OPTIMUM

Therapeutic Solutions

Co Q-10 300mg

For Professional Use Only

Clinical Applications

- Enhances Cellular Energy Production and Physical Performance
- Supports Cardiovascular Health
- Boosts Antioxidant Activity
- Helps Maintain Healthy Blood Sugar Balance
- Promotes Neurological Health

Cardiovascular Health

What is CoQ_{10}?

Coenzyme Q_{10} (CoQ_{10}), also known as ubiquinone, is a proenzyme produced naturally within the body. CoQ_{10} plays a critical role in energy (ATP) production and is one of the most powerful known lipid-soluble antioxidants, protecting cells, organs and tissues from damage caused by oxidative stress and free radicals. CoQ_{10} inhibits protein and lipid oxidation and protects mitochondrial DNA from oxidative damage. This CoQ_{10} 300mg formulation is highly concentrated for those that need to quickly and effectively increase levels of CoQ_{10}. CoQ_{10}300mg is delivered in a proprietary oil-based formulation and includes natural vitamin E for enhanced absorption and maximum stability.

Overview

CoQ_{10} is a lipid-soluble antioxidant found in every cell in the body. CoQ_{10} 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, CoQ_{10} 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 CoQ_{10} 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 CoQ_{10} begins to decline. [1]

CoQ_{10}, 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. Supplementation with a highly concentrated, oil-based CoQ_{10} enables faster recovery of CoQ_{10} levels for those that have increased CoQ_{10} requirements including: those with drug-induced depletion, increasing age, or increased tissue demands. The safety of CoQ_{10} at high doses has been tested in a double-blind, placebo-controlled study. [2] The findings in this study showed that CoQ_{10} was well tolerated and safe at a high intake (900 mg/day).[2]

CoQ_{10} Depletion†

The body's ability to produce and metabolize CoQ_{10} has been reported to decrease with age. CoQ_{10} deficiency may be caused by insufficient dietary intake of CoQ_{10}, impairment in CoQ_{10} production, drug-induced CoQ_{10} depletion, gene mutations, and oxidative stress. HMG-CoA reductase is an enzyme required for the synthesis of cholesterol and CoQ_{10}. Cholesterol lowering medications inhibit this enzyme in order to reduce cholesterol synthesis, but may also simultaneously deplete CoQ_{10} status. Thirteen controlled studies conducted between 1990-2004 demonstrated significant CoQ_{10} depletion, secondary to use of statin medications used to lower cholesterol levels.[3] These studies demonstrated a range of 19-54% decrease in CoQ_{10} levels in patients on statin therapy. In the event of CoQ_{10} depletion, supplementation can improve CoQ_{10} status and help maintain optimal levels in the body.

Antioxidant Protection†

Oxidative stress is a condition that occurs when there is an imbalance between free radicals and the antioxidants required to neutralize them, leading to oxidative damage in the body. The extent of oxidative stress depends on the rate of free radical generation, the level of antioxidant reserves and the rate of repair of cellular and tissue damage. This process has

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a significant impact on the body's aging process. In its role in electron transport, CoQ_{10} continuously goes through an oxidation-reduction cycle in order to neutralize free radicals and provide significant protection against toxic oxidative reactions in the body.

Cardiovascular Health†

CoQ_{10} is important for all energy-dependent processes, and is especially helpful in strengthening contraction of the heart muscle. CoQ_{10} 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 CoQ_{10}/day or placebo for 12 weeks. Compared with placebo, patients receiving CoQ_{10} demonstrated significant support of cardiac function and increased tolerance for physical activity.[4] In another study, 109 patients received an average dose of 225 mg of CoQ_{10} per day. After a mean treatment period of 4.4 months, CoQ_{10} helped in maintaining healthy blood pressure levels in more than half of the patients.[5] CoQ_{10} has been shown to be a preventive factor in reducing low-density lipoprotein (LDL) oxidation- a major factor for supporting healthy cholesterol levels.[6]

Blood Sugar Balance†

The electron transport chain, a biochemical pathway in which CoQ_{10} plays a major role, significantly impacts carbohydrate metabolism. CoQ_{10} has been shown to support healthy blood sugar metabolism.[7] In one study, 39 subjects received 120mg of a CoQ_{10} 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, CoQ_{10} has been shown to support neurological health.[9]

Directions

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

Does Not Contain

Gluten, corn, artificial colors and flavors.

Supplement Facts

V1

Serving Size 1 Soft Gel Capsule
Servings Per Container 30 & 60

1 soft gel capsule contains	Amount Per Serving	% Daily Value
Vitamin E (from 30 IU as d-Alpha Tocopherol)	20 mg	133%
CoEnzyme Q10	300 mg	*

* Daily Value not established

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OPTIMUM

Therapeutic Solutions

Opti-Biotic 22

For Professional Use Only

GLUTEN FREE

Clinical Applications

- Helps Maintain Gastrointestinal Balance
- Increases Secretory IgA for Enhanced Gut Immunity
- Supports Bowel Regularity
- Supports Digestion and Micronutrient Absorption

Gastrointestinal Support

This product is a unique probiotic formula designed to deliver active organisms shown to promote healthy gut microflora, protect intestinal integrity and boost immune function. Included in this formula is *Saccharomyces boulardii*, an extensively researched microorganism shown to help restore microflora balance by enhancing commensal organism function. Each capsule provides seven proven probiotic strains chosen for their ability to withstand the harsh gastrointestinal (GI) environment and adhere to the intestinal tract to deliver superior results.

Overview

The GI tract is a finely balanced environment where roughly 500 different strains of bacteria compete for space and nutrients. When there is a healthy balance (eubiosis), few symptoms exist. However, dysbiosis can occur when an overabundance of potentially harmful organisms prevail. The natural microflora balance can be upset by medications (such as antibiotics, oral contraceptives, etc.), excessive alcohol consumption, or poor dietary intake.

Probiotics have been extensively studied and are characterized as having broad GI and immune benefits, including (1) increasing the population of healthy bacteria following microflora imbalance; (2) supporting healthy bowel function; (3) increasing the production of short-chain fatty acids, which provide energy to the cells of the intestinal lining; (4) strengthening the gut-immune barrier by promoting a healthy gut mucosa; (5) aiding in the digestion of difficult-to-breakdown compounds like lactose and casein; and (6) enhancing detoxification of harmful compounds.

Because probiotics are live organisms, there are many challenges associated with manufacturing and distributing probiotic supplements. For a probiotic to be effective, it must be shelf-stable through the expiration date and precisely delivered to the intestinal tract, where it can have maximum benefit. BioShield® technology is an innovative manufacturing process developed to ensure consistent and reliable results. The microorganisms in this product are protected, sealed and freeze dried away from moisture, heat, light and oxygen. This allows the bacteria to remain dormant until they are exposed to moisture in the GI tract. By utilizing advanced encapsulation technology, the probiotic organisms are preserved and released on-target for maximum benefit.

Lactobacillus acidophilus (La-14)†

Lactobacillus acidophilus is a beneficial bacterial strain that is normally found in the intestinal tract and mouth and is commercially used in dairy products for the production of acidophilus-type yogurt. *L. acidophilus* ferments various carbohydrates to produce lactic acid, which increases the absorption and bioavailability of minerals. This includes calcium, copper, magnesium and manganese. The production of lactic acid also promotes health by creating an inhospitable environment for invading microbes.[1] *L. acidophilus* has been shown to protect intestinal cells by competing for adhesion space in the gut against harmful bacteria, such as *E. coli*. The *L. acidophilus* strain in this product has been specifically chosen because of its strong adherence and survival attributes in the GI tract. It has been demonstrated in vitro to tolerate exposure to gastric acid and bile salts, and has the ability to withstand antibiotics including Ciproflaxin, Polymyxin B and Tetracycline.[2]

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Lactobacillus paracasei (Lpc-37)†

Lactobacillus paracasei has been shown to protect against the harmful effects of bacteria such as *Staphylococcus aureus* (*S. aureus*).[3] *L. paracasei* colonizes the intestinal tract by reinforcing defense mechanisms that support an immune response. It does this by supporting T-helper cell production and secreting secretory IgA (sIgA), an antibody critical for supporting intestinal immunity.[4] *L. paracasei* Lpc-37 is a gastric acid-resistant strain and has been shown in vitro to withstand antibiotics such as Ciproflaxin and Vancomycin.[5]

Bifidobacterium bifidum (Bb-02)†

Bifidobacterium bifidum has been shown to effectively compete with harmful bacteria such as *E. coli*, *S. aureus* and *Camplylobacter jejuni*, which suggests *B. bifidum's* lactic acid and acetic acid production provides an antagonistic action against pathogens to help maintain microflora balance.[6]

Bifidobacterium lactis (Bl-04)†

Bifidobacterium lactis is predominantly found in the colon. A double-blind, randomized placebo-controlled trial on subjects receiving *B. lactis* or placebo for eight weeks found that *B. lactis* supported a balanced immune response in individuals hypersensitive to environmental allergens.[7] Studies examining immune development and dietary supplementation with *B. lactis* have shown that it supports GI health by reducing intestinal permeability.[8]

Lactobacillus plantarum (Lp-115)†

Lactobacillus plantarum is a beneficial bacteria commonly found in fermented foods including sauerkraut, pickles, brined olives and sourdough. *L. plantarum* has been found to compete against strains of *Clostridium difficile* and *Clostridium perfringens*, due to the production of bacteriocins (lethal proteins) that inhibit bacterial growth.[9] Studies have also demonstrated that *L. plantarum* helps boost the immune response by stimulating Th1-mediated immunity.[10]

Lactobacillus rhamnosus (Lr-32)†

Lactobacillus rhamnosus has been proven to have remarkable survivability in the acid and bile environments in the GI tract. *L. rhamnosus* is particularly useful because of its ability to adhere to cells, enhance microflora balance, and inhibit pathogen adherence. *L. rhamnosus* was also found to positively affect inflammatory and immune gene signaling of over 1,700 genes when administered in high doses.[10]

Saccharomyces boulardii†

Saccharomyces boulardii is a probiotic yeast that was first isolated from the skin of the tropical fruits lychee and mangosteen in 1923 by French scientist Henri Boulard, following the observation that mangosteen consumption controlled occasional diarrhea in natives of Southeast Asia. *S. boulardii* plays a role in supporting immune defense by increasing levels of sIgA, creating a first line of defense that helps bind and clear harmful bacteria.[11]

Directions

1 capsule per day or as recommended by your health care professional.

Does Not Contain

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

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Supplement Facts V2

Serving Size 1 Capsule
Servings Per Container 30 & 60

1 capsule contains	Amount Per Serving	% Daily Value
Proprietary Blend	20 Billion CFU++	
Lactobacillus acidophilus		*
Lactobacillus paracasei		*
Bifidobacterium lactis		*
Bifidobacterium bifidum		*
Lactobacillus plantarum		*
Lactobacillus rhamnosus		*
Saccharomyces boulardii	2 Billion CFU++	*

* Daily Value not established

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