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Our April 2008 Newsletter for Healthy Living

Vitamin E protects the heart

Higher doses of vitamin E protected against heart disease in those with high cholesterol; type 2 diabetics who took vitamin E had fewer heart attacks and strokes, and vitamin E reduced DNA damage in adults, in four new studies.

In a high-cholesterol study, doctors noted that **earlier vitamin E studies were poorly designed**, using only one dose, and measuring a single result, such as heart attack. In the first of two trials, researchers recruited seven women and one man, average age 34, with high cholesterol from diet and lifestyle—not from family history—who were at high risk for heart attack. Participants took 3,200 IU of **alpha tocopherol vitamin E** per day for 20 weeks. **Scientists measured F2 isoprostanes—a sign of damaged fat cells and a risk factor for heart disease—which decreased**

continuously for 16 weeks.

In the second trial, 35 participants took 100, 200, 400, 800, 1,600, or 3,200 IU of vitamin E per day for 16 weeks. As the dose of vitamin E increased, levels of F2 isoprostanes decreased, by 35% at 1,600 IU and by 49% at 3,200 IU of vitamin E.

In a diabetes study, researchers recruited 1,434 type 2 diabetics,



aged 55 or older who, due to having a weak antioxidant gene (Haptoglobin 2-2), were more likely than other diabetics to go blind or have heart

or kidney disease. Participants took 400 IU of vitamin E per day, or a placebo, for 18 months. Compared to placebo, **those who took vitamin E were 53% less likely to have a heart attack, stroke, or to die from heart disease, a result so significant that researchers stopped the multi-year trial early.**

In a DNA study, doctors suggested that free radicals—toxic molecules—are the leading cause of physical aging. Researchers recruited 64 men and women, aged 37 to 78, who took 160 mg of vitamin E (tocotrienol) per day, or a placebo, for six months. After three and six months, compared to placebo, the vitamin E group had significantly less DNA damage. Doctors said vitamin E helped neutralize free radicals, allowing cells to repair themselves.

Reference: *Free Radical Biology and Medicine*: November, 2007; Vol. 43, No. 10, 1388-93.

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News & Research This Issue

- **Vitamin E** protected against heart disease and aging.
- Those who read well and took **supplements** were healthier.
- **Garlic, folic acid, riboflavin** and colon cancer risk.
- **Quercetin** and blood pressure, **flavonoids** and cholesterol.
- **Supplements** aided CFS and FMS.
- **Silibinin** kept **liver-cancer cells** from spreading.
- The CCS recommends **1,000 IU of vitamin D**.

Read, write, and take supplements

Older adults who read well were healthier than those who read poorly, and adults who took a wide array of nutritional supplements for at least 20 years had better health than those who did not, two new studies reveal.

In a study of how well people read and understand health information, doctors noted that **those who read poorly know less about health, do not manage chronic disease as well, and do not take as many steps to prevent disease** as those who read well. Researchers interviewed 3,260 men and women, aged 65 years or older, who were enrolled in Medicare managed-care plans in four large U.S. cities and gave a short version of a health-reading and math test called the Test of Functional Health Literacy in Adults.

Scientists followed participants for an average of 5.7 years

and found that—after adjusting for age, sex, education, income, health, and other factors—of the 800 participants who died, 39% had poor health literacy, 29% had fair health literacy, and 19% had good health literacy. **Health literacy independently predicted the risk of dying, doctors noted, while formal education—the number of years of school—did not.**

In a nutritional supplement study, authors explained that there are few studies of those who regularly take a wide range of supplements. Researchers gave a questionnaire to 278 long-term multiple-supplement users and, in a smaller group of these participants, measured body weight, blood pressure, and blood nutrients after fasting. Scientists then compared the findings to participants in the National Health and Nutrition Examination



Survey (NHANES), including 602 who did not take supplements, and 176 who took only a single multivitamin/mineral supplement.

After adjusting for age, sex, income, and other factors, compared to non-supplement and single-supplement users, long-term multiple-supplement users had fewer signs of inflammation, more good cholesterol (high-density lipoprotein, or HDL), lower overall blood fats, and less risk for high blood pressure and diabetes. More than 50% of **long-term multiple-supplement users took a daily multivitamin/mineral, B-complex, vitamins C and E, carotenoids, calcium with vitamin D, omega-3 fatty acids, flavonoids, lecithin, alfalfa, coenzyme Q10, resveratrol, glucosamine, and an herbal immune supplement.** The majority of women in the group also took **gamma linoleic acid** and a **probiotic** supplement, while men also took **zinc, garlic, saw palmetto, and a soy protein** supplement.

Reference: *Nutrition Journal*: October, 2007; Vol. 6, No. 1, 30.

Protecting against cancer

Garlic lowered risk for colon cancer, and folic acid with riboflavin may decrease risk for colon cancer in those with abnormal intestinal growths (colorectal polyps).

In a review of all garlic/colorectal cancer (CRC) studies during the past 10 years, researchers identified eight high-quality studies. In one double-blind, placebo-controlled clinical trial, **the number and size of colon tumors decreased by 29% in participants with CRC who had taken aged garlic extract.** In five of the studies, those who had eaten raw or cooked garlic had lower risk

for CRC compared to those who had not eaten garlic. In two of the studies, **those who had eaten raw or cooked garlic had lower risk for cancer of the distal or Sigmoid colon**—which is located near the end of the intestine—compared to those who had not eaten garlic. Doctors stated that in these seven studies on average, those who had eaten garlic were 30% less likely to have CRC compared to those who had not eaten garlic. Researchers concluded that there is consistent scientific evidence



that garlic protects against CRC, even though the doses and forms of garlic vary widely.

In a preliminary study of colorectal polyps (CP), authors noted that **those with CP often have low levels of folate**—the food form of folic acid—in the intestine near the polyps. When those with CP took 5 mg of riboflavin plus 400 mcg of folic acid, folate activity in the intestine increased, compared to those who took folic acid alone.

Reference: *Cancer Epidemiology, Biomarkers & Prevention*: October, 2007; Vol. 16, No. 10, 2128-35.

Lower blood pressure and cholesterol

Quercetin—an antioxidant in apples, berries, and onions—**lowered blood pressure in those with high blood pressure, and citrus flavonoids and vitamin E reduced cholesterol** in those with high cholesterol, in two new studies.

In a blood pressure (BP) study, doctors noted that previous studies showed **quercetin** cut risk for heart disease and stroke, but that there are no human studies on quercetin and BP. Researchers recruited 41 men and women, 19 with above-normal BP—average 137/86—and 22 with high BP—average 148/86 (normal BP is lower than 120/80)—who took 730 mg of quercetin per day, or a placebo, for 28 days. While BP did not change in those who had above-normal BP, BP decreased by an average of 7/5, to 141/81, in those

who had high BP. There were no reported side effects.

In a high-cholesterol study, the authors noted that **citrus flavonoids and vitamin E** had cut cholesterol in preliminary animal studies, and wanted to test the theory on humans. Researchers recruited 140 men and women, aged 19 to 65, with high cholesterol—above 230 mg/dl—who took 270 mg of citrus flavonoids plus 30 mg vitamin E (tocotrienol) per day, or a placebo, for up to 12 weeks.

At the start of the study and at four, eight, and 12 weeks, participants fasted before scientists measured blood-plasma levels of “bad” cholesterol (low-density lipoprotein, or LDL), “good” cholesterol (high-

density lipoprotein, or HDL), total cholesterol, and total fats. Compared to placebo, **total cholesterol decreased by 20% to 30% and LDL cholesterol decreased by 19% to 27% in those who had taken flavonoids and vitamin E.** HDL cholesterol did not change in a subgroup of 20 participants who stopped the study after four weeks, but those who continued for the full 12 weeks had a 4% increase in HDL compared to placebo, a result study authors said was not significant. However, a protein in HDL (apolipoprotein A1) did increase significantly, by 5%, in this group, doctors said.

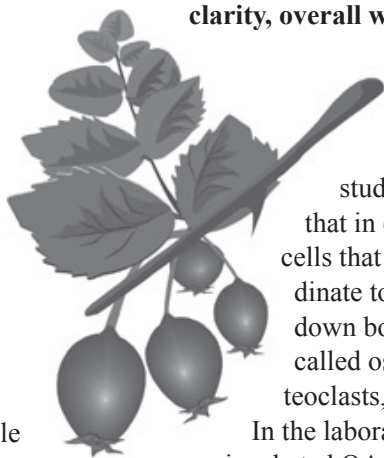
Reference: *American Society for Nutrition Journal of Nutrition*: November, 2007; No. 137, 2405-11.



Less pain, more energy

D-ribose improved symptoms of chronic fatigue and fibromyalgia; **glucosamine, chondroitin, and vitamin D helped rebuild bone in osteoporosis, and rosehips decreased pain and cut pain medication in osteoporosis, three new studies reveal.**

In a chronic fatigue syndrome (CFS) and fibromyalgia syndrome (FMS) study, doctors theorized that the body does not have enough **d-ribose**, a simple sugar the body makes from glucose that cells need to create energy. Researchers recruited 41 participants with CFS or FMS who took a total of 280 grams of



d-ribose, in three 5-gram doses per day, and after about 18 days, 66% of participants reported significantly **better energy, sleep, mental clarity, overall well-being, and less pain.** There were no side effects.

In an osteoarthritis (OA) study, doctors noted that in early OA, special cells that constantly coordinate to form and break down bone, respectively called osteoblasts and osteoclasts, fall out of balance.

In the laboratory, researchers incubated OA bone cells—from knee-replacement surgery—with **glucosamine sulfate (GS) and chondroitin sulfate (CS), alone and together, and found that osteoblast/**

osteoclast activity began to rebound with CS alone and combined with GS. Vitamin D3 enhanced these effects.

In a **rosehip** study, researchers recruited 94 participants with OA of the knee or hip who took 5 grams of *Rosa canina* per day, or a placebo, for three months, then switched treatment and placebo for another three months. After three weeks taking rosehips, participants reported significantly less pain, and were able to take much less pain medication. **After three months taking rosehips, participants reported significantly more physical ability, less stiffness, and less overall severity.** The placebo groups reported no significant changes.

Reference: *Arthritis Research Therapy*: November, 2007; Vol. 9, No. 6, R117.

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Progress on liver cancer

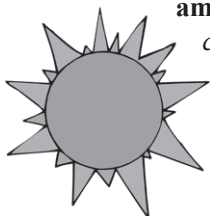
A compound from milk thistle kept liver-cancer cells from spreading and reduced their numbers in a new laboratory study. Researchers from the University of California at Irvine tested various doses of **silibinin**—a compound from milk thistle—in its pure form. Doctors found that a dose of 180 micromoles per liter (mm/L) of silibinin kept liver-cancer cells from spreading. At a dose of 240 mm/L, silibinin accelerated the natural death rate of cancer cells by a factor of nine times. In a major finding, **scientists noted that silibinin appeared to allow cells enough time to detect and repair DNA damage before passing the bad trait onto new cells.** Silibinin also decreased the abnormal blood vessels that feed tumors. Study author, Dr. Ke-Qi Hu, noted that silibinin has “novel anti-cancer mechanisms” and provides researchers with new options for preventing cancer.



Reference: *World Journal of Gastroenterology*: October, 2007; Vol. 13, No. 40, 5299-305.

This Month's *HEALTHY Tip*

The Canadian Cancer Society (CCS) is recommending that people with light skin take 1,000 IU of vitamin D per day in the fall and winter, and people with darker skin and those who do not get much sunlight take that amount year-round. CCS based its decision on a U.S. study published in the June issue of the *American Journal of Clinical Nutrition*, which found that women who took 1,100 IU of vitamin D per day had a substantial drop in cancer risk. By making its recommendation, CCS is breaking with Canadian public health policy, which follows U.S. guidelines of 200 IU to 400 IU of vitamin D for most adults. Heather Logan, director of Cancer Control Policy at CCS, stated, “We’re recommending 1,000 IU [of vitamin D] daily because the current evidence suggests this amount will help reduce cancer risk with the least potential for harm.”



Reference: Canadian Cancer Society: June, 2007.

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