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Our September 2008 Newsletter for Healthy Living

Exercise wise

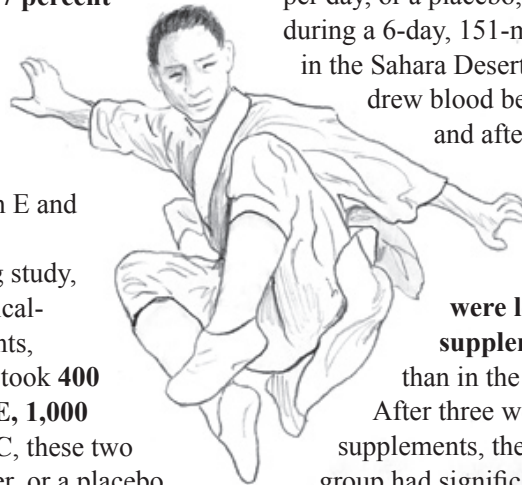
Exercise is healthy, but can also stress the body. Four new studies show how nutrients helped athletes heal from strenuous exercise.

In a coenzyme Q10 (CoQ10) study, 18 highly trained athletes took 300 mg of CoQ10 per day, or a placebo, for 20 days and, on six of those days, trained strenuously for five-and-a-half hours. Researchers drew blood before, during, and after the study and found that on the 3rd and 5th days, **all the athletes had signs of muscle wear-and-tear and inflammation, but the CoQ10 group had significantly lower levels** than the placebo group.

In a green tea study, 14 healthy men, aged 19 to 30, drank a cup of green tea (with 2 grams of green tea leaves), or water, three times per day during seven days of weight-training exercise, and then performed a bench-press exercise test.

Researchers found that, compared to placebo, **signs of inflammation were 64 percent lower in the green tea group, and glutathione—**which protects cells from oxidative damage—**was 37 percent higher.** Doctors noted that the athletes ate an unbalanced diet with too little vitamin E and carotenoids.

In a running study, 36 very fit physical-education students, average age 22, took **400 mg of vitamin E, 1,000 mg of vitamin C,** these two vitamins together, or a placebo, per day for three weeks. In sprint and duration running tests, **all three supplement groups significantly improved oxygen capacity** (aerobic power) compared to placebo.



In a marathon study, 17 athletes took a **low-dose combination of supplements, including 150 mg of vitamin C, 24 mg of vitamin E, and 4.8 mg of beta-carotene** per day, or a placebo, before and during a 6-day, 151-mile foot race in the Sahara Desert. Researchers drew blood before, during, and after the race and found that during the run, **signs of cell damage were lower in the supplement group** than in the placebo group.

After three weeks of taking supplements, the supplement group had significantly higher blood levels of vitamin E, beta-carotene, and vitamin A (retinol), compared to placebo.

Reference: *British Journal of Nutrition*; 2008, electronic publication ahead of print.

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News & Research This Issue

- Nutrients helped athletes heal from strenuous exercise.
- Nutrients aided diabetics in controlling sugar, insulin.
- Fruits and vegetables cut fat.
- Vitamin B6 levels low in arthritis and Parkinson's disease.
- Vitamins and herbs protected the prostate.
- Relora® reduced anxiety in women.
- Probiotics strengthened the liver in alcoholics.

Managing type 2 diabetes

Nutrients helped control fat, sugar, and insulin in three new studies that offer hope for type 2 diabetics.

In an omega-3 study, 27 women with type 2 diabetes and normal fat levels in the blood took 1.8 grams of fish oil caps per day, or a placebo, for two months. At the end of the study, **the omega-3 group had significantly less fat mass and smaller fat cells under the skin, and had lower risk for fatty deposits in the arteries and for cardiovascular disease**, compared to placebo. Omega-3 did not change how sensitive the women were to insulin, the hormone that helps the body regulate blood sugar (**glucose**).

In a lab study, researchers suggested that the energy “power plants” in cells—the **mitochondria**—could help type 2 diabetics

increase insulin sensitivity. The investigators exposed fat cells to two mitochondrial nutrients, **alpha-lipoic acid (LA) and acetyl-L-carnitine (ALC)**, and found that over a 24-hour period, **the mitochondria grew larger, gained oxygen capacity, and processed energy more efficiently**. Researchers said this is the first study to show that LA with ALC may help fat cells improve diabetes and obesity.

In a diabetes study, 66 participants with type 2 diabetes ate a high-carbohydrate liquid meal along with a placebo or 240 mg or 480 mg of the soon-to-be-available Indian herb *Salacia*



oblonga. Doctors measured glucose and insulin before, and up to three hours after, the meal. Compared to placebo, those who took 240 mg of *Salacia oblonga* had 14 percent lower glucose levels and 14 percent lower insulin levels. **Those who took 480 mg of *Salacia oblonga* had 22 percent lower glucose levels and 19 percent lower insulin levels** compared to placebo.

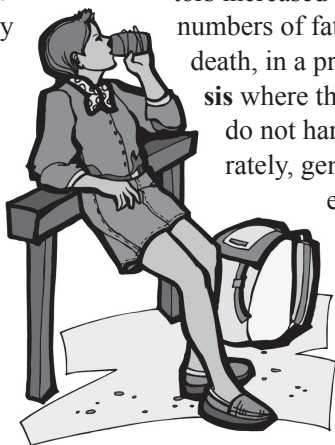
Doctors believe that *Salacia oblonga* lets the body digest complex carbohydrates more slowly, lowering the spike in blood sugar after a high-carbohydrate meal, and helping to regulate blood sugar between meals.

Reference: *Diabetologia*; 2008, Vol. 51, No. 1, 165-74.

Reducing fat

Three new studies show that **nutrients from fruits and vegetables helped cut fat**.

In a soy-protein study, 15 obese postmenopausal women, average age 56, drank a liquid meal containing 20 grams of soy protein with 160 mg of soy isoflavones per day, or a placebo. After three months, although none of the women lost weight, **those who drank the soy shake had lost an average of about 6 square inches of abdominal fat** while those in the placebo group had gained 9 square inches of abdominal fat. Doctors do not know how soy cuts fat, but suggested that isoflavones may keep fat cells from building up.



In a lab study, researchers exposed young and mature fat cells to the nutrients soy (**genistein**) and **resveratrol**, a nutrient found in grapes and peanuts. As investigators increased the dosages, larger numbers of fat cells died a natural death, in a process called **apoptosis** where the dying and dead cells do not harm the body. Separately, genistein and resveratrol each increased apoptosis by 46 percent. **Together, genistein and resveratrol increased apoptosis by 242 percent.**

Doctors also measured how much fat accumulated in the cells—a sign of maturity—and found that genistein cut accumulating fat by 30 percent, resveratrol cut fat by 20

percent, and together, **genistein and resveratrol cut accumulating fat by 78 percent.**

In another lab study, investigators exposed fat cells to the nutrients **resveratrol and quercetin**, which is found in leafy green vegetables and beans. In young fat cells, resveratrol reduced accumulating fat by 9 percent, and quercetin cut accumulating fat by 15 percent. Together, resveratrol and quercetin cut accumulating fat by 68 percent.

In mature fat cells, resveratrol increased apoptosis by 120 percent, and quercetin increased apoptosis by 85 percent. Doctors concluded that together, **resveratrol and quercetin prevent fat cells from maturing** and help cause mature fat cells to die a natural death.

Reference: *Life Science*; 2008, Vol. 82, Nos. 19-20, 1,032-9.

More vitamin B6 please!

Vitamin B6 levels are low in the general population, and in arthritis and Parkinson's disease, according to findings from three new studies.

In the first large study of vitamin B6 in the general population, researchers measured blood-plasma levels of vitamin B6 in 7,822 males and females at least one year old. **Nearly 25 percent of those who did not take supplements had low levels of vitamin B6**, as did 11 percent of supplement users. Four groups were more likely than most to have low vitamin B6, including women of childbearing age—especially those taking or who had taken oral contraceptives—male smokers, non-Hispanic African-



American men, and men and women over age 65. **Three in four (75 percent) of women who had taken oral contraceptives and did not take vitamin B6 supplements had very low levels (deficiency) of B6.** Investigators noted that the federal government uses the same blood-plasma measure to set the recommended daily allowance (RDA) for vitamin B6 and that even those who said they consumed more than the RDA had low vitamin B6 levels.

In an arthritis study of women over age 55, including 18 women with **rheumatoid arthritis (RA)** and 33 healthy women, researchers measured blood levels of vitamin B6, folate, fats, and signs of inflammation. Participants weighed the

food they ate for seven days and described their pain and ability to perform daily tasks. Compared to the healthy women, women with RA had lower levels of vitamin B6, folate, and more inflammation. Because the women in both groups consumed the same amounts of nutrients, doctors theorized that **those with RA do not absorb vitamin B6 as well as healthy people**, and may need to take supplements.

In a Parkinson's disease (PD) study, researchers examined the diets of 5,289 healthy participants over age 55 and followed up for 10 years. **Those who consumed at least 231 mcg of vitamin B6 per day were 54 percent less likely to develop PD** than were those who consumed less than 185 mcg per day.

Reference: *Journal of the American Dietary Association*; 2008, Vol. 108, No. 3, 443-53.

Protecting the prostate

Nutrients cut prostate-cancer symptoms and lowered risk, in findings from three new studies.

In a saw palmetto study, 92 men, aged 49 to 75, who had lower urinary-tract symptoms from an enlarged prostate gland (benign prostatic hyperplasia, or BPH), took saw palmetto or a placebo. After 12 weeks, compared to placebo, **those who took saw palmetto had significantly higher urinary flow rates and significantly lower urinary resistance.** Overall symptoms and quality of life improved in 39 percent of those who took saw palmetto compared to 1 percent for placebo.

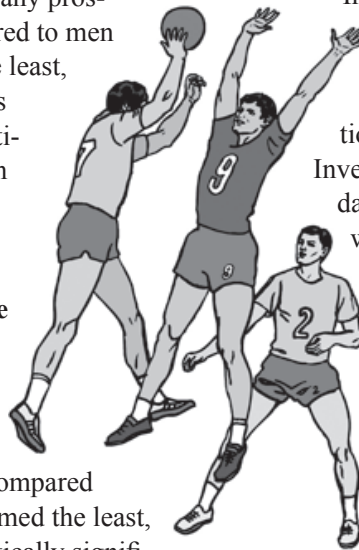
In a vitamin K study, doctors examined the diets of 11,319 men and followed up for about 9 years.

Overall, men who consumed the most vitamin K2 were 35 percent less likely to have any prostate cancer compared to men who consumed the least, a result researchers said was not statistically significant. In measuring risk for advanced prostate cancer, **men who had consumed the most vitamin K2 were 63 percent less likely to have advanced prostate cancer** compared to men who consumed the least, which was a statistically significant result, doctors said. In previous lab studies, vitamin K cut cancer in prostate-cancer cells, but this is the

first vitamin K/prostate cancer study in humans.

In a lab study, researchers exposed healthy and cancerous prostate cells to hydrogen peroxide, intentionally damaging cell DNA. Investigators then exposed the damaged cells to **vitamin D** which increased antioxidants in the healthy cells, but not in the cancerous cells. Doctors concluded that, **"We have demonstrated that [vitamin D] can protect nonmalignant human prostate cells ... suggesting a possible role of [vitamin D] in prostate cancer prevention."**

Reference: *International Journal of Cancer*; 2008, Vol. 122, No. 12, 2,699-706.



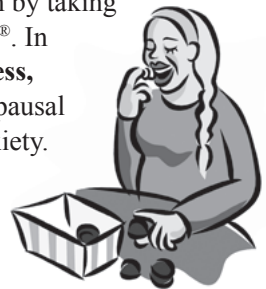
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Stress eating

Women who tend to eat more after being in a stressful situation were able to calm down by taking a combination of *Magnolia officinalis* and *Phellodendron amurense* known as Relora®. In explaining the reasons for the study, doctors said that recent **research has linked stress, anxiety, insomnia, and excess weight**. Investigators recruited 26 healthy, overweight, premenopausal women, aged 25 to 50, who said they were “stress eaters,” and who had higher-than-average anxiety. The women took 250 mg of Relora three times per day, or a placebo, for six weeks. At the end of the study, although long-standing feelings of anxiety and depression had not changed, **women who had taken Relora had significantly fewer sudden bursts of anxiety** than women who had taken the placebo, without side effects.



Reference: *Nutrition Journal*; 2008, Vol. 7, No. 11.

This Month's HEALTHY Tip

Probiotics strengthened liver function in alcoholics in a new study. For four weeks, doctors gave *Lactobacillus casei* Shirota three times per day to 12 participants with alcoholic cirrhosis. Researchers compared the participants to 13 healthy people and 8 other people with alcoholic cirrhosis who did not take probiotics. Investigators measured a type of white blood cell called a **neutrophil** that destroys bacterial infections. At the start of the study, neutrophils in participants with alcoholic cirrhosis were 73 percent effective compared to 98 percent effective in the 13 healthy people. By the end of the study, **neutrophils returned to normal effective levels in those taking probiotics**. There was no change in the alcoholics who did not take probiotics.



Reference: *Journal of Hepatology*; 2008, electronic publication ahead of print.

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