

LE Magazine November 2006

## In The NEWS

### Fish Oil, Exercise Help Obese People Shed Weight



When combined with moderate exercise, fatty acids derived from fish oil can help promote weight loss in overweight individuals, report Australian researchers.<sup>2</sup>

Scientists studied overweight and obese individuals over a three-month period. The subjects engaged in moderate exercise (45 minutes of walking or running, three times weekly) and supplemented with either fish oil or sunflower oil, but made no other dietary changes. Those who combined exercise with fish oil lost an average of 4.5 pounds over the three-month period, while those who combined sunflower oil with moderate exercise saw no weight loss.

The study authors believe that omega-3 fatty acids found in fish oil increase fat burning by improving blood flow to the muscles during exercise. The combination of fish oil and exercise may thus help overweight individuals to shed excess weight.

—Elizabeth Wagner, ND

### Berry Extracts Confer Potent Brain Health Benefits



Extracts of blueberry and strawberry may help protect the brain against age-related oxidative stress, and could even protect astronauts from the dangerous effects of radiation in outer space.<sup>1</sup>

Oxidative stress is associated with cognitive decline, diminished memory, and impaired motor function. In a new study partly sponsored by NASA, male rats were fed a diet enriched with either a 2% blueberry or strawberry extract, or a control diet, for eight weeks. Half the animals in each group were then exposed to a radioactive iron source, which induces symptoms of age-related cognitive decline.

The animals that received radiation but no berry extracts showed decreased levels of a brain signaling biochemical, as well as impaired performance in a task related to memory. Those receiving the antioxidant-rich berries were protected against these changes. Furthermore, the

strawberry-fed animals better retained information related to spatial location, while the blueberry-fed animals demonstrated improved learning ability.

The scientists concluded that antioxidant-rich berry fruits may help slow brain aging and could one day be used to protect astronauts against the damaging effects of space radiation.

—Robert Gaston

### Sulforaphane Guards Against Blindness in Elderly



Sulforaphane, an isothiocyanate found in broccoli and other cruciferous vegetables, may help protect against age-related macular degeneration, the leading cause of blindness in the elderly.<sup>4</sup>

The delicate epithelial cells of the eye's retina are highly vulnerable to oxidative damage from exposure to ultraviolet light, which scientists believe accumulates over time and contributes to macular degeneration. While antioxidant nutrients such as lutein may guard against ultraviolet light-induced oxidative stress, new evidence suggests that sulforaphane may also be protective.

Scientists divided human retinal epithelial cells into two groups. One group was treated with sulforaphane for 24 hours, while the other served as a control. The cells were then exposed to ultraviolet light. The sulforaphane-treated cells had a much higher rate of survival, with larger doses providing greater benefits.

Sulforaphane boosts the liver's phase II enzymes, helping detoxify carcinogens before they damage cells. By strengthening the body's natural antioxidant defenses, sulforaphane may help protect every human cell.

—Elizabeth Wagner, ND

## Citrus Peel Extract Promotes Insulin Sensitivity



Citrus peel compounds that are known as polymethoxylated flavones may help support healthy insulin sensitivity, according to a recent study.<sup>3</sup>

While citrus peel extract has been reported to improve cholesterol levels, this study was the first to examine its effects on insulin sensitivity. Scientists fed hamsters a sugar-rich diet for two weeks to induce insulin resistance and elevated triglycerides. The insulin-resistant animals then received either a low or high dose of the citrus flavones tangeretin and nobiletin. Supplementing with citrus flavones for four weeks helped reverse impaired insulin sensitivity.

Since insulin resistance, diabetes, and obesity are considered inflammatory disorders, the researchers also measured levels of two biomarkers of inflammation, tumor necrosis factor-alpha and interleukin-6. Levels of these biomarkers decreased in both groups receiving citrus flavones, as

did serum levels of triglycerides and cholesterol.

These results indicate that citrus peel extracts may help fight insulin resistance and diabetes, as well as support healthy blood lipid levels.

—Robert Gaston

## Migraine with “Aura” May Raise Cardiovascular Risk



Women who suffer from migraine headaches with aura have an increased risk of heart attack and stroke, according to a recent study.<sup>5</sup>

The aura that immediately precedes migraine may be experienced as dizziness, flashes or spots of light, or temporary vision loss. Migraines are more common in women than in men, and fewer than one third of migraine sufferers experience a preceding aura.

Nearly 28,000 women aged 45 and older who were free from cardiovascular disease at the study's onset were followed for up to 12 years. Compared to women with no history of migraine, those who reported active migraine with aura had a twofold greater risk of major

cardiovascular disease, including heart attack or stroke. Women who reported migraine without aura did not exhibit elevated risk of cardiovascular events.

Since migraine with aura is associated with an adverse cardiovascular risk profile—including elevated levels of homocysteine—affected individuals should rigorously monitor their risk factors to protect themselves against cardiovascular events.

—Elizabeth Wagner, ND

## **Lutein, Zeaxanthin Deficiencies Linked to Arterial Disease**

Higher blood levels of lutein and zeaxanthin may be associated with optimal cardiovascular health, according to a recent report.<sup>7</sup>

While these carotenoid nutrients are associated with protection against macular degeneration (a common cause of vision loss), their effects on cardiovascular health have been less clear. Scientists compared blood samples from adults with coronary artery disease to those of healthy individuals. The disease-free subjects had significantly higher plasma levels of lutein and zeaxanthin than did people with coronary artery disease. Higher levels of lutein and zeaxanthin were also associated with higher levels of natural killer cells, an important component of immune health.

Scientists believe that lutein and zeaxanthin may confer these protective benefits by reducing oxidative stress.

—Elizabeth Wagner, ND

## **Magnesium May Help Manage Asthma in Children**



Asthmatic children who supplement with magnesium have less severe symptoms and require less medication, scientists recently reported.<sup>6</sup>

Magnesium promotes dilation of the airways known as bronchioles and helps relax blood vessels. Children with moderate, persistent asthma supplemented with 300 mg of magnesium each day for two months, while continuing to use prescription asthma inhalers as needed. After two months, the magnesium-supplemented children had an average of 28% fewer days of severe asthma, reduced their use of a prescription asthma medication by 40%, and demonstrated improved airway responsiveness, an important indicator of respiratory function.

Magnesium thus appears to support healthy respiratory function in children who suffer from asthma.

—Elizabeth Wagner, ND

## **Vitamin K Supports Bone Health, Prevents Fractures**



Increasing one's intake of vitamin K boosts bone strength and prevents fractures, according to a recent review of the medical literature.<sup>8</sup>

Vitamin K1 (phytonadione) is found in dietary sources such as green leafy vegetables, while vitamin K2 (menaquinone) is manufactured by microorganisms in the gut. Scientists who reviewed trials in which adults supplemented with oral vitamin K for six months or longer found numerous studies indicating that vitamin K1 and K2 help reduce bone loss. Furthermore, supplementation with vitamin K2 reduced rates of all types of fracture, including hip and vertebral fractures.

Vitamin K may help support healthy bone mass and prevent fractures by its effects on osteocalcin, a protein considered crucial for healthy bone matrix. Along with calcium, magnesium, vitamin D, and boron, vitamin K may be regarded as an essential nutrient for promoting lifelong bone health.

—Elizabeth Wagner, ND

## **Lack of Sleep Tied to Weight Gain in Women**



Women who get little sleep are more prone to weight gain and obesity, according to an analysis of more than 68,000 women.<sup>10</sup>

Over the course of 16 years, women who slept five or fewer hours nightly gained an average of 2.3 pounds more than those who slept at least seven hours. Women who slept six hours a night gained 1.5 pounds more than those who slept seven or more hours.

Less sleep dramatically increased the risk of major weight gain during the study period. Compared with women who slept seven hours a night, women who slept five or fewer hours had a 32% higher risk of gaining more than 30 pounds, while women who slept six hours

had a 12% greater risk of gaining more than 30 pounds. Likewise, the risk of developing obesity was higher in women who slept less than seven hours a night.

The association between lack of sleep and weight gain was independent of physical activity and dietary habits. In fact, women

who slept less actually had a lower caloric intake than those who slept more. One scientist proposed that reduced sleep could slow a person's basal metabolic rate, and that sleep deprivation may compromise insulin sensitivity and facilitate fat deposition.

These results suggest that ensuring adequate sleep should be a cornerstone of every healthy lifestyle.

—Elizabeth Wagner, ND

## Sesame Offers Benefits for Postmenopausal Women



Consuming sesame may promote healthy blood lipids and enhance cancer protection in postmenopausal women, according to a recent study.<sup>9</sup>

After healthy postmenopausal women consumed approximately 1.7 ounces of ground sesame powder each day for five weeks, researchers noted improvements in several critical blood markers. Levels of total cholesterol, low-density lipoprotein (LDL), and a measure of oxidative stress all decreased, while levels of an estrogen metabolite associated with cancer protection increased.

Eating sesame on a daily basis may help optimize blood lipids, support antioxidant status, and promote healthy estrogen metabolism in postmenopausal women.

—Elizabeth Wagner, ND

## Probiotics Protect Elderly Against Bowel Disorders

Supplements of probiotics, or beneficial bacteria, may help protect older adults against bowel conditions such as irritable bowel syndrome, according to a recent report.<sup>11</sup>

These “friendly” bacteria, which include lactobacilli and bifidobacteria, are found in yogurt and other fermented foods, as well as in dietary supplements. The human gut contains many different types of bacteria, some of which are beneficial and some that contribute to disease. Maintaining a healthy balance of gastrointestinal flora is believed to prevent harmful bacteria from taking hold and causing illnesses such as food poisoning and traveler’s diarrhea.

Older adults have dramatically reduced levels of beneficial bacteria in the gut; in fact, the elderly may have 1,000-fold less beneficial bacteria compared to younger adults. Older people are also more susceptible to gastrointestinal infections and conditions such as irritable bowel syndrome, and boosting levels of healthful bacteria may help protect against these ailments.

Probiotics may also benefit healthy people of all ages, particularly those using antibiotics, which kill all types of bacteria in the gut.

—Elizabeth Wagner, ND

## Curcumin, Quercetin May Help Fight Colon Cancer



Curcumin, a component of the curry spice turmeric, and quercetin, an antioxidant found in fruits and vegetables, may help fight colon cancer, concludes a promising new study.<sup>12</sup>

Scientists studied a small group of patients with familial adenomatous polyposis (FAP), an inherited form of precancerous polyps in the lower bowel. People with this condition tend to develop hundreds of colorectal polyps, or adenomas, and eventually colon cancer. For six months, individuals with FAP received regular doses of curcumin (480 mg, three times daily) and quercetin (20 mg, three times daily). After six months, their average number of polyps dropped by a remarkable 60%, and the average polyp size decreased by 51%.

While previous studies have suggested that curcumin and quercetin may help prevent or fight colon cancer, this study was the first to demonstrate their efficacy against FAP. Although the substances were administered together, the scientists believe that

curcumin is the key agent in protecting against the development of colon cancer.

—Elizabeth Wagner, ND

## High Blood Pressure Heightens Risk of Dementia



Individuals who have elevated systolic blood pressure in midlife have an increased risk of dementia in later life, according to scientists at the National Institute on Aging.<sup>14</sup>

Systolic blood pressure, which is the pressure that occurs when the heart contracts, is expressed as the upper number in a person's blood pressure measurement. Scientists assessed the blood pressure of middle-aged Japanese-American men in the early 1970s and followed them through the late 1990s. They found that those with higher midlife systolic blood pressure had a greater risk of developing dementia later in life. Individuals whose midlife systolic blood pressure was over 140 mmHg had the greatest risk. Midlife systolic pressure of 120-139 mmHg increased dementia risk to a lesser degree, while pressure below 120 mmHg

was associated with the lowest risk. The risk for dementia was highest for those who had never been treated for high blood pressure.

These findings suggest that the processes leading to dementia begin many years before the condition manifests, and that preventing and treating high blood pressure in middle-aged adults may help reduce their risk of developing dementia later in life.

—Elizabeth Wagner, ND

## FDA Scientists Asked to Alter Scientific Data

Almost 20% of 997 FDA scientists surveyed by the Union of Concerned Scientists “have been asked, for nonscientific reasons, to inappropriately exclude or alter technical information or their conclusions in a FDA scientific document.”<sup>13</sup> Moreover, 40% stated that they feared retaliation for expressing safety concerns in public, and more than a third did not feel they could express safety concerns even within the agency.

Sixty-one percent of respondents knew of instances in which Department of Health and Human Services or FDA political appointees had inappropriately entered into FDA determinations or actions. Additionally, 60% were aware of cases in which “commercial interests have inappropriately induced or attempted to induce the reversal, withdrawal, or modification of FDA determinations or actions.” When asked whether they agreed that the “FDA routinely provides complete and accurate information to the public” and “FDA leadership is as committed to product safety as it is to bringing products to the market,” fewer than half of the scientists responded positively.

The Union of Concerned Scientists called on the FDA to increase accountability and transparency, as well as to protect researchers who speak out when scientific data are manipulated. Furthermore, the group recommends that all federal agencies have fully functioning, independent advisory committees and be held accountable by Congress.

—Dayna Dye

## Japanese Study May Herald Stem Cell Breakthrough



Adult cells from mice can be made to behave like embryonic stem cells, report Japanese researchers.<sup>16</sup> If this technology works similarly in humans, it could render moot some of the ethical controversies surrounding embryonic stem cell research.

Because embryonic stem cells have the potential to become any type of cell in the human body, they hold almost unlimited promise in fighting disease and helping scientists understand how diseases develop. Embryonic stem cells are typically harvested from five-day-old embryos (known as blastocysts), which are destroyed in this process of harvesting. Opponents of stem cell therapies consider destruction of an embryo at any stage of development to be unethical. If adult cells from humans could be manipulated to behave like embryonic stem cells, no

destruction of embryos would be necessary.

Additionally, inducing adult cells to behave like stem cells could help advance the field of tissue transplantation. Transplanted tissues and organs are frequently rejected by the recipient's immune system because they are recognized by the body as foreign. The ability to induce adult cells to behave like embryonic stem cells means that people could one day receive tissue transplants derived from their own cells, thus overcoming the problem of rejection by the immune system.

—Elizabeth Wagner, ND

## Missouri to Vote on Promoting Stem Cell Research



On November 7, 2006, Missouri voters will have the opportunity to vote on the Stem Cell Initiative, a measure that would amend the state's constitution to ensure that any federally approved form of stem cell research or treatment could take place in Missouri. The measure would pave the way for both embryonic and adult stem cell research to be conducted in Missouri.<sup>17</sup>

The Missouri Coalition for Lifesaving Cures has raised more than \$16 million toward the initiative's passage, much of it donated by the founders of the Stowers Institute for Medical Research, which performs both embryonic and adult stem cell research. William Neaves, president and CEO of the Stowers Institute and a leading supporter of embryonic stem cell

research, says that those who support limiting research to adult stem cells are exaggerating the potential benefits of using only adult stem cells.

Neaves recently published a letter in *Science* magazine in response to comments made by Sen. Sam Brownback (R-Kan) during congressional debate on federal funding of embryonic stem cell research.<sup>18</sup> Brownback, an opponent of embryonic stem cell research, requested that the Congressional Record list 69 human diseases that are now being treated with adult and cord blood stem cells. According to Neaves, however, stem cell treatment for most of those diseases is based on limited clinical trials or observations by patients and doctors, rather than on approval by the FDA. Neaves maintains that only nine illnesses have FDA-approved adult stem cell treatments. "For patients, the standard of FDA approval is a critical distinction," he notes.

By approving the measure, Missouri voters would give a green light to embryonic as well as adult stem cell research. Because embryonic stem cells have the potential to become any type of cell in the human body, scientists believe they may hold almost unlimited potential in helping to fight disease and promote longevity.

—Elizabeth Wagner, ND

---

## References

1. Shukitt-Hale B, Carey AN, Jenkins D, Rabin BM, Joseph JA. Beneficial effects of fruit extracts on neuronal function and behavior in a rodent model of accelerated aging. *Neurobiol Aging*. 2006 Jul 10; [Epub ahead of print]
2. Available at: [http://today.reuters.co.uk/news/articlenews.aspx?type=healthNews&storyID=2006-07-28T180224Z\\_01\\_KRA864917\\_RTRIDST\\_0\\_HEALTH-FISH-OIL-DC.XML](http://today.reuters.co.uk/news/articlenews.aspx?type=healthNews&storyID=2006-07-28T180224Z_01_KRA864917_RTRIDST_0_HEALTH-FISH-OIL-DC.XML). Accessed August 9, 2006.
3. Li RW, Theriault AG, Au K, et al. Citrus polymethoxylated flavones improve lipid and glucose homeostasis and modulate adipocytokines in fructose-induced insulin resistant hamsters. *Life Sci*. 2006 Jun 20;79(4):365-73.
4. Gao X, Talalay P. Induction of phase 2 genes by sulforaphane protects retinal pigment epithelial cells against photooxidative

damage. Proc Natl Acad Sci U S A. 2004 Jul 13;101(28):10446-51.

5. Kurth T, Gaziano JM, Cook NR, Logroscino G, Diener HC, Buring JE. Migraine and risk of cardiovascular disease in women. JAMA. 2006 Jul 19;296(3):283-91.

6. Gontijo-Amaral C, Ribeiro MA, Gontijo LS, Condino-Neto A, Ribeiro JD. Oral magnesium supplementation in asthmatic children: a double-blind randomized placebo-controlled trial. Eur J Clin Nutr. 2006 Jun 21; [Epub ahead of print]

7. Available at: <http://www.nutraingredients-usa.com/news/ng.asp?id=69367>. Accessed August 10, 2006.

8. Cockayne S, Adamson J, Lanham-New S, Shearer MJ, Gilbody S, Torgerson DJ. Vitamin K and the prevention of fractures: systematic review and meta-analysis of randomized controlled trials. Arch Intern Med. 2006 Jun 26;166(12):1256-61.

9. Wu WH, Kang YP, Wang NH, Jou HJ, Wang TA. Sesame ingestion affects sex hormones, antioxidant status, and blood lipids. J Nutr. 2006 May;136(5):1270-5.

10. Available at: <http://www.medscape.com/viewarticle/536938?src=mp>. Accessed August 11, 2006.

11. Available at: <http://news.bbc.co.uk/2/hi/health/5253182.stm>. Accessed August 10, 2006.

12. Available at: <http://www.jhu.edu/gazette/2006/07aug06/07curry.html>. Accessed August 10, 2006.

13. Available at: [http://www.ucsus.org/news/press\\_release/fda-scientists-pressured.html](http://www.ucsus.org/news/press_release/fda-scientists-pressured.html). Accessed August 11, 2006.

14. Freitag MH, Peila R, Masaki K, et al. Midlife pulse pressure and incidence of dementia: the Honolulu-Asia Aging Study. Stroke. 2006 Jan;37(1):33-7.

15. Fukui M, Kitagawa Y, Kamiuchi K, Hasegawa G, Yoshikawa T, Nakamura N. Low serum dehydroepiandrosterone sulfate concentration is a predictor for deterioration of urinary albumin excretion in male patients with type 2 diabetes. Diabetes Res Clin Pract. 2006 Jul;73(1):47-50.

16. Available at: <http://www.jsonline.com/story/index.aspx?id=482262>. Accessed August 14, 2006.

17. Available at: <http://www.kansascity.com/mld/kansascity/news/local/15235590.htm>. Accessed August 14, 2006.

18. Smith S, Neaves W, Teitelbaum S. Adult stem cell treatments for diseases? Science. 2006 Jul 28;313 (5786):439.

All Contents Copyright © 1995-2009 Life Extension Foundation All rights reserved.

**LifeExtension**<sup>®</sup>

These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease. The information provided on this site is for informational purposes only and is not intended as a substitute for advice from your physician or other health care professional or any information contained on or in any product label or packaging. You should not use the information on this site for diagnosis or treatment of any health problem or for prescription of any medication or other treatment. You should consult with a healthcare professional before starting any diet, exercise or supplementation program, before taking any medication, or if you have or suspect you might have a health problem. You should not stop taking any medication without first consulting your physician.