CLINICAL AND SCIENTIFIC STUDIES

Camillotek's Bio-CoQ10 is a unique blend which is bioenhanced for better absorption and utilisation at low doses. The latest studies reveal an even more remarkable finding: *When a high purity* ***shilajit*** *component - DBP is* ***combined*** *with* ***CoQ10,*** *cellular* ***energy*** *gains* ***increase*** *dramatically.* Together they ***optimize*** mitochondrial energy levels, activating a ***super-vitalization*** of our mitochondria's ability to convert food into energy. This adaptogenic combination not only radically ramps up available energy — it enhances ***mitochondrial*** *health,* a vital factor in ***preventing aging*** at the cellular level.The DBPs from shilajit are not only ***sustaining higher levels of CoQ10*** from the supplement itself — they are actually ***increasing concentrations in tissues*** beyond what the supplement alone can produce. One way that DBPs achieve this remarkable effect is by ***stabilizing*** and preserving CoQ10 in its active form. In other words, CoQ10 that would otherwise be depleted during mitochondrial energy production is preserved, thus better protecting mitochondria against oxidant damage.

A team of researchers published compelling results in 2009 showing how ***shilajit plus CoQ10*** preserve and protect energy function in mice. The researchers engaged mice in strenuous and stressful physical activity for two hours each day for seven days. Starting on day four they supplemented the animals orally with CoQ10 alone, shilajit alone, or the two in combination. They measured levels of CoQ10, ATP, and other compounds vital in mitochondrial energy production. They then compared the results with those of the stressed animals given a placebo only, and with animals at rest. The outcomes were nothing short of astounding:

- Compared to a placebo, CoQ10 + shilajit significantly ***increased energy production (ATP)*** by ***144% in muscle,*** and the ***combination*** was ***27% better than CoQ10 alone!***
- Compared to a placebo, CoQ10 + shilajit significantly ***increased energy production (ATP)*** by ***56% in the brain,*** and the combination was ***40% better than CoQ10 alone!***
- Compared to control animals at rest, ***CoQ10 levels in the intense exercise-stressed animals plummeted by 75%*** — yet the combination of CoQ10 + shilajit restored CoQ10 levels to ***within 15% of the normal rested animals' levels!***
- The CoQ10 + shilajit combination produced ***similar synergistic effects*** on a variety of other ***measures*** of***cellular energy*** status, especially in muscle and brain tissue.

Coenzyme Q10 (CoQ10) is produced by the human body and is necessary for the basic functioning of cells. CoQ10 levels are reported to decrease with age and to be low in patients with some chronic diseases such as heart conditions, muscular dystrophies, Parkinson's disease, cancer, diabetes, and HIV/AIDS. Some prescription drugs may also lower CoQ10 levels.

Coenzyme Q10 deficiency Coenzyme Q10 is normally produced by the human body, although deficiency may occur in patients with impaired CoQ10 biosynthesis due to severe metabolic or mitochondrial disorders, not enough dietary CoQ10 intake, or too much CoQ10 use by the body. Depending on the cause of CoQ10 deficiency, supplementation or increased dietary intake of CoQ10 and the vitamins and minerals needed to produce CoQ10 may be effective.	A
High blood pressure (hypertension) Preliminary research suggests that CoQ10 causes small decreases in blood pressure (systolic and possibly diastolic). Low blood levels of CoQ10 have been found in people with hypertension, although it is not clear if CoQ10 "deficiency" is a cause of high blood pressure. Well-designed long-term research is needed to strengthen this recommendation.	B

Age-related macular degeneration Early study shows that acetyl-L-carnitine, n-3 fatty acids, and Coenzyme Q10 (Phototrop®) may help age-related macular degeneration. More research is needed using Coenzyme Q10 alone before a recommendation can be made.	B
Alzheimer's disease Promising preliminary evidence suggests that CoQ10 supplements may slow down, but not cure, dementia in people with Alzheimer's disease. Additional well-designed studies are needed to confirm these results before a firm recommendation can be made.	B
Angina (chest pain from clogged heart arteries) Preliminary small human studies suggest that CoQ10 may reduce angina and improve exercise tolerance in people with clogged heart arteries. Better studies are needed before a firm recommendation can be made.	B
Anthracycline chemotherapy heart toxicity Anthracycline chemotherapy drugs, such as doxorubicin (Adriamycin®), are commonly used to treat cancers such as breast cancer or lymphoma. Heart damage (cardiomyopathy) is a major concern with the use of anthracyclines, and CoQ10 has been suggested to protect the heart. However, studies in this area are small and not high quality and the effects of CoQ10 remain unclear.	C
Asthma CoQ10 may benefit asthma patients when added to other therapies. Further research is needed. Asthma should be treated by a qualified healthcare provider.	C
Breast cancer Supplementation with CoQ10 has not been proven to reduce cancer and has not been compared to other forms of treatment for breast cancer.	C
Cancer Further research is needed to determine if CoQ10 may help cancer when used with other therapies. Cancer should be treated by a qualified healthcare provider.	C
Cardiomyopathy (dilated, hypertrophic) There is conflicting evidence from research on the use of CoQ10 in patients with dilated or hypertrophic cardiomyopathy. Better research is needed in this area before a recommendation can be made.	C

Chronic fatigue syndrome Early study shows that CoQ10 may improve symptoms of chronic fatigue syndrome. High quality research is needed in this area before a decision can be made.	C
Cocaine dependence A combination of Coenzyme Q10 and L-carnitine has been studied to reduce cocaine usage, but early study is inconclusive.	C
Coronary heart disease There is not enough scientific evidence to recommend for or against the use of CoQ10 in patients with coronary heart disease.	C
Exercise performance Results are variable, with some research suggesting benefits, and other studies showing no effects. Most trials have not been well designed. Better research is necessary before a firm conclusion can be drawn.	C
Friedreich's ataxia Preliminary research reports promising evidence for the use of CoQ10 in the treatment of Friedreich's ataxia. Further evidence is necessary before a firm conclusion can be drawn.	C
Gum disease (periodontitis) Preliminary human studies suggest possible benefits of CoQ10 taken by mouth or placed on the skin or gums in the treatment of periodontitis. Better research is needed before a strong conclusion can be drawn.	C
Heart attack (acute myocardial infarction) There is preliminary human study of CoQ10 given to patients within three days after a heart attack. Better research is needed before a firm conclusion can be drawn.	C
Heart conditions (mitral valve prolapse in children) There is early data to support the use of CoQ10 in children with mitral valve prolapse. Well-designed clinical trials are needed before a recommendation can be made.	C
Heart failure The evidence for CoQ10 in the treatment of heart failure is controversial and remains unclear. Different levels of disease	C

severity have been studied (New York Heart Association classes I through IV). Better research is needed in this area studying the effects on quality of life, hospitalization, and death rates before a recommendation can be made.	
Heart protection during surgery Several studies suggest that the function of the heart may be improved after major heart surgeries such as coronary artery bypass graft (CABG) or valve replacement when CoQ10 is given to patients before or during surgery. Better studies are necessary before a recommendation can be made.	C
HIV/AIDS There is limited evidence that natural levels of CoQ10 in the body may be reduced in people with HIV/AIDS. There is a lack of reliable scientific research showing that CoQ10 supplements have any effect on this disease.	C
Hypertriglyceridemia Early study of CoQ10 for high triglyceride levels in the blood is unclear.	C
Increasing sperm count (idiopathic spermatozoa) There is early evidence that supports the use of CoQ10 in the treatment of increasing sperm count and motility. Better studies are needed before a strong recommendation can be made.	C
Kidney failure There is initial data to support the use of CoQ10 in the treatment of kidney (renal) failure. More research is needed before a recommendation can be made.	C
Lipid lowering (adjunct to statin therapy) Coenzyme Q10 may reduce some adverse effects associated with statin therapy for high cholesterol, including reduced heart function. More study is needed before a recommendation can be made.	C
Migraine There is fair evidence to support the use of CoQ10 treatment in migraine prevention or treatment. However, more well-designed studies are needed to confirm these findings.	C
Mitochondrial diseases and Kearns-Sayre syndrome CoQ10 is often recommended for patients with mitochondrial diseases, including myopathies, encephalomyopathies, and Kearns-Sayre syndrome. CoQ10 may help improve function in children with maternally-inherited diabetes and deafness. Better studies are needed before a strong recommendation can be made.	C

Muscular dystrophies Preliminary studies in patients with muscular dystrophy taking CoQ10 supplements describe improvements in exercise capacity, heart function, and overall quality of life. Additional research is needed in this area.	C
Myelodysplastic syndrome Further research is needed before a recommendation can be made. Early study results are unclear.	C
Parkinson's disease There is promising human evidence for the use of CoQ10 in the treatment of Parkinson's disease. Better-designed trials are needed to confirm these results.	C
Post-surgical recovery (adjuvant) In patients with stage I and II melanoma with surgically removed lesions, CoQ10 may decrease the rate of recurrence. Although these results are promising, more study is needed in this area to confirm these conclusions.	C
Prostate cancer One study using a combination that included CoQ10 did not find a significant effect on PSA levels in patients with prostate cancer. Although PSA levels may be an indicator of cancer, it is unclear whether CoQ10 would have any effect on cancer treatment of prevention. More study is needed.	C
Tinnitus (ringing in the ears) More research is needed in patients with tinnitus with low levels of CoQ10 before a strong recommendation can be made.	C
Diabetes Preliminary evidence suggests that CoQ10 does not affect blood sugar levels in patients with type 1 or type 2 diabetes, and it does not alter the need for diabetes medications.	D
Huntington's disease There is negative evidence from studies that used CoQ10 in the treatment of Huntington's disease.	D

Key to grades

A Strong scientific evidence for this use

B Good scientific evidence for this use

C Unclear scientific evidence for this use

D Fair scientific evidence against this use (it may not work)

F Strong scientific evidence against this use (it likely does not work)

Dosing

The below doses are based on scientific research, publications, traditional use, or expert opinion. Many herbs and supplements have not been thoroughly tested, and safety and effectiveness may not be proven. Brands may be made differently, with variable ingredients, even within the same brand. The below doses may not apply to all products. You should read product labels, and discuss doses with a qualified healthcare provider before starting therapy.

Adults (above 18 years old)

50-1,200 milligrams of CoQ10 have been taken in divided doses by mouth daily.

85 milligrams of CoQ10 per milliliter of soybean oil suspension has been applied to the surface of affected areas once weekly using a plastic syringe for gum disease.

Most studies of CoQ10 for heart protection during bypass surgery have used CoQ10 taken by mouth. One study used intravenous CoQ10, 5 milligrams per kilogram of body weight, given two hours prior to surgery. Safety is not clear. Any therapies used close to the time of surgery should be discussed with the surgeon and a pharmacist prior to starting.

Children (under 18 years old)

There is not enough scientific information to recommend the safe use of CoQ10 in children. A qualified healthcare provider should be consulted before considering use.

Side Effects and Warnings

There are few serious reported side effects of CoQ10. Side effects are typically mild and brief, stopping without any treatment needed. Reactions may include nausea, vomiting, stomach upset, heartburn, diarrhea, loss of appetite, skin itching, rash, insomnia, headache, dizziness, itching, irritability, increased light sensitivity of the eyes, fatigue, or flu-like symptoms.

CoQ10 may lower blood sugar levels. Caution is advised in patients with diabetes or hypoglycemia, and in those taking drugs, herbs, or supplements that affect blood sugar. Serum glucose levels may need to be monitored by a healthcare provider, and medication adjustments may be necessary.

Low blood platelet number was reported in one person taking CoQ10. However, other factors (viral infection, other medications) may have been responsible. Lowering of platelets may increase the risk of bruising or bleeding, although there is a lack of known reports of bleeding from CoQ10. Caution is advised in people who have bleeding disorders or who are taking drugs that increase the risk of bleeding. Dosing adjustments may be necessary.

CoQ10 may decrease blood pressure, and caution is advised in patients with low blood pressure or taking blood pressure medications. Elevations of liver enzymes have been reported rarely, and caution is advised in people with liver disease or taking medications that may harm the liver. CoQ10 may lower blood levels of cholesterol or triglycerides. Thyroid hormone levels may be altered based on one study.

Organ damage due to lack of oxygen/blood flow during intense exercise has been reported in a study of patients with heart disease, although the specific role of CoQ10 is not clear. Vigorous exercise is often discouraged in people using CoQ10 supplements.

Pregnancy and Breastfeeding

There is not enough scientific evidence to support the safe use of CoQ10 during pregnancy or breastfeeding. Sperm may be affected.

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