

# CO ENZYME Q10

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Co Enzyme Q10 could very well be called the 'spark of life', as it is responsible for producing life-giving energy!

Co enzyme Q10 is the key to producing 95% of the energy in the cells of the body. Without CoQ10 we would not have enough energy to live!

Many scientific papers report its benefits in the treatment of heart disease, high blood pressure, periodontal (gum) disease, impaired immunity, obesity, and the lack of energy. It also has antioxidant action, protecting cell membranes from damage.

Sports people use Co Q10 to increase endurance and energy levels, supplementing for one month before a big event to increase performance by 3-12%, via increased oxygen transport into muscle cells, enough to give a winning edge.

## WHAT IS IT?

Co Q10 is a lipid soluble molecule similar in structure to a vitamin and belonging to a family of quinones (present in almost every cell).

Co Q10 occurs in the mitochondrial energy factories of human cells. Organs such as the heart, liver, kidneys, spleen, pancreas which require vast quantities of energy, have an abundance of mitochondria, and therefore contain high levels of Co Q10.

## HOW DOES IT WORK?

The main function of Co Q10 is in the body's manufacture of ATP (adenosine triphosphate), which is the basic unit of energy used by your cells to perform their functions. It is the fuel that keeps the mitochondria (the most active part of the cell) working to produce the release of energy.

**These mitochondria produce the energy that powers all cells.**

Free radicals cause alterations in mitochondrial DNA, this leads to decrease in mitochondrial function. Less energy is produced and even more free radicals are generated. As people age, a greater proportion of their mitochondrial DNA contains these alterations. Old cells, in particular old heart cells have a reduced ability to produce energy.

Co Q10 is involved in cellular energy production, acting as an electron carrier in the cytochrome chain.

In a simplistic analogy, think of these mitochondrial energy factories in the cells, as being like cylinders of a car engine. Ignition of the fuel is required to provide energy; this ignition involves a spark, which is the Co Q10. Deficiency of Co Q10 causes a 'misfire' in the engines of our cells.

## ELIXIR OF YOUTH

Some Co-enzyme Q10 is available from a good normal diet but as we age even from approximately twenty years of age the liver lacks the ability to manufacture enough Co Q10 for the body's needs. This shortage accelerates with increasing age. Also as we age the mitochondria are damaged and don't work as efficiently – so the cells aren't supplied with as much energy.

The Japanese, who have the highest longevity statistics in the world, have embraced Co Q10, with 12 million people taking it every day.

Life expectancy is on the increase now due to healthy lifestyles. Diets low in fat and also high in antioxidants, of which Co Q10 is one, has lead to this expected increase.

## CARDIAC EFFECTS

Approx 62 % of cardiac patients are found to be deficient in Co Q10. The heart's Co Q10 levels decline with the progression of the aging process.

Co Q10 can decrease the incidence of myocardial damage caused by ischaemia and improve circulation.

Some studies have found an improvement in the condition of 91% of heart attack patients within 30 days of initial supplementation with CoQ10

## WEIGHT LOSS

Anything with the ability to speed up or make the metabolism of energy production more efficient has potential to be a fat burner. Studies of obese people found that half were deficient in Coenzyme Q10.

All those who were deficient were put onto a diet, with half of them being given 100mg of Co Q10. In the group given no supplements, the average weight loss was 25 kg's. Those given the Co Q10 supplements lost an average of 66kg's in weight over the course of the study – more than double the weight loss of the other group.

## ATHLETIC PERFORMANCE

Co Q10 increases the production of ATP, the conversion of carbohydrates to energy. This means that it can improve the VO 2 max (maximal performance level) and can prevent muscle damage in those who engage in intensive or endurance exercise. As can be imagined it also might have benefits for chronic fatigue syndrome.

## IMMUNE SYSTEM ENHANCER

Coenzyme Q10 greatly enhances the general function of the immune system. It enhances the effect of macrophages, phagocytes, increases the production of helper T-cells, can double the levels of protective antibodies. Consequently, it has been used in the treatment of most viral conditions including HIV.

## ORAL HEALTH

CoQ10 has been reported to halt the progression gingivitis and gum (periodontal) disease and heal the damage already done. It was found to minimise inflammation and bleeding, reduce wobbly teeth and bacterial count. This is likely to be due to its ability to improve energy delivery to this area of fast cell turn over.

## BRAIN EFFECTS

Some studies have found that CoQ10, by concentrating in the cerebral cortex, increasing energy production, and reducing neuron damage, can alleviate some of the symptoms of Alzheimer's Disease, Huntington's and Parkinson's disease.

## SKIN

CoQ10 has the potential to reduce aging effects on the appearance of the skin. This could be achieved by an anti-oxidant effect protecting collagen and hyaluronic acid from damage.

## WHY SUPPLEMENT AND WHAT

### DOSAGE?

Even though Co Q10 can be found in several different types of foods. Storage, commercial processing and cooking destroys much of the nutritional value of these foods.

You would also need to consume impossibly large amounts of foods to get enough.

This combined with the body's inability to synthesise and assimilate enough of it to provide the effects discussed, necessitates a general supplementation dose of 50-150mg a day.

Athletic Dose can be 500mg to 1,000 mg per day before a major exercise event .

This will in fact SPARK the whole system with a SURGE OF NATURAL ATP ENERGY plus all the other benefits listed here .

Athletes suggest start on 250grams to 500 grams per dose and see how you go and read the body's feedback.

For general health maintenance of non exercising persons 50 to150 to 200 grams per day .

Again govern the dose on the individuals bio-feedback and energy levels per dose feed-back.

Athletes obviously require greater dosages then no exercising individuals . GH

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