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In The NEWS

Low Testosterone Increases Mortality in Older Men



A recent report in the Archives of Internal Medicine links reduced levels of testosterone in men to an increased risk of mortality during up to eight years of follow-up.⁵ Testosterone levels in men progressively decline after the age of 30, which can eventually result in a loss of muscle mass and bone density, diminished energy and libido, and symptoms of depression and irritability.

Scientists analyzed the association between testosterone levels and mortality in 858 male veterans over the age of 40. Testosterone levels were measured at least twice between 1994 and 1999. The subjects were followed through 2002. Nineteen percent of the participants had a low total testosterone level (less than 250 ng/dL) or a low free testosterone level, while 53% had normal levels and 28% had equivocal levels (an equal number of low and normal levels).

While 20% of the men with normal testosterone died during follow-up, deaths occurred among 25% of those with equivocal levels and 35% of those with low levels. After adjusting for age, illness, and other factors, men with low testosterone had an 88% higher risk of dying over the course of follow-up compared to men with normal levels. To reduce the effect of acute illness, the researchers then excluded men who died within the first year of follow-up, yet still found a 68% greater risk of death among men with low testosterone.

Larger prospective studies are needed to clarify the association between low testosterone and mortality risk, the scientists noted.

—Dayna Dye

DHEA May Delay HIV Disease Progression



Supplementing with DHEA elevates levels of sex hormones and may help arrest disease progression in HIV-positive men, according to a newly published report.¹

DHEA (dehydroepiandrosterone) is a precursor to the sex hormones testosterone and estrogen. Previous studies have demonstrated that DHEA supplementation enhances immune function, improves bone mineral density and wound healing, reduces depression, increases muscle mass, and reduces low-density lipoprotein (LDL) levels.² In HIV-infected individuals, lower blood levels of DHEA and DHEA-sulphate (DHEA-S) are associated with disease progression.³

In a randomized, placebo-controlled trial of 69 HIV-infected men with mild depression, 100-400 mg per day of oral DHEA therapy increased circulating levels of DHEA, DHEA-S, free testosterone, and androstenedione, while suppressing sex hormone-binding globulin. A separate report noted that DHEA supplementation elevated mood in HIV-positive individuals suffering from depression.⁴

The investigators concluded that DHEA supplementation of up to 400 mg per day is safe in HIV-infected men, and that it can help improve mood and elevate levels of sex hormones.^{1,4}

—Penny Baron

Milk Thistle Compound Suppresses Prostate Cancer



Isosilybin B, an active constituent of silymarin found in milk thistle, suppresses the growth of prostate cancer cells far more effectively than other milk thistle compounds and extracts, according to a recently published report.⁷

Scientists have known for some time that milk thistle (*Silybum marianum*) offers protection against some forms of prostate cancer. Two extracts of milk thistle seed, silymarin and silibinin, have long been recommended for liver support and various other health benefits. Scientists recently tested several active constituents of silymarin and silibinin to determine which exerted the most powerful effects against prostate cancer.

Isosilybin B, which is present only in silymarin, was the most consistently potent suppressor of cell growth compared to other milk thistle constituents and extracts. Isosilybin B accounts for no more than 5% of silymarin and is not contained in silibinin. The researchers thus concluded that milk thistle extracts enriched for isosilybin B, or isosilybin B alone, may prove most effective in prostate cancer prevention and treatment.

—Dale Kiefer

Emotional Stability, Well-Being Improve with Age



As people grow older, they become “mellower” in their response to negative emotions, and emotional stability continues to improve over the course of the human life span, even into the seventh decade of life, according to a new report.⁶

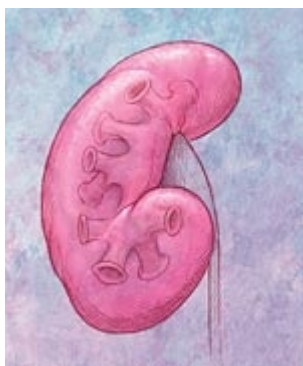
Neuroscientists studied a group of healthy individuals between the ages of 12 and 79, using emotional well-being questionnaires as well as brain imaging studies. They found that neurotic tendencies decreased with advancing age, with those aged 12-19 reporting the highest level of neurosis, and those aged 50-79 reporting the lowest level. Using functional MRI testing and measurements of brain electrical activity, the scientists found that younger age groups were better able to recognize facial expressions of fear, but less accurate at identifying expressions of happiness. In older adults, the medial prefrontal cortex, an area of the brain that plays a role in coordinating thoughts and actions with internal goals, was more active when processing negative

emotions than positive emotions.

These findings led the scientists to propose that life experience and changing motivational goals may help older adults to increase their control over both negative and positive emotions, helping them to maintain mental health, even in the face of difficult life events.

—Elizabeth Wagner, ND

Cystatin C Valuable in Detecting Kidney Dysfunction



Cystatin C is a more sensitive indicator of early kidney dysfunction than the currently used biomarker, according to a report in the *Annals of Internal Medicine*.⁸ This is a welcome finding, as kidney disease affects approximately 5% of adults over the age of 20 but is often undetected until its later stages.

Scientists compared the prognostic value of cystatin C and creatinine in detecting early kidney impairment. Creatinine, a normal by-product of muscle breakdown, is currently used to estimate glomerular filtration rate, an indicator of kidney function. Cystatin-C was found capable of detecting early kidney disease considerably sooner than creatinine or estimated glomerular filtration rate. Unlike creatinine, cystatin-C is not affected by variables such as age, gender, or race, and is thus a more sensitive and useful test for detecting kidney dysfunction.

Scientists have previously demonstrated that, among apparently healthy elderly people, cystatin C is a better predictor of mortality risk from various causes than either creatinine or estimated glomerular filtration rate.⁹

Lutein, Zeaxanthin Improve Skin Health



Compounds in leafy green vegetables known as lutein and zeaxanthin increase hydration, elasticity, and surface lipids of the skin while protecting against lipid oxidation, according to the results of a study presented at the Beyond Beauty Paris conference in September 2006.

Italian researchers studied women aged 25-50 who received 10 mg of an oral supplement of lutein and zeaxanthin, a 50-part-per-million topical lutein/zeaxanthin formula, a combination of oral and topical lutein and zeaxanthin, or a placebo for 12 weeks. Compared to placebo, lutein and zeaxanthin administered orally, topically, and both orally and topically were associated with improvements in skin elasticity, skin hydration, and superficial lipid levels, as well as a reduction in skin lipid oxidation. Combined oral and topical lutein provided the greatest overall

benefit, resulting in a 60% increase in skin hydration, a 20% increase in skin elasticity, a 50% elevation in superficial lipid levels, and a 65% decrease in skin lipid peroxidation.

The study contributes to previous findings suggesting that regular ingestion of lutein may help improve the skin's antioxidant defense system, which helps protect against damage caused by the sun and artificial light.¹¹ Lutein and zeaxanthin are commonly ingested as nutritional supplements for eye health.

“This is the first study to determine the impact of lutein/zeaxanthin alone on the human skin,” noted Richard L. Roberts, PhD, senior manager of scientific affairs for Kemin Health, a leading manufacturer of lutein. “It provides strong new evidence of lutein’s positive role in promoting skin health and appearance by increasing hydration, elasticity, and lipid content.”

Osteoporosis Drug Reduces Breast Cancer Risk



Therapy with raloxifene (Evista®), a drug used to both prevent and treat osteoporosis, reduced the risk of invasive breast cancer in postmenopausal women, according to researchers at the University of Michigan.¹⁰

The scientists analyzed data from a four-year trial involving 7,705 women and another four-year follow-up study involving 4,011 women. To assess breast cancer risk, pre-specified subgroups were defined by age, age at menopause, body mass index, family history of breast cancer, serum estradiol level, prior estrogen therapy, and bone mass at baseline in both the original trial and follow-up study. In the placebo group, older age, higher estradiol level, and a family history of breast cancer were associated with an increased breast cancer risk. Raloxifene therapy, however, led to reduced breast cancer incidence in women at both lower and higher breast cancer risk as determined by the pre-specified risk factors. Compared to placebo, raloxifene treatment was associated with reductions in risk ranging from 33% to 89%.

The researchers concluded that raloxifene therapy was associated with a reduced risk of invasive breast cancer in postmenopausal women, irrespective of the presence or absence of other risk factors. The drug's effect was especially pronounced in women with a family history of breast cancer.

—Matt Sizing

Ginseng Improves Breast Cancer Survival, Outcomes



Ginseng may improve survival rates and quality of life for breast cancer patients, report Chinese researchers.¹³ Over 1 million women worldwide are diagnosed with breast cancer every year. The highest incidence rates are in the Netherlands and US, while China has the lowest incidence and mortality rate of the disease.

In a population-based study of 1,455 breast cancer patients in Shanghai, women who used ginseng before breast cancer diagnosis tended to have higher survival rates, while those who started taking the herb after diagnosis experienced improved quality of life. During follow-up surveys conducted over an average of 4.8 years, the researchers found that women who had taken ginseng regularly pre-diagnosis had a higher overall survival rate than pre-diagnosis non-takers (88.6% vs. 80%), as well as a higher disease-free survival rate (83.8% vs. 77.4%). Quality of life (physical, social, psychological, and material well-being, measured using a standardized questionnaire) improved among the women who started taking the herb after diagnosis.

While ginseng is typically taken to enhance stamina and reduce feelings of fatigue and physical stress, it is also believed to have anti-cancer properties and has been reported to normalize blood glucose levels, improve insulin sensitivity, and reduce the risk of obesity. The researchers proposed that compounds contained in ginseng called ginsenosides may account for the apparent benefits of supplementation in breast cancer patients. Previous in-vitro and animal studies have supported the proposal that these compounds have anti-cancer activity.

—Matt Sizing

Drug Helps Prostate Patients Avoid Castration



Medical scientists in Wisconsin report that the oral drug bicalutamide (Casodex®) appears to be an acceptable alternative to chemical castration in the treatment of patients with prostate cancer.¹²

A double-blind, randomized study followed 1,370 early prostate cancer patients who received radiotherapy with curative intent. After a median follow-up of 7.2 years, subjects who received daily Casodex® treatment reduced their risk of disease progression by 44% and cut their overall risk of death by 35% compared to patients who received a placebo.

“In patients with locally advanced disease, a daily 150-mg dose of bicalutamide (Casodex®) following initial radiotherapy has shown significant clinical benefits in terms of overall survival and progression-free survival, compared with radiotherapy alone,” noted study author Dr. William See.

“Although many of the adverse effects of castration therapy are manageable, they can have a detrimental effect on quality of life. Here we have evaluated the efficacy and tolerability of a non-castration-based therapy, and found the survival rates to be similar.”

—Matt Sizing

AHRQ Website Offers Wealth of Health Information

Clinicians and consumers alike can access a treasure trove of health care information by visiting the website of the Agency for Healthcare Research and Quality (AHRQ), the lead federal agency charged with improving the quality, safety, efficiency, and effectiveness of health care for all Americans.

As one of 12 agencies within the Department of Health and Human Services, AHRQ supports health services research that will improve the quality of health care and promote evidence-based decision making. Approximately 80% of the agency’s annual budget of more than \$300 million is invested in grants and contracts focused on improving health care.

AHRQ’s strategic goals include reducing the risk of harm by promoting delivery of the best possible health care, improving outcomes by encouraging the use of evidence to make informed decisions, and transforming research into practice to facilitate wider access to effective health care services and reduce unnecessary costs. Its broad audience includes clinicians and other health care providers, consumers and patients, policymakers at the federal, state, and local levels, employers and public and private insurers, and hospital systems and medical school faculty.

For more information, please visit www.ahrq.gov.

—Matt Sizing

Vitamin C Improves Blood Pressure in the Elderly

Supplementing with vitamin C helps to control blood pressure in elderly adults with high blood pressure that fails to respond to ordinary treatment (refractory hypertension), according to a new report.¹⁴

Noting that oxidative stress plays a role in hypertension, Japanese scientists sought to determine whether antioxidants might benefit people with uncontrolled blood pressure. For six months, two groups of patients received 600 mg of ascorbic acid per day. Patients in the elderly group (average age of 78) saw marked decreases in systolic blood pressure, while patients in the adult group (average age of 55) saw no effect from supplementation. Markers of oxidative stress, such as C-reactive protein, were also reduced in the elderly group.

Ascorbic acid is thus emerging as a useful tool in controlling blood pressure in elderly patients with refractory hypertension. The study authors noted that vitamin C may benefit cardiovascular health, as vascular aging is also closely related to oxidative stress.

—Dale Kiefer

Creatine, Whey Before Exercise Boost Muscle Growth



Numerous studies have demonstrated that supplementation with whey protein and/or creatine monohydrate, combined with exercise, contributes to increases in lean muscle mass and strength.^{16,17}

Australian researchers now report that when these supplements are consumed may have a significant impact on muscle-building efforts. According to as-yet-unpublished research, men who took the supplements before or immediately after supervised resistance training built more lean muscle mass than men who took the supplements at other times of the day. While both groups took the supplements and engaged in strength training for 10 weeks, those who took the supplements immediately before exercising showed significantly better improvements in strength and lean muscle mass than control subjects. Results were confirmed by sophisticated muscle tissue analysis.¹⁸

These findings have important implications not only for bodybuilders, but for all adults seeking to maintain healthy muscle mass with aging. According to a new report by the Council for Responsible Nutrition, creatine is safe for long-term consumption at doses of up to 5 grams per day.¹⁹

—Dale Kiefer

Vitamin E, Lipoic Acid Help Slow Vision Loss



The antioxidants vitamin E and lipoic acid help slow the loss of vision associated with the sight-robbing disease known as retinitis pigmentosa, according to a recent study.¹⁵

A degenerative eye disease, retinitis pigmentosa involves a genetic mutation that affects the low light-sensing “rod” cells in the eye’s retina, leading to gradual loss of night and peripheral vision. Later, the surrounding “cone” cells of the retina, which detect bright light and color, may also die, which may result in complete blindness. Currently, there is no effective medical treatment for retinitis pigmentosa.

Scientists hypothesized that high levels of oxidative stress in the retina may cause the destruction of the cone cells following damage to the rod cells. To determine whether antioxidants can prevent this vision-robbing effect, they administered vitamin E, vitamin C, or lipoic acid to mice with a form of retinitis pigmentosa. In test subjects that received vitamin E or lipoic acid, nearly 40% of cone cells survived, nearly twice the cell survival rate seen in the vitamin C and control groups.

Vitamin E and lipoic acid may thus offer protection against the vision loss associated with retinitis pigmentosa. This finding lends further support to a growing body of evidence linking antioxidants with improved eye health.

—Robert Gaston

Vitamin D Cuts Risk of Pancreatic Cancer



Vitamin D supplements reduce the risk of pancreatic cancer by nearly 50%, reports the American Association for Cancer Research.²⁰ The fourth leading cause of cancer death in the United States, pancreatic cancer is rapidly fatal, and surgical treatment is often not effective.

Scientists who analyzed data from the Health Professionals Follow-up Study and Nurses’ Health Study—which examined the long-term health and dietary practices of more than 120,000 men and women—found that people who consumed 400 IU of vitamin D daily demonstrated a 43% reduced risk of developing pancreatic cancer. Adults who consumed up to 150 IU of vitamin D experienced a 22% reduced risk of pancreatic cancer.

Until now, avoiding cigarette smoking has been the only strategy known to help prevent pancreatic cancer. This exciting development suggests that vitamin D may represent a crucial nutritional strategy for reducing the risk of pancreatic cancer. Scientists are planning additional studies to investigate whether vitamin D may help reduce pancreatic cancer mortality.

—Elizabeth Wagner, ND

Fish Oil Tops Defibrillators in Preventing Cardiac Deaths



A recent report suggests that fish oil may save more lives than cardiac defibrillators.²¹ Consumption of omega-3 fatty acids found in fish oil is associated with a reduced risk of fatal heart rhythms, or arrhythmias.

To estimate the potential public impact of raising dietary intake of omega-3 oils using fish oil supplements, scientists performed a computer simulation of Americans, utilizing past medical data. Based on this model, they estimated that raising omega-3 levels would save 58 lives per 100,000 Americans each year, equivalent to a 6.4% reduction in total deaths, largely due to the prevention of sudden cardiac death in apparently healthy people.

Far fewer lives would be saved by defibrillators, which are devices that deliver an electrical shock to correct a fatal, irregular heartbeat. Even if automated external defibrillators (portable devices that

can be used by laypeople to shock someone in cardiac arrest) were present in every home and public area, the devices would only lower the annual death rate of a community by an estimated 1%. Implantable defibrillators would lower the cardiac death rate by 3.3%, approximately half the death rate reduction that could be achieved with fish oil supplements. However, since roughly half of adults who suffer from sudden cardiac death exhibit no warning signs before the fatal event, most would never be candidates for implanted defibrillators.

By preventing fatal heart rhythms, fish oil supplements may represent a safe, effective means of preventing sudden cardiac death in adults.

—Elizabeth Wagner, ND

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