

Health Insights Today

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Nutrition Update

When reading reports on new research, it is important to remember that no single study should be seen as providing the whole truth. The following reports offer helpful clues but in most cases further research is needed before firm conclusions can be drawn.

Soy Foods Decrease Chance of Breast Cancer Recurrence

In a major study that takes a significant step toward resolution of a major women's health controversy, a team of researchers at Vanderbilt University Medical School and the Shanghai Institute of Preventive Medicine report that higher soy intakes correlate with decreased incidence of breast cancer recurrence and decreased death rates. The Shanghai Breast Cancer Survival Study is a large, population-based cohort study of 5042 female breast cancer survivors in China. Women aged 20 to 75 years with diagnoses between March 2002 and April 2006 were recruited and followed up through June 2009. Information on cancer diagnosis and treatment, lifestyle exposures after cancer diagnosis, and disease progression was collected at approximately 6 months after cancer diagnosis and was reassessed at 3 follow-up interviews conducted at 18, 36, and 60 months after diagnosis. Medical charts were reviewed to verify disease and treatment information.

During the median follow-up of 3.9 years (range, 0.5-6.2 years), 444 deaths and 534 recurrences or breast cancer-related deaths were documented in 5033 surgically treated breast cancer patients. Soy food intake, as measured by either soy protein or soy isoflavone intake, was inversely associated with mortality and recurrence. The inverse association was evident among women with either estrogen receptor-positive or -negative breast cancer and was present in both users and nonusers of tamoxifen.

Shu XO, Zheng Y, Cai H et al. Soy Food Intake and Breast Cancer Survival. *JAMA*. 2009;302(22):2437-2443.

Processed Foods Associated with More Depression than Whole Foods

In a study involving data collected from 3,486 middle-aged subjects (26% women, mean age: 55.6 years), higher odds of depression (assessed via results of the Center for Epidemiologic Studies-Depression scale) was found to be associated with consumption of a "processed foods" diet (heavily loaded by sweetened desserts, fried food, processed meat, refined grains, high-fat dairy products), while consumption of a "whole foods" diet (heavily loaded by vegetables, fruit, and fish) was associated with a decreased odds of CES-Depression (OR=0.74).

Akbaraly TN, Brunner EJ, Ferrie JE, Marmot MG, Kivimaki M, Singh-Manoux A. Dietary pattern and depressive symptoms in middle age. *Br J Psychiatry*. Nov 2009;195(5):408-413.

Magnesium Reduces Migraine Symptoms

In a randomized, double-blind, placebo-controlled study involving 40 patients with migraine headaches (with aura), supplementation with magnesium (600 mg/d) for a period of 3 months was found to reduce the frequency, severity, and P1 amplitude in visual evoked potential examination. In addition, those treated with magnesium were found to have reductions in post/pre-treatment ratios of migraine attack frequency, severity, and P1 amplitude. Significant increases in cortical blood flow in inferolateral frontal, inferolateral temporal, and insular regions were found after magnesium treatment. The authors conclude, "These results have made us think that magnesium is a beneficial agent in prophylaxis of migraine without aura and might work with both vascular and neurogenic mechanisms."

Koseoglu E, Talaslioglu A et al. The effects of magnesium prophylaxis in migraine without aura. *Magnes Res*. 2009; 21(2): 101-8.

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Calcium Supplements Help Blood Pressure Control

In a randomized, placebo-controlled trial involving 323 generally healthy men, supplementation with calcium (1200 mg per day) was found to be associated with downward trends in blood pressure, particularly in subjects with low baseline intakes of calcium (below the median value of 785 mg/d), with systolic BP reduced by 4.2 mm Hg and diastolic by 3.3 mm Hg. Low intake of magnesium showed a similar interaction. Calcium supplementation was not found to be associated with changes in the ratio of HDL to LDL cholesterol, weight, fat mass, lean mass, triglycerides, or total, LDL, or HDL cholesterol levels. The authors conclude, "Calcium supplementation in those with low dietary intakes may benefit blood pressure control."

Reid IR, Ames R, Mason B, et al. Effects of calcium supplementation on lipids, blood pressure, and body composition in healthy older men: a randomized controlled trial. *Am J Clin Nutr.* Nov 11 2009.

Low-Fat Diet Helps Mood More Than Low-Carbohydrate Diet

One hundred six overweight and obese participants with an average age of 50 were randomly assigned either to an energy-restricted (approximately 1433-1672 calories per day, planned very low-carbohydrate, high-fat (LC) diet or to a high-carbohydrate, low-fat (LF) diet for 1 year. Changes in body weight, psychological mood and well-being (Profile of Mood States, Beck Depression Inventory, and Spielberger State Anxiety Inventory scores), and cognitive functioning (working memory and speed of processing) were assessed.

At 1 year, the overall mean weight loss was 13.7 (1.8) kg, with no significant difference between groups. Over the course of the study, there were significant time x diet interactions for Spielberger State Anxiety Inventory, Beck Depression Inventory, and Profile of Mood States scores for total mood disturbance, anger-hostility, confusion-bewilderment, and depression-dejection as a result of greater improvements in these psychological mood states for the LF diet compared with the LC diet. The authors concluded that there was a favorable effect of an energy-restricted LF diet compared with an isocaloric LC diet on mood state and affect in overweight and obese individuals. Both diets had similar effects on working memory and speed of processing.

Brinkworth GD, Buckley JD, Noakes M, Clifton PM, Wilson CJ. Long-term effects of a very low-carbohydrate diet and a low-fat diet on mood and cognitive function. *Arch Intern Med.* Nov 9 2009;169(20):1873-1880.

Low-Carb Diet Leads to Bowel Function Problems, Unlike Low-Fat Diet

Brinkworth and colleagues also evaluated the long-term effects of LC and LF diets on bowel function. In a parallel study design, ninety-one overweight and obese participants were randomly assigned to either an energy-restricted, planned isoenergetic LC or HC diet for 8 weeks. At baseline and week 8, 24 hour urine and fecal collections were obtained and a bowel function questionnaire was completed. Compared with the HC group, there were significant reductions in the LC group for fecal output, defecation frequency, fecal excretion and concentrations of butyrate, and total short-chain fatty acids and counts of bifidobacteria. Urinary phenols and p-cresol excretion decreased with no difference between diets. No differences between the diets were evident for incidence of adverse gastrointestinal symptoms, which suggests that both diets were well tolerated.

Brinkworth GD, Noakes M, Clifton PM, Bird AR. Comparative effects of very low-carbohydrate, high-fat and high-carbohydrate, low-fat weight-loss diets on bowel habit and faecal short-chain fatty acids and bacterial populations. *Br J Nutr.* May 2009;101(10):1493-1502.

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Supplementation May Reduce Allergy Risk in Children

Researchers in Sweden studied the association between multivitamin supplementation and allergic disease in 2423 8-y-old children. Data were obtained from a Swedish birth cohort study. Information on lifestyle factors, including use of vitamin supplements, environmental exposures, and symptoms and diagnoses of allergic diseases, was obtained by parental questionnaires. In addition, allergen-specific IgE concentrations of food and airborne allergens were measured in blood samples collected at age 8 y.

Overall, no strong and consistent associations were observed between current multivitamin use and asthma, allergic rhinitis, eczema, or atopic sensitization at age 8. However, children who reported that they started taking multivitamins before or at age 4 had a decreased risk of sensitization to food allergens and tendencies toward inverse associations with allergic rhinitis. In contrast, there was no consistent association among children who started to use multivitamins at or after age 5.

Marmsjo K, Rosenlund H, Kull I, et al. Use of multivitamin supplements in relation to allergic disease in 8-y-old children. *Am J Clin Nutr.* Dec 2009;90(6):1693-1698.