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CoQ10 treatment improves statin-induced myopathy

Statin drugs are used effectively by a large number of individuals with elevated cholesterol levels to help reduce the risk of cardiovascular disease; however, a not uncommon side effect is muscle pain which could be related in part to the drugs' inhibition of the body's synthesis of coenzyme Q10 (coQ10), a cofactor for the production of energy in the cells' mitochondria.

In a double-blind trial reported in the May 15, 2007 issue of *The American Journal of Cardiology*, Giuseppe Caso, MD, MSc, PhD and colleagues at Stony Brook University in New York administered 100 milligrams coenzyme Q10 per day to 18 men and women with myopathic symptoms resulting from current statin use, and 400 international units vitamin E to another 14 patients with the condition. The groups were similar in age, weight, body mass index, cholesterol levels, and statin drug use. Myopathic pain was evaluated by completion of the Brief Pain Inventory Questionnaire by participants at the beginning of the study and after 30 days of treatment.

At the trial's conclusion, subjects who received coenzyme Q10 had a 40 percent decrease in pain severity and a 38 percent decrease in interference by pain in their daily activities. The group that received vitamin E did not experience improvements. Sixteen of the eighteen participants who received coQ10 reported less pain compared to 3 subjects in the control group.

Statin drugs reduce a precursor of cholesterol and coenzyme Q10, which could affect oxidative phosphorylation and mitochondrial ATP production, resulting in mitochondrial energy deficit. Decreased plasma coQ10 during treatment with statin drugs is associated with a higher blood lactate to pyruvate ratio, indicating mitochondrial respiratory system dysfunction. This may result in a reduction of the aerobic capacity of muscle accompanied by increased muscle fatigue.

"It can be hypothesized that some of the myopathic symptoms in patients treated with statins may result from partial inability of the mitochondria to supply the ATP needed for muscle contraction because of decreased coenzyme Q10 levels," the authors write. "Results of the present study showing improvement in myopathic symptoms using coenzyme Q10 supplements supports this hypothesis, suggesting a possible etiologic role of coenzyme Q10 depletion in the pathogenesis of myopathic symptoms in statin-treated subjects."

Health Concern

Cholesterol reduction

Elevated cholesterol is associated with a greater-than-normal risk of atherosclerosis and cardiovascular disease. While antioxidants can inhibit cholesterol from oxidizing onto the linings of the arteries, knowing and controlling your cholesterol levels is still an important step in preventing cardiovascular disease.

Drugs that inhibit the enzyme HMG-CoA reductase are referred to as "statins." These drugs lower cholesterol by slowing down the production of cholesterol and by increasing the liver's ability to remove the LDL cholesterol already in the blood.

Some people with high cholesterol are able to reduce to safe levels by using combinations of dietary supplements that have been shown to lower serum cholesterol, protect against LDL cholesterol oxidation, and reduce the risk of an abnormal arterial blood clot formation.

The effectiveness of any cholesterol-reduction therapy varies considerably between individuals. The nutrients we recommend have not only been shown to lower cholesterol, but also protect against cardiovascular disease by other mechanisms such as inhibition of cholesterol-oxidizing free radicals and abnormal blood clots inside arteries (thrombosis).

<http://www.lef.org/protocols/prtcl-032.shtml>

Featured Products

Super BioActive CoQ10 Ubiquinol

When it comes to achieving optimal results from your CoQ10 supplement, how much you absorb is of critical importance. Since 1983, Life Extension has continuously sought out the purest, most bioavailable CoQ10 available. Now, Japan's largest CoQ10 producer has patented a form of CoQ10 that offers unprecedented bioavailability—capable of increasing human blood levels up to 8 times more efficiently than the higher-absorption CoQ10 products on the market today.

In studies from Japan, this superior new form of CoQ10 has shown remarkable antiaging effects. In one study, it was 40 percent more effective than conventional CoQ10 in slowing markers of aging in middle-aged mice. In a study of aged rats, this new form of CoQ10 demonstrated anti-fatigue effects that were 2.5 times greater than conventional CoQ10 supplements.



<http://www.lef.org/newshop/items/item00952.html>

Sytrinol™

Reducing triglyceride and low-density lipoprotein (LDL) levels is an effective, well established strategy for maintaining a healthy heart/cardiovascular system. Unfortunately, the statin drugs, while effective, also have side effects that understandably compromise patient compliance.

Sytrinol™ is an important option for health conscious people seeking a safe, effective, and convenient way to help maintain a healthy cholesterol level in those already within normal range.



<http://www.lef.org/newshop/items/item00674.html>

Life Extension Events

Inaugural Life Extension Cruise

Cruise the Western Caribbean and learn insider secrets to a significantly extended life span and vibrant health! Join us for the inaugural Life Extension "Fountain of Life" Cruise on October 27, 2007 for a week of fun-filled activities and the opportunity to rub elbows with fellow Life Extensionists aboard Norwegian Cruise Line's luxurious Norwegian Sun.

ENJOY ADDITIONAL INCENTIVES SUCH AS:

- Shipboard credit of \$50 per stateroom
- 10% discount on all onboard Life Extension product orders
- Incentives for renewing your membership onboard
- Contests and drawings for free Life Extension Gift Cards and gift baskets!

You'll want to be part of this life-changing cruise — do it for fun, do it for life!

YOU'LL ENJOY:

- Welcome aboard cocktail reception
- Presentations highlighting the latest in integrative therapies and antiaging research
- Product previews on new cutting-edge antiaging products
- One-on-one advisor appointments
- And so much more to help you attain optimal health
- Ship amenities such as Freestyle Cruising® at top-notch restaurants and exciting excursions: swim with dolphins, tour ancient ruins and more!

Be a part of Life Extension history! Hurry, space is limited on a first come, first serve basis.

Book by July 1, 2007, and receive an onboard coupon booklet valued at \$300.

<http://www.lef.org/event.html>

If you have questions or comments concerning this issue or past issues of Life Extension Update, send them to ddye@lifeextension.com or call 954 202 7716.

For longer life,



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