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Eating More Protein, Cutting Back on Carbs Keeps Those Extra Pounds Off

Trying to diet and keep those pounds off?

Eating a little more protein and cutting back a little on sweets and other refined carbohydrates can help you keep the weight off after dieting, according to a study in the *New England Journal of Medicine*.

Thomas Meinert Larsen, PhD, of the University of Copenhagen, Denmark, and his colleagues recruited 773 men and women and their families, with all of the subjects living in eight different western European nations. All of the men and women had recently lost at least 8 percent of their body weight on a low-calorie diet.

The subjects were asked to follow one of five follow-up dietary regimens for six months: a low-protein, low-glycemic index diet; a low-protein, high-glycemic index diet; a high-protein, low-glycemic index diet; or a high-protein, high-glycemic diet. The remaining group had no food restrictions and served as a control. Everyone was allowed to eat as much as they wanted to.

In the high-protein groups, people consumed 25 percent of their calories as protein. Meanwhile, in the low-protein groups, people consumed about 13 percent of their calories as protein.

After six months, substantially more people had stayed with the high-protein or low-glycemic groups, compared with those in the low-protein, high-glycemic group.

People eating the low-protein, high-glycemic index diet regained the most weight – an average of 3.7 pounds. In contrast, people in the high-protein groups regained an average of 2 pounds *less*.

Typically, higher protein diets are more nutrient dense, whereas lower protein diets tend to be richer in sugars and other types of carbohydrates.

In related research, Renata Micha, PhD, RD, and her colleagues at the Harvard Medical School, analyzed 20 published studies on the relationship between meat consumption and the risk of heart disease, stroke, and type 2 diabetes.

Micha reported that red meat per se was not associated with the risk of developing coronary heart disease, stroke, or diabetes. However, the daily consumption of 50 grams (a little less than 2 ounces) of processed meats – also known as luncheon or deli meats, such as bologna or salami – was associated with a 42 percent greater risk of coronary heart disease and a 19 percent higher risk of diabetes.

In another study, Jeff S. Volek, PhD of the University of Connecticut, Storrs, asked eight weight-stable men to follow one of two low-calorie, low-carbohydrate diets for six weeks. One diet was relatively high in saturated fat (86 grams daily), and the other was high in polyunsaturated fats (47 grams daily).

With both diets, the subjects benefited from lower triglyceride and insulin levels and an increase in LDL cholesterol particle size. Large LDL particles (in contrast to small LDL particles) protect against cardiovascular disease. Despite a significant increase in saturated fat consumption, the subjects showed signs of reduced body fat production. Volek wrote that the study's findings were "consistent with the concept that dietary saturated fat is efficiently metabolized in the presence of low carbohydrates."

The findings build on earlier research and analysis of published studies showing that saturated fat seems to have no bearing on the risk of cardiovascular diseases. (See the May 2010 issue of *The Nutrition Reporter*.)

References: Larsen TM, Dalskov SM, van Baak M, et al. Diets with high or low protein content and glycemic index for weight-loss maintenance. *New England Journal of Medicine*, 2010;363:2102-2113. Micha R, Wallace SK, Mazaffarian D. Red and processed meat consumption and risk of incident coronary heart disease, stroke, and diabetes mellitus. A systematic review and meta-analysis. *Circulation*, 2010; 121:2271-2283. Siri-Tarino PW, Sun Q, H FB, et al. Forsythe CE, Phinney SD, Feinman RD, et al. Limited effect of dietary saturated fat in the context of a low carbohydrate diet. *Lipids*, 2010;45:947-962. □

More research summaries on next page

Perspectives

Vitamin E and Stroke Risk

A recent article in the *British Medical Journal*, a related news release from the publisher, and news stories published around the world were nothing less than misleading and alarming. The *BMJ* article, based on an analysis of nine previously published studies, reported that vitamin E supplements increased the risk of stroke.

Wait a minute! The study and all the negative publicity were deeply flawed – and the data were twisted around.

First, none of the individual studies had found an increased risk of stroke. Second, the dosages varied from 300 IU to 800 IU of vitamin E daily, some using natural and others using synthetic vitamin E. The studies ranged from about a year and one-half to 10 years, the subjects varied from middle-age to seniors, and some were healthy while others were at high risk of cardiovascular disease (and whom were likely to be taking several medications). With this disparate data, the researchers concluded that one additional person in every 1,250 taking vitamin E would suffer a hemorrhagic (bleeding) stroke, whereas about 2.6 additional people in 1,250 would be *less likely* to suffer an ischemic (clotting) stroke.

You would think that the significantly greater reduction in ischemic stroke would be the subject of headlines. But it wasn't. The researchers downplayed the benefits, and headlines warned that vitamin E increased the risk of stroke.

The article neglected to note that you are far more likely to suffer an ischemic stroke. That's because 90 percent of all strokes are related to blood clots. You are far less likely to suffer a hemorrhagic stroke; they account for only 10 percent of all strokes.

Even though this study was of questionable quality, it still showed that vitamin E supplements significantly reduced the risk of the most common type of stroke, whereas it slightly increased the risk of the least common stroke. You don't have to be a rocket scientist – or a statistician – to figure out that the benefits:risk ratio of vitamin E supplements is strongly in your favor.

Selenium Supplements Helpful in Auto-Immune Thyroid Disorder

Taking supplemental selenium, an essential dietary mineral, can lead to improvements in Hashimoto's thyroiditis, the most common cause of low thyroid activity. Hashimoto's involves an auto-immune reaction, in which the body's immune cells

attack the thyroid. Because the thyroid gland regulates the metabolic rate, reduced thyroid active can cause a variety of symptoms, including fatigue, cold hands and feet, and weight gain.

Konstantinos A. Toulis, MD, of the Papageorgiou General Hospital in Thessaloniki, Greece, and his colleagues analyzed data from seven previously published studies in which doctors used selenium supplements as an adjunct in the treatment of people with Hashimoto's. A total of almost 400 patients were in those studies.

All of the patients had been receiving treatment with synthetic thyroid hormone, commonly known as T4. Some of the subjects received 200 mcg of selenium and others received placebos daily for three to six months.

After taking selenium for three months, patients benefited from significantly lower levels of auto-immune antibodies – a sign of reduced disease activity – as well as improvements in well-being and mood.

Selenium-dependent enzymes, called deiodinases, are needed to convert T4 to the active form of thyroid hormone, T3.

Reference: Toulis KA, Anastasilakis AD, Tzellos TG, et al. Selenium supplementation in the treatment of Hashimoto's thyroiditis: a systematic review and meta-analysis. *Thyroid*, 2010; doi 10.1089/thy.2009.0351. □

Vitamin B6 Eases Inflammation in Rheumatoid Arthritis

Supplemental vitamin B6 has long been known to reduce inflammation and pain, and now researchers have shown that supplements reduce inflammation in people with rheumatoid arthritis.

Yi-Chia Huang, PhD, of the Chung Shan Medical University, Taiwan, and colleagues used B vitamins to treat 35 patients who had been diagnosed with rheumatoid arthritis. Fifteen of the patients took 5 mg of folic acid daily, while 20 patients took 100 mg of vitamin B6 and 5 mg of folic acid daily for 12 weeks.

Huang and colleagues measured several blood markers of inflammation.

At the end of the study, people taking vitamin B6 had significantly lower levels of two inflammatory markers, interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α).

"Pro-inflammatory cytokines such as IL-6 and TNF- α have key roles in driving the inflammation and synovial cell proliferation that characterize rheumatoid arthritis joint destruction," wrote Huang.

In addition, people taking vitamin B6 had about a

10 percent increase in lymphocytes, a type of immune cell. Huang wrote that this increase might reflect more normal activity of immune cells.

“Our results provide valuable reference data for clinical practice with regard to the potential beneficial use of vitamin B6 to suppress inflammatory response in rheumatoid arthritis patients,” wrote Huang.

Reference: Huang S-C, Wei JC-C, Wu DJ, et al. Vitamin B6 supplementation improves pro-inflammatory responses in patients with rheumatoid arthritis. *European Journal of Clinical Nutrition*, 2010;64:1007-1013. □

High Intake of Alpha-Carotene Linked to Lower Death Risk

Eating a lot of foods rich in alpha-carotene seems to reduce the risk of death from heart disease, cancer, and all other causes.

Although beta-carotene tends to get more attention, alpha-carotene is found in many of the same foods, particularly carrots and squash.

Chaoyang Li, MD, PhD, of the U.S. Centers for Disease Control and Prevention, Atlanta, Georgia, and his colleagues analyzed dietary and health data for 15,318 people who participated in the Third National Health and Nutrition Examination Survey Follow-up Study.

People who consumed relatively large amounts of alpha-carotene had 23 to 39 percent lower risks of death, with the greatest benefits occurring in people who ate the most alpha-carotene.

High alpha-carotene intake was also associated with a 29 percent lower risk of cardiovascular diseases, 43 percent lower risk of cancer, and a 67 percent lower risk of diabetes.

“Because current antioxidant supplements or food additives contain little if any alpha-carotene, we assumed that members of our study cohort obtained alpha-carotene primarily from consumption of fruits and vegetables,” wrote Li.

Reference: Li C, Ford ES, Zhao G, et al. Serum alpha-carotene concentrations and risk of death among US adults. *Archives of Internal Medicine*, 2010; doi 10.1001/archinternmed.2010.440. □

Omega-3 Fish Oils May Reduce Chances of Serious Eye Disease

People who eat a lot of fish or shellfish rich in the omega-3 fish oils – eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) – are far less likely to develop the most severe form of age-related macular degeneration (AMD), a common cause of blindness among seniors.

Bonnielin K Swenor, MPH, and her colleagues at

Johns Hopkins University, Baltimore, analyzed dietary intake of fish over the course of one year and the risk of AMD in 2,520 people, ages 65 to 84 years.

People in the study were divided into four groups: those free of AMD, with early AMD, with intermediate-stage AMD, and advanced AMD. All of the participants ate some seafood, and they all lived on the eastern shore of Maryland.

People with advanced AMD were far less likely to consume fish and other types of seafood rich in omega-3 oils. Conversely, a high intake of omega-3 oils from seafood seemed to protect against the most severe form of AMD.

Reference: Swenor BK, Bressler S, Caulfield L, et al. The impact of fish and shellfish consumption on age-related macular degeneration. *Ophthalmology*, 2010; 117:2395-2401. □

Coenzyme Q10 and Pycnogenol® Help in Heart Failure Patients

Coenzyme Q10 (CoQ10), a vitamin-like substance involved in energy production, can help strengthen a weak heart. A new study has found that a combination of CoQ10 and Pycnogenol, an antioxidant extract of French maritime pine trees, also benefits people with moderate to serious heart failure.

Gianni Belcaro, MD, PhD, of Chieti-Pescara University, Italy, and his colleagues treated patients with either the CoQ10 and Pycnogenol combination or placebos. All of the patients were also treated according to conventional medical guidelines. However, people taking statins were excluded from the study because the drugs reduce CoQ10 activity.

Thirty-two people took 350 mg of CoQ10 and 105 mg of Pycnogenol daily daily, while 21 people took placebos for 12 weeks.

The supplement combination led to significant improvements in heart function, whereas the placebos did not. On average, people taking CoQ10 and Pycnogenol had a 22 percent increase in ejection fraction, a measure of the heart’s ability to pump blood. They also had significant decreases in blood pressure and edema, and they were able to walk more than three times farther on a treadmill.

Nine of the 32 people taking CoQ10 and Pycnogenol had an improvement in their New York Heart Association (NYHA) classification of heart failure, compared with only three of those taking placebos. NYHA heart failure classifications (I-IV) are used worldwide to assess the severity of heart failure.

Reference: Belcaro G, Cesarone MR, Dugall M, et al. Investigation of Pycnogenol® in combination with coenzyme Q10 in heart failure patients (NYGA II/III). *Panminerva Medica*, 2010; 52 (Suppl 1 and 2):21-25. □

Quick Reviews of Recent Research

• Diversity of veggies has health benefits

Considerable research has shown that eating large amounts of vegetables and fruits reduces the risk of developing cardiovascular diseases and cancer. However, consuming a wide selection of veggies and fruits may be more important – in part because of the broad range of nutrients provided by a diversity of veggies and fruits. Researchers from Tufts University, Boston, analyzed the dietary habits and levels of inflammation in 1,200 middle-age and elderly Puerto Rican men and women living in the Boston area. People who consumed the most diverse selection (but not the largest quantity) of vegetables and fruits had on average C-reactive protein (CRP) levels about one-third lower than those who did not consume a wide selection of produce. CRP is a commonly used marker of inflammation.

Bhupathiraju SN. *American Journal of Clinical Nutrition*, 2010;93:37-46.

• Psoriasis linked to metabolic syndrome

Psoriasis is often related to unbalanced or inadequate intake of essential fatty acids. Researchers at the Harvard Medical School reported that people with psoriasis are more than twice as likely (compared with healthy subjects) to have signs of metabolic syndrome. The most common sign of metabolic syndrome among these patients was abdominal obesity, followed by elevated triglycerides and low levels of high-density lipoprotein (HDL) cholesterol. Similar eating habits may underlie both psoriasis and metabolic syndrome.

Love TJ. Prevalence of the metabolic syndrome in psoriasis. *Archives of Dermatology*, 2010; doi 10.1001/archdermatol.2010.370.

• Fish oils protect against heart attack

Researchers from Umeå University, Sweden, investigated blood levels of omega-3 fats among 431 people who had a heart attack and 499 people who had not. The statistical analysis also included 69 women from a breast-cancer screening registry. People with the highest blood levels of omega-3s had a 35 percent lower risk of heart attack. Analyses of blood levels of both mercury and selenium, which are commonly associated with fish intake, showed no harmful effect. Fish consumption per se was not associated with heart attack risk.

Wennberg M. *American Journal of Clinical Nutrition*, 2010;93:27-36.

• Vitamin B3 protects chromosomes

The B-complex vitamins are involved in maintaining the integrity of chromosomes and genes and enhancing gene-repair activities. Scientists at the

U.S. Centers for Disease Control and Prevention, Cincinnati, Ohio, investigated how the diets of 82 airline pilots might affect chromosome damage. Pilots were selected because high altitudes induce more chromosome damage. They found that pilots who had diets rich in vitamin B3 were 42 percent less likely to experience chromosome damage.

Yong LC. *British Journal of Nutrition*, 2010;doi 10.1017/S000711451000379X.

• Sugary drinks may cause gout in women

Researchers at the Boston University School of Medicine found that women who consume soft drinks and orange juice have a substantially higher risk of gout, compared with women who do not. The study tracked almost 79,000 women over 22 years. Women who had one non-diet soft drink daily had a 74 percent greater risk of gout, compared with women who had a soft drink only once a month. The risk of gout was 2.4 times higher if they consumed two or more soft drinks daily. Women who had a 6-ounce glass of orange juice daily were 41 percent more likely to develop gout, and those who consumed two or more glasses daily were 2.4 times more likely to have gout. The researchers attributed the risk to fructose in the beverages.

Choi HK. *JAMA*, 2010; doi 10.1001/jama.2010.1638.

• Probiotics reduce risk of infections

Researchers from Georgetown University Medical Center, Washington, D.C., provided 638 children with either a probiotic-containing dairy beverage or an identical placebo. The children were three to six years of age, and they were given the drinks daily for three months. Children consuming the probiotic drink, containing *Lactobacillus casei*, had a 19 percent lower risk of developing respiratory or gastrointestinal infections.

Merenstein D. *European Journal of Clinical Nutrition*, 2010;64:669-677.

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