

March 2015 Media Alert: The Journal of Nutrition

The following articles are being published in the March 2015 issue of *The Journal of Nutrition*, a publication of the American Society for Nutrition. Summaries of the selected articles appear below; the full text of each article is available by clicking on the links listed. Manuscripts published in

The Journal of Nutrition are embargoed until the article appears online either as in press (Articles in Press) or as a final version. The embargoes for the following articles have expired.

<u>Higher-protein diets related to lower adiposity and higher "good"</u> <u>cholesterol in healthy American adults</u>

<u>Choosing a variety of nutrient-rich foods remains a valid rule-of-</u> thumb

<u>Long-term use of vitamin-mineral supplements associated with lower cardiovascular mortality in women</u>

<u>Higher-protein diets related to lower adiposity and higher "good"</u> <u>cholesterol in healthy American adults</u>

Dietary trends and recommendations tend to vacillate between those emphasizing high-protein foods and those urging carbohydrate-rich options. These fluctuations are driven by a combination of factors such as food availability, population health, economics, scientific discoveries, and public perception. Currently, most experts recommend a relatively high-carbohydrate diet. However, consuming more protein and fewer carbohydrates appears to be advantageous to weight loss and overall health in overweight and obese individuals. However, few studies have examined whether higher-protein diets might also have health benefits for healthy-weight adults. To explore this possibility, a research team led by Dr. Stefan Pasiakos examined associations between typical protein intake patterns and health in nearly 24,000 American adults. Details about this study are published in the March 2015 issue of *The Journal of Nutrition*.

The data used in this study were obtained from diet and health records of adults collected in the National Health and Nutrition Examination Survey conducted between 2001 and 2010. As part of this ongoing, federally-funded survey, participants complete a questionnaire detailing everything they consumed during the previous day; are clinically examined, weighed and measured; and answer a series of questions regarding their health status. In addition, blood is taken and analyzed for a variety of components including sugar and cholesterol. The researchers analyzed this large, nationally-representative dataset to investigate whether there were different relationships between protein intake and health depending on body fat levels.

The researchers found that most Americans consume levels of protein in excess of what is recommended by the Institute of Medicine. Whereas the recommended dietary allowance (RDA) for protein intake is 0.8 grams for every kilogram body weight, the average adult American was found to

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consume about 1.25 grams per kilogram. Women and older adults generally consumed less protein than did men. Body mass index (BMI) and waist circumference - both indicators of body fatness - were lowest in participants consuming the most protein. Conversely, circulating concentrations of high-density lipoprotein (HDL) cholesterol (the so-called "good" form of cholesterol) were highest in adults eating the most protein. The potential health benefits of higher-protein diets were more pronounced in overweight than healthy-weight individuals but similar between men and women. Interestingly, the effect of protein appeared to be largely independent of total calorie, carbohydrate, and fat consumption. The researchers concluded, "Our findings strongly suggest that consuming protein well above the RDA is safe and may be considered a valid nutritional strategy to improve cardiometabolic health."

Reference Pasiakos SM, Lieberman HR, Fulgoni VL III. Higher-protein diets are associated with higher HDL cholesterol and lower BMI and waist circumference in US adults. *Journal of Nutrition* 145:605-14, 2015. **For More Information** To contact the corresponding author, Dr. Stefan Pasiakos, please send an e-mail to stefan.pasiakos@us.army.mil.

<u>Choosing a variety of nutrient-rich foods remains a valid rule-of-thumb</u>

"Variety, moderation, and balance" has been the steadfast mantra of nutrition experts for decades. Although this advice may have served Americans well in the past, some research now suggests that greater access to a variety of high-calorie foods can lead to overeating and obesity. For instance, people consume more calories when they eat buffet-style than when they are presented with fewer options. However, consuming a variety of healthy foods continues to be important when it comes to assuring nutrient adequacy. For instance, if the only fruit you eat is apples you will probably become deficient in vitamin C. Instead, a variety of fruits (including vitamin C-rich citrus fruits and berries) should be consumed. To help determine if dietary patterns including a variety of nutrient-rich foods (but not unhealthy ones) are related to health, a research team coordinately led by Drs. Niyati Parekh (New York University) and Josiemer Mattei (Harvard T.H. Chan School of Public Health) studied these relationships in a large cohort of US adults. Two of the papers resulting from this research, both first-authored by Dr. Maya Vadiveloo, are published in the March 2015 issue of *The Journal of* Nutrition.

For both studies, the researchers utilized data collected from 7,470 men and women participating in the National Health and Nutrition Examination Surveys between 2003 and 2006. Dietary intake patterns were obtained by asking each participant what he or she had eaten during the previous day. The researchers then compared food intake patterns with those recommended in the 2010 Dietary Guidelines for Americans and MyPyramid food guidance system. Dietary variety was scored from 0 to 1, with higher values reflecting greater diversity and nutrient content. The statistical relationship between these scores and a variety of health outcomes (e.g., body fat and hypertension) was then investigated.

As hypothesized, people who had the highest dietary variety scores appeared to be the healthiest. For instance, men and women who had the highest scores were 48 and 31%, respectively, less likely to be obese than those with the lowest scores. Similar trends were seen for other health indicators such as blood pressure, high-density-lipoprotein (HDL) cholesterol, and blood sugar levels. The researchers concluded that the long-held recommendation advocating for dietary variety is still valid - unless, of course this results in eating a variety of junk foods.

Reference Vadiveloo M, Parkeh N, Mattei J. Greater healthful food variety as measured by the US Healthy Food Diversity Index is associated with lower odds of metabolic syndrome and its components in US adults. *Journal of Nutrition* 145:564-71, 2015.

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Vadiveloo M, Dixon LB, Mijanovich T, Elbel B, Parekh N. Dietary variety is inversely associated with body adiposity among US adults using a novel food diversity index. *Journal of Nutrition* 145: 555-63, 2015.

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<u>Long-term use of vitamin-mineral supplements associated with lower cardiovascular mortality in women</u>

Dietary supplements represent a multibillion-dollar industry in the United States, but do they really help keep us healthy? In 2014, the U.S. Preventive Services Task (an independent, volunteer panel of national experts in prevention and evidence-based medicine) concluded that "current evidence is insufficient to assess the balance of benefits and harms of the use of multivitamins for the prevention of cardiovascular disease or cancer." However, this conclusion was based on just two randomized intervention trials, one lasting 8 years and the other 11 years. In addition, neither of the studies examined both men and women. For this and other reasons, a research team comprised of members from several federal agencies and centers recently used a nationally-representative dataset collected from ~8,700 men and women to examine whether people who take multivitamin supplements (with or without minerals) have a lower risk of cardiovascularrelated mortality than people who do not take these types of supplements. Details about this study and its results suggesting a benefit in women but not men can be found in the March 2015 issue of The Journal of Nutrition.

Information used in this study was gleaned from the ongoing National Health and Nutrition Evaluation Survey (NHANES) which has been conducted since the 1960s by the US Centers for Disease Control and Prevention (CDC). NHANES data include detailed information about dietary supplement use of each participant, although the researchers focused their investigation on those which provided vitamins with or without minerals. These data, collected between 1988 and 1994, were then coupled with information related to cardiovascular deaths of each participant during the 20 years that followed.

Sophisticated statistical analyses reveals that women who reported using multivitamin/mineral supplements for at least three years were 44% less likely to die of cardiovascular disease than those who did not report taking them and those who had taken them for a shorter period of time. These trends were not seen for multivitamin supplements not containing minerals or for men. The research team, led by Dr. Regan Bailey at the Office of Dietary Supplements, urges additional studies that differentiate between supplement types and consider the potential impact of gender on health outcomes.

Reference Bailey RL, Fakhouri TH, Park Y, Dwyer JT, Thomas PR, Gahche JJ, Miller PE, Dodd KW, Sempos CT, Murray D. Multivitamin-mineral use is associated with reduced risk of cardiovascular disease mortality among women in the United States. *Journal of Nutrition* 145:572-8, 2015. **For More Information** To contact the corresponding author, Dr. Regan Bailey, please send an e-mail to baileyr@mail.nih.gov.

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