

The Nutrition Reporter™

© Jack Challem January 2009 Vol 20 No 1



The independent newsletter that reports vitamin, mineral, and food therapies

Diet and Supplements Lower Levels of C-Reactive Protein, Inflammation

A recent article in the *New England Journal of Medicine* touted the benefits of statin drugs, such as Lipitor, for lowering levels of C-reactive protein (CRP), a marker and promoter of inflammation. But dietary changes and supplements work just as well as drugs – and without side effects, according to several recent studies.

Helene Jacques, PhD, of Laval University, Quebec, Canada, and her colleagues asked 19 middle-age men and women to consume a diet with cod (fish) as their primary source of protein for four weeks. All of the subjects were overweight and insulin resistant.

They were then switched to a diet in which they consumed lean beef, pork, eggs, and dairy products for four weeks. Both diets with essentially the same in fiber and monounsaturated fat, polyunsaturated fat, and saturated fat.

The high-cod diet led to a 25 percent decrease in CRP levels, whereas the other diet tended to increase CRP levels.

Cod protein tends to be low in omega-3 fats, suggesting that the benefits were from the protein. Jacques wrote that “insulin-resistant individuals could benefit from including dietary cod protein in their diets.”

In another study Ahmad Esmailzadeh, PhD, of Isfahan University, Iran, analyzed the dietary consumption of 486 women and the relationship of specific dietary fats to inflammation.

He found that women consuming the most partially hydrogenated vegetable oils (the principal source of trans fats) had much higher levels of several markers of inflammation, compared with women who consumed few or no hydrogenated vegetable oils.

Women consuming the most hydrogenated vegetable oils had 45 percent higher levels of CRP, 66 percent higher levels of tumor necrosis factor alpha, 72 percent higher levels of interleukin-6,

compared with women who consumed little or no hydrogenated vegetable oils.

In a third study, Gladys Block, PhD, of the University of California, Berkeley, and her colleagues asked 396 healthy nonsmoking men and women to take 1,000 mg of vitamin C, 800 IU of vitamin E, or placebos daily for two months. Most of the subjects in the study had low CRP levels, although obese subjects tended to high higher levels compared with thin subjects.

Vitamin C reduced CRP levels by 25 percent. Although vitamin E did not lower CRP levels in this study, several other studies have found that it does lower CRP levels.

References: Ouellet V, Weisnagel J, Marois J, et al. Dietary cod protein reduces plasma C-reactive protein in insulin-resistant men and women. *Journal of Nutrition*, 2008;138:2386-2391. Esmailzadeh A, Azadbakht L. Home use of vegetable oils, markers of systemic inflammation, and endothelial function among women. *American Journal of Clinical Nutrition*, 2008;88:913-921. Block G, Jensen CD, Dalvi TB, et al. Vitamin C treatment reduces elevated C-reactive protein. *Free Radical Biology & Medicine*, 2008; epub ahead of print. □

Perspectives Vitamin C and Cancer

A recent study – in cells and mice – was published in the journal *Cancer Research* and immediately followed by newspaper and internet headlines screaming that vitamin C interfered with the cancer-killing effect of several chemotherapeutic drugs.

The finding contradicted several promising studies – in cells, animals, *and* people – showing that large amounts of vitamin C enhance the body’s ability to fight cancer. What gives?

The study, conducted by researchers at the Memorial Sloan-Kettering Cancer Center in New York City, used an awful methodology. That’s what gives. I’ll explain.

Continues on next page

Most of the vitamin C found in foods and supplements is chemically known as ascorbic acid. The Sloan-Kettering researchers did *not* use this type of vitamin C. Instead, they used dehydroascorbic acid, which is the “oxidized” form of the vitamin, and found that it reduced the effectiveness of chemo drugs on cells. Meanwhile, in the mouse study, the researchers used dehydroascorbic acid in doses known to be toxic.

No one in the entire world sells dehydroascorbic acid supplements. In fact, when dehydroascorbic acid is formed in the body, it is quickly broken down because of its inherent toxicity. It makes absolutely no sense to (1) call dehydroascorbic acid vitamin C or (2) to use it in cancer experiments.

Several studies have successfully used large amounts of *real* vitamin C to destroy cancer cells in cell experiments, animals, and people. The current theory is that large amounts of vitamin C – large intravenous doses of vitamin C in people – generate hydrogen peroxide, which functions as a natural chemotherapeutic agent but does not harm normal cells. – *JC*

Multivitamin Supplement Leads to Sharper Brains in Children

Taking a low-potency multivitamin and multi-mineral supplement is enough to improve cognition function in apparently healthy children, according to a study conducted at Northumbria University in England.

David O. Kennedy, PhD, and his colleagues gave supplements or placebos to 81 children ages eight to 14 years for 12 weeks. The children were assessed with a variety of computer-based tests before and after taking the supplements on the first and last day of the study, as well as after four and eight weeks. The cognitive tests focused on reaction time, symbol recognition, and memory.

“The most striking finding from the current study was a consistent pattern of enhancement across the attention task components of the battery [of tests]...” wrote Kennedy and his colleagues. Children taking the supplements had faster reaction times and were better able to distinguish between different images.

However, tests on the last day of the study found that the ability to recognize drawings decreased among children taking supplements. The researchers noted that this finding might have simply been due to chance.

Reference: Haskell CF, Scholey AB, Jackson PA, et al. Cognitive and mood effects in healthy children during 12 weeks’ supplementation with multi-vitamins/minerals. *British Journal of Nutrition*, 2008;100:1086-1096. □

Herbal Extract and Vitamin E Aid Patients with Liver Diseases

A combination of silybin, an extract of the herb milk thistle, and vitamin E improved liver function in people with either chronic hepatitis C infection or fatty liver.

Jacopo Vecchiet, MD, of the Gabriele d’Annunzio University, Italy, and his colleagues used silybin and vitamin E to treat 30 men and women with hepatitis C infection, and then compared their responses to 10 patients who did not receive the supplements.

The supplements provided 188 mg of silybin and 60 (IU) of vitamin E daily for three months.

After three months, people receiving the supplements benefited from a significant decrease in their liver enzymes, a sign of improved liver function. The two enzymes, ALT and AST, declined from an average of 63 to 52 and from 49 to 40, respectively. In addition, they benefited from about a 22 percent decrease in C-reactive protein, a marker of inflammation.

Ten other patients with fatty liver, known medically as steatosis, also benefited from the supplements. They also had significant decreases in ALT and AST, along with reductions in total cholesterol, fasting glucose, fasting insulin, and C-reactive protein.

Reference: Falasca K, Ucciferri C, Mancino P, et al. Treatment with silybin-vitamin E-phospholipid complex in patients with hepatitis C infection. *Journal of Medical Virology*, 2008; 80:1900-1906. □

“Functional” Vitamin B12 Deficiency Common in Migraines

Vitamin B12 supplements were first used in the treatment of migraine headaches almost 50 years ago, but recent studies have produced conflicting results. The reason may be related to not properly diagnosing a deficiency of vitamin B12.

Levels of the vitamin are most often assessed based on its level in the blood. However, a functional measurement assesses levels of methylmalonic acid, which reflects actual vitamin B12 activity. When vitamin B12 levels are low, methylmalonic acid levels are elevated.

Osman Metin Ipçoğlu, MD, of the Gulhane Military Medical Academy, Istanbul, Turkey, studied 50 women who had a history of migraine headaches without aura and compared them to 46 healthy subjects. Blood levels of both vitamin B12 and folic acid (another B vitamin) were similar among women with migraines and those without migraines.

However, almost three-fourths of the women with

migraine headaches had elevated levels of methylmalonic acid. In fact, their levels of methylmalonic acid averaged twice that of women without migraines.

Ipçoiglu noted that a functional deficiency of vitamin B12 might be missed with simple blood tests for the vitamin. He recommended that migraine patients be tested for methylmalonic acid and, if it was elevated, be treated with vitamin B12.

Reference: Ipçoiglu OM, Özcan O, Gültepe M, et al. Functional vitamin B12 deficiency represented by elevated urine methylmalonic acid levels in patients with migraine. *Turkish Journal of Medical Sciences*, 2008;38:409-414. □

Probiotic Supplements Reduce Risk of Eczema in Infants

A specific strain of probiotics – good bacteria that aid the digestive tract – can cut in half the risk of developing eczema in infants, according to a study conducted at the University of Otago in New Zealand.

Kristen Wickens, PhD, and her colleagues asked pregnant women to take one of two strains of probiotics or placebos beginning at the eighth month of pregnancy and continuing for six months postpartum if they breastfed their babies. In addition, 474 infants received the same treatment from birth to age two years.

Infants receiving supplemental *Lactobacillus rhamnosus* were 49 percent less likely to develop eczema, which is also known as atopic dermatitis. Infants that did develop eczema tended to have less severe forms, compared with babies that received either the other type of probiotic or placebos.

Other research has shown that intestinal bacteria help regulate the immune system and have anti-inflammatory effects.

Reference: Wickens K, Black PN, Stanley TV, et al. A differential effect of 2 probiotics in the prevention of eczema and atopy: a double-blind, randomized, placebo-controlled trial. *Journal of Allergy and Clinical Immunology*, 2008;122:788-794. □

Low CoQ10 and Vitamin D May Predispose to Heart Failure

Low blood levels of coenzyme Q10 (CoQ10) and vitamin D may increase the risk of death from heart failure, according to two recent studies. CoQ10 supplements have been used by some cardiologists in the United States and Japan to treat heart failure for at least 25 years.

Christopher M. Florkowski, MD, of Canterbury Health Laboratories, Christchurch, New Zealand, and his colleagues studied the CoQ10 blood levels of 236

patients admitted to the hospital with chronic heart failure. They found that low levels of CoQ10 doubled the risk of heart failure over two and one-half years.

People with CoQ10 levels below 0.73 $\mu\text{mol/L}$ were more likely to die, whereas people with CoQ10 levels above that amount were more likely to survive. Normal blood levels of CoQ10 are 0.8 to 1.4 $\mu\text{mol/L}$.

In the other study, Stefan Pilz, MD, of the University of Heidelberg, Germany, and his colleagues measured vitamin D levels in 3,299 patients who had been referred to doctors for coronary angiography.

After an average follow-up of almost eight years, 116 patients had died from heart failure and 118 had died from sudden cardiac death. People with low vitamin D levels were almost three times more likely to die from heart failure and five times more likely to die from sudden cardiac death.

References: Molyneux SL, Florkowski CM, George PM, et al. Coenzyme Q10: an independent predictor of mortality in chronic heart failure. *Journal of the American College of Cardiology*, 2008;52:1435-1441. Pilz S, Marz W, Welnitz B, et al. Association of vitamin D deficiency with heart failure and sudden cardiac death in a large cross-sectional study of patients referred for coronary angiography. *Journal of Clinical Endocrinology and Metabolism*, 2008;93:3927-3935. □

Eating Eggs for Breakfast Better than Bagels for Weight Loss

Eating two eggs for breakfast, combined with a reduced-calorie diet, leads to substantial weight loss within eight weeks, compared with eating a bagel for breakfast.

Nikhil V. Dhurandhar, PhD, of the Pennington Biochemical Research Center, Baton Rouge, Louisiana, and his colleagues asked 152 men and women to follow one of four diets for eight weeks: two eggs for breakfast as part of a low-calorie diet, a bagel for breakfast as part of a low-calorie diet, 2 eggs for breakfast while maintaining the subjects' typical diet, and a bagel for breakfast while maintaining a typical diet.

Eating eggs or a bagel for breakfast, while maintaining a typical diet, did not lead to weight loss. However, eating two eggs for breakfast at least five days weekly, as part of a low-calorie diet, led to substantial weight and fat loss, compared with people eating a bagel for breakfast on a low-calorie diet.

At the end of the study, the egg/low-calorie group averaged a 65 percent greater loss of weight, compared with the bagel/low-calorie group – almost 6 pounds versus 3.5 pounds. The egg/low-calorie group also had a 16 percent reduction in body fat, and 34 percent reduction in waist circumference.

Continues on next page

Quick Reviews of Recent Research

• Low folic acid increase anemia in elderly

Researchers from Leiden University in the Netherlands analyzed blood samples from 423 men and women who were 85 years of age. They found that a deficiency of folic acid was associated with almost twice the risk of anemia. A combination of folic acid deficiency and elevated homocysteine levels was related to more than a three-time greater risk of anemia. A lack of vitamin B12 was not associated with anemia in this study.

den Elzen WPJ. *Archives of Internal Medicine*, 2008; 168:2238-2244.

• Oral vitamin D may prevent skin infections

Researchers at the University of California, San Diego, gave 4,000 IU of vitamin D daily to 14 patients with moderate to severe atopic dermatitis. After 21 days of supplementation, the subjects increased their production of cathelicidin, an immune compound that protects against microbial infection. In many skin disorders, low levels of cathelicidin are associated with increased infection. Other recent research has found that vitamin D increases the immune response to the bacterium causing tuberculosis.

Hata TR. *Journal of Allergy and Clinical Immunology*, 2008;122:829-830.

• Calcium supplements protect bone in men

Physicians and researchers at the University of Auckland, New Zealand asked 323 health men, at least 40 years of age, to take 600 mg of calcium citrate, 1,200 mg of calcium, or placebos daily for two years. Men taking 1,200 mg of calcium citrate daily had a 1 to 1.5 percent increase in bone density, an increase comparable to that seen after supplementation in postmenopausal women. Men taking the higher dose of calcium also experienced fewer falls. The effects of taking 600 mg of calcium were comparable to placebos. However, calcium supplements did slightly increase the risk of heart attack and other vascular problems.

Reid IR. *Archives of Internal Medicine*, 2008;168:2276-2282.

Eggs Enhance Weight Loss...

Continues from previous page

Dhurandhar and his colleagues noted that eggs are an inexpensive and widely available food, and that they promote weight loss despite their inherent calories and fat.

Reference: Vander Wal JS, Gupta A, Khosla P, et al. Egg breakfast enhances weight loss. *International Journal of Obesity*, 2008;32:1545-1551. □

• Pomegranate extract reduces inflammation

Pomegranate seeds are rich in antioxidant polyphenolic flavonoids. American and Indian researchers tested the anti-inflammatory effects of pomegranate extract on chondrocytes, the cells that build cartilage. The extracts significantly reduced the activity of the Cox-2 enzyme, which promotes inflammation, and to a lesser extent on the Cox-1 enzyme.

Shukla M. *Journal of Inflammation*, 2008;5:9.

• Fructose stimulates fat production

Many doctors have argued that increased consumption of fructose-containing foods stimulates fat production. In this study, researchers at the University of Texas gave six healthy subjects 85 grams of glucose, 85 grams of a 50/50 mix of glucose and fructose, or 85 grams containing 75 percent fructose and 25 percent glucose. When the high-fructose was consumed, lipogenesis (fat formation) was two times greater compared with pure glucose, increasing both immediately and several hours later after consuming lunch.

Parks EJ. *Journal of Nutrition*, 2008;138:1039-1046.

• Chinese herbal remedy helpful in psoriasis

Forty-two patients in Taiwan were asked to apply an ointment containing indigo naturalis or a placebo ointment to psoriasis plaques daily for 12 weeks. Indigo naturalis (known as ching dai in Cantonese) is a combination of five Chinese leaf extracts. The researchers, with the Chang Gung Memorial Hospital and other institutions, found that indigo naturalis led to a clearance or near clearance in psoriasis plaques in 31 of the patients. Overall, the size of plaques decreased by 61.5 percent, compared with only a 10 percent decrease in the placebo group.

Lin YK. *Archives of Dermatology*, 2008;144:1457-1464.

The Nutrition Reporter™ newsletter (ISSN 1079-8609) publishes full monthly issues except for August and December and is distributed only by prepaid subscription. This issue, Vol 20 No 1, © January 2009 by Jack ChalleM. All rights reserved. Reproduction without written permission is prohibited. Phone: (520) 529.6801. Email: nutritioncomment@cs.com. The Nutrition Reporter™ is strictly educational and not intended as medical advice. For diagnosis and treatment, consult your physician. Subscriptions are \$28 per year in the U.S.; either \$34 US or \$40 CDN for Canada; and \$42 for all other countries, payable in U.S. funds through a U.S. bank. The Nutrition Reporter™ is a trademark of Jack ChalleM.

The Nutrition Reporter™

Post Office Box 30246 • Tucson AZ 85751-0246 USA

Editor and Publisher: Jack ChalleM

Copy Editor: Mary E. Larsen

Medical and Scientific Advisors

Richard P. Huemer, MD Lancaster, Calif. • Ralph K. Campbell, MD Polson, Montana

Peter Langsjoen, MD Tyler, Texas • Ronald E. Hunninghake, MD Wichita, Kansas

Marcus Laux, ND San Francisco, Calif. • James A. Duke, PhD Fulton, Maryland