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American Society for Nutrition
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Medical Nutrition News

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Announcement from MNC Chair

Dear MNC members,

The Medical Nutrition Council is looking to increase its offerings of clinical nutrition programs to create more value for ASN and MNC members. We're developing a 2-3 day academic conference to be held in early 2011 sponsored by MNC, possibly in San Francisco. The major themes of the meeting will be an update on specific nutrient supplements and antioxidants and nutrition in aging, obesity and diabetes. The audience that this meeting is relevant for includes academic physicians (both research and clinical track), practicing physicians, physician assistants, nurse practitioners, registered dietitians and nutritionists (PhD faculty, etc). We are also in the planning phases for developing specific MNC-ASN guidelines on "hot clinical topics" such as pediatric obesity etc. Finally, we are working with ASN leadership to fund raise with federal agencies for a potential national survey to assess nutrition knowledge and educational needs in US health professionals.

We are also finalizing the all-day symposium "Aging 2010: Challenges and New Opportunities for Clinical Nutrition Interventions in the Aged" for EB (organized by Drs. Johanna Dwyer, Mary Ann Johnson and Edward Saltzman) and "Nutrition at the Forefront of Medical Education," which is being sponsored by the MNC and GPEC (organized by Drs. Sachiko St. Jeor and Doug Heimerger).

Please visit the ASN website www.nutrition.org for more information on MNC and other ASN Council and RIS activities.

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March/April 2010

The American Society for Nutrition (ASN) is the premier research society dedicated to improving the quality of life through the science of nutrition.

ASN Medical Nutrition News is an executive summary of noteworthy articles pertaining to the latest research findings and practices, potential funding sources, advocacy activities, and nutrition in regards to our society and is distributed every month to ASN members as an exclusive membership benefit. Our editorial staff monitors nearly 12,000 newspapers, business publications, Web sites, national and international wire services, and other periodicals and summarizes significant articles into an easy-to-read summary.

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 "Effects of a Mixed Meal on Hemodynamics and Autonomic Control of the Heart in Patients With Type 1 Diabetes"

ASN News

ASN/AACE Co-Host Cardiometabolic Disorder Symposium on April 21 in Boston

ASN and the American Association of Clinical Endocrinologists (AACE) are presenting the symposium 'Therapeutic Diets for Cardiometabolic Disorders: What is the Evidence?' in Boston on April 21. Topics include low carb-high protein diets for obesity, antioxidants and vascular inflammation, diets for heart disease prevention and treatment and diet and exercise for sarcopenia and cachexia. Continuing medical education (CME) credit will be available. Register at <http://www.aace.com/meetings/ams/2010/nutrition/nutritionreg.php>.

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Research News

Meta-Analysis of Prospective Cohort Studies Evaluating the Association of Saturated Fat With Cardiovascular Disease

American Journal of Clinical Nutrition (03/10) Vol. 91, No. 3, P. 535; Siri-Tarino, Patty W.; Sun, Qi; Hu, Frank B.; et al.

There is no significant evidence to conclude that dietary saturated fat is associated with increased risk of coronary heart disease (CHD), according to a meta-analysis of 21 studies. These studies included up to 23 years of follow-up on more than 347,000 subjects, approximately 11,000 of whom developed CHD or stroke. The saturated fat intake of these subjects did not determine increased risk of CHD, cardiovascular disease, or stroke, even when considering age, sex, and study quality. The authors of the analysis suggest that more data is necessary to determine if cardiovascular risks are influenced by specific nutrients that are used to replace saturated fat.

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Circulating Vitamin D Low in Dialysis Patients

MedPage Today (02/26/10) Phend, Crystal

About 79 percent of new dialysis patients are deficient in vitamin D, new findings show. Deficiency of 25-hydroxyvitamin D, generated by the liver after exposure to sun and dietary supplements, was predicted by African-American race, female sex, winter season, and low serum albumin, according to the researchers at Massachusetts General Hospital in Boston, writing in the *Clinical Journal of the American Society of Nephrology*. Their analysis involved a random sample of 908 patients whose vitamin D levels were measured as part of a study of patients beginning chronic hemodialysis at 1,056 U.S. dialysis centers. The researchers warned, however, that the observational study was unable to show causality, and it is not yet known if correcting the vitamin D levels improves outcome. Guidelines for managing end-stage renal disease have focused primarily on the active form of vitamin D, 1,25-dihydroxyvitamin D, which is principally generated in the kidney, but recent research suggests that circulating vitamin D may be biologically relevant even with impaired renal production.

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Projected Effect of Dietary Salt Reductions on Future Cardiovascular Disease

New England Journal of Medicine (02/18/10) Vol. 362, No. 7, P. 590; Bibbins-Domingo, Kirsten; Chertow, Glenn M.; Coxson, Pamela G.; et al.

Reducing dietary salt by even modest amounts of 1 g each day could yield significant health benefits, according to new research. Reducing salt intake by 3 g daily could reduce the annual number of new cases of coronary heart disease by 60,000 to 120,000, according to an analysis using the Coronary Heart Disease Policy Model. Stroke cases could be lowered by 32,000 to 66,000, and myocardial infarction by 54,000 to 99,000, with the annual deaths from any cause reduced by 44,000 to 92,000. The researchers note that the reductions would benefit all portions of the population, though African Americans would benefit proportionately more and women would especially benefit from stroke reductions. These benefits are on the same level as the benefits from reduced tobacco use, obesity, and cholesterol levels. Healthcare costs would also be reduced by about \$10 billion to \$24 billion each year. "Our findings underscore the need for an urgent call to action that will make it possible to achieve these readily attainable cardiovascular benefits," the researchers conclude.

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U.S. Panel: Too Little Known on Lactose Intolerance

Washington Post (02/24/10)

A panel of specialists convened by the National Institutes of Health (NIH) has concluded that medical knowledge is lacking in the proper diagnosis of lactose intolerance. Some studies show that people who think they are lactose intolerant can actually digest the sugar lactose. This has caused concern on the NIH panel that people may avoid dairy products entirely, believing that they are lactose intolerant, rather than consuming only small amounts. The panel advised that such people seek a doctor's diagnosis, as the symptoms of lactose intolerance may actually be a disorder such as irritable bowel syndrome. Some people who are diagnosed with lactose intolerance may still be able to tolerate small amounts of dairy. In addition, calcium and vitamin D may be obtained from non-dairy sources, such as fortified orange juice, broccoli, and soy products.

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Gastric Bypass Bands Effective for Severely Obese Teens, Study Finds

Los Angeles Times (02/10/10) Stein, Jeannine

For severely obese teenagers, gastric banding surgery may be more effective than lifestyle interventions for losing weight and keeping it off, according to a new study. In the United States, gastric banding surgery is only available to adolescents who participate in research studies; however, some doctors hope the Food and Drug Administration (FDA) will soon approve the procedure for adolescents. Although other gastric bypass procedures are approved for teenagers, banding may be less invasive and less permanent. The most recent study, reported in the *Journal of the American Medical Association*, involved 50 Australians between ages 14 and 18 years, with body-mass indexes of more than 35. Half of the subjects had the surgery, and half participated in a lifestyle intervention program that included individualized diet plans, exercise, a personal trainer, and follow-ups with healthcare providers. Both groups experienced weight loss, but the teens who had surgery lost about 79 percent of their excess weight, compared with about 13 percent in the lifestyle group in two years of follow-up. Nine of the surgery group subjects had metabolic syndrome at the beginning of the study, but not after two years. The researchers pointed out that the lifestyle group's progress was still significant too, especially for diabetes prevention.

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Vitamin B12 Deficiency: A Chronic Complication of Metformin Therapy That Can Cause Irreversible Neuronal Damage

Endocrine Today (02/19/10) Brannon, Matthew

Because metformin-induced malabsorption often causes the depletion of vitamin B12, vitamin levels should be monitored each year in patients with diabetes who receive long-term metformin therapy. Writing in the *Southern Medical Journal*, Dr. David S. H. Bell, suggests that an annual 1,000 mcg vitamin B12 injection could be a cost-effective alternative method. Vitamin B12 malabsorption can cause irreversible neuronal damage, as demonstrated in the case report of a 69-year-old man who had "very low" B12 levels and experienced a hematocrit drop from 34 percent to 24 percent. After receiving vitamin B12 therapy, the hematocrit level returned, but the patient experienced numbness in the feet and had bilateral loss of pinprick and vibration sense above the ankle and also had brisk ankle jerks. These neuropathic symptoms did not improve or worsen after one year. Metformin-

induced B12 malabsorption affects about 30 percent of patients with diabetes who receive metformin therapy but is often unrecognized or misdiagnosed as diabetic neuropathy.

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Impact of Maternal Probiotic-Supplemented Dietary Counselling on Pregnancy Outcome and Prenatal and Postnatal Growth

British Journal of Nutrition (02/04/2010) Luoto, Raakel; Laitinen, Kirsi; Nermes, Merja; et al.

Probiotic supplements in perinatal dietary counseling could be a safe, cost-effective method for curbing metabolic problems. Researchers randomized 256 women in their first trimester of pregnancy to a control group or to a group that received intensive dietary counseling. The dietary counseling group was further randomized to receive either probiotics or a placebo. The frequency of gestational diabetes was substantially lower in the probiotics group, compared to the diet and control groups. The probiotics group also had normal pregnancy duration and no adverse events for mothers or children.

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Study Links Pop Consumption and Pancreatic Cancer

Minnesota Public Radio (MN) (02/08/10) Benson, Lorna

Consuming a large amount of soft drinks may increase the risk of pancreatic cancer by nearly two-fold, suggests research from the University of Minnesota. For this study, researchers observed the dietary habits of about 60,000 Chinese subjects for 14 years. The increased risk was associated with consumption of at least two carbonated, sugar-sweetened beverages per week compared to those who did not drink these beverages. According to the authors, drinking soda may send a "jolt" of insulin to the pancreas, potentially overwhelming it. The study contained limitations, however, associated with self-reported dietary habits, as it may be difficult to consider the effects of other dietary behaviors. The researchers could account for other contributing factors, including diabetes, age, and smoking habits.

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A Study Finds Mental Benefit of Fish Oil

Wall Street Journal (02/02/10)

Fish oil pills may be able to prevent severe mental illness such as schizophrenia, according to a preliminary study of 81 patients. These patients, ages 13 to 25 years, all had warning signs of psychosis, including sleeping too much or too little, suspicion of others, and believing they have magical powers. The patients were randomized to either take four fish oil pills each day for three months, or placebo pills. Within a year of follow-up, two of the 41 patients in the fish oil group had become psychotic, compared to 11 of the 40 in the placebo group. Although the cause of schizophrenia is unknown, some scientists suggest that it may be the incorrect process of fatty acids, leading to damaged brain cells, a condition that may be helped by the omega-3 fatty acids in fish oil. The study is published in the Archives of General Psychiatry.

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Childhood Obesity, Other Cardiovascular Risk Factors, and Premature Death

New England Journal of Medicine (02/11/10) Vol. 362, No. 6, P. 485; Franks, Paul W.; Hanson, Robert L.; Knowler, William C.; et al.

Obesity, glucose intolerance, and hypertension in childhood are strongly associated with increased rates of premature death from endogenous causes in American Indian children, particularly of Pima or Tohono O'odham Indian heritage. Researchers examined the body-mass index (BMI), glucose tolerance, blood pressure, and cholesterol levels of 4,857 children without diabetes, born between 1945 and 1984, to assess these measurements' prediction for premature death (before age 55). In a median follow-up of 23.9 years, there were 166 deaths from endogenous causes, with the rates of death from endogenous causes for the highest BMI quartile about twice that of the lowest quartile. Among children in the highest quartile of glucose intolerance, rates of death from endogenous causes were 73 percent higher than those of children in the lowest quartile. There were no significant associations between rates of death and childhood cholesterol or blood pressure on a continuous scale, but childhood hypertension was significantly

associated with premature death from endogenous causes.

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UAB Researchers Find Link Between Low Potassium and Heart Failure Risk *MyFoxAL (02/14/2010)*

Low potassium levels can raise the risk of death or hospitalization for patients with heart failure and chronic kidney disease (CKD), researchers at the University of Alabama Birmingham have report in an American Heart Association Journal. The researchers analyzed data from 1,044 patients who had both heart failure and CKD who had participated in the Digitalis Investigation Group study, sponsored by the National Heart, Lung and Blood Institute. In a follow-up period of 57 months, 48 percent of the patients with hypokalemia (low potassium) died, versus 36 percent of those with normal potassium. Patients with hypokalemia also experienced slightly more frequent hospitalization than those with normal levels. Mild hypokalemia was found in 87 percent of the study subjects.

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Vitamin D Protects Against Crohn's Disease *U.S. News & World Report (02/01/10)*

Vitamin D may act on two genes, defensin 2 and NOD2, that have been linked to Crohn's disease, Canadian researchers report. Deficiency of vitamin D may contribute to the autoimmune disorder, the researchers suggest in the Journal of Biological Chemistry. The researchers recommend that individuals whose siblings have Crohn's, but who do not have the condition themselves, make sure that they get enough vitamin D in their diets.

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Whole Grain Intake Prevents Diabetes, Heart Diseases, and Excess Weight Gain *News-Medical.Net (02/01/2010)*

Although national guidelines recommend three daily servings of whole grains to prevent type 2 diabetes, coronary heart disease, and excess weight gain, survey data shows that few adolescents and young adults follow them. Researchers found that young people consume less than one serving of whole grains per day, based on the results from Project EAT (Eating Among Teens), involving 1,686 young adults and 792 adolescents. The survey estimated daily whole-grain servings according to the reported frequency of consuming one slice of dark bread; kasha, couscous, or bulgur; one small bag of popcorn; one bowl of hot breakfast cereal; and one bag of cold breakfast cereal. Home availability of whole grains was the only socio-environmental factor involved in increased consumption. Personal factors included a preference for the taste of whole-grain breads, as well as confidence that one could change or maintain eating patterns. The researchers report their findings in the Journal of the American Dietetic Association.

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Vinegar Decreases Postprandial Hyperglycemia in Patients With Type 1 Diabetes

Diabetes Care (02/10) Vol. 33, No. 2, P. e27; Mitrou, Panayota; Raptis, Athanasios E.; Lambadiari, Vaia; et al.

Patients with type 1 diabetes may supplement their diets with two tablespoons of vinegar, such as in a salad dressing, to help lower blood sugar levels, researchers say. Studies already shown that vinegar can improve insulin sensitivity in healthy or insulin-resistant subjects, but the effects had not been examined in patients with type 1 diabetes. Scientists examined 10 men with type 1 diabetes, who had an average age of 32 and were treated with rapid-acting insulin preprandially and long-acting insulin once daily. To create similar metabolic conditions among the subjects, the researchers infused insulin in a hand vein with a pump. In the last hour before the experiment began, the patients were in a steady state of blood glucose and insulin infusion rate, so researchers stopped the infusion and connected the patients to an artificial pancreas for continuous glucose monitoring. The subjects were randomly assigned to consume vinegar (30 ml vinegar, 20 ml water) or placebo (50 ml water) five minutes before a meal of bread, cheese, turkey ham, orange juice, butter, and a cereal bar. Before eating, the subjects received a subcutaneous dose of insulin. The fasting blood glucose was similar in the vinegar and placebo experiments; however, 30 minutes after eating, blood

glucose began to rise in the placebo group, while blood glucose in the vinegar group increased to about 8.6 mmol/l and remained so until the end of the test. Compared to placebo, vinegar consumption reduced blood glucose by nearly 20 percent.

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One-Fifth of US Teens Have Unhealthy Cholesterol

Reuters (01/21/10) Allen, JoAnne

Unhealthy cholesterol levels are present in 20.3 percent of U.S. adolescents, which puts them at risk for heart disease in adulthood, according to a report from the U.S. Centers for Disease Control and Prevention (CDC). The presence of unhealthy cholesterol levels was found even in 14 percent of teens with normal body weight. Bad cholesterol levels were more prevalent in boys than girls. The CDC study concluded that one-third of teens would qualify for cholesterol screening by strictly being overweight or obese, in accordance with American Academy of Pediatrics (AAP) guidelines. It is also the recommendation of the AAP that young people with a family history of high cholesterol or premature heart disease get screened. "It's a large proportion of the youth that have at least one abnormal lipid level," notes CDC study leader Ashleigh May. "That is concerning given the long-term implications for heart disease." The CDC assessment involved analysis of low-density lipoprotein, high-density lipoprotein, and triglycerides from data on 3,125 teenagers in the National Health and Nutrition Examination Survey for 1999 through 2006.

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Task Force Recommends Screening, Treatment for Obesity in Kids

Reuters Health Information Services (01/18/10)

The U.S. Preventive Services Task Force has updated its 2005 recommendation, saying that clinicians should now screen children and adolescents ages six to 18 years for obesity. The Task Force also suggests that patients should be referred to a comprehensive program of dietary, physical activity, and behavioral counseling if they are obese according to their body-mass index (BMI). Obesity rates have reached about 12 percent to 18 percent in two- to 19-year-olds, a sixfold increase since the 1970s, the Task Force reports in the February issue of *Pediatrics*. In creating the updated recommendations, the Task Force reviewed 13 behavioral intervention trials involving 1,258 obese children and adolescents aged four to 18. Moderate- to high-intensity programs, involving more than 25 hours of contact with the child or family over six months, yielded a BMI decrease by 12 months after the program began.

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Effects of a Mixed Meal on Hemodynamics and Autonomic Control of the Heart in Patients With Type 1 Diabetes

Journal of Clinical Endocrinology & Metabolism (01/10) Vol. 95, No. 1, P. 194; Cozzolino, Domenico; Furlan, Raffaello; Gruosso, Domenico; et al.

Independent of insulin use, hemodynamic, neurohormonal, and cardiac neural responses to eating are abnormal in patients with type 1 diabetes, the results of a small study suggest. Italian researchers compared 15 healthy controls and 15 patients with type 1 diabetes to evaluate the hemodynamics, neurohormones, and cardiac autonomic control after eating. The study involved blood sampling, electrocardiogram, blood pressure and respiration recordings, and heart rate variability analysis after a mixed meal. Patients with diabetes were also studied 20 minutes after a mixed meal preceded by scheduled insulin. At baseline, the researchers found no significant differences between the groups, aside from metabolic parameters. The authors noted that compared with baseline, plasma norepinephrine, heart rate, and sympathetic modulation rose significantly, while vagal modulation significantly declined after eating in controls, but not in patients with diabetes. The study found no relationship between postprandial changes of insulin and sympathetic or vagal modulation of the sinoatrial node in either controls or the patients with diabetes.

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