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Eating Habits Strongly Influence the Risk of Developing Serious Eye Disease

Supplements often provide the edge in achieving and maintaining health, but it's never wise to ignore basic eating habits. Three recent studies report that different dietary habits can either reduce or increase the risk of age-related macular degeneration (AMD), the leading cause of blindness among seniors.

Jennifer S.L. Tan, MB, of Westmead Hospital, University of Sydney, Australia, and her colleagues tracked the health of 2,453 men and women over 10 years. They found that people eating one serving of fish weekly were 31 percent less likely to develop AMD. Fish consumption lowered the risk of AMD by 43 percent when people also ate a diet low in linoleic acid, found in corn and soybean oils.

People eating two servings of nuts each week had a 35 percent lower risk of AMD during the study.

Meanwhile, Chung-Jung Chiu, PhD, DDS, of Tufts University, Boston, and his colleagues studied the diets and eye health of 4,003 men and women in the Age-Related Eye Disease Study (AREDS). All of the subjects were 65 years of age or older.

Chiu found that high intake of many different nutrients was associated with a low risk of AMD. Those nutrients included omega-3 fish oils, vitamins C and E, zinc, and lutein and zeaxanthin.

On average, each of these nutrients was related to modest reductions in the risk of drusen (a sign of damage to the eye's macula, which is responsible for detailed vision) and advanced AMD.

A combination of these nutrients, however, plus a low-glycemic diet was related to about a 40 percent lower risk of advanced AMD.

The most protective dietary pattern consisted of fish, leaf green vegetables, and citrus fruit, while being low in sugars and refined carbohydrates.

In the third study, Elaine W.T. Chong, MD, PhD, of the University of Melbourne, Australia, and her colleagues, analyzed dietary fat consumption and the risk of AMD among 6,734 middle-age and older men and women.

Chong reported that consuming about 3.4 ounces of olive oil weekly seemed to reduce the risk of AMD by 52 percent, compared with people who consumed virtually no olive oil. In addition, high intake of omega-3 fish oils was associated with a 15 percent lower risk of AMD.

Furthermore, Chong noted that people who consumed a lot of trans fats in their diets were 76 percent more likely to develop AMD.

References: Tan JSL, Wang JJ, Flood V, et al. Dietary fatty acids and the 10-year incidence of age-related macular degeneration. *Archives of Ophthalmology*, 2009;127:656-665. Chiu CJ, Milton RC, Klein R, et al. Dietary compound score and risk of age-related macular degeneration in the age-related eye disease study. *Ophthalmology*, 2009;116:939-946. Chong EWT, Robman LD, Simpson JA, et al. Fat consumption and its association with age-related macular degeneration. *Archives of Ophthalmology*, 2009;127:674-680. □

Perspectives

How Serious is the Swine Flu?

The swine flu, or H1N1 influenza virus, emerged in Mexico this past spring. The timing was uncharacteristic of most flu viruses, and so was its genetic makeup. H1N1 bore an uncanny resemblance to the 1918 flu virus, which killed an estimated 50 to 100 million people worldwide. The 1918 virus initially appeared mild, seemed to disappear during the summer, then reemerged with deadly virulence in the fall and winter. Unlike most types of influenza, it tended to affect healthy people in their 20s, triggering a self-destructive immune reaction in people with the most robust immune systems.

Will this year's H1N1 virus follow the same pattern as the 1918 flu? At this point, there is certainly the potential, but no one knows for sure. It's too soon to panic, but it would be smart to prepare. I'm stocking up on some supplements, just in case.

I believe it's important to take some key supplements daily for general protection, and then to ramp

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up the dosages on the first day of symptoms, before virus concentrations increase and the immune system overreacts. My flu-protection plan consists of the following:

N-acetylcysteine (NAC). This potent antioxidant is unsurpassed for suppressing flu symptoms. I take 500 mg daily, doubling this over the fall and winter. I've taken up to 5 to 6 grams daily to suppress flu and cold symptoms.

Vitamin D. I take 5,000 IU daily, but will briefly go up to 25,000 to counter flu or cold symptoms.

Vitamin C. Bowel tolerance increases during sickness, so take at least 2,000 mg daily and increase this to 10,000 mg or more to fight infections.

Selenium. This mineral helps prevent the creation of viral mutations that can damage the heart. Take 200 mcg daily, but increase it to 400 mcg if you're fighting a flu or cold.

L-lysine. This amino acid inhibits the growth of viruses. I take it only when fighting an infection, 500 to 1,000 mg daily.

Zinc lozenges. These also help suppress cold and flu symptoms. Follow label instructions.

Oscillococcinum. This homeopathic remedy also seems to help. Follow label instructions.

Don't forget: The office, family gatherings, and air travel are great opportunities to share infections. Wash your hands frequently, and if you're sick, please stay home. – *JC*

Natural Substance May Have Potent Clot-Busting Benefits

Nattokinase, an enzyme naturally found in natto, a traditional Japanese fermented soy food, has impressive clot-reducing benefits that may reduce the risk of heart attack.

Nae-Cherng Yang, PhD, of the Chungchou Institute of Technology, Taiwan, and colleagues divided 45 subjects into three groups: those with cardiovascular disease, those undergoing kidney dialysis, and those who were healthy.

All of the subjects took two 400-mg capsules of nattokinase after dinner each day for two months.

Yang and colleagues tracked the subjects' blood levels of three clotting factors, fibrinogen, factor VII, and factor VIII. Fibrinogen is a major determinant of whole blood and plasma thickness, and high fibrinogen levels are strongly related to the risk of heart attack. Factors VII and VIII are also related to an increased risk of heart attack.

By the end of the two-month study, the participants had impressive reductions in all three clotting factors. Fibrinogen levels decreased by 7 to 10 percent, factor VII declined by 7 to 14 percent,

and factor VIII decreased by 17 to 19 percent.

"These results support our hypothesis that oral administration of nattokinase would have a beneficial action on risk factors associated with cardiovascular disease," wrote the researchers.

Reference: Hsia CH, Shen MC, Lin JS, et al. Nattokinase decreases plasma levels of fibrinogen, factor VII, and factor VIII in human subjects. *Nutrition Research*, 2009;29:190-196. □

Supplemental Selenium Boosts Thyroid Hormone Levels in Men

Taking a modest amount of supplemental selenium tends to increase levels of the active T3 form of thyroid hormone in healthy men.

Gerald F. Combs, PhD, of the USDA Human Nutrition Research Center in Grand Forks, North Dakota, and his colleagues asked 28 healthy men and women to take 200 mcg of selenium (as selenomethionine) daily for two years and four months.

Selenium is needed for enzymes to convert the T4 form of thyroid hormone to the more potent T3 form. During the study, blood concentrations of selenium increased significantly, and T3 levels increased by 5 percent annually in men, but not in women. In women, T4 levels increased slightly, but levels of T3 and thyroid stimulating hormone did not change.

Combs and his colleagues wrote that the effect of selenium supplementation was not clinically significant.

Editor's note: Selenium might have had a greater effect if the subjects had low T3 levels at the start of the study.

Reference: Combs GF, Midthune DN, Patterson KY, et al. Effects of selenomethionine supplementation on selenium status and thyroid hormone concentrations in healthy adults. *American Journal of Clinical Nutrition*, 2009;89:1808-1814. □

Plant Extract Reduces Feelings of Fatigue in Exercising Men

Culinary herbs and spices are a trove of beneficial nutritional substances – and justify their liberal use when cooking. The herb saffron, a staple of southern Asian cooking, is no exception.

Hiroshi Mizuma, PhD, of the Osaka City University Graduate School of Medicine, Japan, and his colleagues focused on the health effects of crocetin, an antioxidant carotenoid found in saffron and other plants.

Mizuma asked 14 healthy men and women to participate in a three-phase study. Each phase lasted eight days, and the subjects were given 15 mg of crocetin, 3,000 mg of vitamin C, or placebos. The subjects were asked to work out on exercise bicycles until fatigued.

Men but not women taking crocetin had improved physical stamina and less fatigue. Mizuma wrote that “we demonstrated that oral administration of crocetin improved physical capacity during fatigue-inducing workload tests in men compared with placebo. Participants receiving ascorbic acid (vitamin C) did not show significant changes compared with placebo.”

Other studies have found crocetin to be a potent antioxidant, and animal studies suggest that it might have benefits in reducing the risk of cardiovascular disease, cancer, and diabetes.

Reference: Mizuma H, Tanaka M, Nozaki S, et al. Daily oral administration of crocetin attenuates physical fatigue in human subjects. *Nutrition Research*, 2009;29:145-150. □

Vitamin B6 Might Help Protect Against Colorectal Cancer

Consuming ample amounts of vitamin B6 might reduce the risk of developing colon and rectal cancers.

Jung Eun Lee, ScD, of the Harvard Medical School, Boston, and his colleagues investigated almost 15,000 men participating in the Physicians’ Health Study. Over 16 to 18 years, 197 of the men were diagnosed with colorectal cancer, and Lee compared them to 371 men with similar lifestyles.

Lee found that men with the highest blood levels of pyridoxal-5-phosphate, the active form of vitamin B6, had half the risk of developing colorectal cancer, compared with men who had the lowest levels of the vitamin.

Lee explained that several mechanisms could explain the protective effect of vitamin B6. It reduces inflammation, a factor in cancer risk, and it also plays crucial roles in DNA synthesis and repair. In addition, vitamin B6 reduces cell proliferation.

“Our findings in men are consistent with the previous findings in women, which observed a 52% reduction on colorectal cancer risk [with the highest blood levels of vitamin B6].”

Reference: Lee JE, Li H, Giovannucci E, et al. Prospective study of plasma vitamin B6 and risk of colorectal cancer in men. *Cancer Epidemiology, Biomarkers & Prevention*, 2009;18:1197-1202. □

Low Vitamin D Levels May Be Factor in Vaginal Infections

Bacterial vaginosis – a relatively common infection – affects one in every three women of childbearing age. Acquired during pregnancy, it can lead to premature birth and infant mortality. Black women, who tend to have lower vitamin D levels than white women, are three times more likely to have bacterial vaginosis.

In a recent study, Lis M. Bodnar, PhD, of the University of Pittsburgh Graduate School of Public Health, and her colleagues studied 469 women during their first trimester of pregnancy.

Overall, 41 percent of the women had bacterial vaginosis, and 57 percent of the women deficient in vitamin D had bacterial vaginosis. In contrast, only 23 percent of women with high levels of vitamin D had bacterial vaginosis.

Women with low blood levels of vitamin D were 65 percent more likely to have bacterial vaginosis.

People with dark complexions need longer exposure to sunlight to stimulate production of vitamin D.

Blood levels of vitamin D less than 20 nmol/L (8 ng/ml) indicate a deficiency.

Reference: Bodnar LM, Krohn MA, Simhan HN. Maternal vitamin D deficiency is associated with bacterial vaginosis in the first trimester of pregnancy. *Journal of Nutrition*, 2009;139: April 8 epub ahead of print. □

Fortifying Foods with Folic Acid Reduces Severe Birth Defects

Fortifying breads with the B-vitamin folic acid was controversial when it was mandated by the United States and Canada in the 1990s – but the benefits appear to be paying off.

Folic acid was added to some foods to reduce the risk of spina bifida and other serious birth defects.

Now a Canadian study shows that fortification of breads and pastas with folic acid quickly led to an impressive reduction in the risk of severe congenital heart defects in infants.

Louise Pilote, MD, PhD, of the Royal Victoria Hospital, Montreal, and her colleagues analyzed trends in birth defects in the province of Quebec between 1990 and 2005. During this time, more than 1.3 million births occurred, and 2,083 infants were born with severe heart defects.

Pilote noted that no changes occurred in the rate of congenital heart defects among infants in the nine years before folic acid fortification of bread and pasta. However, after folic acid fortification became mandatory in 1998, the rate of heart defects decreased significantly.

During the first seven years tracked since fortification, the number of severe congenital heart defects decreased by 6 percent each year. That adds up to a cumulative 42 percent reduction in severe heart defects.

Furthermore, the researchers noted that their calculations may have actually underestimated the impact of folic acid fortification. That’s because a

Quick Reviews of Recent Research

• **Low-carb veggie diets help in weight loss**

Eating a low-carb vegetarian diet can lead to significant weight loss and a reduction in LDL cholesterol levels after just four weeks. Researchers from the University of Toronto, Canada, asked 47 overweight men and women to eat one of two different diets. One diet was based on relatively low-carb plant-based foods, and the other consisted of a high-carb lacto-ovo diet (including dairy and egg products). People in both groups lost similar amounts of weight, an average of almost nine pounds. However, only people eating the vegetarian diet had significant decreases in their LDL cholesterol levels.

Jenkins DJ. *Archives of Internal Medicine*, 2009; 169: 1046-1054.

• **L-glutamine may protect against ulcers**

Helicobacter pylori bacteria are a leading cause of stomach ulcers and cancer. Researchers at the Beth Israel Deaconess Medical Center, Boston, investigated whether supplemental L-glutamine, an amino acid, might protect against gut damage caused by *H. pylori*. The bacteria release ammonia in the stomach that leads to gastritis, cell damage, and changes that can set the stage for cancer. Supplemental L-glutamine stimulated the breakdown of ammonia in the stomach and also reduced levels of inflammation.

Hagen SJ. *Journal of Nutrition*, 2009;139:912-918.

• **Acid-reducing meds may weaken bones**

Stomach acid plays an important role in preparing calcium for absorption into bone. Using laboratory animals, German researchers investigated how reduced stomach acid disrupts calcium metabolism

and weakens bone. They found that alterations in stomach acidity, such as those caused by Prilosec and Prevacid, led to osteoporosis in mice. However, adding supplemental calcium prevented the deterioration in bone health.

Schinke T. *Nature Medicine*, 2009; epub ahead of print: doi 10.1038/nm.1963

• **Prediabetes common in stroke patients**

Signs of glucose intolerance – a form of prediabetes – are common in stroke patients. Researchers from the Juntendo University School of Medicine, Japan, investigated 427 stroke patients. Approximately two-thirds of the patients had glucose intolerance, based on the findings of an oral glucose tolerance test. One-fourth of the patients who had experienced an ischemic stroke (the most common type) had previously undiagnosed type 2 diabetes.

Urabe T. *Stroke*, 2009;40:1289-1295.

• **Fast-food quickly alters glucose tolerance**

Researchers from Linköping University, Sweden, asked 18 thin young adults to eat two fast-food meals daily and also to reduce their physical activity for one month. During the study, the subjects gained an average of 12 to 15 pounds of weight, about half of which was fat. They also become more insulin resistant during the month-long study, a sign that they were starting to develop prediabetes.

Danielsson A. *Molecular Medicine*, 2009; epub May 15.

• **Coenzyme Q10 helps with blood flow**

Supplements of coenzyme Q10 (CoQ10) improved blood flow in 23 patients with type 2 diabetes who were taking statin drugs, such as Lipitor. The patients had been diagnosed with endothelial dysfunction – essentially poor blood vessel tone and reduced blood flow. Researchers from the University of Western Australia treated them with 200 mg of CoQ10 daily for 12 weeks.

Hamilton SJ. *Diabetes Care*, 2009;32: epub ahead of print

Folic Acid and Birth Defects...

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variety of factors, such as obesity, gestational diabetes, and older maternal age, increase the risk of birth defects.

Pilote and her colleagues noted that an annual 6 percent decrease in heart defects “might seem modest.” But such defects typical require difficult surgeries to correct, and those surgeries have a high rate of infant mortality. The researchers wrote that “even a small reduction in the overall risk will significantly reduce the costs associated with the medical care of these patients and the psychological burden on patients and their families.”

Reference: Ionescu-Ittu R, Marelli AJ, Mackie AS, et al. Prevalence of severe congenital heart disease after folic acid fortification of grain products: time trend analysis in Quebec, Canada. *British Medical Journal*, 2009;338:b1673 doi do.1136/bmj.b1673. □

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