



## CO-ENZYME Q10 (UBIQUINONE)

**30 mg**

UPC CODE 0 646420 2825 9

NPN # 02176955

**60 mg**

UPC CODE 0646420 6103 4

NPN # 80005615

**120 mg**

UPC CODE 0 646420 6447 9

NPN# 80027715

**250 mg**

UPC CODE 0 646420 6448 6

NPN# 80023959

---

### NATURAL HEALTH PRODUCTS DIRECTORATE (NHPD) CLAIMS:

#### NHPD claims for Jamieson Co-Enzyme Q10 (CoQ10) 30 mg:

- Helps to maintain and support cardiovascular health
- Helps to reduce the frequency of migraine headaches and associated nausea and vomiting when taken as a prophylactic
- An antioxidant for the maintenance of good health

#### NHPD claims for Jamieson Co-Enzyme Q10 (CoQ10) 60 mg:

- Helps to maintain and support cardiovascular health
- An antioxidant for the maintenance of good health

#### NHPD claims for Jamieson Co-Enzyme Q10 (CoQ10) 120 mg:

- Helps to maintain and support cardiovascular health
- An antioxidant for the maintenance of good health
- Helps to reduce the frequency of migraine headaches and associated nausea and vomiting when taken as a prophylactic.

#### NHPD claims for Jamieson Co-Enzyme Q10 (CoQ10) 250 mg are:

- Helps to maintain and support cardiovascular health
- An antioxidant for the maintenance of good health

- Helps to reduce the frequency of migraine headaches and associated nausea and vomiting when taken as a prophylactic

### GENERAL INFORMATION

Co-Enzyme Q10 (CoQ10), which is also known as ubiquinone, is a naturally occurring nutrient molecule present in the mitochondria (cellular organelle) of all cells in the body.<sup>1,2</sup> This nutrient is essential for its role in the electron transport system, also known as the body's bioenergetics. It is this system that provides the energy required by each cell to both survive and function effectively.<sup>1,2</sup> The cells of the heart are particularly abundant in CoQ10, because of the high demand for energy production that is required to help the heart muscle beat and efficiently pump blood throughout the body.<sup>1,2</sup>

The benefits of CoQ10 are due to the following attributes:

- It is necessary for the production of energy in all cells of the body.<sup>1,2</sup>
- It is an important fat-soluble antioxidant that is unequally able to protect the cells' mitochondria from free radical damage.<sup>1,2</sup>

It has been well-documented in both animal and human studies that the use of HMG-CoA reductase inhibitors (statins) for cholesterol-lowering can deplete CoQ10 levels in the body.<sup>3,4,5</sup> In fact, the prevalence of CoQ10 deficiency is growing steadily, which may in part be attributed to the reduced target LDL cholesterol that is advocated by the medical community, and consequent increase in the potencies and dosages of statins being prescribed. The statin drugs work to reduce blood lipid levels by inhibiting production of the enzyme 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase, which is involved in the manufacture of cholesterol from acetyl-CoA in the liver.<sup>6</sup> However, this also affects the biosynthesis of mevalonate, which is a precursor to ubiquinone (CoQ10). Since CoQ10 plays a critical role in maintaining normal functioning of the heart, any benefit of statin use related to the reduction of cholesterol levels can be offset if there is a concurrent reduction in plasma levels of CoQ10.

Hypercholesterolaemic individuals may experience muscle pain, weakness, fatigue, irritability and memory problems when taking statins. There is some research to indicate that some of these adverse effects could be associated with a mitochondrial dysfunction related to statin-induced depletion of CoQ10.<sup>3,7</sup> In addition, because the heart has

**For Accidental Overdose** (such as child ingesting formula)  
Dial 911, 0 for operator assistance or call your nearest Poison Control Centre.

#### For Professional Use Only

The information contained here has been accumulated from many sources.  
Indications are not intended as cures, they are simply a guideline to be used at your professional discretion.

For more information please visit [www.jamiesonvitamins.com](http://www.jamiesonvitamins.com) or call 1-800-265-5088 to speak to a Consumer Affairs representative.



extremely high energy demands, insufficient levels of CoQ10 could lead to cardiomyopathy or congestive heart failure, where a weakened heart pumps blood less efficiently through the body.<sup>3</sup> Supplementation with CoQ10 in combination with long-term statin therapy can help to prevent depletion of this essential nutrient, without interfering with the cholesterol-lowering action of these drugs.<sup>8</sup>

CoQ10 plays a crucial role in cellular energy production. This is because it is part of the oxidative phosphorylation process within the mitochondria of cells, whereby energy within carbohydrates and fatty acids in food are transformed into ATP; this particular molecule captures the chemical energy released by the combustion of nutrients and transfers it to reactions that require energy, e.g. muscle contractions and many other critical cellular functions. However, while CoQ10 is naturally present in every cell of the body, its natural levels decline with age.<sup>2</sup> Hence, the potential exists that some age-related health problems may be worsened or progress faster due to declining cellular levels of CoQ10. A daily supplement of CoQ10 can help restore natural levels of this important nutrient, thereby providing a part solution to boosting cellular energy and improving overall wellness.

Jamieson CoQ10 is made from 100% bio-fermented yeast, unlike synthetic CoQ10. This natural source CoQ10 is identical to the body's own CoQ10 so it is more efficiently absorbed than synthetic CoQ10.

Jamieson CoQ10 is formulated from natural sources and is pharmaceutically tested to guarantee full potency and absolute clinical purity.

What makes CoQ10 from Jamieson Laboratories different....and why does that difference mean better?

- 1) Contains natural CoQ10 derived from 100 percent bio-fermented yeast, processed under pharmaceutical CGMP protocols for both lab and manufacturing. This form is more efficiently absorbed and used by the body than synthetic CoQ10.
- 2) Our premium formulations are manufactured using the 360 Pure process – a minimum of 360 quality tests that guarantee traceability and reliability of raw material, product safety, full potency and absolute clinical purity.

## INGREDIENT INFORMATION & DIRECTIONS

### CoQ10 30 mg

Available as 60 + 20 softgels.

Each softgel contains:

Co-Enzyme Q10 .....30 mg  
(Yeast fermentation)

Non-tobacco source identical to your body's own biologically active CoQ10.

**Adults:** To maintain and support cardiovascular health and/or as an antioxidant: Take 1-3 softgels, 1-3 times daily. Store between 15°C-25°C, away from children.

### CoQ10 60 mg

Available as 60 + 20 softgels.

Each softgel contains:

Co-Enzyme Q10 .....60 mg  
(Yeast fermentation)

Non-tobacco source identical to your body's own biologically active CoQ10.

**Adults:** To maintain and support cardiovascular health and/or as an antioxidant: Take 1-3 softgels, 1-3 times daily. Store between 15°C-25°C, away from children.

### CoQ10 120 mg

Available as 30 + 30 softgels.

Each softgel contains:

Co-Enzyme Q10 .....120 mg  
(Yeast fermentation)

Non-tobacco source identical to your body's own biologically active CoQ10.

**Adults:** To maintain and support cardiovascular health and/or as an antioxidant: Take 1 softgel 1-2 times daily. For migraine prophylaxis: Take 1 softgel 2 times daily. Use for a minimum of 3 months to see beneficial effects. Store between 15°C-25°C, away from children.

### CoQ10 250 mg

Available as 30 + 15 softgels.

Each softgel contains:

Co-Enzyme Q10 .....250 mg  
(Yeast fermentation)

Non-tobacco source identical to your body's own biologically active CoQ10.

---

**For Accidental Overdose** (such as child ingesting formula)  
Dial 911, 0 for operator assistance or call your nearest Poison Control Centre.

#### For Professional Use Only

The information contained here has been accumulated from many sources.  
Indications are not intended as cures, they are simply a guideline to be used at your professional discretion.

For more information please visit [www.jamiesonvitamins.com](http://www.jamiesonvitamins.com) or call 1-800-265-5088 to speak to a Consumer Affairs representative.



**Adults:** To maintain and support cardiovascular health, as an antioxidant or for migraine prophylaxis: Take 1 softgel daily. For migraine prophylaxis, use for a minimum of 3 months to see beneficial effects. Store between 15°-25°C, away from children.

## EXCIPIENTS

Gelatin, glycerin, soy lecithin, soybean oil, titanium dioxide, annatto colour.

## INDICATED BENEFITS

- Helps to maintain cardiovascular health
- An antioxidant for the maintenance of good health
- Supports cellular energy production<sup>1,2</sup>
- Supports healthy CoQ10 levels for patients prescribed statin drugs
- Helps to reduce the frequency of migraine headaches and associated nausea and vomiting when taken as a prophylactic

## NUTRIENT INTERACTIONS

### Drug Interactions

Blood thinners, blood pressure medications.

### Nutrient Depletions

CoQ10 levels may be depleted by statins (HMG-CoA reductase inhibitors), beta-blockers, fibric acid derivatives and tricyclic antidepressants.

### Supportive Interactions

CoQ10 may provide nutritional support when taking the following medications: anti-migraine drugs, daunorubicin and doxorubicin (chemotherapy medications), perphenazine, timolol and thioridazine.

## WARNINGS AND PRECAUTIONS

Consult a health care practitioner prior to use if you are taking blood pressure medication or blood thinners; or if pregnant or breastfeeding.

For migraine prophylaxis: consult a health care practitioner if migraine frequency increases and associated nausea and vomiting persists or worsens.

## TOXICITY, ADVERSE REACTIONS, AND SIDE EFFECTS

Do not exceed recommended dosage. High doses of CoQ10 may cause upset stomach, diarrhea, nausea or loss of appetite.

## REFERENCES

1. Coenzyme Q10 (n.d.) Retrieved September 2, 2005, from: [http://www.wholehealthmd.com/refshelf/substances\\_view/1,1525,768,00.html](http://www.wholehealthmd.com/refshelf/substances_view/1,1525,768,00.html)
2. Crane, F.L. (2001). Biochemical functions of coenzyme Q10. *J.Amer.College Nutr.*, 20(6): 591-598.
3. De Pinieux, G., Chariot, P., Ammi-Said, M., Louarn, F., Lejonc, J.L., Astier, A., Jacotot, B. & Gherardi, R. (1996). Lipid-lowering drugs and mitochondrial function: effects of HMG-CoA reductase inhibitors on serum ubiquinone and blood lactate/pyruvate ratio. *Br J Clin Pharmacol*, 42(3): 333-337.
4. Langsjoen, P.H. & Langsjoen, A.M. (2003). The clinical use of HMG CoA-reductase inhibitors and the associated depletion of coenzyme Q10. A review of animal and human publications. *Biofactors*, 18(1-4): 101-111.
5. Mortensen, S. A., Leth, A., Agner, E. & Rohde, M. (1997). Dose-related decrease of serum coenzyme Q10 during treatment with HMG-CoA reductase inhibitors. *Mol Aspects Med.*, 18 Suppl: S137-144.
6. Hargreaves, I.P. (2003). Ubiquinone: cholesterol's reclusive cousin. *Ann Clin Biochem*, 40(Pt 3): 207-218.
7. Langsjoen, P.H., Folkers, K., Lyson, K., Muratsu, K., Lyson, T. & Langsjoen, P. (1988). Effective and safe therapy with coenzyme Q10 for cardiomyopathy. *Klin Wochenschr*, 66(13): 583-590.
8. Folkers, K., Langsjoen, P., Willis, R., Richardson, P., Xia, L.-J., Ye, C.-Q. & Tamagawa, H. (1990). Lovastatin decreases coenzyme Q levels in humans. *Proc. Natl. Acad. Sci. USA*, 87: 8931-8934.
9. Bargossi, A.M., Grossi, G., Fiorella, P.L., Gaddi, A., Di Giulio, R. & Battino, M. (1994). Exogenous CoQ10 supplementation prevents plasma ubiquinone reduction induced by HMG-CoA reductase inhibitors. *Mol Aspects Med*, 15 Suppl: s187-193.
10. Ghirlanda, G., Oradei, A., Manto, A., Lippa, S., Uccioli, L., Caputo, S., Greco, A.V., Littarru, G.P. (1993). Evidence of

---

**For Accidental Overdose** (such as child ingesting formula)  
Dial 911, 0 for operator assistance or call your nearest Poison Control Centre.

### For Professional Use Only

The information contained here has been accumulated from many sources.  
Indications are not intended as cures, they are simply a guideline to be used at your professional discretion.

For more information please visit [www.jamiesonvitamins.com](http://www.jamiesonvitamins.com) or call 1-800-265-5088 to speak to a Consumer Affairs representative.



plasma CoQ10-lowering effect by HMG-CoA reductase inhibitors: a double-blind, placebo-controlled study. *J. Clin Pharmacol.*, 33(3): 226-229.

11. Hanaki, Y., Sugiyama, S., Ozawa, T., Ohno, M. (1993). Coenzyme Q10 and coronary artery disease. *Clin Investig.* 71 (8 Suppl): S112-115.
12. Langsjoen, P.H., Vadhanavikit, S. & Folkers, K. (1985). Response of patients in classes III and IV of cardiomyopathy to therapy in a blind and crossover trial with coenzyme Q10. *Proc. Natl. Acad. Sci. USA*, 82: 4240-4244.
13. Possible Interactions with : Coenzyme Q10 (n.d.) Retrieved September 2, 2005 from University of Maryland, Medical Center Web site: <http://www.umm.edu/altmed/ConsSupplements/Interactions/CoenzymeQ10cs.html>
14. Watts, G.F., Castelluccio, C., Rice-Evans, C., Taub, N.A., Baum, H. & Quinn, P.J. (1993). Plasma coenzyme Q (ubiquinone) concentrations in patients treated with simvastatin. *J Clin Pathol.*, 46(11): 1055-1057.

---

**For Accidental Overdose** (such as child ingesting formula)  
Dial 911, 0 for operator assistance or call your nearest Poison Control Centre.

**For Professional Use Only**

The information contained here has been accumulated from many sources.  
Indications are not intended as cures, they are simply a guideline to be used at your professional discretion.

For more information please visit [www.jamiesonvitamins.com](http://www.jamiesonvitamins.com) or call 1-800-265-5088 to speak to a Consumer Affairs representative.