

## Statins and Co-Q10

Numerous nutrients are needed by the body to maintain optimal health. Some of these, such as vitamins, are not produced by the body and need to be obtained from either nutritional supplements or food. Others are produced by the body, but may still need to be obtained from dietary sources due to depletion or a decrease in natural production associated with aging or illness.

Coenzyme Q-10 (CoQ10) is a vitamin-like compound that belongs to a family of 10 substances designated coenzyme Qs. But CoQ10 is the only one found in human tissue. CoQ10 is present in virtually all cells and is especially high in concentration in the heart, liver, kidneys and pancreas.<sup>1</sup> Within the cells, the majority of CoQ10 is found in the mitochondria, the cellular organelles responsible for energy production.<sup>1</sup> CoQ10 is essential to the energy production cycle that takes place inside the mitochondria, and it also functions as an antioxidant.<sup>2</sup> However, the benefits of CoQ10 are not limited to its function on a cellular level. CoQ10 supplementation is also beneficial in addressing cardiovascular conditions such as hypertension and congestive heart failure, and it has been shown to reduce heart attack risk.<sup>3</sup>

Because the body produces adequate amounts of CoQ10, it is not considered a vitamin<sup>1</sup> and is often overlooked in the daily vitamin regimen. However, a recent study reported in *The American Journal of Cardiology* demonstrated a need for CoQ10 supplementation in individuals taking statin medications for the treatment of elevated cholesterol levels.

Statin medications, also known as HMG CoA reductase inhibitors, are effective in inhibiting cholesterol synthesis, thus reducing cholesterol levels by decreasing cholesterol production. In doing so, statins block production of farnesyl pyrophosphate, an intermediate in the synthesis of CoQ10. <sup>4</sup> Myopathy, or muscle pain, a frequent side effect associated with statin use is believed to be related to a reduction in CoQ10 levels.

According to Giuseppe Caso, MD, MSc, PhD and colleagues at Stony Brook University in New York, some of the myopathic symptoms in patients treated with statins may result from a depletion of CoQ10 and the associated inability of the mitochondria to supply the energy needed for muscle contraction. CoQ10 supplementation may help reverse these symptoms.

Subjects with myopathic symptoms associated with statin use who received supplemental CoQ10 had a 40 percent decrease in pain severity and 38 percent decrease in interference by pain in their daily activities. Sixteen of the 18 participants who received CoQ10 reported less pain compared to three subjects in the control group.

Although this recent study focused on the benefits of CoQ10 during statin therapy, the benefits of CoQ10 are not limited to those taking prescription statin medications. Individuals taking Red Yeast Rice, a dietary supplement used for the maintenance of optimal cholesterol levels, may also benefit from supplemental CoQ10.

#### References:

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4. Marcoff L, Thompson PD. The role of coenzyme Q10 in statin-associated myopathy. J Am Coll Cardiol 2007; 49:2231-2237.