



# COENZYME Q10

The cellular spark plug with cardiovascular benefits & more!

“It is being hailed by scientists as one of the brightest new antioxidants around for postponing aging and preventing or treating age-related diseases, namely heart disease. It’s unsure how much you need, but it seems certain that taking in more than your body produces may help defeat the ravages of aging and even prolong life. Thus you may be aging far too rapidly because your cells don’t get enough coenzyme Q10.”— Jean Carper in *Stop Aging Now*.

Are these claims just hype or can they be substantiated? Coenzyme Q10 (CoQ10) is required by every cell in our body and is key to the chemical reactions that produce cellular energy. An automobile engine with poor spark plugs will sputter and choke with carbon. Like a cellular spark plug, CoQ10 ignites the cell’s oxygen to produce energy. If our cells do not burn oxygen properly, damaging compounds such as free radicals (abnormal oxygen molecules) are formed. A misfiring automobile will eventually break down.

Similarly, insufficient CoQ10 will break down our health, resulting in cardiovascular disease, cancer or other degenerative diseases. An antioxidant and free radical quencher, CoQ10 protects us while maintaining cellular energy.

In scientific circles, coenzyme Q10 is called ubiquinone, derived from ubiquitous, which means “everywhere at the same time.” The name is appropriate because every cell in our body requires CoQ10, so it is required for ideal health. However, as we age, body stores of CoQ10 diminish and some theorize that reduced CoQ10 might be responsible for poor health and our susceptibility to degenerative diseases as we grow older.

## THE ANTIOXIDANT POWER OF COQ10

CoQ10 soaks up free radicals with such dispatch that it can take its place next to the other heavyweight antioxidants—vitamins C, E, the carotenoids, and selenium. Just like vitamin E, coenzyme Q10 is particularly good at protecting low-density lipoproteins (the bad cholesterol) from oxidation, a process that contributes to plaque build up in the arteries.

Those using “statin drugs” to lower cholesterol should be aware of their special need to supplement with CoQ10. Statin drugs work by interfering with the liver’s manufacture of cholesterol. Unfortunately, they also inhibit the liver’s manufacture of CoQ10 at the same time. CoQ10 is critical for muscle energy and function, and the heart and blood vessels involve muscle. Statin drugs may create a severe deficiency of CoQ10, causing side-effects of muscle deterioration, weakness, and pain. The solution is to supplement with sufficient CoQ10.

## CARDIOVASCULAR BENEFITS

Dr. Peter Langsjoen, cardiologist and CoQ10 researcher, is convinced of its benefits: “CoQ10 is remarkable stuff. People feel so much better after taking it. It makes such a dramatic improvement, it’s unthinkable for me to practice medicine without it.” (Carper)

CoQ10 is abundant in the human heart. This makes sense because the heart has high energy demands. Renowned CoQ10 researcher, Dr. Karl Folkers, was convinced that low CoQ10 levels contributed to heart disease. He found that heart disease patients had 25% less CoQ10 than healthy people. It is not surprising that so many studies show that CoQ10 helps strengthen heart muscle and improves a variety of heart conditions.

## CONGESTIVE HEART FAILURE IMPROVEMENT

Over 640 cardiac patients with congestive heart failure were given either CoQ10 or placebo in a one-year double-blind trial. The number of patients who needed to be hospitalized for worsening heart failure was 38% fewer in the CoQ10 group. Episodes of pulmonary edema (fluid build up in the lungs) or cardiac asthma were reduced by 60% and 50% respectively in those receiving CoQ10 and their heart muscle strength increased dramatically. The survival-rate of the CoQ10 group increased threefold. (Morisco, *et al.*)

A large study of 2,664 patients with congestive heart failure showed that supplemental CoQ10 improved many symptoms. They received from 50 to 150 milligrams of CoQ10 per day, with the majority getting 100 milligrams per day. After three months their symptoms were evaluated. Note the percentage of patients with improvement in the following symptoms: cyanosis (purple hue of the skin), 78.1%; fluid retention, 78.6%; pulmonary edema, 77.8%; enlargement of the liver, 49.3%; shortness of breath, 52.7%; heart palpitations, 75.4%; subjective arrhythmia, 63.4%; sweating, 79.8%. The researchers “observed a contemporary improvement of at least three symptoms in 54% of patients; this could be interpreted as an index of improved quality of life.” (Baggio, *et al.*)

## LOWERING HYPERTENSION

A study of 109 patients with essential hypertension showed that an average dose of 225 milligrams daily reduced the blood pressure in 85% of the patients. The authors noted: “A definite and gradual improvement in functional status was observed with the concomitant need to gradually decrease antihypertensive drug therapy within the first one to six

months. Thereafter, clinical status and cardiovascular drug requirements stabilized with a significantly improved systolic and diastolic blood pressure." (Langsjoen, *et al.*)

### COQ10 AND HEALTHY GUMS

There is a strong connection between CoQ10 and healthy gums. "In numerous studies between 1970 and 1975, scientists working with CoQ10 and gum disease came to these important conclusions: Since CoQ10 is an essential factor in cellular energy formation and is essential for the health of tissues, it would logically follow that increased availability of CoQ10 to deficient tissue should improve the bioenergetics of the tissue. With periodontal diseased tissue, it appeared that CoQ10 did exactly that." (Bliznakov, *et al.*)

### PARKINSON'S DISEASE AND OTHER NEUROLOGICAL DISORDERS

Research shows high dosages of CoQ10 may help Parkinson's disease. A study on patients who had been diagnosed with early onset Parkinson's within 5 years of enrollment and who had three primary symptoms of PD-tremor, stiffness and slowed movements-showed that those given the largest dose of CoQ10 (1,200 mg daily) had 44% less decline in mental function, motor movement and ability to carry out activities of daily living. Those patients given 300 mg/day and 600 mg/day also had less decline than the placebo group but their decline was not as pronounced as those given 1,200 mg daily. The researchers point out that this was only a small study and more studies need to be carried out. (Schultz, *et al.*)

High dosages may help other neurological disorders including ALS (Lou Gehrig's disease).

### CAN WE GET IT FROM DIET?

We can manufacture CoQ10 from the food we eat, but the body needs B vitamins – especially B6, B12, niacin and folic acid-to do it well. Good food sources of CoQ10 are fatty fish, organ meats and peanuts. Keep in mind that you would have to eat a pound of sardines or two pounds of peanuts just to get 30 mg of CoQ10.

Researchers have used supplemental CoQ10 in studies to achieve dramatic

results. As a fat-soluble molecule supplemental CoQ10 is better absorbed if taken with meals where some fat is present.

### DOSAGE

For results, according to experts, a minimum of at least 60 mg per day must be taken for at least two months. That is a very modest amount. Now many health care practitioners are recommending that those with serious ailments such as congestive heart failure, Parkinson's disease or ALS may benefit from much higher doses.

### SAFETY

CoQ10 is remarkably safe, even at high doses over a long period of time. In one study 31 subjects with ALS (Lou Gehrig's disease) were given as much 3,000 mg of CoQ10 daily for eight months. The authors noted that this dose was safe and well-tolerated. (Ferrante, *et al.*)

### QUALITY TESTING

Natural Factors CoQ10 is manufactured using a proprietary continuous fermentation process of CoQ10 containing yeast, ensuring that only the natural "all-trans", (pharmacologically active) form of CoQ10 is produced, identical to the form produced by the human body. The steps of the manufacturing process involve extraction of the CoQ10 from the yeast, followed by purification, crystallization and drying. The result is pure CoQ10, ensured to be completely free of any contamination by undesirable residue or micro-organisms, including bacteria or yeast.

### WHY A YEAST SOURCE?

Yeast supplies the only direct form of CoQ10, bio-identical to the form used in the human body. CoQ10 can be manufactured synthetically but produces a "cis" form of CoQ10 that is not found in the body.

At Natural Factors, body-friendly CoQ10 is rigorously tested for heavy metals, arsenic, purity, and potency, beginning with the raw materials. Natural Factors complies with Good Laboratory Practices (GLP) and Good Manufacturing Practices (GMP), meeting and often exceeding Health Canada standards, (among the highest in the world) ensures quality you can depend on.

### ABSORPTION OF COQ10

CoQ10 is fat-soluble. Therefore, the original dry forms of CoQ10, found in hard gel capsules (30 mg and 60 mg), must be taken with sufficient fats or oils, such as at mealtime or absorption will be impaired.

For this reason many prefer the newer 50 mg, 100 mg or the latest 200 mg softgels, all in a base of rice bran oil and vitamin E. Ideal for those requiring higher potencies, these softgels provide sufficient oil and vitamin E to ensure the best absorption and bioavailability no matter when they are taken.

### SUMMING IT ALL UP

The intense focus of international clinical studies, CoQ10 continues to amaze researchers at its ability to improve so many varied health conditions, especially as we age. CoQ10 benefits the heart, protects your gums and may enhance immune function. It shows much promise in cancer therapy. Get to know more about this nutritional "spark plug" that may slow down aging while it benefits our cardiovascular system.

### KEY REFERENCES

- Baggio E., *et al.*, "Italian multicenter study of the safety and efficacy of coenzyme Q10 as adjunctive therapy in heart failure," *CoQ10 Drug Surveillance Investigators, Molecular Aspects of Medicine*, 15, S287-294; 1994
- Bliznakov E.G., Hunt G., "The Miracle Nutrient Coenzyme Q10," *Bantam*, 1986
- Carper J., "Stop Aging Now," *Harper Collins*, 1995
- Ferrante, K.L., *et al.*, "Tolerance of high-dose (3,000 mg/day) coenzyme Q10 in ALS," *Neurology*, 65: 1834-1836; 2005
- Langsjoen P.H., Folkers K., *et al.*, "Treatment of essential hypertension with coenzyme Q10, in: Eighth International Symposium on Biomedical and Clinical Aspects of Coenzyme Q10 (1994), *The Molecular Aspects of Medicine*, vol 15, S287-S294; 1994
- Morisco C., *et al.*, "Effect of coenzyme Q10 therapy in patients with congestive heart failure: a long-term multicenter randomized study," *Clin Investig*, 71: S134-S136; 1993
- Schultz C.W., *et al.*, "Effects of coenzyme Q10 in early Parkinson disease: evidence of slowing of the functional decline," *Archives of Neurology*, v 59, no 10: 1541-1550; October 2002