

IN THE NEWS

Caloric Restriction Reduces Atherosclerosis Risk



Caloric restriction in humans is associated with a reduced risk for atherosclerosis, according to a study recently published in the Proceedings of the National Academy of Sciences USA.*

Caloric restriction has been shown to prolong life and reduce the incidence of certain diseases in animals, though little is known about its long-term effects on cardiovascular risk factors in humans.

Investigators from the Washington University School of Medicine in St. Louis, MO, examined 18 adults (average age of 50) who had practiced caloric restriction for an average of six years, along with 18 age-matched healthy adults following a typical American diet.

The caloric restriction group consumed a balance of foods designed to exceed the recommended daily intake of all essential nutrients while minimizing energy intake. They consumed 1,100-2,000

calories per day, with approximately 26% of calories derived from protein, 28% from fat, and 46% from complex carbohydrates. The caloric restriction group avoided eating processed foods and trans fats. By contrast, the control group consumed nearly twice as many calories (2,000-3,500 calories a day), with approximately 18% of calories derived from protein, 32% from fat, and 50% from carbohydrates.

Compared to the control group, the caloric restriction group had a lower average body mass index (19.6 vs. 25.9), lower percentage of body fat (8.7% vs. 24%), higher levels of beneficial high-density lipoprotein (HDL), and lower levels of total cholesterol, low-density lipoprotein (LDL), triglycerides, fasting glucose, fasting insulin, C-reactive protein, and systolic and diastolic blood pressure. Furthermore, carotid artery intima-media thickness was 40% less in the caloric restriction group than in the control group.

Based on a range of risk factors and measurement of carotid artery intima-media thickness, the practice of caloric restriction in adults appears to offer powerful protection against atherosclerosis, the major cause of death in Americans.

—Elizabeth Wagner, ND

Reference

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Calcium, Vitamin D May Lower Risk of PMS



Consuming calcium and vitamin D may reduce a woman's risk of developing premenstrual syndrome, according to a recent study published in the Archives of Internal Medicine.*

Up to 90% of women experience PMS at some point during their childbearing years. PMS is marked by physical and psychological symptoms such as headache, edema, anxiety, depression, and irritability during the 7-10 days before onset of menstruation. These symptoms can range from mild to debilitating, and usually disappear soon after menses begins.

Researchers examined calcium and vitamin D intake among more than 3,000 women aged 27-44 years, using a food-frequency questionnaire that was administered three times over an eight-year period. Comparing dietary intake data with participants' incidence of PMS, they found that women with the highest intake of calcium and vitamin D

had a 30-40% lower risk of developing clinical PMS than women with the lowest intake of calcium and vitamin D.

While this study examined only calcium and vitamin D intake from dietary sources, the researchers hope to investigate the effects of calcium and vitamin D supplements in relation to PMS incidence. "At this point, I hesitate to say that there really is a difference between these two sources," lead researcher Dr. Elizabeth Bertone-Johnson of Brigham and Women's Hospital and Harvard Medical School told Life Extension.

"Our findings, together with those from several small randomized trials that found calcium supplements to be effective in treating PMS, suggest that a high intake of calcium and vitamin D may reduce the risk of PMS," the researchers concluded. "Clinical trials of this issue are warranted. In the interim, given that calcium and vitamin D may also reduce the risk of osteoporosis and some cancers, clinicians may consider recommending these nutrients even for younger women."

—Marc Ellman, MD

Reference

* Bertone-Johnson ER, Hankinson SE, Bendich A, Johnson SR, Willett WC, Manson JE. Calcium and vitamin D intake and risk of incident premenstrual syndrome. *Arch Intern Med.* 2005 Jun 13;165(11):1246-52.

Broccoli Protects Against Bladder Cancer

Compounds in broccoli may help prevent or slow the progression of bladder cancer, according to Ohio State University researchers.^{1,2} Previous research has shown that men who eat two or more servings of broccoli per week are less likely to develop bladder cancer, which kills more than 13,000 Americans each year.

The researchers isolated compounds called glucosinolates from broccoli sprouts. The process of chopping, chewing, and digestion transforms these compounds into biochemicals called isothiocyanates. The Ohio State team used an enzyme process to convert the broccoli glucosinolates into isothiocyanates.

In the laboratory, the scientists treated two lines of human bladder cancer cells and one mouse cell line with varying amounts of glucosinolates and isothiocyanates. They found that the isothiocyanates decreased proliferation of all three cancer cell lines. In fact, the isothiocyanates exerted the strongest effect on the most aggressive cell line examined, human invasive transitional cell carcinoma. Surprisingly, the glucosinolates did not demonstrate an effect against the bladder cancer cells.^{1,2}

The researchers are not sure how biochemicals in broccoli prevent cancer cells from proliferating, noting that at least a dozen compounds in broccoli could have anti-cancer effects. Other cruciferous vegetables—including cabbage, cauliflower, kale, and Brussels sprouts—may also contain similar disease-fighting phytochemicals.

"Eat a variety of vegetables in your diet," study author Dr. Steven Schwartz advised. "Because there's all sorts of compounds we're finding can be healthy and disease preventive."²

—Elizabeth Wagner, ND

References

1. Available at: <http://researchnews.osu.edu/archive/goodbroc.htm>. Accessed August 18, 2005.
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DHEA Helps Resolve Cervical Dysplasia

Intravaginal use of dehydroepiandrosterone (DHEA) promotes regression of low-grade cervical dysplasia, according to women's cancer specialists at Boston's Massachusetts General Hospital.*

Defined as abnormal cells on the surface of the female cervix, cervical dysplasia is considered a pre-cancerous condition that, if left untreated, may progress to cervical cancer. Most pre-malignant and malignant lesions of the cervix result from infection with the human papilloma virus (HPV), which is spread through sexual contact. Treatment options for cervical dysplasia include cryotherapy, laser treatment, loop excision, and cone biopsy.

Supporting the body's immune response to the HPV virus may be an effective therapeutic tool in managing cervical dysplasia. Scientists theorized that because DHEA is known to help modulate immune activity in laboratory animals, topical DHEA might help women combat an early infection with HPV.

The MGH pilot study enrolled 12 women with low-grade cervical dysplasia, who were instructed to insert one vaginal tablet containing 150 mg of DHEA next to the cervix each day at bedtime for six months. Between three and six months later, cervical dysplasia completely regressed in 10 of the 12 patients, and incompletely regressed to a non-normal, non-dysplastic lesion in the remaining two patients. DHEA was well tolerated and did not result in significant elevation of testosterone levels.

This study suggests that intravaginal DHEA is a safe, well-tolerated therapeutic tool that may help promote the regression of low-grade cervical dysplasia by supporting the local immune response to the HPV virus.

—Linda M. Smith, RN

Reference

* Suh-Burgmann E, Sivret J, Duska LR, Del Carmen M, Seiden MV. Long-term administration of intravaginal dehydroepiandrosterone on regression of low-grade cervical dysplasia—a pilot study. *Gynecol Obstet Invest.* 2003;55(1):25-31.

IN THE NEWS

Policosanol, Omega-3 Combination Improves Lipids

A combination of policosanol and omega-3 fatty acids improves lipid profiles and inhibits platelet aggregation more powerfully than either agent alone, according to recently published research.*

Policosanol is a mixture of primary alcohols purified from sugarcane wax. Fish oil is the most abundant source of the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

In this study, male rabbits were divided into four test groups: the first group received 5 mg of policosanol per kilogram of body weight; the second group received 250 mg of omega-3 fatty acids per kilogram of body weight; the third group received both policosanol and omega-3 fatty acids; and a control group received neither policosanol nor omega-3 fatty acids. Treatment was administered orally for 60 days, and lipid levels and platelet aggregation were measured at baseline and at the study's end.

The policosanol group experienced significant decreases of 43% in low-density lipoprotein (LDL) and 29% in total cholesterol, an increase of 15% in high-density lipoprotein (HDL), and no change in triglyceride level. The omega-3 group demonstrated a 47% decrease in triglyceride levels, but no change in other lipid levels. In the policosanol and omega-3 combination group, LDL dropped 39%, while changes in HDL and total cholesterol were similar to those achieved with policosanol alone. Both policosanol and omega-3s significantly inhibited platelet aggregation, by 13% and 12%, respectively. The combination of the two agents, however, reduced platelet aggregation by 24%. This pair of nutritional therapeutics may thus offer a powerful combination for optimizing several risk factors for cardiovascular disease.

Anyone using policosanol or any other drug, supplement, or diet for the purpose of lowering total cholesterol/LDL should have their blood tested within 60 days to make sure cholesterol and LDL levels are being reduced to safe ranges. Life Extension recommends that both total cholesterol and LDL should be under 100 mg/dL, while beneficial HDL should be at least 50 mg/dL.

—Christie C. Yerby, ND

Reference

* Gamez R, Maz R, Arruzazabala ML, Mendoza S, Castano G. Effects of concurrent therapy with policosanol and omega-3 fatty acids on lipid profile and platelet aggregation in rabbits. *Drugs R D*. 2005;6(1):11-9.

Vinpocetine Boosts Blood Flow in Stroke Patients

Vinpocetine, a compound derived from the periwinkle plant *Vinca minor*, increases blood flow and oxygenation to the brain in patients who have suffered a stroke, according to several new studies.¹⁻³

Stroke affects an estimated 700,000 Americans each year, choking off the flow of blood and oxygen to the brain. Stroke's effects can include memory loss, paralysis, and vision and speech problems. Treatment immediately following a stroke is associated with improved outcomes.

In a double-blind, placebo-controlled study, researchers examined vinpocetine's effects on patients who had suffered an ischemic stroke. They randomly assigned 43 patients to two groups. The first group received 20 mg of vinpocetine in 500 ml of saline administered intravenously, and the placebo group received saline only. Examining cerebral blood flow before and after treatment, the researchers found that vinpocetine helped increase cerebral circulation and tissue oxygenation.¹

A subsequent study used positron emission tomography (PET) to determine the effects of intravenously administered vinpocetine in chronic ischemic stroke patients. In this double-blind study, 14 days of intravenous vinpocetine was found to increase cerebral blood flow.²

Vinpocetine may have several different mechanisms of action, including antioxidant, vasodilatory, and neuroprotective activities.³ Vinpocetine may help optimize cerebral blood flow and oxygen supply in patients who have suffered from ischemic stroke. Both intravenous and oral administration of vinpocetine show promise in promoting optimized cerebral circulation.¹⁻⁴ While orally administered vinpocetine rapidly appears in the brains of healthy human subjects,⁴ more studies are indicated to examine its

effects in people who have suffered a stroke.

—Christie C. Yerby, ND

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Nutrients Benefit Macular Degeneration Patients

A combination of nutrients improves vision and reverses pathological changes in adults with early macular degeneration, according to a recent study conducted by European investigators.*

Macular degeneration is the major cause of vision loss in adults over 55 years of age. While epidemiological studies have shown that an antioxidant-rich diet may help prevent macular degeneration, this new study demonstrates an effective nutritional treatment for the adverse effects of early macular degeneration.

This randomized, double-blind, placebo-controlled study enrolled 106 patients with bilateral macular degeneration. The subjects received either a nutrient combination (consisting of 200 mg of acetyl-L-carnitine, 780 mg of omega-3 fatty acids, and 20 mg of coenzyme Q10) or a placebo daily for 12 months, and underwent visual testing every three months. Treatment improved visual field defects in both eyes. Only one of 102 eyes treated deteriorated during the 12-month study, compared to 14 of 110 placebo-treated eyes. Moreover, the area of the eye's fundus covered by drusen (degenerated retinal pigment cells that are a precursor to macular degeneration) in the treated group decreased by 15% to 23%, while increasing by more than 10% in the placebo group.

The nutrients were selected based on their biological activities. Specifically, acetyl-L-carnitine facilitates fatty acid oxidation, omega-3 fatty acids regulate neural and sensory development in the retina, and coenzyme Q10 is critical to the generation of energy in the mitochondria. The results suggest that supporting mitochondrial health may be useful in preventing and managing macular degeneration.

—Linda M. Smith, RN

Reference

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