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## In The NEWS

### Lipoic Acid May Guard Against Alzheimer's



The antioxidant lipoic acid may aid in the treatment of Alzheimer's disease and related dementias, particularly in their early stages, report Australian scientists.\* Despite extensive study into the causes and progression of Alzheimer's, a neuroprotective treatment—particularly for early-stage disease—is not yet available for clinical use.

The scientists noted that lipoic acid acts in several ways to improve brain health in Alzheimer's sufferers. Alzheimer's is associated with deficits of the brain neurotransmitter acetylcholine and its receptors. Lipoic acid activates an enzyme that facilitates increased acetylcholine production. Lipoic acid also reduces inflammation and acts as a powerful antioxidant, while increasing the availability of glucose for use by brain cells.

These observations suggest that lipoic acid may come to play an important role in averting mind-robbing dementia and Alzheimer's disease.

—Dale Kiefer

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#### Reference

\* Holmquist L, Stuchbury G, Berbaum K, et al. Lipoic acid as a novel treatment for Alzheimer's disease and related dementias. *Pharmacol Ther.* 2006 Sep 19; [Epub ahead of print]

### Low Magnesium and Fiber Intake Linked to Inflammation

Higher intake of magnesium and fiber is associated with lower levels of high-sensitivity C-reactive protein (hs-CRP), according to a new report.\* An important marker of inflammation, hs-CRP has been tied to elevated cardiovascular disease risk.

Using food-frequency questionnaires, researchers determined the fiber and magnesium intake of 1,653 study participants. Height, weight, blood pressure, and waist circumference were measured, and blood samples were analyzed for glucose, insulin, total cholesterol, high-density lipoprotein (HDL), triglycerides, and hs-CRP.

Subjects in the lowest third of magnesium and fiber intake were three to four times more likely to have diabetes, metabolic syndrome, or elevated hs-CRP (3 mg/L or higher). Low magnesium intake was independently correlated with elevated hs-CRP, but not with metabolic syndrome or diabetes, while low fiber intake was independently associated with a greater risk of diabetes, metabolic syndrome, and elevated hs-CRP.

—Dayna Dye

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#### Reference

\* Bo S, Durazzo M, Guidi S, et al. Dietary magnesium and fiber intakes and inflammatory and metabolic indicators in middle-aged subjects from a population-based cohort. *Am J Clin Nutr.* 2006 Nov;84(5):1062-9.

### Eating Red Meat May Raise Breast Cancer Risk



Consuming red meat is strongly linked to the risk of developing hormone-receptor-positive breast cancer in premenopausal women, according to a new report by researchers at Harvard Medical School.<sup>1</sup>

After examining nutritional intake data for more than 90,000 premenopausal women aged 26-48, the scientists compared information on red meat intake with reported incidences of breast cancer, and monitored the women for 12 years.

Greater red meat intake was strongly linked to an elevated risk of both estrogen-receptor-positive and progesterone-receptor-positive breast cancers.<sup>1</sup> However, red meat intake was not linked to either estrogen-receptor-negative or progesterone-receptor-negative breast tumors.<sup>1</sup> Estrogen- and progesterone-positive breast cancer tumors are “fueled” by the presence of these female hormones

and are considered distinct from hormone-negative tumors, differing in both incidence rates and risk factors.<sup>2</sup>

—Dale Kiefer

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#### Reference

1. Cho E, Chen WY, Hunter DJ, et al. Red meat intake and risk of breast cancer among premenopausal women. *Arch Intern Med.* 2006 Nov 13;166(20):2253-9.
2. Colditz GA, Rosner BA, Chen WY, Homes MD, Hankinson, SE. Risk factors for breast cancer according to estrogen and progesterone receptor status. *J Natl Cancer Inst.* 2004 Feb 4;96(3):218-28.

## Pancreatic Cancer Linked to High Sugar Intake



People who consume a large amount of sugar each day run a markedly higher risk of developing pancreatic cancer, notes a recent study.\* Among the most lethal of cancers, pancreatic cancer kills about 30,000 Americans every year.

Of nearly 80,000 men and women whose diets were studied from 1997 to 2005, 131 developed pancreatic cancer. Those who drank carbonated or syrup-laden drinks even twice a day were 90% more likely to contract pancreatic cancer than those who never drank them. Those who added sugar to their foods or beverages at least five times daily had a 70% higher risk of contracting the disease compared to those who did not.

This study clearly establishes a link between pancreatic cancer and high sugar consumption, which scientists believe may contribute to pancreatic cancer by causing frequent after-meal high blood sugar, thus increasing insulin demand and decreasing insulin sensitivity.

—Robert Gaston

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#### Reference

- \* Larsson SC, Bergkvist L, Wolk A. Consumption of sugar and sugar-sweetened foods and the risk of pancreatic cancer in a prospective study. *Am J Clin Nutr.* 2006 Nov;84(5):1171-6.

## Optimizing Omega-3 Intake May Avert Kidney Cancer

Omega-3 fatty acids may help prevent kidney cancer in women, says a newly published study in the *Journal of the American Medical Association*.<sup>1</sup> While omega-3 consumption is correlated with decreased risks of heart disease, depression, and breast cancer, its role in kidney cancer has previously been unknown.<sup>2-4</sup>

Scientists followed a group of 61,433 women, aged 40-76, over an average of 15 years. The women completed a food-frequency questionnaire at baseline and at the study's end. Regular consumption of omega-3-rich fatty fish—such as salmon, sardines, mackerel, and herring—was associated with a significantly decreased risk of developing renal cell carcinoma, or kidney cancer. By contrast, consumption of lean fish (low in omega-3 fatty acids) did not protect the women against developing kidney cancer.<sup>1</sup>

These results indicate that added protection against kidney cancer is yet another important health benefit of regularly consuming omega-3 fatty acids.

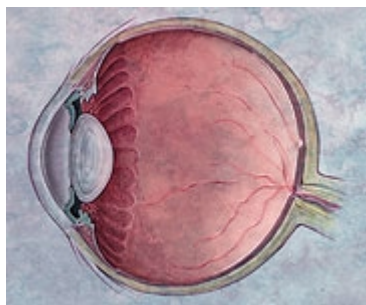
—Edward R. Rosick, DO, MPH, DABHM

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1. Wolk A, Larsson SC, Johansson JE, Ekman P. Long-term fatty fish consumption and renal cell carcinoma incidence in women. *JAMA*. 2006 Sep 20; 296(11): 1371-16.
2. De Lorgeril M, Salen P. Fish and N-3 fatty acids for the prevention and treatment of coronary heart disease: nutrition is not pharmacology. *Am J Med*. 2002 Mar;112(4):316-9.
3. Stoll AL, Severus WE, Freeman MP, et al. Omega-3 fatty acids in bipolar disorder: a preliminary double-blind, placebo-controlled trial. *Arch Gen Psychiatry*. 1999 May;56(5):407-12.
4. Maillard V, Bougnoux P, Ferrari P, et al. N-3 and N-6 fatty acids in breast cancer adipose tissue and relative risk of breast cancer in a case-control study in Tours, France. *Int J Cancer*. 2002 Mar 1;98(1):78-83.

## Retinal Cell Transplants Help Blind Mice See



In a breakthrough operation, American and British scientists recently restored the sight of blind mice using a retinal stem cell transplant.\*

The animals suffered blindness due to the loss of photoreceptor (light-sensing) cells that line the back of the eye, or retina. The functional loss of these cells causes some of the more common forms of adult blindness, including macular degeneration.

Previous attempts to restore vision using transplanted stem cells failed because the cells—master cells with the potential to become any type of cell in the body—did not develop into photoreceptors. By using precursor cells already programmed to become photoreceptors, the scientists were able to successfully restore the animals' vision.

The study authors say continuing research could lead to the first human retinal cell transplants within a decade—a potential boon for those suffering from age-related loss of vision.

—Robert Gaston

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## Reference

- \* MacLaren RE, Pearson RA, MacNeil A, et al. Retinal repair by transplantation of photoreceptor precursors. *Nature*. 2006 Nov 9;444 (7116):203-7.

## B-Vitamin Deficit Impairs Athletic Performance



Athletes who are deficient in B vitamins may display diminished performance in high-intensity exercise compared to those with optimal nutrient intake, according to a recent report.\*

Vitamins B1, B2, and B6 are used by energy-producing pathways, while vitamins B12 and folate assist new cell synthesis and repair of damaged cells. After examining the nutritional status, dietary intake, and performance of athletes, researchers noted that increased stress on the body's energy-producing pathways and tissues, combined with a loss of nutrients after strenuous activity and the need for extra nutrients to repair tissues, could increase B-vitamin requirements for athletes.

“Many athletes, especially young athletes involved in highly competitive sports, do not realize the

impact their diets have on their performance,” the researchers noted. Since the current US RDAs for B vitamins may be inadequate for active people, the researchers advise supplementing with a multivitamin/mineral formula.

—Dayna Dye

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#### Reference

\* Woolf K, Manore MM. B-vitamins and exercise: does exercise alter requirements? *International Journal of Sport Nutrition and Exercise Metabolism*. 2006 Oct; 16(5).

### **Omega-3 Therapy Relieves Depression in Children**

The omega-3 fatty acids EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) may help relieve clinical depression in children, according to a promising pilot study.\* The US Department of Health and Human Services reports that one of every 33 children, and one of every eight adolescents, may suffer from depression.

Twenty children between the ages of 6 and 12 completed a small clinical trial in which they received either an omega-3 supplement or inactive placebo. Depression was scored using a combination of three different psychological rating scales.

While the placebo group demonstrated no improvement, seven of the ten children in the omega-3 group showed a 50% or greater reduction in depression scores, and four children achieved full remission. Omega-3 fatty acids may thus offer an effective means of managing depression in children.

—Robert Gaston

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#### Reference

\* Nemets H, Nemets B, Apter A, Bracha Z, Belmaker RH. Omega-3 treatment of childhood depression: a controlled, double-blind pilot study. *Am J Psychiatry*. 2006 Jun;163(6):1098-100.

## Soy Consumption in Youth Reduces Breast Cancer Risk



Asian-American women who frequently consumed soy during childhood, adolescence, and adulthood reduced their risk of developing breast cancer, according to recent findings.\* The strongest anti-cancer effect was associated with soy consumption between the ages of 5 and 11.

Scientists studied 597 American women of Chinese, Japanese, and Filipino descent with breast cancer. Women whose soy intake during adolescence and adulthood was in the top third of all subjects had a 25% lower risk of developing breast cancer than those whose intake was in the lowest third. Women who consumed the most soy during childhood had a 58% lower risk.

“Hormonal exposures in adulthood, such as use of estrogen and progesterone replacement therapy, are established breast cancer risk factors,” the scientists noted. “However, a growing body of evidence suggests that hormonally related exposures early in life may also modify susceptibility to breast cancer.”

—Dayna Dye

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### Reference

\* Available at: [http://www.nlm.nih.gov/medlineplus/news/fullstory\\_41260.html](http://www.nlm.nih.gov/medlineplus/news/fullstory_41260.html). Accessed December 11, 2006.

## Chitosan Promotes Weight and Fat Loss



The popular fiber supplement chitosan helps reduce body weight and body fat, according to a recent double-blind, placebo-controlled study.\*

One-hundred-fifty overweight men and women were randomly assigned to one of three groups. The treatment group was given 3 grams of chitosan daily along with a self-monitored behavior-modification program; a placebo group received an inactive supplement and the same behavioral program; and a control group followed any program of their choosing. Body composition, bone density, and blood chemistry were measured at the trial's onset and 60 days later.

Those who took chitosan lost an average of 2.8 pounds, compared to a loss of 0.6 pounds in the placebo group and a gain of 0.8 pounds in the control group. The chitosan group also had greater reductions in fat percentage and fat mass than the placebo group, along with an improvement in body composition.

“These data provide evidence for the efficacy and safety of a chitosan compound to facilitate the depletion of excess body fat with minimal loss of fat-free or lean body mass,” the scientists concluded.

—Dayna Dye

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### Reference

\* Kaats GR, Michalek JE, Preuss HG. Evaluating efficacy of a chitosan product using a double-blinded, placebo-controlled protocol. *J Am Coll Nutr.* 2006 Oct;25(5):389-94.

## Optimal DHA Levels Lower Dementia Risk



Higher blood levels of the omega-3 fatty acid DHA (docosahexaenoic acid) may help prevent dementia and Alzheimer's disease, according to a recent report.\* DHA plays an important role in learning ability and memory, but its levels in the brain decline with age.

The study tracked 899 dementia-free participants who averaged 76 years of age. They underwent neuropsychological tests, provided blood samples that were analyzed for DHA levels, and completed a diet questionnaire. The subjects were followed for approximately nine years and screened for dementia every two years.

Of the 99 subjects who developed dementia, 71 were diagnosed with Alzheimer's. Those whose plasma DHA levels were in the highest quarter of all participants had a 47% lower risk of developing dementia and a 39% lower risk of Alzheimer's than the rest of the subjects. Those with plasma DHA levels in the top quarter reported eating more fish—an average of three fish meals weekly, yielding 180 mg of DHA a day.

Abundant DHA intake may thus offer protection against developing dementia and Alzheimer's

—Dayna Dye

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#### Reference

\* Schaefer EJ, Bongard V, Beiser AS, et al. Plasma phosphatidylcholine docosahexaenoic acid content and risk of dementia and Alzheimer disease: the Framingham Heart Study. *Arch Neurol.* 2006 Nov;63(11):1545-50.

## Magnesium Boosts Bone Growth in Girls



Magnesium supplementation improves bone mineral content in young girls, report Yale University researchers.\* Accumulating substantial bone mass during youth is critical in preventing low bone mass and osteoporosis later in life.

The study examined 50 Caucasian girls, aged 8-14, with a history of low magnesium intake. Twenty-three girls received 300 mg of supplemental magnesium oxide daily, while 27 girls received placebo. After one year, girls given magnesium had a 3% greater increase in overall hip bone mineral content compared to the placebo group. Increases were recorded in several hip regions, as well as in spinal bone mineral content and bone mineral density.

"This study provides data supporting the hypothesis that magnesium supplementation has positive effects on accrual of bone mass in adolescents with suboptimal magnesium intake," the authors wrote.

—Dayna Dye

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#### Reference

\* Carpenter TO, Delucia MC, Zhang JH, et al. A randomized controlled study of effects of dietary magnesium oxide supplementation on bone mineral content in healthy girls. *J Clin Endocrinol Metab.* 2006 Dec;91(12):4866-72.

## Nutrient-Fortified Milk Improves Children's Health



Fortifying milk with vitamins and minerals decreased the incidence of diarrhea and lower respiratory disease in young children living near New Delhi, India, report researchers from the US and India.\*

In a year-long trial of 633 children between the ages of one and four, 316 children were given three daily servings of milk fortified with zinc, iron, selenium, copper, and vitamins A, C, and E, while 317 children drank unfortified milk. The children were visited twice weekly to collect information on their health. Children who consumed the fortified milk had 15% fewer days in which they experienced severe illness, 7% fewer days with high fever, an 18% drop in the incidence of diarrhea, and a 26% lower incidence of pneumonia.

“Some micronutrients have a crucial role in generation, maintenance, and amplification of immune responses in the body,” the study authors noted. “Deficiencies in multiple micronutrients among

preschool children are an important determinant of child health in developing countries.”

—Dayna Dye

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## Reference

\* Sazawal S, Dhingra U, Hiremath G, et al. Effects of fortified milk on morbidity in young children in north India: community based, randomised, double masked placebo controlled trial. *BMJ*. 2006 Nov 28. [Epub ahead of print]

## Gingerol Destroys Pancreatic Cancer Cells



Gingerol, a component of ginger, inhibits cell growth and induces cell death in human pancreatic cancer cells, according to Korean researchers.\*

The scientists incubated two separate pancreatic cancer cell lines with varying concentrations of gingerol for different durations. Cell growth was inhibited in direct relation to the dose and duration of gingerol application. Gingerol interfered with the cell-growth cycle in both cell lines and hastened cell death in one of the cell lines.

Most important, gingerol killed cancer cells that carry a mutation in a gene known as p53, which is mutated in more than half of human cancers and can contribute to resistance to radiation and chemotherapy. In view of its beneficial effects, gingerol may eventually be used to facilitate tumor response to treatments for pancreatic cancer.

—Laura J. Ninger, ELS

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## Reference

\* Park YJ, Wen J, Bang S, Park SW, Song SY. [6]-Gingerol induces cell cycle arrest and cell death of mutant p53-expressing pancreatic cancer cells. *Yonsei Med J*. 2006 Oct 31;47(5):688-97.

## Antioxidants May Complement Radiation Treatment



Consuming antioxidants during radiation therapy may improve rather than interfere with treatment, report researchers at the Cancer Treatment Centers of America.\*

Scientists have long been concerned that because antioxidant supplements protect tissues from free radicals, they may also protect cancerous tumors from the intended destructive effects of ionizing radiation when taken before or during radiation treatment.

In this study, prostate cancer patients who were given radiation therapy and no antioxidants were compared to those who underwent therapy and consumed green tea extract, melatonin, high-potency multivitamins, and vitamins C and E. Prostate-specific antigen (PSA) levels, a prostate cancer marker, did not differ between the two groups, demonstrating that the supplements did not impede the effects of radiation.

This finding is “evidence that antioxidants as a complementary therapy in cancer treatment do not interfere with external beam radiation therapy,” the researchers stated.

—Dayna Dye

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## Reference

\* Available at: <http://www.cancercenter.com/cancer-center-news/606.cfm>. Accessed December 12, 2006.

## A4M Conference Spotlights Regenerative Biomedical Technologies



Advances in anti-aging technologies were spotlighted at the 14th International Congress on Anti-Aging & Regenerative Biomedical Technologies, held at the Venetian Resort Hotel Casino in Las Vegas, Nevada, on December 7-10, 2006.

The annual gathering is hosted by the American Academy of Anti-Aging Medicine (A4M), the world's largest professional medical society dedicated to advancing clinical pursuits aimed at enhancing the quality and length of the human life span. The December 2006 conference drew a record-breaking audience of more than 6,000 physicians, scientists, and anti-aging enthusiasts from at least 90 countries around the world.

Conference attendees were treated to a broad array of presentations covering nearly every conceivable topic in anti-aging medicine. Among the subjects addressed at this year's conference were new drug delivery systems for bioidentical hormone replacement therapy, the latest developments in antioxidant and vitamin therapies, breakthroughs in stem cell therapeutics and human cloning, advances in genetic engineering and genomics, and recent innovations in nanotechnology and nano-biology.

The Life Extension Foundation was well represented at the conference, exhibiting an array of educational materials. Dr. Steven V. Joyal, Life Extension vice president of scientific affairs & medical development, discussed independent risk factors for cardiovascular disease and integrative strategies to reduce these risks in his presentation, “What You Don't Know About Cholesterol Could Hurt You.” Other featured presenters included Drs. Mitchell J. Ghen and Ron Rothenberg, both of whom serve as members of the Life Extension Foundation Medical Advisory Board.

A conference highlight was actress and bestselling author Suzanne Somers, who described her lifelong challenges and triumphs with

hormones, doctors, and the media. Author of the recent bestseller *Ageless*, Somers is a passionate advocate for the use of bioidentical hormone replacement therapy to alleviate menopausal and andropausal symptoms and improve quality of life. Addressing more than 4,000 conference attendees, Somers promised to use her celebrity status to continue heralding the benefits of hormone restoration. Her presentation included a personal salute to the Life Extension Foundation for its pioneering and continued role in the advancement of anti-aging and longevity medicine.

—Elizabeth Weinstock

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