



### THE COQ10 EFFECT

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### COENZYME Q10 Just the facts

Are you in your 30s or 40s? If so, then chances are your Coenzyme Q10 levels are not as high as they once were. You see, the levels of Coenzyme Q10, or CoQ10, in our body starts to degrade once we get past our 20s, which is when our CoQ10 levels reach its highest.

But wait a minute. Why does it matter if you have low CoQ10 levels in your blood? What is it and what makes it so important?

Coenzyme Q10 is a naturally-occurring nutrient synthesized inside our bodies. It is a powerful antioxidant, which helps in ridding the body of free radicals and repairing the damage they cause, and plays a crucial role in producing energy in the mitochondria, the part of our cells responsible for the manufacturing of energy in the form of ATP.

Coenzyme Q10 not only has the capacity to improve skin health and reverse skin damage, it also has the capacity to lower the chance of cancer, improve heart health, and even slow the progression of Parkinson's Disease.



### THE UBIQUITOUS MIRACLE WORKER

Coenzyme Q10 is a vitamin-like substance that is found in every cell in our bodies. As a matter of fact, its alternate names, ubiquinone and ubiquinol, come from the word "ubiquitous", which means "found everywhere", or simply "universal".

CoQ10 was first discovered by Professor Fredrick L. Crane and his colleagues at the University of Wisconsin Madison Enzyme Institute in 1957. Surprisingly, it wasn't until the 1970s that CoQ10 hit the consumer markets for the first time. Since this time its seen a steep rise in clinical trials due to the remarkably beneficial effects it has in the human body.



#### HOW DOES IT WORK?

Within each of the tens of trillions of cells in our bodies are organelles known as mitochondria. Every organ in our body, from the nerves to the muscles, from the liver and to the heart, needs a tremendous amount of energy in order to function properly, and by extension, keep us in a healthy condition. Our mitochondria process the calories we get from our food and the oxygen we get from the air into cellular energy, in the form of adenosine triphosphate, or ATP.

In order for the mitochondria to do its job, however, it needs a special component to carry those much-needed energy-carrying electrons around, so they can be processed properly. That's where Coenzyme Q10 steps in. It plays a very important role in the final steps of cellular energy production and cannot be replaced or compensated for by any other nutrient. If your body ends up losing CoQ10, which is the case as you grow older, your body cannot produce energy as efficiently anymore. What's more, a lower level of CoQ10 in the body is attributed to a faster aging process.

So, to put it simply, the less CoQ10 you have, the faster you'll age, or at minimum, you'll feel a lot older than you actually are.



# HOW COQ10 COULD IMPROVE YOUR LIFE

Since its discovery in the 1950s, CoQ10 has seen some major breakthroughs in the scientific community. In the past 30 years, CoQ10 has been looked into for its potential to treat many ailments (it is also currently being used in research to determine if it has the capacity to strengthen the immune system of people who are HIV positive, or suffering from AIDS), and most of the research done on it has been largely positive.

Written here are just some of the known possible benefits that CoQ10 could impart upon you.



#### MORE ENERGY!

As stated before, the primary function of Coenzyme Q10 is in the synthesis of energy within our cells. Naturally, when you start your supplemental CoQ10 regime, you'll begin to notice a new spring in your step, and you'll feel 10-20 years younger!

Because of its property of increasing energy production and as a superior antioxidant, which fights off free radicals, Coenzyme Q10 is one of the best nutrients to take when you're on an exercise program. A daily dose of supplemental CoQ10 has been shown to reduce free radical damage and increase the time it takes for you to become exhausted after periods of strenuous activity. Research has shown that a higher CoQ10 level during exercise is directly related to improved oxygen utilization, which results in less fatigue.

Another study also showed that taking CoQ10 daily could also support weight loss and improve the body's metabolism.



# THE FIGHT AGAINST CANCER

Because Coenzyme Q10 is an excellent antioxidant, a compound that blocks the effects of free radicals, which are activated oxygen molecules that can damage the cells in our bodies, it may also support your fight against cancer. Not only can CoQ10 potentially prevent cancer, it can also help fight it, or reduce the effects of cancer treatment on patients.

More recent studies have not only documented clinical improvements, but also have identified some positive effects CoQ10 has on tumor growth. Some of these effects include strengthening the immune system to fight cancer cells, suppressing the growth of tumors, and reducing the inflammatory markers that could eventually lead to the spread of cancer cells.

A recent study compared the effects of administering alpha interferon with daily CoQ10 supplements to patients who were suffering from skin cancer with those who didn't take CoQ10 supplements. There was a significantly lower risk of metastasis in the group that was being supplemented with CoQ10. This effect was even more pronounced for those with the more advanced form of skin cancer, where CoQ10-



supplemented patients were 13 times less likely to develop metastasis. Alpha interferon is an immune boosting drug that can induce side effects so severe that some patients are forced to discontinue it. In this study, only 22% of CoQ10-supplemented patients developed side effects compared to 82% not taking supplemental CoQ10, showing CoQ10's ability to not only improve the odds of remission amongst cancer patients, but also reduce the side effects of cancer treatment.



### MAKE BLEEDING GUMS A THING OF THE PAST

If you've ever had problems with sensitive teeth or receding gums, where your gums are beginning to recede and expose the more sensitive parts of your teeth, then CoQ10 is exactly what you're looking for!

Gum disease can cover many problems, which includes the swelling of gums, redness, bleeding and pain brought about by receding of the gums. According to research, CoQ10 has the capacity to improve gum health, especially when paired with vitamin C.

One particularly small study looked into the effects of CoQ10 on periodontitis, which is a disease in the tissues that hold the teeth in place. Ten male periodontitis patients with 30 periodontal pockets were selected for the study and were made to take a topical supplement of CoQ10. During the first 3 weeks of the study, the patients who applied topical CoQ10 were reported to have significant improvement in their symptoms.



# STEPS TO A HEALTHIER HEART

Another benefit CoQ10 could give you is improved heart function. During the 1960s, CoQ10 was used to treat cardiomyopathy and heart failure. These types of heart diseases have little or nothing to do with cholesterol levels. Rather, they are characterized by a significant loss of energy in the heart muscles, which leads to its inability to pump blood efficiently. In fact, talking to your cardiologist about using CoQ10 for heart ailments could be a good idea, since many of them prescribe it to their patients.

Multiple research studies also suggest that CoQ10 could reduce symptoms related to heart failure, such as shortness of breath, difficulty sleeping, and high blood pressure. CoQ10 has the capacity to increase energy production in the heart muscles, which then leads to strengthening its pumping power.

In one particular study, 32 patients suffering from heart failure and waiting for heart transplantation received either 60 mg of CoQ10 or a placebo and were closely monitored for approximately 3 months. Patients who took the CoQ10



experienced a significant improvement in functional status, clinical symptoms, and quality of life.

In another study, 641 people with congestive heart failure were randomized to receive either a CoQ10 supplement, along with the standard treatment, or a placebo plus the standard treatment. The patients who took the CoQ10 supplement had a significant reduction in symptom severity and went through fewer hospitalizations during the course of the study.



# THE SECRET TO SOFT, VIBRANT SKIN

Research completed in 2003 concerning CoQ10 and its effects on the skin has also yielded some generally positive results. The researchers have shown that CoQ10 has the capacity to both repair the skin and safeguard it from the harmful effects of free radicals on the skin.

According to study, the simultaneous utilization of oral coenzyme Q10 supplements and topical preparations could produce greater levels of coenzyme Q10 within the skin. Since CoQ10 is an effective antioxidant and is found in every cell in the human body, it isn't farfetched to comprehend that the skin is regarded to be one of the best sources of CoQ10, considering that the skin is the largest organ in the body. The antioxidants within CoQ10 can withstand and reverse skin damage, preserving the collagen and elastin within your skin cells and keeping your skin looking younger and healthier.



# SLOWING THE PROGRESSION OF PARKINSON'S

Coenzyme Q10 has recently demonstrated the ability to also improve muscle and nerve health. Its been discovered that problems in a person's mitochondria causes most of the conditions connected with nerve degradation. Thus, one particular aspect of CoQ10 that is currently being thoroughly studied is its ability to act as a nerve-protecting nutrient.

Since Parkinson's disease is the one of the most common degenerative brain disorders in the United States, scientists have been looking into how Coenzyme Q10 could help patients deal with the condition.

One such study, which was published in 2002, proved that 1,200 mg of Q10 daily could slow the progression of Parkinson's disease. In this study, doses of 300 mg, 600 mg and 1,200 mg of CoQ10 were administered to patients who were in the early stages of Parkinson's and were closely monitored for a period of 16 months. Those who took the lower doses showed a trend toward improvement, but that



trend only became statistically significant in the group who took 1,200 mg of supplemental CoQ10 daily.



#### COQ10 AND DIABETES

Though research has not yet reached human trials, CoQ10 has shown the capacity to treat neuropathy caused by diabetes. Neuropathy, or nerve damage, is one of the most common causes of injury and death amongst people who suffer from type-1 and type-2 diabetes. Approximately 50% of people who suffer from type-1 and type-2 diabetes also suffer from diabetic neuropathy. Though there is no known cure at the present time, researchers have discovered that CoQ10 may help alleviate the effects of diabetic neuropathy.

In a recent study, researchers from the University of Miami has found that supplementation with CoQ10 was able to decrease neuropathy-induced pain in diabetic mice. The researchers induced diabetes in 56 obese mice and left another 20 mice unharmed to serve as a control group. They then supplemented the diets of the diabetic mice with CoQ10 and observed both behavioral and physiological markers of pain as well as biological markers of CoQ10 activity. Though the researchers found that while CoQ10 had no influence on the diabetes itself, it reduced pain and inflammation in the mice, preventing the development of diabetic neuropathic pain. The diabetic mice also lost weight, even though their

blood sugar levels did not change. The non-diabetic mice, however, did not lose any weight.

The researchers stated that results of the study could suggest that CoQ10 might be a reasonable preventative strategy for long-term use and using CoQ10 treatment may be a safe and effective long-term approach in the treatment of diabetic neuropathy.



### COQ10 SIDE EFFECTS AND SAFETY

There are no known side effects when taking Coenzyme Q10 in suggested doses or up to levels closer to 3000 mg. Nausea has been recorded on those who take high doses of CoQ10 for long periods of time, as well as insomnia. Though high levels of liver enzymes have been recorded on those who took high doses of CoQ10, liver toxicity has never been reported.

Consult your physician before taking any CoQ10 supplement during pregnancy.



# THE PROPER COQ10 DOSAGE FOR YOU



For people in generally good health, a safe dosage is about 50 milligrams of CoQ10 daily or 100 milligrams for those over the age of 40.

Some physicians may recommend 300 to 400 milligrams daily for treating patients suffering from cardiomyopathy, heart failure and breast cancer.

The effective dose for Parkinson's disease is around 300 to 1,200 milligrams daily.

CoQ10 is fat soluble, so take it with food to aid absorption.



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### CONCLUSION

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