

The Nutrition Reporter™

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Two Natural Ways – Omega-3s and Green Tea – Can Ease Inflammation

Inflammation is often the source of pain, and it is present in every disease process, especially the “-itis” diseases, such as arthritis. While many people turn to medications, such as aspirin or ibuprofen, to reduce inflammation, many natural approaches work better and are safer over the long term. The omega-3 fish oils, gamma-linolenic acid, and curcumin are commonly used to reduce inflammatory symptoms.

Two recent studies focused on the benefits of omega-3s and green tea in lessening inflammation.

In one of the studies, Janice K. Kiecolt-Glaser, PhD, of the Ohio State University College of Medicine, Columbus, and her colleagues asked 138 middle-age and elderly men and women to take a moderately high dose of omega-3 fish oils, a low dose, or placebos daily for four months.

The high-dose omega-3 provided 2,085 mg of eicosapentaenoic acid (EPA) and 348 mg of docosahexaenoic acid (DHA) daily, and the low dose provided half these amounts (in six capsules daily).

Taking the higher dose of omega-3s led to a 12 percent reduction in interleukin-6 (IL-6), one of the most potent inflammation-promoting compounds in the body. The lower dose led to a 10 percent reduction. Meanwhile, IL-6 levels increased by 36 percent in the placebo group.

The higher dose of omega-3s also led to a 2.3 percent reduction in tumor necrosis factor alpha (TNFα), another promoter of inflammation, while the lower dose increased TNFα an insignificant 0.2 percent.

In a separate study, Pawel Bogdanski, MD, of the Poznan University of Medical Sciences, Poland, and his colleagues asked 56 obese, hypertensive men and women to take either a daily supplement containing green tea extract or a placebo for three months. The supplement contained 379 mg of green tea extract, of which 208 mg was epigallocatechin-3-gallate (EGCG), the principal antioxidant found in green tea.

By the end of the study, levels of C-reactive

protein, a pro-inflammatory byproduct of IL-6, decreased by an average of 0.9 mg/L among people taking the green tea extract, but increased slightly among those taking placebos. TNFα levels also decreased in the group taking green tea extract.

But the green tea extract supplements led to far broader benefits. Both systolic and diastolic blood pressure decreased by several points. Glucose and insulin levels, along with insulin resistance, decreased. Cholesterol and triglyceride levels improved as well.

Reference: Kiecolt-Glaser JK, Belury MA, Andridge R, et al. Omega-3 supplementation lowers inflammation in healthy middle-aged and older adults: a randomized controlled trial. *Brain, Behavior, and Immunity*, 2012;26:988-995. Bogdanski P, Suliburska J, Szulinska M, et al. Green tea extract reduces blood pressure, inflammatory biomarkers, and oxidative stress and improves parameters associated with insulin resistance in obese, hypertensive patients. *Nutrition Research*, 2012;32:421-427. □

Perspectives Another Low-Carb Controversy

The *British Medical Journal*, also known as *BMJ*, recently published an online article concluding that low-carb diets increased the risk of cardiovascular disease. The study was based on an analysis of 43,396 Swedish women, who had completed a single dietary survey 15 years before.

One would think that the *BMJ*, one of the top medical journals in the world, would select for quality research. But no. Not only was this a shoddily conducted study, the *BMJ* also published an editorial warning about the dangers of low-carb diets. Of course, the study was reported worldwide, summarized in other journals and newspapers, including the *New York Times*.

There was an upside, however, in the large number of doctors who lambasted the study and the *BMJ* with online criticisms. I don't have the space to describe all of the criticisms, but I'll relate a few:

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The statistical findings were of “minimal” value. The dietary data was based on the women’s recall of what they had eaten during the prior six months. One of the commenters asked if you would remember what you ate over the previous six months and whether you’re still eating the way you did 15 years ago. The same doctor noted that the women in the study consumed an average of 1,561 calories daily – a suspiciously small amount of food that in itself would invalidate the data used in the study. In fact, the low-carb eaters consumed 154 grams of carbs daily – an amount that was anything but low-carb. Atkins’ original diet limited carbs to initially 20 grams daily.

Want to hear more? Shorter women were three times more likely to have a serious cardiovascular event, e.g., a heart attack. And with all this, the risk of having cardiovascular problems was extraordinarily small – “women in the study had a 99.81% chance of *not* suffering any cardiovascular events during the long study,” according to one observer.

My point is that many medical journals publish pure nonsense that isn’t worthy of publication, and the so-called peer review often doesn’t exist or is completely meaningless. Perhaps I’m naive, but I expect more. Maybe it’s time for the *BMJ* to publish a study on the dangers doctors and patients face when they follow the advice in bad studies that should never have seen the light of day. –*JC*

Phosphatidylserine and Omega-3 Supplements Reduce Stress

Taking a combination of phosphatidylserine (PS) and omega-3 supplements led to a significant reduction in stress, according to a study by German researchers.

Juliane Hellhammer, PhD, MSc, of the Diagnostic Assessment and Clinical Research Organization in Trier, Germany, compared the supplement combination to placebos in a study of men who were described as “high chronically stressed subjects.”

Previous studies had found that PS could reduce acute physical and psychological stress, improve memory, reduce signs of depression, and enhance stamina in people who exercised. PS is a phospholipid, an essential brain compound that contains phosphorus and fats. PS also contains the amino acid L-serine.

In the study, Hellhammer and her colleagues asked 60 men, ages 30 to 60 years of age, to take the supplements or placebos for 12 weeks. The daily

supplements provided 66 mg of PS, 75 mg of eicosapentaenoic acid (EPA), and 15 mg of docosahexaenoic acid (DHA).

Tests showed that men taking the supplements had a reduced cortisol response to stress.

Reference: Hellhammer J, Hero T, Franz N, et al. Omega-3 fatty acids administered in phosphatidylserine improved certain aspects of high chronic stress in men. *Nutrition Research*, 2012;32:241-250. □

Analysis Shows Cranberry Helps Prevent Urinary Tract Infections

An analysis of data from 10 different studies has found that cranberry-containing products reduce the odds of developing urinary tract infections (UTIs).

Chih-Hung Wang, MD of the National Taiwan University Hospital and his colleagues looked at 10 controlled studies that included 1,494 men, women, and children. The studies used different types of cranberry products, including juice, capsules, and tablets – with different amounts of cranberry and dosing schedules.

Overall, Wang found that cranberry users were 38 percent less likely to develop a UTI. However, cranberry-containing products seemed to be more effective in certain subgroups. Women in general had a 51 percent lower risk of UTIs if they consumed cranberry products, while women with recurrent UTIs had a 47 percent lower risk of UTIs.

Cranberry juice drinkers had a 53 percent lower risk of UTIs, and consuming cranberry products more than twice daily was associated with a 42 percent lower risk of UTIs. Children who consumed cranberry products had a 67 percent lower risk of UTIs.

Reference: Wang CH, Fang CC, Chen NC, et al. Cranberry-containing products for prevention of urinary tract infections in susceptible populations. *Archives of Internal Medicine*, 2012;172:988-996. □

Low Vitamin D Linked to More Serious Illnesses in Children

Two new studies published in the journal *Pediatrics* show that vitamin D deficiency is common in children and appears to contribute to more serious illnesses.

In the first study, Kate Madden, MD, of Children’s Hospital, Boston, and her colleagues studied data on 511 children with an average age of five years. All of the children had been admitted to the pediatric intensive care unit (PICU) over the course of one year. Two of every five children were deficient in vitamin D.

Low vitamin D levels were strongly associated with greater illness severity and greater use of drugs called vasopressors to increase blood pressure.

In the other study, James D. McNally, MD, PhD, of the Children's Hospital of Eastern Ontario, Ottawa, and colleagues analyzed data on 326 children treated at six different PICUs. He found vitamin D deficiencies in 69 percent of children and teenagers. Again, deficiencies were strongly associated with more severe infections – and with PICU stays about two days longer than in children with normal vitamin D levels.

“Given the roles of vitamin D in bone development and immunity, we recommend screening of those critically ill children with risk factors for vitamin D deficiency and implementation of effective repletion strategies,” wrote Madden.

References: Madden K, Feldman HA, Smith EM, et al. Vitamin D deficiency in critically ill children. *Pediatrics*, 2012: doi 10.1542/peds.2011-3328. McNally JD, Menon K, Chakraborty P, et al. The association of vitamin D status with pediatric critical illness. *Pediatrics*, 2012: doi 10.1542/peds.2011-3059. □

Vitamin B12 Injections Help Curb Hepatitis C Infections

Vitamin B12 shots can increase the effectiveness of drugs used to treat chronic hepatitis C infection.

Garardo Nardone, MD, of the University of Naples, Italy, and his colleagues, treated 94 patients with using a combination of interferon and ribavirin. Some of the patients also received intramuscular injections of 5,000 mcg of vitamin B12 every four weeks while also receiving antiviral therapy.

Nardone tracked how long it took patients to be completely free of the virus that causes hepatitis C. After 24 weeks, patients receiving the B12 injections along with drug therapy were about seven times more likely to be free of the virus, compared with patients who received only drug therapy.

Reference: Rocco A, Compare D, Coccoli P, et al. Vitamin B12 supplementation improves rates of sustained viral response in patients chronically infected with hepatitis C virus. *Gut*, 2012: doi 10.1136/gutjnl-2012-302344. □

Antioxidant-Rich Foods Lead to Improvements in Asthma

Eating a lot of antioxidant-rich vegetables and fruits leads to an improvement in asthma symptoms, compared with eating relatively few of these foods.

Lisa G. Wood, PhD, of the University of Newcastle, New South Wales, Australia, and her colleagues studied 137 asthmatic adults. They were

placed on either a high-antioxidant diet (five servings of vegetables and two servings of fruit daily) or a low-antioxidant diet (less than two servings of vegetables and one serving of fruit daily) for 14 weeks. After the first two weeks, people on the high-antioxidant diet also took placebos, while those on the low-antioxidant diet took either placebos or 45 mg of lycopene supplements daily.

“Improvements were evident only after increased fruit and vegetable intake, which suggests that whole-food interventions are most effective,” wrote Wood and her colleagues.

People eating the low-antioxidant diet had poorer lung function and had a faster exacerbation of their asthma symptoms. People eating the low-antioxidant diet were also more than two times more likely to have an exacerbation of symptoms.

The lycopene supplements did not appear to reduce asthma symptoms.

Reference: Wood LG, Garg ML, Smart JM, et al. Manipulating antioxidant intake in asthma: a randomized controlled trial. *American Journal of Clinical Nutrition*, 2012: doi 10.3945/ajcn.111.032623. □

Some Dietary Antioxidants May Reduce Risk of Pancreatic Cancer

Certain dietary antioxidants might reduce the risk of pancreatic cancer – or they may be markers of healthy eating habits.

Andrew R. Hart, MD, of the Norwich Medical School, United Kingdom, and his colleagues drew on data from 23,658 men and women, ages 40-74 years. Within 10 years, 49 people developed pancreatic cancer, and Hart compared their eating habits with 3,970 people who had similar characteristics but remained free of the disease.

People consuming the largest amounts of vitamins C and E and selenium combined had a 67 percent lower risk of being diagnosed with pancreatic cancer. High intake of selenium was by itself associated with a 51 percent lower risk, and vitamin E intake was by itself associated with a 43 percent lower risk of pancreatic cancer.

Reference: Banim PJR, Luben R, McTaggart A, et al. Dietary antioxidants and the aetiology of pancreatic cancer: a cohort study using data from food diaries and biomarkers. *Gut*, 2012: doi 10.1136/gutjnl-2011-301908. □

Higher Magnesium Related to Fewer Cardiovascular Deaths

People who consume large amounts of magnesium from their foods are less likely to die from cardiovas-

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Quick Reviews of Recent Research

• Wheat germ extract may help in cancer

Human and cell studies have shown that fermented wheat germ extract (FWGE) may have benefits in many different types of cancer. In the latest study along these lines, researchers at a leading cancer research and treatment center in Tampa, Florida, have shown that FWGE might help control the growth of ovarian cancer. The researchers tested FWGE on 12 different types of ovarian cancer cells. The supplement modified gene activity in the ovarian cancer cells and made them more susceptible to chemotherapy. The lead researcher, Patricia L. Judson, MD, conducted the study because she felt that FWGE had helped her patients.

Judson PL. *International Journal of Gynecological Cancer*, 2012;12: doi 10.1097/IGC.0b013e3188258509d.

• Vitamin D linked to lower breast cancer risk

Researchers from Mexico compared 573 randomly selected women who had been diagnosed with breast cancer within the prior six days and 639 women with similar characteristics who were free of the disease. Vitamin D levels were inversely associated with risk of breast cancer. Overall, higher vitamin D levels were associated with a 47 percent lower risk of breast cancer. In premenopausal women, high vitamin D levels were associated with a 40 percent lower risk, and in postmenopausal women high vitamin D levels were associated with a 63 percent lower risk of breast cancer.

Fedirko V. *Cancer Causes and Control*, 2012: doi 10.1007/s10552-012-9984-z.

Magnesium...

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cular diseases, according to a study by Japanese researchers.

Wen Zhang, PhD, of Osaka University, and her colleagues analyzed the dietary magnesium intake of 58,615 Japanese men and women, ages 40-79 years when the study began. After an average follow up of almost 15 years, 2,690 subjects had died from cardiovascular disease, primarily stroke and coronary heart disease.

High intake of magnesium was associated with significantly lower risks of death. Men had a 51 percent lower risk of hemorrhagic stroke, 53 percent lower risk of ischemic stroke, and 50 percent lower risk of either heart failure or coronary heart disease. Women with high magnesium intake from food had a 26 percent lower risk of all cardiovascular diseases.

Reference: Zhang W, Iso H, Ohira T, et al. Associations of dietary magnesium intake with mortality from cardiovascular disease: the JACC study. *Atherosclerosis*, 2012;221:587-595. □

• Propolis might help in prostate cancer

Propolis, a resinous substance bees use to seal their hives, has long been used as a dietary supplement because it has antiviral, antibacterial, and antifungal properties. In a recent study, researchers at the University of Chicago tested an antioxidant extract of propolis, caffeic acid phenethyl ester (CAPE) on laboratory mice with prostate cancer. CAPE inhibited the growth of early-stage prostate cancer by inhibiting the tumor cells' ability to identify sources of nutrition. CAPE stopped tumor growth in the mice, but the tumors grew at their original rate when the treatment was stopped.

Chuu CP. *Cancer Prevention Research*, 2012;5:788-797.

• African-Americans need more vitamin D

People with dark complexions have more difficulty making their own vitamin D, compared with people who have light complexions. The reason is that darker skin pigments protect against ultraviolet radiation, which is needed to stimulate production of the vitamin. As a consequence, they may require larger supplemental doses of the "sunshine vitamin." Researchers at the Ralph H. Johnson V.A. Medical Center, Charleston, S.C., compared vitamin D levels in 47 African-American and white men whose average age was 64 years. More than 90 percent of African-American men were deficient in vitamin D, and 50 percent of those men had severe deficiencies. In contrast, 34 percent of white subjects were deficient, of whom 11 percent had severe deficiencies. Supplementation of 4,000 IU of vitamin D3 daily for one year was needed to bring the vitamin D levels of African-American men up to the levels found in white men. The researchers wrote that "vitamin D deficiency can be easily remedied in African-Americans."

Garrett-Mayer E. *American Journal of Clinical Nutrition*, 2012;96:332-336.

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