CoQ10 + Selenium Yeast

INGREDIENTS

Doctor's Best CoQ10 and Selenium uses coenzyme Q10 made by the largest CoQ10 manufacturer in the world.

BENEFITS

- Helps supports cardiovascular health*
- Helps support immune health*
- Helps support energy production*
- CoQ10 and selenium are antioxidants that help reduce free radicals*

Doctor's Best CoQ10 Plus Selenium Yeast contains the same combination, CoQ10 (200mg) and Selenium Yeast (200mcg), as clinically tested with 443 participants in a double-blind placebo controlled Swedish study, KiSel-10. In the KiSel-10 study, participants who took this combination recorded healthier cardiovascular function and higher Health-Related Quality of Life (HRQoL) scores when compared to the group who did not.* Doctor's Best CoQ10 is naturally fermented USP (United States Pharmacopeia) verified and is combined with high quality selenium yeast to create the same synergistic nutrient combination as the KiSel-10 study.

Although both CoQ10 and selenium are essential to all living cells, the important clinical study (KiSel-10) out of Sweden surprised researchers throughout the world that combining CoQ10 with selenium can dramatically reduce cardiovascular events[1]. Supplementation with CoQ10 and selenium halves cardiovascular risk for many years. This nutrient combination has also been shown to improve heart function[1,2], improve quality of life[2,3], reduce the number of days a patient stays in the hospital[3], lower cardiovascular mortality risk by 49%, and even provide protection years after the subjects stopped taking the CoQ10 + Selenium combination[4].

Both CoQ10 and selenium are potent antioxidants and are involved in energy production[5]. This Swedish clinical was a double-blind, placebo-controlled trial that included 443 healthy adults[1]. Participants received daily either a combination of CoQ10 (200mg) and selenium yeast (200mcg elemental selenium) or a placebo. Those taking the combination of CoQ10 and selenium had better scores on cardiac function than those taking the placebo and the levels of biomarker for heart failure, NT-proBNP (N-terminal pro-brain natriuretic protein) were significantly reduced[1].

EXTENDED BENEFITS

CoQ10 has been thoroughly studied for its role in heart health and as a potent antioxidant.

Coenzyme Q10 production declines as we age and it may be compromised by certain drugs such as statins, making supplementation important for many people.

Essential to human health, selenium has enzymatic functions of fundamental importance to human biology due to its effects on DNA damage repair, its antioxidant properties, and important role in reducing cardiovascular risk. There is evidence that many parts of the world feature selenium-deficient soils and foods, making supplementation important for health.

Supports Cardiovascular Health*

A 5-year prospective randomized double-blind placebo-controlled trial among Swedish citizens aged 70 to 88 was performed in 443 participants given combined supplementation of selenium and coenzyme Q10 or a placebo. Clinical examinations, echocardiography and biomarker measurements were performed. Participants were monitored every 6th month throughout the intervention. The cardiac biomarker N-terminal proBNP (NT-proBNP) and echocardiographic changes were monitored and mortalities were registered. This study concluded that long-term supplementation of selenium/coenzyme Q10 reduces cardiovascular mortality by 50%. The positive effects could also be seen in NT-proBNP levels and on echocardiography[1].

Supplement Facts

Serving Size 1 Veggie Capsule
Servings Per Container 90

	Amount Per Serving	%Daily Value
Selenium (as Selenium Yeast) (*Saccharomyces cerevisiae*)	200 mcg	360%
Coenzyme Q10 (Ubiquinone)	200 mg	†

† Daily Value not established.

Other Ingredients: Rice powder, modified cellulose (vegetarian capsule), magnesium stearate (vegetable source), silicon dioxide.

Suggested Adult Use: Take 1 capsule daily with food, or as recommended by a nutritionally-informed physician.

USP Verified, Naturally Fermented CoQ10

Non-GMO / Gluten Free / Soy Free / Vegan

Store in a cool dry place.

* 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.

Researchers analyzed the same data for cardiovascular mortality up to 10 years after intervention with selenium and coenzyme Q10, to evaluate if mortality differed in subgroups differentiated by gender, diabetes, ischemic heart disease (IHD), and functional class. Four-hundred forty-three healthy elderly individuals were included from a rural municipality in Sweden. All cardiovascular mortality was registered, and no participant was lost to the follow-up. In the 10-year follow-up of a group of healthy elderly participants given four years of intervention with selenium and coenzyme Q10, significantly reduced cardiovascular mortality was observed. The protective action was not confined to the intervention period, but persisted during the follow-up period[4].

A secondary analysis of the previous randomised double-blind placebo-controlled trial attempted to determine whether the effects on cardiovascular mortality of supplementation with a fixed dose of selenium and coenzyme Q10 combined during a four-year intervention were dependent on the basal level of selenium. In 668 healthy elderly individuals from a municipality in Sweden, serum selenium concentration was measured. Of these, 219 individuals received daily supplementation with selenium (200 µg Se as selenized yeast) and coenzyme Q10 (200 mg) combined for four years. The remaining participants (n = 449) received either placebo (n = 222) or no treatment (n = 227). All cardiovascular mortality was registered. No participant was lost during a median follow-up of 5.2 years. In this evaluation of healthy elderly Swedish municipality members, an important result was reported. A low mean serum selenium concentration, 67 µg/L, was found among participants, and cardiovascular mortality was higher in the subgroup with lower selenium concentrations ‹65 µg/L compared to those having a selenium concentration ›85 µg/L. Also supplementation was cardio-protective in those with a low selenium concentration[3].

One study investigated whether the effect of 48-month usage of coenzyme Q10 and selenium on cardiac function was different for participants with different levels of cardiac wall tension as measured by plasma levels of N-terminal natriuretic peptide (NT-proBNP) at baseline. A 48-month randomized double-blind controlled trial in a cohort of community-dwelling elderly (mean age 78 years) was carried out. A total of 443 participants were given coenzyme Q10 combined with selenium, or a placebo. NT-proBNP measured at baseline and 48 months was used to evaluate cardiac wall tension. The study concluded that long-term supplementation of coenzyme Q10/selenium reduces NT-proBNP levels and cardiovascular mortality in those with baseline NT-proBNP in the second to fourth quintiles, indicating those who gain from supplementation are patients with mild to moderate impaired cardiac function[4].

Another study examined the therapeutic efficacy of coenzyme Q10 (CoQ10) and trimetazidine in acute viral myocarditis both individually and in combination. Patients were blinded and randomized to receive CQ10 (n = 42), trimetazidine (n = 39), or CQ10 + trimetazidine (n = 43) treatment. The study concluded that CQ10 and trimetazidine are beneficial individually, but demonstrated a superior effect of combining the therapies on cardiac left ventricular ejection fraction, and biochemical markers of myocardial damage in acute viral myocarditis[6].

Other researchers assessed the effect of CoQ10 plus NADH supplementation on age-predicted maximum heart rate (max HR) during a cycle ergometer test. Secondary measures included fatigue, pain and sleep. A proof-of-concept, 8-week, randomized, controlled, double-blind trial was conducted in 80 Chronic Fatigue Syndrome (CFS) patients assigned to receive either CoQ10 plus NADH supplementation or matching placebo twice daily. Maximum HR was evaluated at baseline and at end of the run-in period using an exercise test. Fatigue, pain and sleep were evaluated at baseline, and then reassessed at 4- and 8-weeks through self-reported questionnaires. The researchers concluded that their results suggest that CoQ10 plus NADH supplementation for 8 weeks is safe and potentially effective in reducing max HR during a cycle ergometer test and also on fatigue in CFS[7].

A separate research project tested the antioxidant efficacy of coenzymeQ10 (CoQ10) as an adjunct treatment in patients with atrial fibrillation (AF) and heart failure (HF). Consecutive patients with HF were randomized and divided into 2 groups: CoQ10 group (combined administration of common drugs and CoQ10) and control group (administration of common drugs). Ambulatory electrocardiogram Holter monitoring (24 hours), Doppler echocardiography, and evaluation of inflammatory cytokines were performed before treatment and 6 and 12 months after treatment. The research concluded that coenzymeQ10 as adjuvant treatment in patients with HF may attenuate AF incidence. The mechanisms of the effect may be related to reduced malondialdehyde levels[8].

A randomized controlled multicenter trial evaluated coenzyme Q10 (CoQ10) as adjunctive treatment in chronic heart failure (HF). Patients with moderate to severe HF were randomly assigned in a 2-year prospective trial to either CoQ10 100 mg 3 times daily or placebo, in addition to standard therapy. The primary short-term endpoints at 16 weeks were changes in New York Heart Association (NYHA) functional classification, 6-min walk test, and levels of N-terminal pro-B type natriuretic peptide. The primary long-term endpoint at 2 years was composite major adverse cardiovascular events as determined by a time to first event analysis. The study concluded that long-term CoQ10 treatment of patients with chronic HF is safe, improves symptoms, and reduces major adverse cardiovascular events[9].

A separate study tested the effect of supplementation with coenzyme Q10 on conventional therapy of children with cardiac failure due to idiopathic dilated cardiomyopathy. In a prospective, randomized, double-blinded, placebo-controlled trial, they randomized 38 patients younger than 18 years with idiopathic dilated cardiomyopathy to receive either coenzyme Q10, chosen for 17 patients, or placebo, administered in the remaining 21. Echocardiographic systolic and diastolic function parameters were determined for every patient at baseline, and after 6 months of supplementation. The index score for cardiac failure in children as established in New York was used for assessing the functional class of the patients. The study concluded that coenzyme Q10 is useful in ameliorating cardiac failure in patients with idiopathic dilated cardiomyopathy through its significant effect on improving diastolic function[10].

Potent Antioxidant*

As selenium and coenzyme Q10 are involved in the anti-oxidative defense, a study evaluated effects of selenium and coenzyme Q10 on copeptin and adrenomedullin as oxidative stress biomarkers. Therefore, 437 elderly individuals were included and given intervention for 4 years. Clinical examination and blood samples were undertaken at start and after 18 and 48 months. Evaluations of copeptin and MR-proADM changes were performed using repeated measures of variance. Cardiovascular mortality was evaluated using a 10-year-period of follow-up. The study concluded that supplementation with selenium and coenzyme Q10 during four years resulted in lower concentration of both copeptin and MR-proADM. A cardioprotective effect of the supplementation was registered, irrespective of the initial levels of these biomarkers, and this protection was recognized also after 10 years of observation[11].

Other researchers assessed the effect of selenium supplementation on antioxidative glutathione peroxidase 1 (GPx-1) in cell culture and on endothelial function in a prospective clinical trial. Human coronary artery endothelial cells were incubated with 5.78 to 578 nmol/L sodium selenite, Se-methyl-selenocysteine hydrochloride, or seleno-l-methionine. Glutathione peroxidase 1 mRNA and protein expression and activity were measured. Coronary artery disease patients (n = 465) with impaired endothelial function (flow-mediated dilation [FMD] ‹8%) were randomly assigned to receive 200 or 500 microg sodium selenite daily or matching placebo during a 12-week period. They tested the effect on red blood cell GPx-1 activity and brachial artery FMD. Furthermore, differences in biomarkers of oxidative stress and inflammation were measured. The

researchers concluded that sodium selenite supplementation increases GPx-1 activity in endothelial cells and in Coronary Artery Disease (CAD) patients[12].

Another study attempted to compare the effects of selenomethionine (SeMet) and selenium-enriched yeast (SY) on prostate cancer relevant biomarkers in men. They performed a randomized double blind, placebo-controlled trial of SY (200 or 285 µg/day) and SeMet (200 µg/day) administered for 9 months in 69 healthy men. Primary endpoints included blood levels of selenium-containing compounds and oxidative stress biomarkers. Secondary endpoints included plasma glucose and PSA levels. The study found reductions in biomarkers of oxidative stress following supplementation with SY but not with SeMet in healthy men. These findings suggest that selenium-containing compounds other than SeMet may account for the decrease in oxidative stress[13].

The aim of another study was to evaluate the effects of selenium supplementation on oxidative markers and the nutritional status of hemodialysis (HD) patients. In this randomized double-blind placebo-controlled trial, 80 patients on stable HD for at least 3 months without any acute illness or active infections were randomly allocated to two equal groups to receive one selenium (200 µg) or placebo capsule daily for 12 weeks. Serum levels of lipoproteins, malondialdehyde (MDA), interleukin-6 (IL-6), high-sensitivity C-reactive protein (HSCRP), homocysteine, ferritin and transferrin as well as the subjective global assessment (SGA) score, malnutrition-inflammation score (MIS) and hemoglobin (Hb) levels were measured at the baseline and at end of treatment. The primary outcome was a change in the nutritional status measured by the SGA score from baseline to end of treatment. The study concluded that selenium may be an effective complementary supplement for reducing the severity of malnutrition in HD patients through alleviating oxidative stress and inflammation[14].

Other researchers assessed the impact of selenium on a simple measure of oxidative stress in pregnant women. A novel assay of prooxidant-antioxidant balance (PAB) was applied in a double-blind, placebo-controlled study of selenium supplementation in pregnancy. The researchers measured the prooxidant burden and the antioxidant capacity simultaneously in one assay, thereby calculating a redox index. A total of 166 primigravid pregnant women in the first trimester of pregnancy, were randomized to receive 100 microg of selenium (n=83) or placebo (n=83) per day until delivery. PAB values and serum selenium concentrations were measured at baseline and at study end. The researchers found that selenium supplementation may reduce oxidative stress associated with pregnancy[15].

Another clinical trial assessed whether supplementation of BRCA1 mutation carriers with selenium has a beneficial effect concerning oxidative stress/DNA damage. The double-blinded placebo control study determined 8-oxodG level in cellular DNA and urinary excretion of 8-oxodG and 8-oxoGua in the mutation carriers. They found that 8-oxodG level in leukocytes DNA is significantly higher in BRCA1 mutation carriers. In the distinct subpopulation of BRCA1 mutation carriers without symptoms of cancer who underwent adnexectomy and were supplemented with selenium, the level of 8-oxodG in DNA decreased significantly in comparison with the subgroup without supplementation. Simultaneously in the same group, an increase of urinary 8-oxoGua, the product of base excision repair (hOGG1 glycosylase), was observed. Therefore, it is likely that the selenium supplementation of the patients is responsible for the increase of base excision repair (BER) enzymes activities, which in turn may result in reduction of oxidative DNA damage.

Importantly, in a double-blinded placebo control prospective study, it was shown that in the same patient groups, reduction in cancer incidents was observed. Altogether, these results suggest that BRCA1 deficiency contributes to 8-oxodG accumulation in cellular DNA, which in turn may be a factor responsible for cancer development in women with mutations, and that the risk to developed breast cancer in BRCA1 mutation carriers may be reduced in selenium-supplemented patients who underwent adnexectomy[16].

Supports Thyroid Health*

A randomized controlled prospective study was performed to investigate the effects of selenium (Se) treatment on patients with autoimmune thyroiditis and mild sub-clinical hypothyroidism. A total of 196 patients with autoimmune thyroiditis were recruited in the study. Patients were assigned to receive (case) or not receive (control) an oral selenomethionine treatment. Cases received 83 mcg selenomethionine/day orally for four months. All the patient's charts were submitted to thyroid hormonal profile (TSH, fT4) and TPOAb evaluation upon enrollment and at end of study. The study concluded that selenium supplementation could restore normal levels of thyroid hormone levels (euthyroidism) in one third of subclinical hypothyroidism patients with autoimmune thyroiditis[17].

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