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Council for Responsible Nutrition

The Science Behind the Supplements

FOR IMMEDIATE RELEASE

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GOOD NEWS FOR VITAMINS
—Three New Studies Reinforce Important Role of Vitamins—

WASHINGTON, D.C., *February 23, 2009* — Three new studies published today in the *Archives of Internal Medicine*, a publication from the *Journal of the American Medical Association (JAMA),* further reinforce the varying and important roles that vitamins can play as part of a healthy lifestyle.

The first study suggests that women with higher intakes of calcium from both food and supplements—up to 1,300 milligrams (mg)/day—appear to have a lower risk of cancer overall, and both men and women with high calcium intakes have lower risks of colorectal cancer and other cancers of the digestive system. [1] A second study showed that women who took a combination of B vitamins, including folic acid (2.5 mg/day), pyridoxine hydrochloride (vitamin B_6, 50 mg/day) and cyanocobalamin (vitamin B_{12}, 1 mg/day), decreased their risk of age-related macular degeneration (AMD), the leading cause of severe irreversible vision loss for older Americans. [2] The third study suggests that higher blood levels of vitamin D are inversely associated with the incidence of upper respiratory tract infections. [3]

"These results are encouraging and may lead us in new directions of research," said Andrew Shao, Ph.D., vice president, scientific and regulatory affairs, for the Council for Responsible Nutrition (CRN). "We've known for many years that these essential nutrients play important roles in health—vitamin D and calcium for bone health and folic acid for the prevention of neural tube birth defects—but these latest studies suggest new and exciting benefits that need further exploration."

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Calcium and Cancer

Previous observational studies have shown an inconsistent relationship between calcium intake and cancer. This large prospective study, part of the National Institutes of Health (NIH) AARP Diet and Health Study, followed 293,907 men and 198,903 women, age 50 to 71. Participants were given a food frequency questionnaire when they enrolled in the study, asking how much and how often they consumed dairy, as well as other conventional foods, and whether they took supplements. After seven years of follow-up, the study found that women with a calcium intake of up to 1,300 mg/day, from a combination of conventional foods and supplements, had a decreased risk of total cancer. The study also found that women who were in the top one-fifth of calcium consumption (1,881 mg/day from a combination of conventional food and supplements) had a 23 percent lower risk of digestive types of cancer, particularly colorectal cancer, than those in the bottom one-fifth (494 mg/day). Men who consumed the most calcium from conventional foods and supplements (about 1,530 mg/day) also had a 16 percent lower risk of digestive types of cancer than those who consumed the least calcium.

"What this means for consumers is that there may be benefits to calcium supplementation that go beyond bone health; but more research is still needed to help explain the observed differences in gender and to better assess the effects on other non-digestive cancers," said Dr. Shao. "It's also interesting to point out that the women in this study who had the highest calcium intakes—and lower risks of cancer—had lower body mass indexes, tended to be physically active, and were less likely to smoke cigarettes or drink alcohol. This further reinforces the notion that good health is truly a combination of overall healthy practices—and vitamins and other supplements are an important part of that formula."

B Vitamins and Age-Related Macular Degeneration

Previous observational studies have suggested an association between lower homocysteine concentrations in the blood and lower risk of age-related macular degeneration (AMD), while intervention studies have shown that folic acid, vitamin B_6 and vitamin B_{12} may lower homocysteine levels. But no intervention study had yet examined the effect of B vitamin supplementation on AMD risk. This randomized, double-blind, placebo-

controlled trial, part of the Women's Antioxidant and Folic Acid Cardiovascular Study (WAFACS), followed 5,442 female healthcare professionals, age 40 years or older, who already had or were at high risk for heart disease for a little more than seven years. Participants were assigned to receive a placebo or a combination of folic acid (2.5 mg/day), vitamin B_6 (50 mg/day) and vitamin B_{12} (1 mg/day). After just two years, the beneficial effects of those women taking B vitamins emerged and persisted throughout the entire trial. After 7.3 years of follow-up, women taking the supplements had a 34 percent lower risk of any AMD and a 41 percent lower risk of visually significant AMD.

"This is very promising news for the millions of older Americans who may be at risk for age-related macular degeneration," said Dr. Shao. "Currently, there are very few treatment options available for AMD, so prevention is key. The results of this study suggest that B vitamins could be combined with other supplemental nutrients including the antioxidants, vitamins C and E and carotenoids beta-carotene and lutein, which have also been shown to lower the risk of AMD. These supplements in turn, can be added to other preventive measures, including avoiding smoking and excessive sun exposure to provide even further protection."

Vitamin D and Upper Respiratory Tract Infections

In recent years, vitamin D inadequacy has reemerged, resulting in the resurfacing of diseases such as rickets in children. According to the Dietary Guidelines for Americans 2005, "Older adults, people with dark skin, and people exposed to insufficient ultraviolet band radiation (i.e., sunlight*)* should consume extra vitamin D from vitamin D-fortified foods and/or supplements." In a secondary analysis of the Third National Health and Nutrition Examination Survey (NHANES), a survey of the U.S. population, found that individuals with low blood levels of a vitamin D marker (25-hydroxyvitamin D) were also more likely to have an upper respiratory tract infection (URTI). Specifically, the analysis found that compared to those with levels greater than 30 nanograms/milliliter (ng/ml), individuals with less than 10 ng/ml had a 36 percent higher risk of having a recent URTI; those with 10 to less than 30 ng/ml had 24 percent higher odds.

"The evidence supporting the benefits of vitamin D continues to build," said Dr. Shao. "The majority of Americans continue to fall short in getting adequate amounts of vitamin D through diet alone. Given that vitamin D is relatively low in most foods, and there are serious risks associated with excessive sun exposure, dietary supplements are an important alternative to achieving a sufficient intake. While this study on its own does not mean that higher vitamin D intake will ensure that you don't get an upper respiratory tract infection this winter, it is consistent with, and adds to, the relatively new body of evidence showing that vitamin D plays a critical role in immune function."

Says Dr. Shao, "The bottom line for consumers is that vitamins are an important component of good health. Science is an evolving process, and this recent good news about vitamins should certainly be encouraging to consumers, particularly those who take them consistently over the long-term in combination with other healthy habits."

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[1] Park Y, Leitzmann M, Subar A, et al. Dairy Food, Calcium and Risk of Cancer in the NIH-AARP Diet and Health Study. *Archives of Internal Medicine*, 2009; 169 (4):391-401.

[2] Christen W, Glynn R, Chew E, et al. Folic Acid, Pyridoxine, and Cyanocobalamin Combination Treatment and Age-Related Macular Degeneration in Women: The Women's Antioxidant and Folic Acid Cardiovascular Study. *Archives of Internal Medicine*, 2009; 169 (4):335-341.

[3] Ginde A, Mansbach J, Camargo C. Association Between Serum 25-Hydroxyvitamin D Level and Upper Respiratory Tract Infection in the Third National Health and Nutrition Examination Survey. *Archives of Internal Medicine*, 2009; 169 (4):384-390.

Note to Editor: The Council for Responsible Nutrition (CRN), founded in 1973, is a Washington, D.C.-based trade association representing dietary supplement manufacturers and ingredient suppliers. In addition to complying with a host of federal and state regulations governing dietary supplements, CRN members also agree to adhere to voluntary guidelines for manufacturing, marketing and CRN's Code of Ethics. Visit www.crnusa.org.