Anti-Aging Medicine

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More than the Multivitamin: Nutritional Supplements Confer Anti-Aging Benefits

Over two-thirds of Americans use nutritional supplements, reports the Council for Responsible Nutrition (CRN). Of these 68%, usage in the 35-to-54 age demographic was particularly strong at 54%. In the 2012 CRN Consumer Survey on Dietary Supplements, multivitamins led with 52% of US adults reporting their use in the preceding twelve months.

Driving the consumer interest in nutritional supplementation is a "desire to seek less-costly alternatives to traditional medical care such as doctor visits or prescription medications."

Beyond the single multivitamin, a diverse array of nutritional supplements are available. Research now suggests that such supplements may help boost health of all body systems, from cardiovascular to immune; improve cognitive function; and beneficially affect the most basic cellular mechanisms involved in aging.

In this column, we review key nutritional supplements and the science of their potential to mitigate aging-related diseases – and, quite possibly, aging itself.

Schultz H. US supplement use remains strong, CRN Survey says [online article]. Nutraingredients-usa.com. 8 October 2012. http://www.nutraingredients-usa.com/Consumer-Trends/U.S.-supplement-use-remains-strong-CRN-survey-says.

Nutritional supplements in the US. Nutraingredients-usa.com. 20 Sept. 2012.

Longevity: Vitamin D plus Calcium Reduces Deaths

In the largest study ever performed on effects of calcium and vitamin D on mortality, Lars Rejnmark and colleagues from Aarhus University Hospital (Denmark) utilized pooled data from eight randomized controlled trials involving over 1000 participants, median age 70 years, each. During the three-year study, death was reduced by 9% in those treated with vitamin D plus calcium, with the reduced mortality not solely due to a lower number of fractures, but representing a beneficial effect beyond the reduced fracture risk. The lead author observed: "We found that calcium with vitamin D supplementation to elderly participants is overall not harmful to survival, and may have beneficial effects on general health."

Rejnmark L, Avenell A, Masud T, et al. Vitamin D with calcium reduces mortality: patient level pooled analysis of 70,528 patients from eight major vitamin D trials. *J Clin Endocrinol Metab*. May 17, 2012. doi:10.1210/jc.2011-3328.

Cancer: Multivitamin Exerts 'Modest but Significant' Reduction in Risk

Analysis of data collected in a large-scale study on physicians reveals the cancer-preventive effect of long-term daily multivitamin supplementation. J. Michael Gaziano and colleagues from Harvard Medical School (Massachusetts, US) analyzed data collected in the Physicians' Health Study (PHS) II, which includes 14,641 male US physicians, initially age 50 years or older. Participants received a daily multivitamin or equivalent placebo, and were followed for an average of 11.2 years. During multivitamin treatment, there were 2669 confirmed cases of cancer, including 1373 cases of prostate cancer and 210 cases of colorectal cancer, with some men experiencing multiple events. A total of 2757 (18.8%) men died during follow-up, including 859 (5.9%) due to cancer. Analysis of the data indicated that men taking a multivitamin had a modest 8% reduction in total cancer incidence. The researchers found that a multivitamin significantly reduced the risk of total cancer (excluding prostate cancer – the early stage of which was the cause of half of all incident cancers in the study). There were no statistically significant reductions in individual site-specific cancers, including colorectal, lung, and bladder cancer, or in cancer mortality. Reporting, "Daily multivitamin use was associated with a reduction in total cancer among 1312 men with a baseline history of cancer," the study authors conclude: "In this large prevention trial of male physicians, daily multivitamin supplementation modestly but significantly reduced the risk of total cancer."

Gaziano J, Sesso HD, Christen WG, et al. Multivitamins in the prevention of cancer in men: the Physicians' Health Study II Randomized Controlled Trial. *JAMA*. 2012;308(18):1–10. Oct. 17, 2012; doi:10.1001/jama.2012.14641.

Cognitive Health: Omega-3 Improves Memory

Previously, a number of studies suggested that dietary or supplemental sources of omega-3 fatty acids help improve cognitive function among aging adults. Rajesh Narendarn and colleagues from the University of Pittsburgh (Pennsylvania, US) studied a group of young adults, 18 to 25 years, who were supplemented with omega-3 fatty acids (2 g/day containing docosahexaenonic acid, DHA 750 mg/d and eicosapentaenoic acid, EPA 930 mg/d), for a 6-month period. Prior to