



Hours:
Monday-Friday 9:00 a.m.-8:00 p.m.
Saturday 9:30 a.m.-6:00 p.m.
Sunday 11:00 a.m.-4:00 p.m.

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Our May 2007 Newsletter for Healthy Living

Stay sharp

Docosahexaenoic acid (DHA, an omega-3 fatty acid), folate, ginkgo biloba, selenium, and vitamin B12 slowed—or lowered risk for—mental decline (dementia) in five new studies.

Published in the November, 2006, *Archives of Neurology*, researchers from Tufts University, Boston, followed 899 men and women, median age 76, for nine years and found that **those who had the highest blood-fluid (plasma) levels of DHA were 47% less likely to develop dementia and 39% less likely to develop Alzheimer's disease** than those with lower levels.

Those with the highest DHA levels consumed about 180 mg of DHA per day, and ate an average of three servings of fish per week.

Researchers from the National University of Singapore studied

451 high-functioning, fully independent Chinese men and women without dementia, aged 55 or older, and found that **those with higher plasma levels of folate** (folic acid, or vitamin B9) **could more easily recall** a list of words immediately and after 30 minutes than could those with lower levels.

The *European Journal of Neurology* reported in September, 2006, that **ginkgo biloba treated dementia as well as the pharmaceutical drug Aricept®** (donepezil). The 24-week double-blind trial examined 76 patients,



aged 50 to 80, with mild to moderate Alzheimer's disease who took 160 mg of ginkgo biloba per day, 5 mg of donepezil per day, or a placebo. Scientists determined the treatments reduced symptoms equally. **Four patients taking donepezil had**

adverse reactions, while no ginkgo biloba patients had adverse reactions.

French researchers followed 1,389 men and women, aged 60 to 71, for nine years and found that **among those whose plasma levels of selenium decreased, those who lost the most selenium were more likely to have mental (cognitive) decline than those who lost the least selenium.** Selenium levels decrease with age.

In a vitamin B12 study, Welsh researchers examined 42 men and 42 women without dementia, aged 69 to 93, and found that 43% were deficient. **Those who were most deficient in vitamin B12 had more mental decline, were less able to understand language, and were less able to express themselves** than those with higher levels.

Reference: *Epidemiology*; 2007, Vol. 18, No. 1, 52-8.

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News & Research This Issue

- **Supplements** slowed **mental decline**.
 - **DHEA** and other **nutrients** increased **bone strength**.
 - **L-theanine** reduced **stress**.
 - **Nutrients** helped **overweight** people burn **calories**.
 - **Folic acid** slowed decline in **hearing**.
 - **Phytochemicals** reduced **cell damage** and **illness**.
 - **Vitamin D** decreased risk of **multiple sclerosis**.
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Healthy bones

The naturally-occurring hormone, dehydroepiandrosterone (DHEA), the antioxidant lycopene, and vitamins C and E increased bone strength or reduced bone loss in three new studies.

Researchers from the University of Colorado, Denver, conducted a double-blind study of 70 men and 70 women, aged 60 to 88, with low blood-fluid (serum) levels of DHEA. Participants took 50 mg of DHEA per day or a placebo, for 12 months. Scientists measured bone mineral density (BMD) at the beginning and end of the study and found that, on average, **those who had taken DHEA gained 1% BMD in the total hip, in the area near the head of the thigh (trochanter), and on the shaft of the thigh, while the placebo group lost an average of (-0.23%), a difference of 1.23% overall.**

Within the DHEA group, those who carefully obeyed the 50 mg

dosage for all 12 months saw 1.2% to 1.6% increases in BMD in the hip regions, compared to 1% for the entire DHEA group. Women who took DHEA gained 1.8% BMD in the lower (lumbar) spine, while women who took the placebo lost (-0.6%), a difference of 2.4% overall. Doctors noted that **bone strength may depend on the male and female sex hormones androgen and estrogen, which the body forms from DHEA**, and that the adrenal glands produce less DHEA with age.

Canadian researchers studying fragile bone disease (osteoporosis) recruited 33 postmenopausal women, aged 50 to 60, who provided a seven-day dietary record and blood samples. Scientists measured serum levels of lycopene, markers for oxidative cell damage (protein thiols), and markers for osteoporosis (N-telopeptide, or NTx). Compared

to women who consumed lower amounts of lycopene, **women who consumed more lycopene had higher serum levels of the antioxidant, lower levels of oxidative cell damage, and low levels of NTx**, which rise as collagen protein, the main component of bone, breaks down.

Researchers from the University of Melbourne, Victoria, Australia, randomly selected 533 postmenopausal women and found that 22 were currently taking the antioxidant vitamins C and E. Scientists determined that **nonsmoking women who had taken vitamins C and E the longest had lost the least amount of bone.** As in the Canadian study, doctors measured serum levels of a marker for osteoporosis, C-telopeptide or CTx, which rise as collagen protein in bone breaks down.

Reference: *Osteoporosis International*; 2007, Vol.18, No.1, 109-15.



Reducing stress

L-theanine, an amino acid that occurs in green tea leaves, **reduced heart rate and lowered signs of stress** in a new study. In order to create a severely stressful situation, researchers gave a mental arithmetic task to 12 participants in four separate trials. In one of the four double-blind trials, participants took L-theanine at the beginning of the mental math task. In a second variation, participants took L-theanine halfway through the task. In a third trial, participants took a placebo at the beginning of the task, and in a fourth, nothing at all.



Compared to the placebo group, **those in the L-theanine group had lower heart rates and lower**

amounts of a stress marker in the saliva (immunoglobulin), which the immune system releases as a response to foreign objects, such as bacteria or viruses. The researchers theorized that **L-theanine suppresses the sympathetic nervous system**, which is the part of the involuntary (autonomic) nervous system that prepares the body to respond to

acute stress or emergency situations. According to the scientists, **L-theanine blocks the chemical**

“L-theanine reduced the effects of acute stress.”

(L-glutamic acid, or glutamate) **that is primarily responsible for carrying electrical signals (neurotransmission) from nerve cells to other cells in the body.** The doctors stated that L-theanine may influence both body (physiology) and mind (psychology) under stress, and concluded that taking an oral L-theanine supplement may reduce the effects of acute stress.

Reference: *Biological Psychology*; 2007, Vol. 74, No. 1, 39-45.

Managing weight

A combination of nutrients including calcium, an extract of green tea, the amino acid L-tyrosine, caffeine, and the active ingredient in chili peppers (capsaicin), **helped overweight and obese people burn calories and lose body fat** in a new study.

Researchers from the University of Copenhagen, Denmark, instructed 80 overweight and obese men and women to eat a **very low-calorie diet—812 calories per day—for the first four weeks**. For the next eight weeks, scientists randomly gave 23 participants a placebo, while the remaining 57 participants took a combination of supplements—divided into three separate doses per day—that totaled 2,000 mg of calcium, 1,500

mg of green tea extract, 1,218 mg of L-tyrosine, 302 mg of caffeine, and 1.2 mg of capsaicin. This was a double-blind study, meaning that scientists did not know which participants received the treatment or placebo.

On the first and last day participants took the supplements, doctors measured the calorie-burning (thermogenic) effect of the treatment, as well as blood pressure, heart rate, body weight, and body fat.



During the initial four-week low-calorie diet, participants lost an average of 15 pounds of body weight. On the first day of treatment, those who had taken the supplement combination burned 21 more calories after four hours of being awake but at rest (resting metabolic

rate) than did those who had taken the placebo. After eight weeks, **those who had taken the thermogenic supplements continued to burn 20 more calories during four hours at rest, and had lost an average of two pounds more body fat**, compared to placebo.

Blood pressure and heart rate did not change in the thermogenic treatment group, leading researchers to conclude that this combination of supplements may help dieters safely maintain lower weight after a low-calorie diet. Doctors noted that previous studies have linked thermogenesis to the active ingredient in green tea—an antioxidant known as a catechin—and to capsaicin.

Reference: *International Journal of Obesity*; 2007, Vol. 31, 121-30.

Better hearing

Folic acid (folate, or vitamin B9) **slowed the decline in hearing that occurs with age** in a new study. Researchers from The Netherlands recruited 728 men and women, aged 50 to 70, with healthy middle ears (the part of the ear that transfers sound energy from the air to the liquid of the inner ear), who had not lost hearing separately in the left or right ear, and who had no ear condition that was not part of normal aging. The **scientists also screened out those who had high levels of a hearing risk factor—homocysteine**, an inflammatory signal—and those who had low levels of vitamin B12, which may increase homocysteine.

During the three-year double-blind trial, participants took a placebo or 800 mcg of folic acid per

day. **Doctors tested hearing in the range of sound frequencies of the normal speaking voice.** By the end of the three-year period, **those who had taken folic acid could hear low frequencies—such as the voice of a bass or baritone singer—better than those who had taken the placebo.** Hearing in both groups declined, but the placebo group needed a louder noise—13.4 decibels on average—before being able to hear low-frequency sound, compared to those in the folic acid group, who on average could hear low frequencies at 12.7 decibels, or 0.7 decibels softer than the placebo group.



At the beginning of the study, all participants heard low-frequency

sound at an average of 11.7 decibels. By the end of the study, **the placebo group needed a 15% increase in sound volume compared to a 9% increase in the folic acid group.**

Folic acid did not affect the decline in hearing high-frequency sounds, such as those of a tenor or soprano singer, which participants heard at an average of 34.2 decibels at the beginning of the study. Researchers noted that some countries, including The Netherlands, do not require food manufacturers to fortify foods with folic acid, and that the average blood level of folate at the beginning of the study was 50% lower than the average level in the U.S., which does fortify foods with folic acid.

Reference: *Annals of Internal Medicine*; 2007, Vol. 146, No. 1, 1-9.

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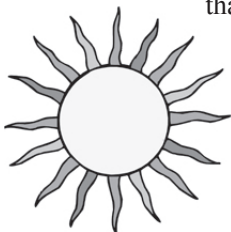
Nutrients from plants, called **phytochemicals**, **increased white blood cells**, and **reduced cell damage and illness** in a new study. Researchers gave 59 healthy law students capsules that contained a **powdered fruit-and-vegetable-juice concentrate** or a placebo for 77 days, and found that, compared to placebo, blood levels of an immune-boosting white blood cell, gamma delta-T, increased 30%, and that there was 40% less damage to other white blood cells (lymphocytes). Compared to placebo, **blood-fluid (plasma) levels of the antioxidants beta carotene, lutein, lycopene, and vitamin C were 50% higher**, and symptoms of illness were significantly lower.



Reference: *Journal of Nutrition*; 2006, Vol. 136, 2606-10.

This Month's **HEALTHY Tip**

The **risk for multiple sclerosis (MS) decreased significantly as the level of 25-hydroxyvitamin D increased** in a new study from Harvard University, Boston, Massachusetts. Doctors examined stored blood samples from more than **7 million U.S. military personnel** and found that **those who had the highest blood-fluid (serum) levels of vitamin D were 62% less likely to have MS** than those who had the lowest levels. MS, a disease in which the immune system attacks rather than protects the body, is more prevalent in northern latitudes where there is relatively little sunlight—the main source of vitamin D—during the winter. This is the first large-scale study of vitamin D and MS.



Reference: *Journal of the American Medical Association*; 2006, Vol. 296, No. 23, 2832-8.

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