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In The NEWS

Increasing Vitamin D Intake Cuts Cancer Risk



Increasing daily vitamin D intake may help lower the risk of cancers of the breast, colon, and ovary by up to 50%, according to a recent review published in the *American Journal of Public Health*.¹

After assessing 63 studies conducted over 40 years, Professor Cedric Garland and colleagues proposed that a daily dose of 1000 international units (IU) of vitamin D is necessary to maintain health.

Vitamin D deficiency may account for thousands of premature deaths due to cancer, they postulated, and the evidence is so overwhelming that public health authorities should take immediate action to urge people to boost their levels of vitamin D.^{1,2}

Recent evidence suggests that vitamin D deficiency may play a role in diverse conditions such as heart disease, diabetes, high blood pressure, lung disease, schizophrenia, and multiple sclerosis. Vitamin D is crucial to skeletal health, helping to prevent rickets and osteoporosis, two diseases characterized by weak bones. Vitamin D's health-promoting effects are attributed to its numerous actions in the body, including supporting calcium absorption, decreasing insulin resistance, regulating cell production, and modulating immune function.

While about 90% of the body's supply of vitamin D is produced by the action of sunlight on the skin, the increasing use of sunscreen combined with limited time spent outdoors leaves many children and adults deficient in this crucial vitamin.

According to Garland, "we now have proof that the incidence of colon, breast, and ovarian cancer can be reduced dramatically by increasing the public's intake of vitamin D. Obtaining the necessary level of vitamin D from diet alone would be difficult and sun exposure carries a risk of triggering skin cancer. The easiest and most reliable way of getting the appropriate amount is from food and a daily supplement."

—Elizabeth Wagner, ND

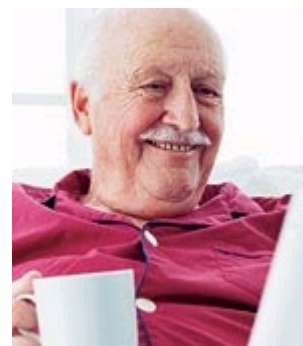
Reference

1. Garland CF, Garland FC, Gorham ED, et al. The role of vitamin D in cancer prevention. *Am J Public Health*. 2005 Dec 27; [Epub ahead of print].
2. Available at: http://news.independent.co.uk/world/science_technology/article335359.ece. Accessed January 4, 2006

Testosterone Benefits Male Alzheimer's Patients

Men with Alzheimer's disease who undergo testosterone replacement enjoy a better quality of life than male Alzheimer's patients who do not take testosterone, according to a California-based, multi-institutional study.*

Sixteen men with Alzheimer's disease and 22 unaffected men completed the study. The participants were randomly assigned to groups that received either testosterone or placebo; thus, there were four groups in the study. Men in the testosterone group applied 75 mg of testosterone gel to their skin each morning after showering, for a period of 24 weeks. At baseline, four weeks, 12 weeks, and at the study's end, investigators measured the effect of testosterone replacement on cognition, neuropsychiatric symptoms, and quality of life.



Testosterone replacement did not have a significant effect on cognition or neuropsychiatric symptoms in Alzheimer's patients or the healthy subjects. Based on caregiver-derived reports, however, men with Alzheimer's disease who received testosterone enjoyed an improved quality of life compared to men with the disease who received placebo. This difference emerged by week 12 of the study and increased until the study's conclusion. Moreover, men with Alzheimer's disease who were given placebo demonstrated deterioration in their quality of life over the 24-week study. In the healthy control group, the testosterone-treated individuals displayed greater improvement in self-rated quality of life, though this trend was nonsignificant.

Testosterone replacement was well tolerated and, according to the caregivers of men with Alzheimer's disease, there were no changes in sexual behavior.

Editor's note: *The reason that testosterone did not do better in this study is that the study subjects were not provided with an aromatase-inhibiting drug like Arimidex®. Aging men often have too much estrogen because the aromatase enzyme converts testosterone to estrogen in the body. When testosterone gels are used, even more unwanted estrogen will be produced unless an aromatase inhibitor is used. Excess estrogen can block the beneficial effects of testosterone.*

—Linda M. Smith, RN

Reference

* Lu PH, Masterman DA, Mulnard R, et al. Effects of testosterone on cognition and mood in male patients with mild Alzheimer disease and healthy elderly men. *Arch Neurol.* 2005 Dec 12; [Epub ahead of print].

Warfarin Increases Fracture Risk in Men



Long-term use of the blood thinner warfarin (Coumadin®) increases the risk of osteoporotic bone fractures in men, according to researchers at the Washington University School of Medicine in St. Louis.*

Warfarin helps prevent blood clots by interfering with the action of vitamin K, a crucial nutrient for both blood clotting and bone health. In this retrospective cohort study, investigators examined the Medicare records of more than 15,000 patients who had been hospitalized for atrial fibrillation, a condition of irregular heart contractions. Because harmful blood clots often accompany atrial fibrillation, this condition is sometimes treated with warfarin. The researchers then identified which patients were also treated for osteoporosis-related bone fractures, and analyzed the correlation between warfarin use and fracture incidence.

Patients who used warfarin for one year or longer demonstrated a 25% greater risk of bone fracture than those who did not use the drug. This association was statistically significant in men but not in women. Men and women who used warfarin for less than one year did not have a heightened risk of bone fracture. Osteoporotic fractures were independently and significantly associated with increasing age, hyperthyroidism, neuropsychiatric disease, and alcoholism. The use of beta-blockers was associated with a decreased risk of bone fracture.

These findings suggest that doctors should carefully monitor the bone health of their patients who take warfarin, and that warfarin users should take measures to reduce their risk of osteoporosis risk. According to study lead author Dr. Brain Gage, "To maintain bone strength, elderly patients taking warfarin should exercise regularly and have adequate intake of calcium and vitamin D."

—Elizabeth Wagner, ND

Reference

* Gage BF, Birman-Deych E, Radford MJ, Nilasena DS, Binder EF. Risk of osteoporotic fracture in elderly patients taking warfarin: results from the National Registry for Atrial Fibrillation 2. Arch Intern Med. 2006 Jan 23;166(2):241-6.

DHEA Promotes Better Wound Healing



The hormone DHEA (dehydroepiandrosterone) is strongly associated with wound healing in humans, and its administration accelerates wound healing in aging mice, according to a recent study in the *Journal of Investigative Dermatology*.¹

Produced by the adrenal gland and frequently referred to as an “anti-aging hormone,” DHEA is a precursor to the sex hormones estrogen and testosterone. In humans, DHEA blood levels peak in our twenties and then decline dramatically with age. Studies suggest that DHEA increases immunological function, improves bone mineral density, boosts sexual libido in women, helps reduce abdominal fat, protects the brain following nerve injury, and offers protection against numerous chronic diseases.²

In their recent study, Stuart J. Mills and colleagues at the University of Manchester, England, found that DHEA levels were significantly decreased in elderly people who were predisposed to chronic wound conditions, such as venous ulcers. Furthermore, DHEA administration accelerated wound healing in estrogen-deficient and aging mice compared to control subjects. DHEA “dampened” local inflammation and reduced tissue levels of pro-inflammatory cytokines, including tumor necrosis factor-alpha and interleukin-6. Their data suggest that DHEA influences wound repair and local inflammation via its conversion to estrogen, and subsequently through the estrogen receptor.¹

According to the authors, reduced DHEA levels in the elderly may be associated with a predisposition to impaired chronic wound healing, and that DHEA may modulate skin repair in humans. The researchers concluded that DHEA is a potentially safe, effective therapy that may improve wound healing in the elderly.¹

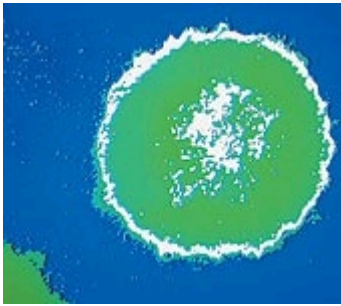
—Penny Baron

Reference

1. Mills SJ, Ashworth JJ, Gilliver SC, Hardman MJ, Ashcroft GS. The sex steroid precursor DHEA accelerates cutaneous wound healing via the estrogen receptors. *J Invest Dermatol*. 2005 Nov;125(5):1053-62.

2. Available at: http://www.lef.org/magazine/mag2005/jun2005_report_hormone_01.htm. Accessed January 4, 2006.

Stem Cells May Help Treat Heart Disease



Bone marrow-derived stem cells are safe and effective in the treatment of advanced heart disease, according to presentations by several independent research teams at the American Heart Association 2005 Scientific Sessions in Dallas, TX.*

The use of stem cells derived from bone marrow to treat damaged cardiac tissue following myocardial infarction is referred to as cellular cardiomyoplasty.

Volker Schachinger, MD, of J.W. Goethe University in Frankfurt, Germany, presented the results of one such study. Schachinger and colleagues found that recipients of bone marrow-derived stem cells significantly improved their left ventricular ejection fraction, a measure of the pumping efficiency of the heart. Left ventricular ejection fraction generally declines over time in those who have had a myocardial infarction, as a result of cardiac cell death and scar tissue formation. This progressive deterioration in heart function can ultimately lead to heart failure, a major cause of disability and premature death in the US.

One hundred nine patients with stable ischemic heart disease enrolled in the study. The patients averaged 59 years in age and had had a documented heart attack between three months and 12 years earlier. In the subgroup of patients who received an infusion of bone marrow-derived stem cells, the left ventricular ejection fraction increased by 3.1%, a clinically significant improvement.

Moreover, the size of the infarct area decreased, suggesting significant repopulation of heart cells by bone marrow-derived stem cells. By contrast, the left ventricular ejection fraction decreased by 1.2% in the control group that did not receive stem cells. Thus far, studies have shown that the beneficial effect of bone marrow-derived stem cell infusion persists for six to 24 months.

Ongoing clinical trials are investigating the optimal conditions for bone marrow-derived stem cell infusion, including the route of infusion, number of cells to infuse, and timing of infusion. While Dr. Schachinger's study involved patients with chronic heart disease, bone marrow-derived stem cell infusion has been demonstrated to improve symptoms as early as four days after a myocardial infarction. Bone marrow-derived stem cell infusion appears to be both safe and effective, with no associated reports of side effects such as rejection, inflammation, or arrhythmia.

—Linda M. Smith, RN

Reference

* Available at: <http://www.medscape.com/viewarticle/517528>. Accessed January 6, 2006.

High Carotenoid, Selenium Levels Reduce Mortality Risk

A report published in the *Journal of Nutrition* reveals that older women with higher serum levels of carotenoids and selenium have a lower risk of dying over the course of five years than women whose levels of these nutrients are low.*

Selenium is a trace mineral found in small amounts in plant and animal foods. Carotenoids occur in plant foods and include alpha carotene, beta-carotene, lycopene, lutein, and zeaxanthin.

Researchers at Johns Hopkins analyzed data from 632 women aged 70 to 79 who enrolled in the Women's Health and Aging Studies I and II. The studies were designed to evaluate the causes and course of physical disability in older community-dwelling women. Selenium and carotenoid levels were measured upon enrollment, and participants were followed for five years.

At the end of the follow-up period, 14% of the women had died. Primary causes of death included cardiovascular disease, cancer, stroke, infection, chronic obstructive pulmonary disease, and accidents. Those who died were older and more likely to be African-American, smokers, and overweight. Higher levels of selenium and individual and total carotenoid concentrations appeared to be

protective against mortality. Women whose selenium or total carotenoid levels were in the lowest 25% of participants had a greater risk of dying than those whose levels were in the top 75%, and as nutrient levels increased, mortality rates decreased. For those who died, mean carotenoid and selenium levels were 1.40 and 1.43 micromoles per liter, compared to 1.72 and 1.54 micromoles per liter for those who survived.

The authors noted that the underlying biological mechanism by which diminished levels of carotenoids and selenium contribute to an increased risk of death could be increased oxidative stress and inflammation. Serum carotenoid levels are considered to be the best marker for fruit and vegetable intake, and studies have shown that high intake of these foods reduces inflammatory biomarkers and protects against cardiovascular disease. Deficient selenium levels have been associated with atherosclerosis and increased oxidative stress.

The authors concluded that their work “provides some early insight into the relation between antioxidant nutrients and mortality among older women,” and recommended further studies.

—Dayna Dye

Reference

* Ray AL, Semba RD, Walston J, et al. Low serum selenium and total carotenoids predict mortality among older women living in the community: the Women's Health and Aging Studies. *J Nutr.* 2006 Jan;136(1):172-6.

Life Extension Experts Address Anti-Aging Congress

Several physicians affiliated with the Life Extension Foundation were among the featured presenters at the 13th Annual International Congress on Anti-Aging Medicine, held December 9-12, 2005, in Las Vegas, NV. The meeting was co-sponsored by the American Academy of Anti-Aging Medicine (A4M), a non-profit medical society dedicated to advancing technology, promoting research, and providing education for the purpose of optimizing the human aging process.

The annual Congress is the world's premier scientific conference on topics relating to medical interventions to prevent and treat diseases and disabilities associated with aging. Congress presenters examine a broad array of the most promising areas of preventive medicine, ranging from stem cell therapeutics and regenerative medicine to cardiovascular disease prevention and treatment, biomarkers of aging, and hormone replacement and vitamin therapies.

This year's meeting set a record for attendance, drawing more than 5,000 physicians, health care practitioners, business leaders, and other attendees from more than 50 nations around the world. As A4M Chairman Dr. Robert Goldman noted, “these 5,000 participants represent the most innovative pioneers in advancements in life enhancement and life extension medicine around the world.”

Among the presenters affiliated with Life Extension were Sergey Dzugan, MD, PhD, and Steven V. Joyal, MD. Dr. Dzugan, president of Life Extension Scientific Information, Inc., presented “A New Theory of Migraine Treatment: The Simultaneous Restoration of Neurohormonal and Metabolic Integrity.” Dr. Dzugan previously published his experience with this groundbreaking, innovative, and extremely successful use of hormone restorative therapy for high cholesterol and migraine management in 2002 and 2003 in the peer-reviewed journals *Medical Hypotheses* and the *Bulletin of Urgent and Recovery Medicine*, respectively. Dr. Joyal, vice president of scientific affairs at Life Extension, presented “Non-Surgical Obesity Treatment and Management: An Integrated Approach.” Dr. Joyal previously published an overview of obesity treatment strategies in the peer-reviewed journal *Current Drug Targets* in 2004.

For more information on A4M and upcoming anti-aging conferences, please visit www.worldhealth.net.

—Matt Sizing

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