Ask DR. MURRAY

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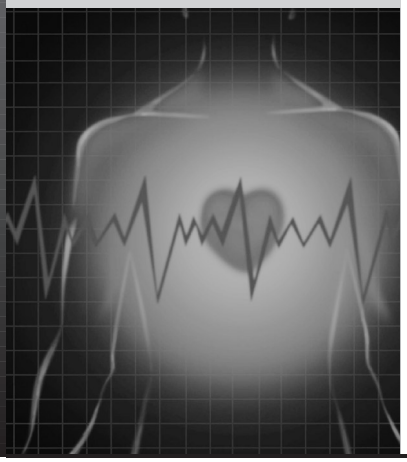

CoEnzyme Q10

Coenzyme Q10 for Energy and Heart Support

written by Dr. Michael T. Murray

Coenzyme Q10 (CoQ10) is an essential component of mitochondria - the energy producing unit of the cells of the body. CoQ10 is involved in the manufacture of ATP, the energy currency of all body processes. CoQ10's role is similar to that of a spark plug in a car engine — without that initial spark, the human body cannot function without CoQ10.

CoQ10 can be synthesized within the body, but sometimes the body simply does not make enough. The heart is one of the most metabolically active organs in the body, and a CoQ10 deficiency affects the heart most and can lead to serious problems. Deficiency can result from impaired CoQ10 synthesis due to poor diet, genetic or acquired defects in CoQ10 synthesis, or increased tissue needs. Heart and vascular diseases, including high cholesterol levels and high blood pressure, can increase tissue demand for CoQ10 and people over 50 may need more CoQ10, as levels are known to decline with advancing age.

Are there food sources of CoQ10?

Yes, but the typical daily intake of CoQ10 from dietary sources is only about 3-5 mg per day[1] – nowhere near the level required to significantly raise blood and tissue levels. Meat, poultry and fish provide the majority of dietary CoQ10.

What are the principal uses of CoQ10?

CoQ10 supplementation is used mostly to treat or prevent cardiovascular diseases such as elevated cholesterol levels, high blood pressure, congestive heart failure, cardiomyopathy, mitral valve prolapse, coronary artery bypass surgery, and angina. Many scientific studies have validated these uses.[2-4] CoQ10 has also been shown helpful in diabetes, periodontal disease, immune deficiency, cancer, against weight-loss, and muscular dystrophy. Response to supplementation of CoQ10 can take time—a noticeable improvement might not occur until eight or more weeks after therapy is begun.

How does CoQ10 improve heart function?

It works by improving energy production in the heart muscle and by acting as an antioxidant.[5,6] Therapeutic use of CoQ10 in cardiovascular disease has been clearly documented in both animal studies and human trials. CoQ10 deficiency is common in patients with heart disease. Biopsy results from heart tissue in patients with various cardiovascular diseases showed a CoQ10 deficiency in 50-75% of cases.[6] Correction of a CoQ10 deficiency can often produce dramatic clinical results in patients with any kind of heart disease.[7-11]

Can CoQ10 lower blood pressure?

Yes. CoQ10 deficiency has been shown to be present in 39% of patients with high blood pressure. In several studies it has been shown to lower blood pressure in patients with hypertension.[12-14] The effect of CoQ10 on blood pressure is usually not seen until after 4-12 weeks of therapy. Typical reductions in both systolic and diastolic blood pressure with CoQ10 therapy in patients with high blood pressure are in the 10% range.

How does CoQ10 boost the immune system?

Tissues and cells involved with immune function are highly energy-dependent and require an adequate supply of CoQ10 for optimal function. Studies have documented the immune-enhancing effect of CoQ10.[18-20] Also, CoQ10 should definitely be used by cancer patients after taking any chemotherapy drug that is associated with heart toxicity (e.g., adriamycin, athralines, etc.).[21]

Since CoQ10 is needed for the burning of fat, can it promote weight loss?

Yes. Since CoQ10 is an essential cofactor for energy production, it is possible that CoQ10 deficiency is a factor in some cases of obesity. Serum coenzyme Q10 levels were found to be low in 52% of the obese subjects tested. When the subjects with low CoQ10 levels were given 100 mg/day of CoQ10 significant weight loss was achieved.[22]

What is the best form of CoQ10?

Coenzyme Q10 is available primarily in tablets or capsules. The best preparations appear to be soft-gelatin capsules with CoQ10 in an oil base or in a soluble form.[23-25] To further enhance absorption, CoQ10 should be taken with food.

I believe that the best form of CoQ10 on the market is Clear Q™ by Natural Factors. To enhance the absorption and utilization of CoQ10, some manufacturers have looked to synthetic compounds to enhance solubility of CoQ10. Natural Factors has chosen an all-natural approach instead. Using a patent-pending process known as Lipcom® (short for lipid compression), they bound CoQ10 to the purest form of natural vitamin E available (Clear Base™ Vitamin E; pure, 100% natural d-alpha tocopheryl acetate). The result is more easily absorbed and used by the body. In a preliminary study, blood levels of CoQ10 six hours after taking Clear Q™ showed an increase 235% greater than the increase achieved with standard CoQ10. Blood levels of CoQ10 six hours after taking a loading dosage of Clear Q™ can reach above 2.5 mcg/ml – the blood level required for consistent results with CoQ10.[27]

CoQ10 is present in the blood in oxidized (inactive) and reduced (active) forms. Increased oxidative stress or low vitamin E levels convert more CoQ10 to its oxidized (inactive form). High levels of pure vitamin E enhance the biological function of CoQ10 which in return enhances vitamin E activity.[26-28]

How much CoQ10 should I take?

Usually 50 to 150 mg of CoQ10 per day is recommended, but if CoQ10 is going to be effective it seems the CoQ10 blood levels must rise above 2.5 mcg/ml and be maintained at this level for a prolonged period. The normal blood level for CoQ10 is roughly 1 mcg/ml, so it can be difficult to achieve therapeutic blood levels especially with poorly absorbed forms of CoQ10. Here is what I recommend: Use Clear Q™; take a loading dosage of four capsules with a meal. This provides 200 mg CoQ10 and 1600 IU vitamin E. After loading, I recommend taking two capsules of Clear Q™ for a week followed by a maintenance dosage of one capsule daily for people weighing up to 250 pounds; and two capsules per day for people over 250 pounds.

Is CoQ10 safe?

Coenzyme Q10 is very safe with no serious adverse effects ever reported even with long-term use. Because safety during pregnancy and lactation has not been proven, CoQ10 should not be used during these times unless the potential clinical benefit (as determined by a physician) outweighs the risks.

Does CoQ10 interact with any drugs?

There are no known adverse interactions between CoQ10 and any drug or nutrient. However, many drugs can adversely affect CoQ10 levels and CoQ10 maybe able to reduce side effects of some drugs. In addition to adriamycin CoQ10 supplementation has been shown to counteract some of the adverse effects of certain cholesterol-lowering, beta-blocker, and psychotrophic drugs. Lovastatin (Mevacor), pravastin (Pravachol), atorvastatin (Lipitor) and simvastatine (Zocor) are used to lower blood cholesterol levels by inhibiting the enzyme (HMG CoA reductase) required to make cholesterol in the liver. Unfortunately, these drugs also block the manufacture of other substances necessary for body functions including CoQ10. Supplementing with CoQ10 (50 mg per day) is necessary to prevent its depletion in body tissues while on these drugs.[29]

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