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IN THE
NEWS**Greater Soy Consumption Associated With Lower Breast Cancer Risk in Women**

An article published in the journal *Nutrition and Cancer* reveals a protective effect of soy on the risk of developing breast cancer.*

Scientists at Hanyang University in Korea compared 362 women diagnosed with breast cancer with an equal number of healthy women matched for age and menopausal status. Participants were interviewed concerning their diets, which included tofu, soybean paste, and soy milk. Total soy protein intake was used as a measure of total soy food consumption.

Among premenopausal women whose intake of soy protein was among the top 20% of participants, there was a 61% lower adjusted risk of breast cancer compared with those in the lowest 20%. For postmenopausal women, the risk experienced by the highest soy protein intake group was 78% lower.

“Our findings, if confirmed, can provide a dietary guideline for the prevention of breast cancer,” the authors conclude.

—Dayna Dye



Reference

* Kim MK, Kim JH, Nam SJ, Ryu S, Kong G. Dietary intake of soy protein and tofu in association with breast cancer risk based on a case-control study. *Nutr Cancer*. 2008;60(5):568-76.

Resveratrol May Protect Against Alcoholic Fatty Liver Disease

A recent issue of the *American Journal of Physiology-Gastrointestinal and Liver Physiology* reported the finding of researchers at the University of South Florida Health Sciences Center in Tampa of a protective effect for resveratrol against alcoholic fatty liver disease in mice.*

Laboratory research has associated alcoholic fatty liver with the inhibition of two signaling molecules, SIRT1 and AMPK, which regulate the liver's fat metabolism pathways. Dr. Min You and colleagues fed mice low-fat diets supplemented with or without ethanol (alcohol) and/or a low or high dose of resveratrol, and measured the expression of SIRT1 and AMPK in the animals' livers. They confirmed that resveratrol activated SIRT1 and AMPK in the mice that received alcohol, which prevented fatty liver.

“Our study suggests that resveratrol may serve as a promising agent for preventing or treating human alcoholic fatty liver disease,” the authors concluded.

—Dayna Dye



Reference

* Ajmo JM, Liang X, Rogers CQ, Pennock B, You M. Resveratrol alleviates alcoholic fatty liver in mice. *Am J Physiol Gastrointest Liver Physiol*. 2008 Oct;295(4):G833-42.

Lutein, Zeaxanthin May Protect Against Colon Cancer

The carotenoid pigments lutein and zeaxanthin may work together to help prevent colon cancer, according to a new laboratory study.¹ These antioxidants are best known for their importance in reducing the risk of cataracts and age-related macular degeneration.²

Korean researchers extracted several bioactive carotenoid compounds, including lutein and zeaxanthin, from two common types of algae. Using a standard laboratory test, the researchers then measured the extracts' effects on human colon cancer cells growing in test tubes. Both extracts inhibited cancer cell growth and induced cells to undergo apoptosis, or programmed "cellular suicide."¹

Although lutein and zeaxanthin are most often cited as crucial eye-health nutrients, the results were not unexpected. Evidence from epidemiological studies suggests that fruit and vegetable-rich diets, which provide high levels of these and other carotenoids, are associated with a reduced risk of various types of cancer.³

—Dale Kiefer



Reference

1. Cha KH, Koo SY, Lee DU. Antiproliferative effects of carotenoids extracted from *Chlorella ellipsoidea* and *Chlorella vulgaris* on human colon cancer cells. *J Agric Food Chem*. 2008 Oct 23.
2. Rhone M, Basu A. Phytochemicals and age-related eye diseases. *Nutr Rev*. 2008 Aug;66(8):465-72.
3. Muller K, Carpenter KL, Challis IR, Skepper JN, Arends MJ. Carotenoids induce apoptosis in the T-lymphoblast cell line Jurkat E6.1. *Free Radic Res*. 2002 Jul;36(7):791-802.

Sunlight Exposure, Lack of Antioxidants Increase Macular Degeneration Risk

A new study suggests that protecting the eyes from sunlight exposure (using protective sunglasses and/or hats, for example) and consuming high levels of dietary antioxidants may significantly reduce the risk of developing age-related macular degeneration, a leading cause of blindness.*

British researchers examined 4,400 older people participating in the European Eye Study for signs of the vision-blurring disease. The scientists also assessed estimated lifetime exposure to sunlight, and measured blood antioxidant levels, including vitamin C, vitamin E, zeaxanthin, and zinc.

Among subjects with the lowest combined antioxidant levels, sunlight exposure was significantly associated with elevated risk of developing advanced macular degeneration. Although the results did not establish that sunlight exposure causes age-related macular degeneration, researchers noted the findings did suggest that in order to safeguard visual health, "people in the general population should use [eye] protection and follow dietary recommendations for the key antioxidant nutrients."

—Dale Kiefer

Reference

- * Fletcher AE, Bentham GC, Agnew M, et al. Sunlight exposure, antioxidants, and age-related macular degeneration. *Arch Ophthalmol*. 2008 Oct;126(10):1396-403.

Breastfed Infants May Require Extra Vitamin D

Despite the known benefits of breast milk, exclusively breastfed infants may develop vitamin D deficiency, as detailed in a recent case study.*

The patient was a healthy 11-month-old African American girl living in Boston. A routine checkup showed undetectable blood levels of 25-hydroxy- vitamin D, and radiographs of the wrists and knees revealed severe rickets (softening of the bones in children) and low bone mineral density. Vitamin D and calcium supplements were prescribed, and blood vitamin D levels subsequently improved.



Mothers living in extreme northern and southern latitudes are at risk for vitamin D deficiency in the blood and breast milk because of inadequate exposure to ultraviolet light. Further, African Americans are particularly at risk because dark skin synthesizes less vitamin D. Although sometimes asymptomatic, rickets can lead to stunted growth and bone deterioration.

The authors therefore conclude, “supplementation is required for strictly breastfed infants because they are at increased risk for vitamin D deficiency and its implications for skeletal and overall health.”

—Laura J. Ninger, ELS

Reference

* Williams AL, Cox J, Gordon CM. Rickets in an otherwise healthy 11-month-old. *Clin Pediatr (Phila)*. 2008 May;47(4):409-12.

DHEA Protects the Heart

The prohormone, dehydroepiandrosterone (DHEA), protects the heart via numerous mechanisms, according to recent research.^{1,2}

Working with human samples obtained during cardiac catheterizations, researchers compared levels of DHEA and the adrenal hormone, aldosterone. Samples taken from patients with heart failure featured measurable aldosterone, but no DHEA. Normal control subjects, on the other hand, were found to secrete DHEA, but not aldosterone in cardiac tissues. “We postulated that DHEA and/or its metabolites exert a cardioprotective action through [suppression of heart enlargement] effects,” researchers conclude in the journal *Circulation*.¹

Scientists at Virginia Polytechnic Institute further examined DHEA’s cardioprotective effects. Working with both human and bovine endothelial cells harvested from the aorta, they conducted tissue culture experiments, which demonstrated that “ .DHEA, at physiological concentrations, inhibited serum deprivation-induced apoptosis [cell death] of both bovine and human vascular endothelial cells.” They conclude “this suggests that DHEA may be a pro-survival factor for the vascular endothelium.”²

—Dale Kiefer

Reference

1. Nakamura S, Yoshimura M, Nakayama M, et al. Possible association of heart failure status with synthetic balance between aldosterone and dehydroepiandrosterone in human heart. *Circulation*. 2004 Sep 28;110(13):1787-93.

2. Liu D, Si H, Reynolds KA, Zhen W, Jia Z, Dillon JS. Dehydroepiandrosterone protects vascular endothelial cells against apoptosis through a Galphai protein-dependent activation of phosphatidylinositol 3-kinase/Akt and regulation of antiapoptotic Bcl-2 expression. *Endocrinology*. 2007 Jul;148(7):3068-76.

Arthroscopic Surgery Not Better Than Conservative Treatment For Knee Pain

Arthroscopic surgery is no better than optimal physical and medical therapy for osteoarthritis of the knee, according to a recent study.¹

In this study, adults with moderate-to-severe osteoarthritis of the knee were randomly assigned to treatment with arthroscopic surgery plus physical and medical therapy or physical and medical therapy alone (control group). Eighty-six patients in each group completed treatment. After two years, scores for both osteoarthritis severity and quality of life were similar in the surgery group and the control group, with minor differences that were not statistically meaningful.

The results confirm previous findings of a lack of superiority of arthroscopy versus placebo treatment for osteoarthritis.² Interestingly, a recent study showed that patients with osteoarthritis often have a torn meniscus—a common reason for arthroscopy—yet meniscal damage is often unrelated to pain.³

—Laura J. Ninger, ELS

Reference

1. Kirkley A, Birmingham TB, Litchfield RB, et al. A randomized trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med*. 2008 Sept 11;359(11):1097-107.
2. Moseley JB, O'Malley K, Petersen NJ, et al. A controlled trial of arthroscopic surgery for osteoarthritis of the knee. *N Engl J Med*. 2002 Jul 11;347(2):81-8.
3. Englund M, Guermazi A, Gale D, et al. Incidental meniscal findings on knee MRI in middle-aged and elderly persons. *N Engl J Med*. 2008 Sep 11;359(11):1108-15.

Zinc Blunts Symptoms, Stunts Duration of Common Cold

When initiated at the first signs of infection, zinc therapy significantly reduces the duration and severity of cold symptoms, according to a new randomized, double-blind, placebo-controlled study.*

Fifty subjects received zinc lozenges containing 13.3 mg zinc acetate, or placebo, within 24 hours of the onset of cold symptoms. Lozenges were taken every two to three hours during waking hours. Compared with the placebo group, zinc lozenge users experienced a shorter average overall cold duration (4 days versus 7.1 days). Duration of cough was just 2.1 days in the zinc group; nasal discharge occurred for three days. In contrast, placebo subjects endured five full days of coughing and 4.5 days of nasal discharge. Zinc therapy also significantly decreased biomarkers associated with cold-induced inflammation.



“Symptom severity scores were decreased significantly in the zinc group,” researchers conclude.

—Dale Kiefer

Reference

* Prasad AS, Beck FW, Bao B, Snell D, Fitzgerald JT. Duration and severity of symptoms and levels of plasma interleukin-1 receptor antagonist, soluble tumor necrosis factor receptor, and adhesion molecules in patients with common cold treated with zinc acetate. *J Infect Dis.* 2008 Mar 15;197(6):795-802.

Vitamin E and Dietary Carotenoids Linked to Reduced Gastric Cancer Risk

Higher intake of vitamin E, alpha-carotene, and beta-carotene is protective against gastric cancer, while greater sodium intake increases risk, according to a recent study published in the *Annals of Oncology*.* Stomach cancer is the second leading cause of cancer-related deaths worldwide.

The case-controlled study examined data gathered over a 10-year period from 230 cancer patients and 547 matched controls. Food frequency questionnaires were employed to estimate dietary intakes of a wide range of nutrients.

“Our data support a favourable effect on gastric cancer of vitamin E and selected carotenoids and a detrimental effect of sodium even at intermediate levels of intake,” researchers conclude. Other micronutrients and minerals studied, such as iron, calcium, and potassium did not appear to be significantly related to gastric cancer incidence.

—Dale Kiefer

Reference

* Pelucchi C, Tramacere I, Bertuccio P, Tavani A, Negri E, La Vecchia C. Dietary intake of selected micronutrients and gastric cancer risk: an Italian case-control study. *Ann Oncol.* 2008 Jul 31.

Hemoglobin A1c and the Risk of Death From Heart Failure

An elevated hemoglobin A1c (HbA1c) level increases the risk of hospitalization, cardiovascular death, and overall mortality among chronic heart failure patients, according to a recent report.* Physicians use the HbA1c blood test to assess blood sugar control over the previous several months in diabetic patients. As HbA1c levels rise, so do cardiovascular events, even among patients without diabetes.



Canadian scientists wondered if HbA1c might be useful for predicting death from cardiovascular events among patients with symptomatic chronic heart failure.

Drawing data from participants in a large ongoing study of heart failure patients, they assessed the relationship between elevated HbA1c and risk of hospitalization and death.

Analyzing research from more than 2,400 patients, the scientists conclude, “in diabetic and nondiabetic patients with symptomatic chronic [heart failure], the HbA1c level is an independent progressive risk factor for cardiovascular death, hospitalization for heart failure, and total mortality.”

Strategies for modulating HbA1c levels include rigorously controlling blood glucose levels, avoiding processed foods and foods cooked at high temperatures, and consuming nutrients that block damaging glycation reactions, such as carnosine, benfotiamine, and pyridoxamine.

—Dale Kiefer

Reference

* Gerstein HC, Swedberg K, Carlsson J, et al. The hemoglobin A1c level as a progressive risk factor for cardiovascular death, hospitalization for heart failure, or death in patients with chronic heart failure: an analysis of the Candesartan in Heart failure: Assessment of Reduction in Mortality and Morbidity (CHARM) program. *Arch Intern Med.* 2008 Aug 11;168(15):1699-704.

Higher Vitamin C Intake May Prevent Bone Loss among Elderly Men

The results of a new study suggest that greater intake of vitamin C from dietary and supplemental sources is associated with stronger bones among elderly men.* Vitamin C is crucial for collagen formation, and collagen comprises 90% of bone matrix.



Researchers at the Human Nutrition Research Center on Aging at Tufts University analyzed data from the Framingham Osteoporosis Study to determine intake of vitamin C, average bone mineral density (BMD) at baseline, and changes in BMD over four years among more than 800 elderly men and women.

Men with a higher consumption of vitamin C experienced significantly less bone mineral density loss over four years than men with low intakes of the antioxidant vitamin. Vitamin C intake was not associated with bone density status in women.

“These results suggest a possible protective role of vitamin C for bone health in older men,” investigators concluded.

—Dale Kiefer

Reference

* Sahni S, Hannan MT, Gagnon D, et al. High vitamin C intake is associated with lower 4-year bone loss in elderly men. *J Nutr.* 2008 Oct;138(10):1931-8.

Daily Dose of *Ginkgo Biloba* May Prevent Brain Damage From Stroke

Taking a daily dose of *Ginkgo biloba* extract minimizes brain damage from ischemic stroke, according to a recent animal study by scientists at Johns Hopkins Medical Center.*

Mice given ginkgo extract for seven days before an induced stroke had 60% less neurological dysfunction and a 48% smaller area of brain damage, compared with untreated mice.

Ginkgo biloba was also shown to be therapeutic after a stroke. Mice given the extract five minutes after a stroke had 60% less brain damage the next day. Mice given ginkgo 4.5 hours after a stroke had 30% less damage than mice that never received the extract.

The researchers conclude that *Ginkgo biloba* could be used as a preventive or therapeutic agent in cerebral ischemia if these results are duplicated in humans. The herbal extract is already widely prescribed in Europe and Asia for memory loss.

—Joanne Nicholas



Reference

* Saleem S, Zhuang H, Biswal S, Christen Y, Dore S. Ginkgo biloba extract neuroprotective action is dependent on heme oxygenase 1 in ischemic reperfusion brain injury. *Stroke*. 2008 Oct 9.

Vitamins C and E Reduce Post-Heart Attack Deaths in Diabetics

In a communication published in the journal *Cardiology*, researchers from Warsaw report the results of a study that found supplementing diabetic patients with vitamins C and E significantly reduces mortality over a 30-day period following acute myocardial infarction.*

Eight-hundred participants received a 12-hour intravenous infusion of 1,000 mg vitamin C, followed by 400 mg vitamin C plus 200 mg vitamin E administered orally three times per day, or a placebo. Although deaths were the same for the treatment and placebo groups in non-diabetic subjects, among diabetics, mortality was 68% lower in those who received the antioxidant vitamins.

“Early administration of appropriate doses of antioxidant vitamins C and E in diabetic patients with acute myocardial infarction seems to be particularly reasonable in view of increased reactive oxygen species formation in these patients,” the authors conclude.

—Dayna Dye

Reference

* Jaxa-Chamiec T, Bednarz B, Herbaczynska-Cedro K, Maciejewski P, Ceremuzynski L. Effects of vitamins C and E on the outcome after acute myocardial infarction in diabetics: a retrospective, hypothesis-generating analysis from the MIVIT study. *Cardiology*. 2008 Aug 12;112(3):219-23.

Lower Vitamin D Levels Predict Increased Blood Sugar and Insulin Resistance

A recent issue of *Diabetes* published the outcome of a study of middle-aged men and women that found lower serum vitamin D levels are associated with an increased risk of developing insulin resistance and elevated blood sugar over a 10-year period.*

The study included 524 non-diabetic participants in the Ely Study. Upon enrollment, serum vitamin D and other factors were measured, and health habits were ascertained. Weight, height, waist circumference, blood pressure, plasma glucose, lipids, and fasting insulin were measured during the initial and 10-year follow-up visits.

At the end of the follow-up period, having a higher baseline serum vitamin D level was associated with a lower adjusted 10-year risk of elevated blood sugar, insulin resistance, and high metabolic syndrome score. The authors remark that the study’s findings add evidence to previously reported observations concerning vitamin D’s effect on metabolic syndrome risk.

—Dayna Dye

Reference

* Frouhi NG, Luan J, Cooper A, Boucher BJ, Wareham NJ. Baseline serum 25-hydroxy vitamin D is predictive of future glycemic status and insulin resistance: the Medical Research Council Ely Prospective Study 1990-2000. *Diabetes*. 2008 Oct;57(10):2619-25.

Drinking Red Wine Associated With Reduced Lung Cancer Risk in Male Smokers

In a recent study, California Kaiser Permanente researchers report yet another benefit associated with drinking red wine: a lower risk of lung cancer.*

Chun Chao, PhD, and colleagues analyzed data from the California Men's Health Study of 84,170 men. Surveys completed between 2000 and 2003 provided information concerning demographics and lifestyle characteristics, including alcoholic beverage consumption. Over the three-year period, 210 cases of lung cancer were identified.

Among men who reported ever having smoked, drinking one or more glasses of red wine per day was associated with a 60% lower adjusted risk of lung cancer compared with the risk experienced by those who did not consume red wine. No effect for beer, liquor, or white wine was observed.

"This finding, if confirmed is of interest for lung cancer chemoprevention in current and former smokers," the authors write.

—Dayna Dye

Reference

* Chao C, Slezak JM, Caan BJ, Quinn VP. Alcoholic beverage intake and risk of lung cancer: the California men's health study. *Cancer Epidemiol Biomarkers Prev*. 2008 Oct 1;17(10):2692-9.

Fish Oil Protective Against Dementia, Depression

Higher blood levels of eicosapentaenoic acid (EPA) are associated with a lower risk of dementia and depression in elderly persons in a recent study.* EPA is an omega-3 polyunsaturated fatty acid found in certain fish that may decrease the risk of dementia and Alzheimer's disease.

The study included 1,214 French persons aged 65 or older living in the community who were examined for dementia and blood levels of fatty acids over four years. Depression was also assessed because it has been related to both low EPA and dementia. By four years, 65 patients had developed dementia. A higher level of EPA was associated with a lower likelihood of dementia, even after accounting for depression and other patient characteristics.

An association between depression and dementia was also confirmed. The authors concluded, "because depression and dementia share common vascular risk factors, the vascular properties of EPA could contribute to decrease depression and dementia risk simultaneously."

—Laura J. Ninger, ELS



Reference

* Samieri C, Fearf C, Letenneur L, et al. Low plasma eicosapentaenoic acid and depressive symptomatology are independent predictors of dementia risk. *Am J Clin Nutr*. 2008 Sep;88(3):714-21.

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