

The Nutrition Reporter™

© Jack Challem February 2004 Vol 15 No 2

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

Widespread Use of Statin Drugs May Deplete CoQ10, Increase Heart Failure Risk

Dramatic increases in the incidence of congestive heart failure may be partly related to the widespread use of “statin” cholesterol-lowering drugs, including Lipitor (atorvastatin), Mevacor (lovastatin), Pravachol (pravastatin), and Zocor (simvastatin). That’s the conclusion of a recent article in the journal *BioFactors* by Peter H. Langsjoen, MD, affiliated with the East Texas Medical Center in Tyler, Texas.

From 1968 to 1993, the number of U.S. deaths directly attributed to congestive heart failure increased from 10,000 to 42,000 cases annually. From 1970 to 1994, the rate of hospitalizations for heart failure increased by more than three times. And in a study at the Henry Ford Heart and Vascular Institute, Detroit, cases of heart failure doubled from 1989 to 1997, according to research cited by Langsjoen.

Statin drugs, introduced in 1987, have been widely prescribed for reducing elevated levels of low-density lipoprotein (LDL) cholesterol.

However, according to Langsjoen, numerous human and animal studies have shown that statin drugs interfere with the body’s production of coenzyme Q10, a vitamin-like antioxidant involved in cellular energy production and normal heart-muscle function. Heart cells in particular have very high energy and CoQ10 requirements.

“Statin-induced depletion of CoQ10 must be considered in the...epidemic of heart failure,” he wrote.

CoQ10, which was the basis of the 1972 Nobel Prize in chemistry, plays a key role in the production of the chemical form of energy, adenosine triphosphate (ATP). Previous research has documented deficiencies of CoQ10 in patients with congestive heart failure.

Many of those studies have found substantial decreases in blood and tissue CoQ10 levels after therapy with statin drugs. The drugs reduce the activity of HMG-CoA reductase, an enzyme involved in the body’s production of both cholesterol and CoQ10. By reducing CoQ10 production in the body,

statins also lower levels of ATP, which can impair normal heart function.

“In human trials evaluating CoQ10 in statin therapy, there appears to be frequent and significant depletion in blood CoQ10 levels, particularly when statins are taken at higher doses and most notably in the elderly,” Langsjoen wrote.

In one study, patients taking 20 mg of Zocor for six months had decreased levels of both LDL cholesterol and CoQ10. But patients who took 100 mg of CoQ10 along with Zocor were able to lower their cholesterol without lowering levels of the nutrient.

As physicians continue prescribing higher dosages of statin drugs, combined with more aggressive efforts to lower LDL cholesterol, “the severity of CoQ10 depletion will increase with an increasing likelihood of impairment in heart-muscle function,” Langsjoen concluded.

Reference: Langsjoen PH, Langsjoen AM. The clinical use of HMG CoA-reductase inhibitors and the associated depletion of coenzyme Q10. A review of animal and human publications. *BioFactors*, 2003;18:101-111. □

Can Coffee Reduce Diabetes Risk? Harvard Study Suggests that It Might

Research on the health effects of coffee has been mixed – some studies find that it might increase the risk of heart disease while others suggest that moderate amounts have no effect.

Now, a study by researchers at Harvard University suggests that drinking coffee might just reduce the risk of developing type 2 (adult-onset) diabetes.

Frank B. Hu, MD, and his colleagues studied the health and coffee drinking habits of 126,000 men and women participating in the Health Professionals’ Follow-up Study and the Nurses’ Health Study. Subjects were tracked from 1980 to 1998, and their coffee consumption was assessed every two to four years.

Continues on next page

When the study began, none of the men or women had diabetes, cancer, or cardiovascular disease. However, in the ensuing years, 1,333 men and 4,085 women developed diabetes.

After accounting for well-known risk factors, such as age, body weight, and smoking, Hu found that men and women regularly consuming coffee had a lower risk of developing diabetes. For example, men drinking an average of six cups of caffeinated coffee daily were 54 percent less likely to develop diabetes. Women consuming that much coffee were 29 percent less likely to develop diabetes.

“Total caffeine intake from coffee and other sources was associated with a statistically significantly lower risk for diabetes in both men and women,” Hu wrote.

People who consumed decaffeinated coffee had a only slightly lower risk of developing diabetes.

Reference: Salazar-Martinez E, Willette WC, Ascherio A, et al. Coffee consumption and risk for type 2 diabetes mellitus. *Annals of Internal Medicine*, 2004;140:1-8. □

Cinnamon Significantly Reduces Glucose, Cardiovascular Risk Factors

Adding a small amount of cinnamon to foods, or taking cinnamon in capsules, can significantly improve blood sugar, cholesterol, and triglyceride levels in people with type 2 diabetes.

These changes are significant because people with type 2 diabetes are two to four times more likely to develop cardiovascular diseases than people without diabetes.

Richard A. Anderson, PhD, of the U.S. Department of Agriculture’s Human Nutrition Research Center, Beltsville, Maryland, worked with researchers in Pakistan to test the effects of cinnamon on 60 people with type 2 diabetes. The subjects, whose fasting blood sugar levels ranged from 140-400 mg/dl at the beginning of the study, were evenly divided between men and women, with an average age of 52 years.

The subjects were divided into six groups. Some subjects were asked to take capsules containing 1, 3, or 6 grams of cinnamon daily after meals, and others were asked to take placebos for 40 days.

One gram of cinnamon is a little less than one-quarter teaspoon of the ground herb, and it is easily sprinkled on fruit, such as apples.

Overall, subjects using cinnamon supplements benefited from significant improvements in fasting blood sugar, cholesterol, and triglyceride levels, all risk factors for cardiovascular disease. Overall, fasting blood sugar levels decreased from 18-29 percent, cholesterol from 7-27 percent, and

triglyceride from 23-30 percent. No improvements occurred among people taking the placebos.

According to Anderson, cinnamon improves the activity of insulin, so it helps transfer blood sugar to cells, where it is burned for energy.

In addition, he pointed out that cinnamon contains almost no calories, an important point because most people with type 2 diabetes are overweight. He added that “cinnamon may be beneficial for the remainder of the population to prevent and control elevated glucose and blood lipid levels.”

Reference: Khan A, Safdar M, Khan MMA, et al. Cinnamon improves glucose and lipids of people with type 2 diabetes. *Diabetes Care*, 2003; 26:3215-3218. □

Antioxidant Might Help Protect Against HPV Infection and Cervical Cancer

A diet high in antioxidants, particularly carotenoids, may help prevent chronic papilloma-virus infections and reduce a woman’s long-term risk of developing cervical cancer, according to a study by Anna R. Guiliano, PhD, of the University of Arizona, Tucson. The findings are significant because persistent HPV infections are the principal cause of cervical cancer.

Guiliano and her colleagues analyzed data from a study focusing on 433 low-income women in Sao Paulo, Brazil. The women, with an average age of 31 when the study began, had been diagnosed with either transient or persistent human papillomavirus (HPV) infections.

A diagnosis of transient HPV infection was based on one positive test for the virus, whereas persistent infection was based on two or more positive tests for the virus.

Women consuming the most dietary lutein/zeaxanthin, cryptoxanthin, or vitamin C had about one-half the risk of experiencing persistent HPV infections, compared with women who consumed the least amount of these nutrients. In addition, women who consumed one or more papaya fruit (rich in cryptoxanthin) each week had a 70 percent lower risk of persistent HPV infections.

According to Guiliano and her colleagues, free radicals can activate cancer-promoting genes involved in HPV infection and cervical cancer. Conversely, antioxidants would inhibit the activity of these genes.

Reference: Guiliano AR, Siegel EM, Roe DJ, et al. Dietary intake and risk of persistent human papillomavirus (HPV) infection: the Ludwig McGill HPV natural history study. *Journal of Infectious Diseases*, 2003;188:1508-1516. □

Vitamin B12 Well Absorbed Whether as Tablet or Sublingual Supplement

Vitamin B12 deficiency is typically treated with intramuscular injections of the vitamins. A study several years ago found that sublingual (under the tongue) tablets were comparable to injections in correcting vitamin B12 deficiency.

Now, researchers report that several different types of vitamin B12 tablets work equally well in the treatment of mild deficiencies.

Moshe Garty, MD, of the Recanti Center for Medicine and Research, Israel, and his colleagues treated 30 patients with low blood levels of vitamin B12. "About 50 percent of our subjects were vegetarians, and this probably explains their cobalamin [B12] deficiency, Garty and his colleagues wrote.

The patients were given one of three supplements daily: a 500 mcg sublingual B12 tablet, a 500 mcg oral B12 supplement, or two oral vitamin B-complex supplements containing 500 mcg of B12.

After four weeks, blood levels of vitamin B12 increased almost identically and by almost 300 percent. In addition, blood levels of methylmalonic acid and homocysteine, both markers of vitamin B12 deficiency, declined slightly.

Reference: Sharabi A, Cohen E, Sulkers J, et al. Replacement therapy for vitamin B12 deficiency: comparison between the sublingual and oral route. *British Journal of Clinical Pharmacology*, 2003;56:635-638. □

High-Protein, High-Fat Diet Leads to Weight Loss, Lower Cardiovascular Risk

Over the past year or so, several high-quality clinical studies reported that various types of high-protein, low-carbohydrate diets helped people lose weight – and also lowered cardiovascular risk factors, such as cholesterol and triglyceride levels.

In the latest, and perhaps most striking study along these lines, John H. Hays, MD, a cardiologist with Christiana Care Health Services, Inc., Newark, Delaware, and his colleagues asked 46 obese patients to follow what might be considered an extreme Atkins-style diet.

The diet was high in protein, with half of all calories coming from saturated fat, mostly in red meat and cheese. Subjects were allowed to eat small amounts of nonstarchy vegetables and fruit, but they were prohibited from eating any starch-containing foods, such as potatoes, breads, and pastas.

The patients included 23 obese men and women diagnosed with severe atherosclerotic heart disease, 15 obese women diagnosed with polycystic ovary syndrome (a disease that involves insulin resistance),

and 8 morbidly obese women with reactive hypoglycemia.

The results were dramatic and consistent among all three groups of people: they lost weight and, despite the large amount of saturated fat in the diet, their cardiovascular risk factors improved.

Among the 23 obese subjects with severe heart disease, body weight and percentage of body fat decreased 5.2 percent after following the diet for just six weeks. In addition, they benefited from significant decreases in blood sugar, insulin, total cholesterol, total triglyceride, triglyceride subtypes, and very low-density lipoprotein (VLDL). While high-density lipoprotein (HDL) and low-density lipoprotein (LDL) levels did not change, the size of HDL and LDL particles increased slightly, a positive change.

After 24 weeks on the diet, patients with polycystic ovary syndrome lost an average of 14 percent of body weight, and had substantial decreases in insulin, total cholesterol, and triglyceride. Similarly, after following the diet for a year, patients with reactive hypoglycemia lost 20 percent of body weight and had significant reductions in total cholesterol and triglyceride. (Data on these patients glucose and insulin levels were not published.)

Reference: Hays JH, DiSabatino A, Gorman RT, et al. Effect of a high saturated fat and no-starch diet on serum lipid subfractions in patients with documented atherosclerotic cardiovascular disease. *Mayo Clinic Proceedings*, 2003;78:1331-1336. □

Beta-Carotene Shows Promise in Controlling Head and Neck Cancers

More than half of people diagnosed with and treated for head and neck cancers have a five-year survival rate. But a recent study suggests that high dosages of beta-carotene might just give these patients a slight edge.

Salvatore Toma, MD, of the University of Genova, Italy, and his colleagues gave either high-dose beta-carotene supplements or placebos to 214 patients who had been recently treated with surgery or radiation for head and neck cancers.

About half of the patients were asked to take 75 mg (125,000 IU) of beta-carotene daily for cycles of three months, followed by no supplements for the fourth month, for three years. Patients taking placebos followed a similar regimen, though none of the patients knew whether they were taking beta-carotene or placebos.

Patient compliance during the study was poor, which prevented a clear assessment of the effects of beta-carotene, but there were some surprising benefits. While only 61 of the 104 patients assigned to the

Continues on next page

Quick Reviews of Recent Research

• Antioxidants projected to curb eye disease

Two years ago, researchers reported that a multi-antioxidant supplement plus zinc significantly reduced the progression of early to advanced age-related macular degeneration (AMD), the leading cause of blindness among the elderly. In a follow-up study, they estimated the public health benefits of large numbers of people taking such a supplement. The researchers calculated that 8 million middle-age and elderly Americans have some form of AMD, and that 1.3 million people would likely develop advanced AMD in the next five years. They estimated that more than 300,000 people could avoid advanced AMD if they regularly took a multi-antioxidant supplement plus zinc.

The AREDS Research Group. *Archives of Ophthalmology*, 2003;121:1621-1624.

• Hawthorn helps prevent LDL oxidation

Free-radical oxidation of LDL cholesterol is considered an early step in the development of coronary artery disease. In experiments, researchers tested whether antioxidant polyphenols from different parts of the hawthorn plant would reduce LDL oxidation. Hawthorn's ability to reduce LDL oxidation was related to the concentration of polyphenols. Extracts of polyphenols from the flowers and tops of the plant were richest in polyphenols and had the greatest effect in reducing LDL oxidation.

Quettier-Deleu C, et al. *Pharmazie*, 2003;58:577-581.

• Conjugated linoleic acid may boost immunity

Conjugated linoleic acid (CLA), a naturally occurring fat found in meat and dairy products, may

Beta-carotene, Head and Neck Cancers...

Continued from previous page

beta-carotene group took the supplements for the entire three years, those who did take the supplements during this time remained free of secondary (subsequent) head and neck tumors.

In addition, patients taking beta-carotene had a 40 percent lower risk of death from all causes and a 16 percent lower risk of death from cancer during an average of five years of follow up. But because of limitations with the study, the researchers did not consider this lower risk of death statistically significant.

Reference: Toma A, Bonelli L, Sartoris A, et al. B-carotene supplementation in patients radically treated for stage I-II head and neck cancer: results of a randomized trial. *Oncology Reports*, 2003;10:1895-1901. □

enhance immune function and resistance to infections. Researchers fed 32 pigs either supplemental CLA or placebos for 42 days, then infected them with a virus that results in wasting, shortness of breath, pallor, and pneumonia, among other symptoms. Animals receiving CLA had greater numbers of CD8 T cells, help fight viral infections, and they also had less severe cases of pneumonia.

Bassaganya-Riera J, et al. *Journal of Nutrition*, 2003;133:3404-3214.

• Milk consumption may influence multiple sclerosis

Several epidemiological studies have noted a correlation between dairy consumption and the risk of multiple sclerosis (MS). Researchers found similar molecular features in a protein present in dairy products and a protein composing myelin nerve sheaths. In MS, these nerve sheaths are attacked by the body's immune system. Based on the research, it appears that the immune system might not distinguish between the two proteins and mount an attack against both of them, exacerbating some cases of multiple sclerosis.

Guggenmos J, et al. *Journal of Immunology*, 2004;172:661-668.

• Vitamins C and E benefit blood vessels

Endothelial dysfunction, an abnormal stiffening of blood vessels, is a risk factor for coronary artery disease. Frequently, elevated blood levels of cholesterol or triglyceride will impair normal endothelial function and blood vessel tone. Researchers treated 15 children and young adults with familial hypercholesterolemia, an inherited condition resulting in elevated cholesterol levels, with supplemental 500 mg of vitamin C daily and 400 IU of vitamin E daily for six weeks. Supplementation with the vitamins restored normal endothelial function in the subjects, which may reduce the risk of heart disease.

Engler MM, et al. *Circulation*, 2003;108:1059-1063.

The Nutrition Reporter™ (ISSN 1079-8609) is published monthly except for August and December and is distributed only by prepaid subscription. This issue, Vol 15 No 2, © February 2004 by Jack Challem. All rights reserved. Reproduction without written permission is prohibited. Phone: (520) 529-6801. Fax: (520) 529-6840. Email addresses: Jchallem@aol.com or jack@thenutritionreporter.com. The Nutrition Reporter™ is strictly educational and not intended as medical advice. For diagnosis and treatment, consult your physician. Subscriptions are \$26 per year in the U.S.; either \$33 U.S. or \$48 CAD for Canada; and \$40 for other countries, payable in U.S. funds through a U.S. bank. The Nutrition Reporter is a trademark(TM) 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, California

Ralph K. Campbell, MD Polson, Montana • **Peter Langsjoen, MD** Tyler, Texas

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