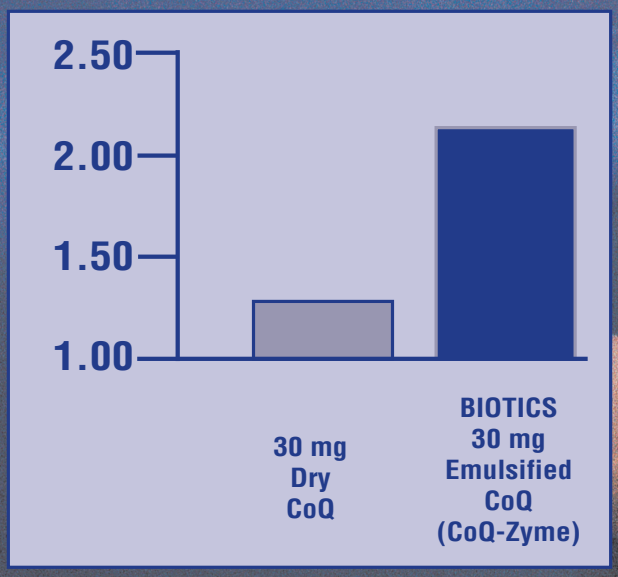
ABSORPTION Is The Issue!

Emulsified for greater uptake and utilization

Based on a double blind clinical study, daily ingestion of 30 mg of Biotics emulsified CoQ_{10} for 4 weeks increased plasma CoQ_{10} levels by 210%, equivalent to 90-100 mg of dry CoQ_{10}. Furthermore, dry CoQ_{10} powder increased serum levels in only 57% of subjects, while the Biotics Research emulsified CoQ_{10} produced increased serum CoQ_{10} levels in 80% of the subjects[1,2].

Increase in Serum Coenzyme Q_{10}



Antioxidant
Cardiac Health
Immune Function
Cell Regulation
Energy Production

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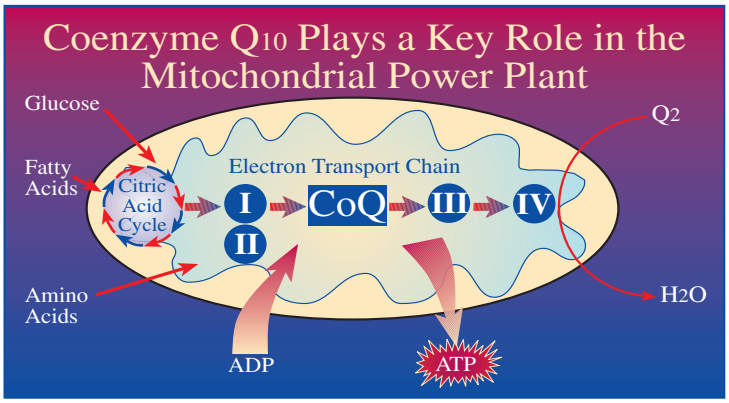
COENZYME Q_{10}

NUTRITIONAL SUPPORT FOR ENERGY PRODUCTION

Coenzyme Q_{10} (CoQ_{10}), also called ubiquinone, plays a key role in energy production from the oxidation of fat, carbohydrate and amino acids by mitochondria. As these fuels funnel into the Citric Acid Cycle to be oxidized to carbon dioxide, electrons are transferred in the mitochondrial electron transport chain via CoQ_{10} in order to generate ATP. Without adequate CoQ_{10}, energy production is reduced and cell function is compromised. Heart and skeletal muscle are particularly dependent on CoQ_{10}.



COENZYME Q_{10} AND CARDIAC HEALTH

The myocardium derives 80% of its energy from ATP generated by the mitochondrial oxidation of fatty acids. CoQ_{10} depletion can have a negative impact on mitochondrial energy[3]. It has been shown that supplemental CoQ_{10} can improve cardiac function and myocardial energy[4]. CoQ_{10} may also improve the tolerance of senescent myocardium to aerobic and ischemic stress[5]. Animal studies have shown positive homeostatic changes after dietary CoQ_{10} supplementation[6], and that a CoQ_{10} rich diet might retard the normally observed age-related decline in overall mitochondrial respiratory function[7]. An Australian study showed that oral supplementation with CoQ_{10} increased $CoQH_{12}$ in the plasma and all lipoproteins thereby increasing the resistance of LDL to radical oxidation[8].The maintenance of optimal cellular and mitochondrial function, which is supported by CoQ_{10}, may prevent a decline in cardiovascular health[9].

COENZYME Q_{10} AS AN ANTIOXIDANT

The body readily converts CoQ_{10} to the reduced form, called ubiquinol, which predominates when there is a net generation of ATP in the cell. CoQ_{10}, as an antioxidant improves myocardial tolerance as well as improving oxidation and high energy phosphate production[10]. Studies have suggested that CoQ_{10} can support normal heart health by reducing oxidative stress[11]. Suppression of the formation of active oxygen leukocytes is another role CoQ_{10} plays as an antioxidant[12]. Mitochondria are strongly involved in production of reactive oxygen species (ROS), considered today to be a pathogenic agent. Researchers suggest that CoQ_{10} may protect cells from ROS in vivo[13]. Due to the tremendous expansion in medical and dental research concerned with free radicals, reactive oxygen species, and anti-oxidant defense systems, there is even more emphasis being placed on the effective use of anti-oxidants, with special attention given to CoQ_{10}[14].

COENZYME Q_{10} AND IMMUNE FUNCTION

The cells and tissues that are involved in immune function are highly dependent on energy and thus require an adequate supply of CoQ_{10} for optimal function. Studies have shown the immune-supporting effects of CoQ_{10}. Some of the effects include enhanced phagocytic activity of macrophages and increased proliferation of granulocytes in response to infection[15].

Immune function can decline with advancing age. As evidenced by studies of elderly animals, suppression of the immune response was associated with marked decline of CoQ_{10} levels in thymic tissue[15].

OTHER POSSIBLE ROLES OF COENZYME Q_{10}

Allergy: When animals were given CoQ_{10}, release of both histamine and slow-reacting substance of anaphylaxis induced by antigen challenge was markedly reduced. This may indicate the possible role of CoQ_{10} in some allergy disorders[16].
Diabetes Mellitus: Diabetes Mellitus is associated with a number of metabolic abnormalities. The electron transport chain, of which CoQ_{10} is a component, plays a major role in carbohydrate metabolism. Therefore, it may be possible that a deficiency of CoQ_{10} would have an adverse effect on glucose tolerance[17].

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