CoQ10

Coenzyme Q10 (CoQ10), also known as ubiquinone, is a fat-soluble, vitamin-like compound integral to the production of cellular energy. Recent animal research demonstrated that supplemental CoQ10 is utilized by the mitochondria - where cellular energy is manufactured - in the liver, kidney, heart, skeletal muscle and brain. Researchers supplemented rats with 150 mg/kg/d of CoQ10 for four and 13 weeks. CoQ10 supplementation increased plasma and mitochondria levels of CoQ10, as well as elevated CoQ10 in tissues, decreased protein oxidative damage and increased antioxidant potential.

In addition to its role in the production of cellular energy, CoQ10 has been widely studied for its application in improving heart health. According to OptiPure, which distributes a pharmaceutical-grade CoQ10 in the United States, deficiencies of CoQ10 have been documented with regard to difficulties in cardiovascular function since the 1970s. It is easy to grasp the concept of altered heart function as a consequence of chronic CoQ10 deficiency. The heart muscle is in constant need of an energy supply to pump blood throughout the body. Muscle tissue, abundant in mitochondria, is extremely vulnerable to CoQ10 concentration; it cannot perform without the energy-producing machinery intact. CoQ10 may protect heart health specifically because of its role in preserving mitochondrial function, according to animal research conducted at Baltimore's University of Maryland Medical System.

CoQ10 is often considered important for people with high cholesterol because statin drugs - cholesterol-lowering pharmaceuticals - are known to reduce the body's stores of CoQ10. In fact, on May 23, 2002, Julian Whitaker, M.D., filed two petitions with the Food and Drug Administration (FDA) requesting patients taking statin drugs be advised to take 100 mg/d to 200 mg/d of CoQ10 because of statins' interference in the body's production of CoQ10.

Low CoQ10 levels in the body may be an indicator for coronary heart disease risk, according to a comparison between levels found in Indian and Chinese males conducted at the National University of Singapore. Supplementation with CoQ10 may also protect heart health by lowering systolic blood pressure.

Additional CoQ10 research has involved diabetes. Because of the nutrient's role in protecting the heart, CoQ10 supplementation has been suggested as a complementary therapy for patients with diabetes-associated heart disease. And, CoQ10 may also play a role in insulin production. In fact, a deficiency of CoQ10 appears to impair the function and activity of glycerol-3-phosphate dehydrogenase (G3PD), an enzyme that helps control insulin production. G3PD has been shown to be less efficient in Type II diabetics as it is in healthy people. And, CoQ10 supplementation may reduce the risk of developing Type II diabetes by enhancing the body's production of cellular energy, according to researchers from Bastyr University in Kenmore, Wash.

CoQ10 may also improve cognitive function. Research out of the University of California, San Diego, indicated 1,200 mg/d of CoQ10 slowed the deterioration in Parkinson's disease, and the supplement was safe and well-tolerated at all doses. Earlier research indicated CoQ10 may also delay the loss
of motor function characteristic in Huntington's disease, another degenerative brain disorder.

More research on CoQ10 has deemed it helpful for reducing the occurrence of migraines. In terms of lung health, researchers at the Institute of Preventive and Clinical Medicine in Bratislava discovered that plasma and blood concentrations of CoQ10 were significantly lower in asthmatics compared to healthy volunteers.

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