australian maternity hospitals on 2,399 women who were less than 21 weeks' gestation with singleton pregnancies. Women were recruited between Oct. 31, 2005, and Jan. 11, 2008, with a follow-up of 726 children completed Dec. 16, 2009. Women took either three 500-mg docosahexaenoic acid–rich fish oil capsules daily or matched vegetable oil capsules without DHA from study entry to birth. The data indicate that the percentage of women with high levels of depressive symptoms in the first six months postpartum did not differ between the DHA and control groups. Mean cognitive composite scores and mean language composite scores did not differ between the children in the DHA group and those in the control group. There were no differences in adverse events related to the capsules reported in either group. The study authors concluded that the use of DHA-rich fish oil capsules did not lower levels of postpartum depression in mothers or improve the early-childhood cognitive and language development in their offspring.

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Lack of Association Between Serum Magnesium and the Risks of Hypertension and Cardiovascular Disease
American Heart Journal (10/10) Vol. 160, No. 4, P. 715 Khan, Abigail May; Sullivan, Lisa; McCabe, Elizabeth; et al.

Some studies have found an association between hypomagnesemia and the development of vascular dysfunction, hypertension, and atherosclerosis. Researchers further examined the relationship between serum magnesium concentration and incident hypertension, cardiovascular disease (CVD), and mortality in 3,531 middle-aged adult participants. There were 551 cases of new-onset hypertension in eight years of follow-up, and 554 cases of CVD in 20 years of follow-up. Analyses found no association between baseline serum magnesium and the development of hypertension, CVD, or all-cause mortality. The researchers concluded that the data do not support the hypothesis that low serum magnesium is a risk factor for hypertension or CVD.

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