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In The News

High Blood Sugar Raises Heart Disease Risk

Lowering blood sugar may reduce coronary heart disease risk in both diabetic and non-diabetic individuals, according to Johns Hopkins researchers.* The investigators found that hemoglobin A1c (HbA1c), a marker of long-term blood glucose level, is an independent predictor of heart disease risk in both diabetics and non-diabetics.

Diabetes, a condition marked by elevated blood sugar, is associated with an elevated risk of cardiovascular disease. Until now, however, it has been unclear whether elevated blood glucose independently contributes to an increased risk of heart disease.

In a prospective case-cohort study of 1,321 adults without diabetes and a cohort study of 1,626 adults with diabetes, researchers investigated the relationship between HbA1c levels and incident coronary heart disease over eight to ten years of follow up.

In participants with diabetes, each percentage-point increase in HbA1c was associated with a 14% jump in coronary heart disease risk. Although the American Diabetes Association has identified an HbA1c level of 7% as a target indicating healthy blood sugar control, these recent findings suggest that in diabetics, heart disease risk begins to increase even at HbA1c values below 7%.

The researchers found that non-diabetic individuals with HbA1c levels in the “high-normal” range of 5-6% saw an elevated risk for heart disease, even after accounting for other factors such as age, cholesterol, blood pressure, smoking, and body mass index. In fact, non-diabetic individuals with an HbA1c level of 6% or higher had almost double the heart disease risk of people with an HbA1c level below 4.6%.

Long-term elevation of blood sugar is an independent risk factor for cardiovascular disease, the investigators concluded, adding that, “For non-diabetics, lifestyle modifications, such as increased physical activity, weight loss, and eating a healthful, low-glycemic-index diet rich in fiber, fruit, and vegetables, may not only help prevent diabetes, but also reduce the risk of heart disease.”

—Elizabeth Wagner, ND

Reference

* Selvin E, Coresh J, Golden SH, Brancati FL, Folsom AR, Steffes MW. Glycemic control and coronary heart disease risk in persons with and without diabetes: the atherosclerosis risk in communities study. Arch Intern Med. 2005 Sep 12;165(16):1910-6.

Eating Vegetables, Fruit Cuts Pancreatic Cancer Risk

A recent study in the journal Cancer, Epidemiology Bio-markers and Prevention found that people who consume vegetables and fruit in abundance have a 50% lower risk of developing pancreatic cancer than those whose vegetable and fruit intake is low.* The study is one of the largest of its kind to date.

University of California, San Francisco (UCSF) researchers analyzed the results of interviews with 532 patients with pancreatic cancer and 1,700 age- and gender-matched control subjects. Study participants were queried about diet, smoking, and other factors.

Participants who consumed five or more servings a day of a group of protective vegetables or vegetables and fruit were found to have half the risk of pancreatic cancer as those who consumed two or fewer servings daily. Consuming nine servings of vegetables and fruit a day was also associated with a 50% lower risk of pancreatic cancer compared to an intake of fewer than five servings.

Vegetables associated with the greatest amount of protection against pancreatic cancer risk included onions, garlic, beans, yellow vegetables, dark leafy vegetables, and cruciferous vegetables such as broccoli, cauliflower, and Brussels sprouts. Although eating fruit was associated with a lesser degree of risk reduction, citrus fruit offered more protection than other kinds of fruit.

According to Elizabeth A. Holly, PhD, senior study author and UCSF professor of epidemiology and biostatistics, “Pancreatic cancer is not nearly as common as breast or lung cancer, but its diagnosis and treatment are particularly difficult. Finding strong confirmation that simple life choices can provide significant protection from pancreatic cancer may be one of the most practical ways to reduce the incidence of this dreadful disease.”

—Dayna Dye

Reference

* Chan JM, Wang F, Holly EA. Vegetable and fruit intake and pancreatic cancer in a population-based case-control study in the San Francisco bay area. Cancer Epidemiol Biomarkers Prev. 2005 Sept;14:2093-7.

Scientists Unravel Neuroprotective Effects of Fish Oil

The omega-3 fatty acid docosahexaenoic acid (DHA) reduces levels of a protein known to cause damaging plaques in the brains of Alzheimer’s patients, and a derivative of DHA helps protect brain cells against cell death, report scientists at Louisiana State University.*

While previous research has suggested that DHA reduces the risk of cognitive decline, its mechanism of action has been unknown.

Collaborating investigators at LSU and at Brigham and Women’s Hospital in Boston discovered that DHA, which is found in coldwater fish such as mackerel, sardines, and salmon, reduces the secretion of the protein amyloid beta, or Abeta, in human neural cells. Amyloid beta plaques accumulate in the brains of those with Alzheimer’s disease. Furthermore, DHA spurred the production of neuroprotectin D1, which has neuroprotective effects on gene expression, promoting the survival of brain cells.

In examining postmortem human brain samples of people with Alzheimer’s disease, the researchers found that an area of the brain critical to memory formation and cognition had greatly diminished levels of neuroprotectin D1. Dr. Greg M. Cole, associate director of the Alzheimer’s Disease Research Center at UCLA’s School of Medicine, noted that both DHA and its derivative, neuroprotectin D1, “are effective in treating human brain cells and reducing the inflammation and toxicity from a toxin called beta amyloid that is widely believed to cause Alzheimer’s.”

Fish oils may thus represent a crucial component of a nutritional strategy to help prevent cognitive decline and Alzheimer’s disease.

—Elizabeth Wagner, ND

Reference

* Lukiw WJ, Cui JG, Marcheselli VL, et al. A role for docosahexaenoic acid-derived neuroprotectin D1 in neural cell survival and Alzheimer disease. J Clin Invest. 2005 Sept 8; [Epub ahead of print]

Curcumin Lowers Cholesterol, Improves Lipids

Curcumin helps lower elevated cholesterol levels induced by a high-fat diet in rats, according to investigators at Al-Azhar University in Cairo, Egypt.* By promoting a healthy blood lipid profile, curcumin may thus help reduce the risk of cardiovascular disease.

The researchers studied three groups of 10 rats per group. The control group was fed standard rat chow. One experimental group received a high-cholesterol diet enriched with 0.5% curcumin by weight, while the other experimental group received a high-cholesterol diet without curcumin. Cholesterol profiles, liver enzyme levels, and markers of antioxidant activity in the three groups of rats were examined after one week on the high-cholesterol diet.

The high-cholesterol diet increased total cholesterol levels dramatically, but adding curcumin reduced total cholesterol by 21% compared to the high-cholesterol group that did not receive curcumin. In the curcumin-supplemented rats, triglyceride levels dropped by 25-31%, while low-density lipoprotein (LDL) levels fell by 58% compared to the unsupplemented group. The curcumin-fed animals also demonstrated a 51% increase in high-density lipoprotein (HDL) levels. Moreover, curcumin significantly reduced the ill effects of a high-cholesterol diet on markers of liver health in the rats, though it had no discernible effect on blood markers of oxidation.

Curcumin thus appears to improve several blood lipid parameters by lowering total cholesterol, LDL, and triglycerides, while raising HDL levels. The researchers believe that curcumin exerts its cholesterol-lowering actions by modulating cholesterol absorption, degradation, or elimination, rather than through an antioxidant mechanism. Long used as an anti-inflammatory agent, curcumin may also help protect cardiovascular health through its beneficial effects on blood lipids.

—Linda M. Smith, RN

Reference

* Arafa HM. Curcumin attenuates diet-induced hypercholesterolemia in rats. Med Sci Monit. 2005 Jul;11(7):BR228-34.

In The News

Folate Cuts Colon Cancer Risk, Especially in Smokers

A high dietary intake of folate offers protection against colon cancer, particularly in cigarette smokers, report researchers affiliated with the Karolinska Institute in Sweden and the Harvard School of Public Health.* Epidemiological evidence indicates that high folate intake is associated with a reduced risk of colon cancer, but whether this effect is modified by smoking had not been previously studied.

To clarify the possible influence of cigarette smoking on folate's protective effect against colon cancer, the study followed more than 61,000 women. Using food-frequency questionnaires, the researchers determined mean daily folate intake among the study subjects to be 183 micrograms (mcg).

During nearly 15 years of follow up, 805 cases of colorectal cancer were documented in the study group. Women who ingested less than 150 mcg of folate daily had a 39% greater risk of colon cancer compared to women who consumed at least 212 mcg of folate daily. Statistical modeling disclosed a dose-response relationship between daily folate intake and colon cancer risk, predicting that each 100-mcg increase in folate intake could decrease colon cancer risk by 34%.

Among women who had smoked cigarettes for 10 or more years, those consuming at least 193 mcg of folate daily had a 66% lower risk of colon cancer than those whose folate intake was less than 163 mcg. Although non-smokers with the lowest folate intake had a 41% lower risk of colon cancer than did smokers, smokers with the highest folate intake had the same risk of colon cancer as non-smokers with the highest folate intake.

Increasing dietary folate intake may thus decrease the risk of colon cancer. This effect is particularly notable in smokers, who experience an elevated risk for the disease.

—Linda M. Smith, RN

Reference

* Larsson SC, Giovannucci E, Wolk A. A prospective study of dietary folate intake and risk of colorectal cancer: modification by caffeine intake and cigarette smoking. Cancer Epidemiol Biomarkers Prev. 2005 Mar;14(3):740-3.

"Accelerating Change" Conference Draws Futurists to Stanford

More than 350 scientists, academics, technologists, entrepreneurs, and humanists converged at Stanford University on September 16-18, 2005, for "Accelerating Change," a conference presented by the nonprofit Acceleration Studies Foundation. Speakers discussed some of today's most important trends in science, technology, business, and social development, with the goal of helping attendees accelerate technological change to foster professional and personal development.

John Smart, founder and president of the Acceleration Studies Foundation (www.accelerating.org), discussed some of the conference presentations with Life Extension. Featured presenters included Dr. T. Colin Campbell, author of the bestselling The China Study, which explores the findings of the China Project, the largest epidemiological study of correlations between dietary factors and health ever conducted. The China Project found that a greater consumption of a variety of high-quality, plant-based foods is associated with a reduced risk of cancer, cardiovascular disease, diabetes, and other chronic diseases that are endemic in Western nations. Dr. Campbell's research suggests that 80-90% of all such diseases may be preventable by dietary modifications.

Dr. Greg M. Cole of UCLA discussed his recent findings regarding the potent neuroprotective effects of curcumin, the yellow pigment derived from the curry spice turmeric. Dr. Cole's research indicates that curcumin is a potent protector against amyloid plaques. In animal studies, curcumin reduced amyloid levels and plaque burden in aging mice. Strategies that target amyloid plaque may be the key to preventing neurodegenerative conditions such as cognitive decline and Alzheimer's disease.

Another keynote speaker was inventor and visionary Ray Kurzweil, coauthor of the recent book Fantastic Voyage: Live Long

Enough to Live Forever. Kurzweil discussed his new book, The Singularity Is Near: When Humans Transcend Biology, which explores artificial intelligence, robotics, nanotechnology, and a rapidly approaching future in which humans and machines merge into a super-intelligent civilization.

By exploring innovative applications of emerging technologies across many disciplines, the presenters and attendees of the Accelerating Change conference hope to facilitate rapid, radical, and life-improving change.

—Elizabeth Wagner, ND

Adding Dietary Fiber Helps Women Stay Slim

A higher level of dietary fiber intake in women is associated with a decreased risk of being overweight or obese, according to researchers from Tufts University.*

The investigators studied the association between various dietary components and body mass index in 4,539 adults between the ages of 20 and 59 years. Among the participants, 1,932 reported a caloric intake that was judged reasonably accurate (within a set margin of predicted energy requirements) over two 24-hour periods. Of these, only around 5% reported consuming an adequate level of dietary fiber (approximately 25 grams for a 2,000-calorie-a-day diet).

In women, a diet low in fiber (less than 12.6 grams per 2,000 calories/day) and high in fat (35% or more of total calories from fat) was associated with the greatest risk of being overweight or obese. In men, however, only the percentage of energy intake from fat was associated with body mass index.

“Weight control advice for US women should place greater emphasis on consumption of fiber,” the study authors concluded.

In addition to promoting a healthy weight, a fiber-rich diet is associated with numerous health benefits for men and women. In fact, a high-fiber diet may help reduce blood cholesterol as well as lower risk of digestive disease and heart disease. The Tufts study also illustrates that dietary fiber intake is inadequate in the US population at large. The Dietary Guidelines for Americans, published in January 2005 by the US Department of Health and Human Services, advises all adults to consume 25-30 grams of fiber daily from sources such as whole grains, nuts, cereals, fruits, and vegetables.

—Elizabeth Wagner, ND

Reference

* Howarth NC, Huang TT, Roberts SB, McCrory MA. Dietary fiber and fat are associated with excess weight in young and middle-aged US adults. J Am Diet Assoc. 2005 Sept; 105(9):1365-72.