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In The NEWS

Silymarin Lowers Glucose, Lipid Levels in Diabetics



Silymarin, a milk thistle seed extract, helps lower elevated blood sugar and lipid levels in diabetics, according to new findings.¹

Scientists administered 200 mg of silymarin three times daily for four months to 25 type II diabetes patients, while 26 diabetics received a placebo. Blood levels of fasting glucose, hemoglobin A1c (HbA1c, which reflects long-term glucose control), insulin, total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL), and triglycerides were measured before the trial and at its conclusion.

Subjects who received silymarin experienced significant reductions in fasting blood glucose, HbA1c, total cholesterol, LDL, and triglycerides, while fasting blood glucose, total cholesterol, triglycerides, and HbA1c increased in the placebo group.

By decreasing glucose and lipid levels, silymarin may thus play an important role in the management of type II diabetes.

—Dayna Dye

Green Tea Delays Memory Loss in Aged Mice



Since oxidative stress is implicated in brain senescence, scientists investigated the effects of green tea polyphenols, a potent antioxidant, in senescence-accelerated mice. The mice served as a model of brain senescence, with short life span, cerebral atrophy, and cognitive dysfunction. They were fed water containing 0.02% green tea polyphenol (equivalent to a mean daily dose of about 35 mg per kilogram of body weight) from the age of 1 month to 15 months.

Daily consumption of green tea polyphenols prevented memory regression and DNA oxidative damage in the mice, suggesting that regular intake of green tea polyphenols may promote healthy aging of the brain in older persons.²

—Dayna Dye

Grape Seed Blocks Colon Cancer Cell Growth



Grape seed extract inhibits the growth of human colorectal tumor cells in the lab and in mice, researchers recently reported.³

Administration of three concentrations of grape seed extract to human colorectal cancer cell lines in culture produced an inhibition of cell growth that increased with the concentration and time exposed to grape seed extract. There was also an increase in programmed cancer cell death (apoptosis). Grape seed increased the availability of a protein that halts cancer cell replication, while decreasing several proteins that encourage cell division.

When the extract was given to mice implanted with human colorectal tumor cells, tumor volume was reduced 44% after eight weeks compared to mice that did not receive the extract. Levels of a

protein associated with cancer cell self-destruction doubled in the tumor cells.

—Dayna Dye

Omega-3s Slow Cognitive Decline in Mild Alzheimer's Cases



Omega-3 fatty acids may slow cognitive decline in patients with very mild Alzheimer's disease, according to a newly released study.⁴

Alzheimer's patients received 600 mg of EPA and 1.7 grams of DHA or a placebo for six months, followed by a six-month period during which both groups received the omega-3 fatty acids.

While most subjects saw no difference in the rate of cognitive decline at 6 or 12 months, a subgroup with very mild cognitive impairment receiving the placebo had a significant decline. This decline was halted when the placebo group received omega-3 supplements during the study's second half.

The results support earlier findings that the anti-inflammatory effects of omega-3 fatty acids may help prevent Alzheimer's disease.

—Dayna Dye

Low Selenium Levels Increase Coronary Artery Disease Risk



People with higher selenium levels or greater selenium intake have a lower risk of coronary heart disease, according to a new meta-analysis that examined the findings of 31 studies.⁵

Among 25 observational studies, a 50% increase in selenium concentrations was associated with a 24% reduction in coronary heart disease risk. In six randomized trials, those who used selenium supplements saw an 11% reduction in coronary heart disease risk.

The authors noted that selenium-containing proteins may scavenge free radicals, regenerating antioxidant systems and protecting endothelial cells from lipid peroxidation. Low selenium may contribute to heart disease by increasing platelet aggregation and vasoconstriction. In

addition, selenium may help protect the cardiovascular system from toxic metals, such as arsenic, cadmium, and mercury, that cause oxidative damage.

—Dayna Dye

Study Says Benefits of Eating Fish Outweigh Risks



Any risks associated with regular consumption of fish are far outweighed by the associated health benefits, according to a review by the Harvard School of Public Health.⁶

The authors found that one to two weekly servings of fish, containing 250 mg or more per day of the omega-3 fatty acids EPA and DHA, reduced the risk of coronary heart disease death by 36% and of all-cause mortality by 17%.

Because DHA benefits the infant brain, fish and shellfish are recommended for pregnant or nursing mothers. However, these women should avoid fish containing high levels of methylmercury, such as swordfish and albacore tuna, because even low levels of mercury adversely affect early neurodevelopment.

Levels of dioxins and PCBs in fish are low, and their potentially adverse health effects are outweighed by the benefits of fish intake.

Osteoarthritis May Signify Accelerated Biological Aging



A recent report suggests that osteoarthritis may be a sign of rapid biological aging, which is based on the measurement of certain biomarkers.⁷

Researchers examined 1,086 twins between the ages of 31 and 79. Each participant was x-rayed for osteoarthritis, and blood samples were analyzed to assess biological aging, as reflected by the shortening of telomeres in white blood cells. Telomeres shorten with time or insufficient repair of free-radical damage, and shortened telomeres are seen in numerous age-related diseases.

Advancing chronological age was associated with shorter telomeres in all participants. The 160 people with x-ray-confirmed osteoarthritis demonstrated markedly shorter telomere lengths, signifying increased biological aging. The degree of telomere shortening in those with arthritis was equivalent to the amount accumulated over 11 years of life in healthy individuals, and was also

associated with severity of the disease.

—Dayna Dye

Mediterranean Diet May Lower Alzheimer's Risk



Researchers at Columbia University Medical Center report that eating a Mediterranean-style diet may reduce the risk of Alzheimer's disease.⁸

The scientists analyzed the diets of 194 Alzheimer's sufferers and 1,790 people without dementia. Questionnaires on dietary intake during the previous year were used to score adherence to the Mediterranean diet on a scale of 0 to 9.

Close adherence to the diet was significantly associated with a lower incidence of Alzheimer's, reducing risk by 19-24% for each diet score point. Compared to subjects in the bottom third of diet scores, those in the top third had a 68% lower risk, while those in the

middle third had a 53% reduced risk. The association between the diet and Alzheimer's risk remained valid even when the researchers accounted for other vascular disease risk factors such as stroke, heart disease, and diabetes.

—Dayna Dye

Progesterone Guards Against Disability Following Brain Injury



Administering progesterone to trauma victims following brain injury may reduce their risk of death and degree of disability, according to Emory University researchers.⁹

To qualify for this phase II clinical trial, prospective participants had to reach the hospital within 11 hours of a moderate to severe blunt traumatic brain injury. Seventy-seven of 100 subjects received intravenous progesterone, while the other 23 received a placebo. After 30 days, neurological function and disability level were rated.

Progesterone treatment was associated with a lower mortality rate: 30% of the placebo group died within the 30-day period, compared to only 13% of those given progesterone. Severe traumatic brain injury survivors in both groups had poor 30-day neurological outcomes; however, moderate traumatic brain injury survivors who received progesterone were more likely to have moderate to good functional outcomes and disability ratings compared to those who received placebo.

—Dayna Dye

Cola Intake May Decrease Bone Density in Women



Daily consumption of cola beverages is associated with decreased bone mineral density of the hip in older women, according to just-released findings.¹⁰

Researchers examined dietary intake and hip and spine bone mineral density in more than 2,500 men and women in their fifties and sixties. After adjusting for body mass index, height, age, energy intake, physical activity level, smoking, menopausal status, and estrogen use (in women only), and intake of alcohol, caffeine, vitamin D, and calcium, they found that cola intake in women was associated with significantly lower bone mineral density of the hip. Drinking one daily serving of cola decreased a woman's bone density by 4-5%, while consuming non-cola carbonated beverages had no effect on bone density.¹⁰ Phosphoric acid in cola may slowly leach calcium from the bones, decreasing their density.¹¹

—Elizabeth Wagner, ND

Sleep Duration, Quality Affect Blood Sugar in Diabetics



Sleep deprivation and poor quality of sleep are associated with poorer blood sugar control in people with type II diabetes, say investigators at the University of Chicago.¹²

Scientists interviewed 161 African-American volunteers with type II diabetes, assessing sleep quality, sleep loss, and long-term blood sugar levels, as measured by hemoglobin A1c (HbA1c) in the blood. Higher HbA1c levels indicate poorer blood sugar control and an increased risk of diabetes complications. Patients were also categorized as being either "without complications" or "with one or more complications" of diabetes.

In patients with no complications, higher HbA1c was associated with perceived sleep loss, but no disruption in sleep quality. In those with at least one complication, higher HbA1c levels were associated with poorer sleep quality, but not with sleep loss. Thus, sleep duration and quality are significant predictors of HbA1c levels, a key marker of blood sugar control in diabetics.

“Prescription for Disaster” Garners Film Prize



“Prescription for Disaster,” a collaborative effort between Life Extension and award-winning documentary filmmaker Gary Null, was recently awarded the prize for Best Documentary Feature at the Red Bank (NJ) International Film Festival 2006.

An in-depth investigation of how close ties among drug makers, medical researchers, the FDA, and lawmakers influence consumer health care in America, the documentary has previously been honored at film festivals around the world. In April 2006, it won the coveted Platinum Award at the 39th Annual Worldfest-Houston Film Festival.

“Prescription for Disaster” is available to Life Extension members for just \$12 a copy on DVD or VHS. For more information, please call 1-800-544-4440.

Life Extension’s William Faloon, with co-producer and director Manette Loudon and writer, producer, and director Gary Null, PhD, won the coveted Platinum Award for the documentary film Prescription for Disaster at the 39th Annual WorldFest-Houston Film Festival on April 29, 2006.

—Matt Sizing

Reviving Bacteria May Yield Medical Benefits



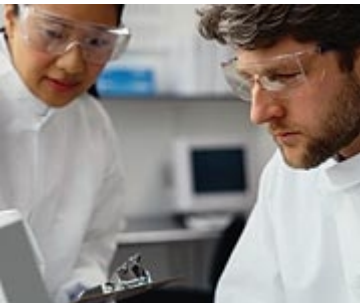
Scientists have recently unraveled the previously unknown mechanism by which a strain of bacteria is literally able to come back from the dead.¹³

A resilient microbe known as *Deinococcus radiodurans* is capable of returning to life after having its DNA fragmented by extreme desiccation or damaging ultraviolet radiation.

Unlike higher life forms, the bacterium possesses at least two copies of its genome. When random DNA breaks occur, at least one intact fragment of any given DNA segment will typically “survive” death. The cell then combines undamaged pieces of DNA fragments with new strands synthesized from remaining DNA fragments from the original cell. Once reassembled, the DNA goes to work directing production of proteins necessary for life. Scientists believe that this extraordinary process may one day inform efforts to repair and regenerate human cells.

—Dale Kiefer

PayPal Founder Pledges \$3.5 Million to Anti-Aging Research



Peter A. Thiel, co-founder and former CEO of the pioneering online payments system PayPal, has pledged \$3.5 million to support anti-aging research to be conducted under the auspices of the Methuselah Foundation, a research organization co-founded and chaired by Dr. Aubrey de Grey.¹⁴

Thiel’s donation will fund pilot projects intended to validate the “SENS” approach to combating aging. Proponents of SENS (Strategies for Engineered Negligible Senescence) believe it is possible to mitigate and eventually reverse age-related changes in body composition at the molecular and cellular levels.

Dr. de Grey noted, “I have been working with leading biologists and biochemists around the world in identifying promising research projects, and with this generous donation we will go to work straightaway.”

—Matt Sizing

Turmeric Fights Arthritis, Bone Loss



Turmeric, the yellow curry spice that contains curcumin, may help prevent both rheumatoid arthritis and osteoporosis, according to recent findings.¹⁵

In animal subjects, researchers administered turmeric root whole extract, turmeric essential oils, or a curcumin-rich turmeric extract either before or after inducing rheumatoid arthritis. Of the three preparations, the curcumin-rich turmeric extract, which is most similar to commercially available turmeric supplements, was most effective in inhibiting the onset of rheumatoid arthritis. The extract blocked a pathway affecting bone breakdown, suggesting that turmeric could help prevent osteoporosis. In addition, the curcumin-rich extract prevented the activation of a transcription factor known as nuclear factor-kappa beta (NF- κ B). Activation of NF- κ B enhances the production of inflammatory proteins that destroy joint tissue.

—Dayna Dye

Alcor Conference Charts Future of Medicine

More than 200 of the world's most forward-thinking minds gathered in Scottsdale, Arizona, last October for the 6th Alcor Conference, "An Inside Look at the Science and Medicine of Tomorrow." With topics ranging from "Nanomedicine and Medical Nanorobotics" to "Research Towards Whole-Body Suspended Animation," the featured presentations examined cutting-edge research projects that share the goal of extending the healthy human life span.

Arizona state representatives Michele Reagan and Linda Lopez opened the conference with a discussion of the importance of protecting personal health care rights and encouraging innovative medical research.

Dr. Robert Freitas, a senior research fellow at the Institute for Molecular Manufacturing in Los Altos, CA, described nanorobots that may one day repair injured and aging human organs and tissues at the cellular level when damaged cells are unable to do so on their own. These nanorobots could be programmed to eliminate microbial and viral infections, cure cancer, repair the human cardiovascular system, mend injured or failed organs, replace chromosomes in cells to reverse the effects of genetic diseases and aging, and revive cryopreserved patients.

Dr. Freitas suggested that nanorobots could eventually provide even more advanced regeneration and rejuvenation therapies to help extend the healthy human life span. He believes that nanomedicine eventually will incorporate diagnostic devices in the skin that can monitor key bodily functions and provide critical feedback to anticipate internal health problems. The Life Extension Foundation helps to fund Dr. Freitas's groundbreaking research.

Dr. Gregory Fahy, chief scientific officer of California-based 21st Century Medicine, presented the results of his latest research on the vitrification of kidneys, brains, and whole bodies at extremely low temperatures. Funded by Life Extension, this slow and painstaking investigation into the cryopreservation of major biological systems is leading to the development of organ and tissue banks that will someday save thousands of lives. Dr. Fahy's pioneering long-term goal is the achievement of perfect suspended animation.

Repairing the damage caused by aging was the subject of a presentation by Dr. Aubrey de Grey, a biogerontologist who is the originator of several noted prizes that encourage research to solve the problems of aging. Dr. de Grey outlined his Strategies for Engineered Negligible Senescence (SENS) and discussed potential methods to reverse all forms of aging damage.

Websites of Interest:

- Alcor Foundation
- 21st Century Medicine
- Institute for Molecular Manufacturing
- Nanomedicine
- SENS

To order your Alcor DVD visit www.alcor.org/lef/dvd.html

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