Coenzyme Q10 is a naturally occurring vitamin-like, lipid-soluble (fat-soluble) nutrient found in nearly every cell in the body, with highest concentrations in the brain, heart, kidney and liver tissues. CoQ10 plays a fundamental role in cellular energy production and critical antioxidant activities throughout the body. CoQ10 acts as a primary scavenger of free radicals, inhibiting oxidative damage to cell membranes, DNA, proteins, and low-density lipoproteins (LDL). CoQ10 also regenerates other antioxidants such as vitamin E, stimulates cell growth, and inhibits cell death.1,12

Research shows that CoQ10 levels decline with age, which can lead to a deficiency state. CoQ10 deficiency can also result from low dietary intake of CoQ10, chronic malnutrition, chronic disease, or insufficient intake of essential nutrients required for CoQ10 synthesis such as B6, B12, folate, pantothenic acid, vitamin C, and tyrosine, to name a few. In addition, CoQ10 levels can be adversely affected by cholesterol-reducing drugs such as HMG-CoA reductase inhibitors (i.e. statin-like drugs), as well as certain beta-blockers, adriamycin (an anti-cancer drug), hormone replacement therapy, and psychotropic drugs, including phenothiazine and tricyclic antidepressants. CoQ10 deficiency has been identified in several clinical disorders, including heart failure, hypertension, Parkinson’s and other neurodegenerative diseases, type 2 diabetes, degenerative muscle diseases, male infertility, cystic fibrosis, and during aging. Low blood levels of CoQ10 have also been exhibited in women with pre-eclampsia (a pregnancy-related condition that causes high blood pressure), and in athletes, most likely due to increased metabolic stress and free radical formation resulting from intense exercise and training.1,2,4,10,13-17

CoQ10 demonstrates multiple cardioprotective (heart-protecting) benefits, including anti-atherogenic, anti-inflammatory, hypotensive (blood pressure-lowering), and vasodilator effects. CoQ10 has also been shown to decrease the incidence of pre-eclampsia in pregnancy, and has been identified as an independent predictor of survival in chronic heart failure—depletion of CoQ10 is associated with worse outcomes in chronic heart failure. Thus, sufficient levels of CoQ10 are essential for a healthy heart and critical for a failing heart.1,4,6,13,18,23

CoQ10 also demonstrates neuroprotective effects and has been shown to protect the brain in degenerative conditions such as Parkinson’s and Alzheimer’s diseases. Evidence suggests that CoQ10 is a promising therapeutic agent for the treatment of neurodegenerative diseases such as Parkinson’s and Huntington’s diseases, amyotrophic lateral sclerosis, and Friedreich’s ataxia. CoQ10 may also provide neuroprotection in drug addiction, since CoQ10 has been shown to inhibit the neurotoxic effects of cocaine and methamphetamine in mice brains.1,3,4,24-27

Research indicates a number of other benefits from CoQ10 supplementation. Clinical trials have shown that CoQ10 exhibits anti-diabetic effects and can improve glycemic control and lower plasma insulin levels. CoQ10 has also been found to effectively improve sperm count and motility in patients with asthenozoospermia—a type of male infertility characterized by reduced sperm motility. CoQ10 has been shown to reduce exercise-induced muscular injury in athletes, and evidence suggests CoQ10 may also be helpful for vertigo and for mitigating headache symptoms. In addition, CoQ10 supplementation can provide anti-aging benefits and contribute to improved health and longevity. CoQ10 protects the epidermis (the outer layer of the skin) against oxidative damage, enhances production of dermal and epidermal cell components, and positively influences age-affected cellular metabolism, thus combating the signs of aging beginning at the cellular level.1,4,6,13,16,19,20,22,28-32

The absorption and bioavailability of CoQ10 is markedly influenced by its delivery system. Research has shown that using a lipid-based (fat or oil-based) delivery formula improved the bioavailability of CoQ10 compared to powdered (crystalline) forms. Intestinal absorption of CoQ10 is also enhanced with food intake.1,3,33,34

NSP’s CoQ10-50 is a crystal-free, liquid softgel supplement that utilizes a patent-pending lipid blend containing conjugated linoleic acid (CLA), flaxseed oil, and soy monoglycerides to provide maximum absorption and bioavailability, without the use of chemical additives or solvents.33,35

References:
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