

CoQ₁₀



CLINICAL APPLICATIONS

- Enhances Cellular Energy Production and Physical Performance
- Supports Cardiovascular Health
- Supports Blood Sugar Balance Already Within Normal Levels
- Promotes Neurological Health

CARDIOVASCULAR HEALTH

What is CoQ₁₀?

Coenzyme Q₁₀ (CoQ₁₀), also known as ubiquinone, is a proenzyme produced naturally within the body. CoQ₁₀ plays a critical role in energy (ATP) production and is one of the most powerful known lipidsoluble antioxidants, protecting cells, organs and tissues from damage caused by oxidative stress and free radicals. CoQ₁₀ inhibits protein and lipid oxidation and protects mitochondrial DNA from oxidative damage. This CoQ₁₀ formulation is delivered in an oil-based proprietary form and includes natural vitamin E for enhanced absorption and maximum stability.

Overview

CoQ₁₀ is a lipid-soluble antioxidant found in every cell in the body. CoQ₁₀ is abundant in the mitochondrial membrane and plays an important role in the synthesis of adenosine triphosphate (ATP), a molecule of chemical energy upon which all cellular functions depend. The synthesis of ATP within the mitochondria is a multi-step series of biochemical reactions called the electron transport chain. As a coenzyme, CoQ₁₀ is required for several enzymatic reactions required to produce cellular energy and to protect the body against free radicals produced during this process. To maintain energy production, mitochondrial CoQ₁₀ is continuously recycled from ubiquinone, its ATP production state, to ubiquinol, its antioxidant state. After the age of 35 to 40 years, endogenous synthesis of CoQ₁₀ begins to decline.¹ CoQ₁₀, an essential component of cellular energy production, has been shown to extend cell life

and benefit high-energy systems, namely the cardiovascular, neurological and immune systems.

CoQ₁₀ Depletion[†]

The body's ability to produce and metabolize CoQ₁₀ has been reported to decrease with age. CoQ₁₀ deficiency may be caused by insufficient dietary intake of CoQ₁₀, impairment in CoQ₁₀ production, drug-induced CoQ₁₀ depletion, gene mutations and oxidative stress. HMG-CoA reductase is an enzyme required for the synthesis of cholesterol and CoQ₁₀. Cholesterol lowering medications inhibit this enzyme in order to reduce cholesterol synthesis, but may also simultaneously deplete CoQ₁₀ status. Thirteen controlled studies conducted between 1990-2004 demonstrated significant CoQ₁₀ depletion, secondary to use of statin medications used to lower cholesterol levels.² These studies demonstrated a range of 19-54% decrease in CoQ₁₀ levels in patients on statin therapy. In the event of CoQ₁₀ depletion, supplementation can improve CoQ₁₀ status and help maintain optimal levels in the body.

Cardiovascular Health[†]

CoQ₁₀ is important for all energy-dependent processes, and is especially helpful in strengthening contraction of the heart muscle. CoQ₁₀ is also important for protection against free radical damage to the arterial vessels. In a double-blind, cross-over trial 19 patients received 100 mg CoQ₁₀/day or placebo for 12 weeks. Compared with placebo, patients receiving CoQ₁₀ demonstrated significant support of cardiac function and

[†] These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

increased tolerance for physical activity.³ In another study, 109 patients received an average dose of 225 mg of CoQ₁₀ per day. After a mean treatment period of 4.4 months, CoQ₁₀ helped in maintaining healthy blood pressure levels in more than half of the patients.⁴ CoQ₁₀ has been shown to be a preventive factor in reducing low-density lipoprotein (LDL) oxidation- a major factor for supporting healthy cholesterol levels.⁵

Blood Sugar Balance[†]

The electron transport chain, a biochemical pathway in which CoQ₁₀ plays a major role, significantly impacts carbohydrate metabolism. CoQ₁₀ has been shown to support blood sugar balance already within normal levels.⁷ In one study, 39 subjects received 120mg of a CoQ₁₀ analog for 2-18 weeks. Fasting blood sugar levels were maintained in the normal range, along with a 30% decrease of ketone bodies in 59% of patients- an indicator of healthy blood sugar metabolism.⁸

Neurological Health[†]

Neurons are characterized by high rates of metabolic activity and the need to respond quickly to energy demanding fluctuations in the brain. Mitochondrial alterations, leading to reduced ATP production, can promote neuronal dysfunction and degeneration via increased production of reactive oxygen species in the central nervous system. As an effective carrier with strong antioxidant properties, CoQ₁₀ has been shown to promote neurological health.⁹

Directions

1 or more soft gel capsules per day or as recommended by your health care professional.

Does Not Contain

Wheat, gluten, dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners or preservatives.

Supplement Facts ^{V4}		
Serving Size 1 Soft Gel Capsule		
Servings Per Container 30, 60 & 120		
1 soft gel capsule contains	Amount Per Serving	% Daily Value
Vitamin E (from 100 IU as d-Alpha Tocopherol)	64 mg	427%
Coenzyme Q10	100 mg	*
* Daily Value not established		

ID# 120030 30 Soft Gel Capsules

ID# 120060 60 Soft Gel Capsules

ID# 120120 120 Soft Gel Capsules

References

1. Hojerova J. Coenzyme Q10- its importance, properties and use in nutrition and cosmetics. *Ceska Slov Farm* 2000;49:199-123. [Slovak].
2. Hargreaves IP, Duncan AJ, Heales SJ, Land JM. The effect of HMG-CoA reductase inhibitors on coenzyme Q10: possible biochemical/clinical implications. *Drug Saf* 2005;28:659-676.
3. Langsjoen PH, Vadhanavikit S, Folkers K. Effective treatment with coenzyme Q10 of patients with chronic myocardial disease. *Drugs Exptl Clin Res* 1985;11:577-579.
4. Langsjoen P, Langsjoen P, Willis R, Folkers K. Treatment of essential hypertension with Coenzyme Q10. *Molec Aspects Med* 1994;15(Suppl):S265-S272.
5. Stocker R, Bowry VW, Frei B. Ubiquinol-10 protects human low density lipoprotein more efficiently against lipid peroxidation than does alpha-tocopherol. *Proc Natl Acad Sci* 1991; 88(5):1646-50.
6. Gaby AR. The role of coenzyme q10 in clinical medicine: Part II. Cardiovascular disease, hypertension, diabetes mellitus and infertility. *Altern Med Review* 1996; 1(3):168-175.
7. Shigeta Y, Izumi K, Abe H. Effect of coenzyme Q7 treatment on blood sugar and ketone bodies of diabetics. *J Vitaminol* 1966;12:293-298.
8. Mancuso M, Orsucci D, Calsolaro V, Choub A, Siciliano G. Coenzyme Q10 and Neurological Diseases. *Pharmaceuticals* 2009; 2:134-149.

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