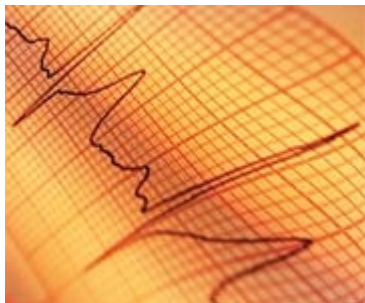


LE Magazine August 2006

In The NEWS

Magnesium Reduces Risk for Metabolic Syndrome



New research links increased magnesium intake to a reduced risk of developing metabolic syndrome. Magnesium helps regulate blood sugar levels, blood pressure, and heart rhythm, among other functions.¹

Northwestern University scientists followed more than 4,600 young adults for 15 years, estimating their magnesium intake and documenting the incidence of metabolic syndrome and its various components.² Metabolic syndrome was diagnosed according to standardized, government-recommended criteria.^{3,4}

After adjusting for lifestyle and dietary variables, subjects with the highest dietary intake of magnesium had the lowest incidence of metabolic syndrome, while those with the lowest magnesium intake were significantly more likely to develop metabolic syndrome.²

—Dale Kiefer

Melatonin May Protect Against Alzheimer's



Chinese researchers report that the “sleep hormone” melatonin protects the brain against several biochemical processes linked to the development of Alzheimer's disease.⁶

Melatonin levels decline as people age, but Alzheimer's patients experience even more dramatic reductions in melatonin. Alzheimer's disease is characterized by the formation of beta-amyloid plaques in the brain, along with neurofibrillary tangles composed of modified tau protein. Melatonin may protect against Alzheimer's by inhibiting beta-amyloid production and countering the modification of tau protein to its toxic form.

—Dale Kiefer

Creatine Mitigates Effects of Sleep Deprivation



Researchers report that creatine supplementation ameliorates the negative effects of sleep deprivation.⁷ Extended lack of sleep is known to stress the mind, affecting mood, memory, and the ability to concentrate and perform physical tasks. These deficits may be due, in part, to decreased levels of creatine in the brain.

Subjects in the controlled experiment took 5 grams of creatine monohydrate or placebo four times daily for a week, prior to undergoing 24 hours of sleep deprivation. They underwent various tests designed to assess cognitive function, mood, and motor function. Subjects who had taken creatine experienced significantly less change in mood and cognitive function than those who took placebo.

—Dale Kiefer

Ginger, Chili Peppers Slow Cancer Growth

The flavorsome culinary ingredients ginger and chili peppers contain chemicals that may stop cancer in its tracks, according to researchers at the University of Michigan and University of Pittsburgh.⁵

In laboratory studies, gingerol, an antioxidant compound in ginger, prevented ovarian cancer cells from growing by promoting apoptosis (programmed cell death) and autophagocytosis (a process in which cells digest themselves). Similarly, capsaicin, the chemical responsible for chili peppers' heat, inhibited the growth of human pancreatic cancer cells that were transplanted into laboratory mice.



—Dale Kiefer

Blueberries Offer Protection for Heart Vessels



New research indicates that blueberries may protect heart vessels against oxidative damage by boosting the production of vessel-protective compounds.¹¹

At the University of Maine, scientists fed laboratory rats an ordinary diet or one enriched with powdered blueberries for 13 weeks. The rodents' aortas were subsequently examined for glycosaminoglycan content. Glycosaminoglycans are vessel components with great structural diversity, and they interact with numerous compounds, including enzymes, cytokines, growth factors, proteins, and lipoproteins.

Blueberry-fed rats experienced a 13% increase in total glycosaminoglycans, and a 67% increase in a particular class of glycosaminoglycans. Scientists believe that these changes may help protect blood vessel walls from alterations that lead to cardiovascular disease.

—Dale Kiefer

Charred Meat Linked to Prostate Cancer

A chemical formed when meat is charred (as in grilling) promotes the growth of prostate cancer, according to researchers at Johns Hopkins University in Baltimore. The presence of the chemical, a heterocyclic amine dubbed PhIP, may explain the apparent link between greater meat consumption and an increased risk of prostate cancer in men.⁸

The chemical was added to laboratory rodents' feed for up to eight weeks, to investigate its effects on the animals' internal organs. The researchers concluded that PhIP, which is formed when meat is charred at high temperatures, initiates and promotes the growth of prostate cancer in laboratory rodents.⁸ Late last year, scientists at the National Cancer Institute (NCI) reported a link between PhIP and the development of prostate cancer in men.⁹ Japanese researchers had previously tied PhIP to colon, prostate, and breast cancers in rats.¹⁰



In their study, the NCI scientists assessed the dietary consumption of various meats by more than 29,000 men, and calculated their exposure to compounds formed by high-temperature cooking methods. Interestingly, total meat consumption was not associated with an increased risk of prostate cancer, nor was consumption of white or red meat. However, "very well done" meat was "positively associated with prostate cancer risk."⁹

—Dale Kiefer

Creatine Aids Muscular Dystrophy Management



Creatine monohydrate enhances neuromuscular function in several diseases, including muscular dystrophy, report scientists at Tufts University in Boston.¹² Muscular dystrophy is a family of inherited disorders characterized by genetic defects that lead to defective muscle cell proteins. The different forms of muscular dystrophy vary in their severity and rate of progression.

Although muscular dystrophy lacks a cure, management options include corticosteroids to reduce inflammation. A potentially helpful nutritional therapeutic is creatine, which helps reduce calcium ion buildup in muscle cells. Such buildup has been associated with accelerated cellular degeneration. Supplementation with creatine increases stores of

phosphocreatine in muscle and brain cells, providing readily available energy for cells.

—Dale Kiefer

Good Fats, Vitamin E Reduce ALS Risk

A diet rich in polyunsaturated fatty acids and vitamin E may reduce the risk of amyotrophic lateral sclerosis (ALS), according to Dutch researchers.¹³ ALS, also known as Lou Gehrig's disease, is a neurodegenerative disorder.

A total of 132 patients with definite or possible ALS and 220 healthy controls answered a questionnaire about their dietary intake in the year before noticing ALS symptoms. ALS patients had markedly lower polyunsaturated fatty acid and vitamin E intake than did controls. For both nutrients, the highest intake (compared to the lowest intake) was associated with a 50-60% reduction in the risk of ALS. The difference was not explained by other patient characteristics such as age, sex, smoking, body weight, education, duration of disease, or total calorie intake.

The beneficial component in polyunsaturated fatty acids is presumably omega-3 fatty acids, which are found in fish and nuts. Unfortunately, the investigators did not differentiate the specific contribution of omega-3 fats.

—Laura J. Ninger, ELS

Most Americans Get No Preventive Health Care

Proven preventive measures, such as a daily dose of aspirin, colon cancer screening, and smoking-cessation therapy, are effective ways to save lives and health care dollars. However, fewer than half of Americans who need these services get them, according to findings by the *American Journal of Preventive Medicine*.¹⁷ The findings are based on an analysis of more than 8,000 previously published studies.

For example, low-dose aspirin therapy has been shown to be a cheap, effective way of lowering the risk of heart disease and stroke. If doctors discussed aspirin therapy with all at-risk patients, the study authors concluded, it could save 80,000 lives annually.

Researchers ranked 25 recommended preventive services according to their potential health benefits and medical cost savings. Other effective preventive services include childhood vaccinations, blood pressure screening, Chlamydia screening for young women, and immunizing adults against the flu and pneumonia.

—Matt Sizing



CLA Promotes Fat Loss in Legs, Abdomen



Supplementing with conjugated linoleic acid (CLA) promotes fat loss in adults, particularly in the upper legs and abdomen, according to a just-released study.¹⁸

In a randomized, double-blind, placebo-controlled study, 180 overweight adults received either 3.4 grams of CLA or a placebo daily for six months. Fat mass, lean body mass, and insulin sensitivity were closely monitored in the study participants.

At the end of the six-month study, participants taking CLA lost more than four pounds of fat mass and gained nearly one pound of muscle mass, with most of the fat loss occurring in the upper legs and abdomen. The CLA supplements were well tolerated, and those who took CLA

demonstrated a slight improvement in insulin sensitivity.

—Elizabeth Wagner, ND

Fish Oil, Caloric Restriction Ease Inflammation



Korean scientists recently announced that dietary fish oil and caloric restriction work synergistically to reduce various inflammatory markers associated with aging.¹⁴

The scientists sought to determine how dietary fish oil and caloric restriction affected these markers in laboratory mice. The rodents were fed chow with either 5% fish oil or 5% corn oil. Some rodents were allowed to eat their fill, while others had their calorie intake reduced by 40%, for up to nine months. Some animals were examined at four months, allowing scientists to compare dietary effects in young and old animals. The animals were assessed for various markers of oxidative status and inflammation.

Superoxide anion is a highly reactive free radical believed to play a role in age-associated degenerative processes.^{15,16} Superoxide levels in older mice on the corn oil diet were 18% higher than in younger mice on the same diet. But young mice on the fish oil diet had superoxide levels that were nearly 60% lower than those of the corn oil-fed controls. Young mice on calorie-restricted diets had 35% fewer superoxide molecules than controls, and young mice on the calorie-restricted/fish oil diet showed a remarkable 90% reduction in superoxide production compared with controls. In older mice receiving both dietary interventions, superoxide was reduced by 94%.¹⁴

—Dale Kiefer

Mediterranean Diet Protects Vascular System



Elderly adults who consume a diet rich in olive oil, fresh vegetables, and vitamin E experience a reduced risk of blood vessel obstruction in the extremities, or peripheral arterial disease, according to a research team in Italy.^{19,20}

The researchers used questionnaires to evaluate the nutritional and dietary intake of 1,251 home-dwelling individuals who averaged 68 years of age. Using the ankle-brachial index test, they then assessed the presence of peripheral arterial disease.¹⁹

A greater intake of vegetable lipids, primarily from olive oil, was associated with decreased risk, with intake of 34 grams or more per day decreasing risk by more than 60%. Greater blood levels of beneficial high-density lipoprotein (HDL) also were associated with reduced risk of peripheral arterial disease; in

fact, each 10-mg/dL increase in HDL produced a 24% lower risk. Furthermore, vitamin E intake dramatically lowered risk, with each 7.7 mg of vitamin E consumed daily producing a dramatic 63% risk reduction.¹⁹

—Elizabeth Wagner, ND

Omega-3s Aid Recovery from Mining Disaster

Following the Sago Mine disaster that killed 12 miners in West Virginia last January, the only survivor, Randal McCloy Jr., age 26, was in a coma suffering from carbon monoxide poisoning and multiple organ failure.

His neurosurgeon, Dr. Julian Bailes, credits his rapid recovery in part to two nontraditional therapies: hyperbaric oxygen and massive doses of omega-3 fatty acids.²¹

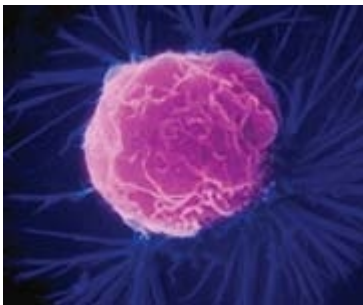
McCloy received 30 grams per day of fish oil concentrate as suggested by Dr. Barry Sears, providing 18 grams of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Because this is a very high dose, McCloy's blood levels were constantly monitored. According to Dr. Sears, the EPA may have helped reduce the inflammation caused by the lack of oxygen within the organs, while the DHA may have helped to support healthy brain tissue.

—Mark Neveu, PhD



Personnel walk toward the entrance of the Sago Mine where 12 miners died in Sago, West Virginia, on January 5, 2006. The miners were trapped for 40 hours in the mine after an explosion occurred on the morning of January 2.

Obesity Increases Women's Breast Cancer Risk



Women who gain significant amounts of weight during adulthood have a higher risk of developing breast cancer, according to a recent report.²²

In a study of more than 44,000 women, greater weight gain was associated with higher risk for all types, stages, and grades of breast cancer. Compared to women who gained 20 pounds or less during their adult years, women who gained 60 pounds or more during adulthood were almost twice as likely to develop certain types of breast cancer. Extremely obese women were up to three times more likely to develop breast cancer metastases than were women who gained less weight as adults.

Breast cancer has been linked with increased levels of circulating estrogen hormones. Since fat tissue produces estrogen, this may explain the link between obesity and elevated risk of breast cancer.

—Elizabeth Wagner, ND

Resveratrol May Protect Brain Against Stroke



Resveratrol, a cardioprotective compound that naturally occurs in grapes, also helps protect the brain against damage caused by reduced blood flow, and may thus protect against stroke, according to findings from a recent animal study.^{23,24}

Researchers induced brain ischemia (reduction of blood flow) in two groups of rats. One group then received a single administration of resveratrol, while the other group did not. Cerebral blood flow decreased by 65% in the ischemia-only group of rats. By comparison, the resveratrol-treated group experienced only a 35% reduction of blood flow. The resveratrol animals demonstrated less brain cell loss than did the ischemia-only rats, and also showed lower levels of damaging free radicals in the brain tissue than animals that did not receive

resveratrol.

These findings indicate that resveratrol helps to attenuate the damaging effects of decreased blood flow in the brain, and may thus help protect against stroke. In humans, 85% of strokes occur in conjunction with ischemia.

—Elizabeth Wagner, ND

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CORRECTION:

In the July 2006 issue of Life Extension magazine, on page 47 we stated that up to 4.5 grams of DHA has been used as a daily supplement in some trials. The correct statement is that up to 4.5 grams of fish oil was used; that quantity of fish oil contains between 0.79 and 0.99 grams of DHA. We sincerely regret this error.

–The Editors

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