Co-enzyme Q10 with MCT

Coenzyme Q10, also known as ubiquinone, is a naturally occurring substance and an essential component of the mitochondria - the energy producing unit within our cells. CoQ10 is involved in the production of ATP, the energy molecule. The benefits of CoQ10 centre around energy production and for its benefits as an antioxidant. CoQ10s antioxidant effects reduce lipid peroxidation and assist vitamin E in protecting cell membranes and lipids such as cholesterol from oxidation.

- **CARDIO-PROTECTIVE** - CoQ10 has demonstrated significant clinical improvements in various types of cardiovascular disease such as; cardiomyopathy, congestive heart failure, angina, arrhythmias, mitral valve prolapse, and hypertension. Deficiency of CoQ10 within the myocardium may explain much of this improvement.
- **ENERGY PRODUCING** - Due to CoQ10's role in the kreb's cycle it is essential for energy production, aerobic capacity, and muscular performance. At 60mg/day over 4-8 weeks CoQ10 has been found to work capacity and work load, maximal oxygen consumption, and oxygen transport. CoQ10 has also been shown to be beneficial in cases of muscular dystrophy and myopathy.
- **ANTIOXIDANT** - As a lipid protecting antioxidant, CoQ10 helps protect LDL cholesterol from oxidation. Recent research suggests that it is also beneficial in neurological disorders as it has been discovered that Parkinson's disease patients have decreased levels of CoQ10 within platelet mitochondria. The antioxidant protective effects of CoQ10 have also been found to stimulate the healing of gastric ulcers.
- **IMMUNE SUPPORTING** - The immune system is a highly energy dependent process and requires many nutrients for its maintenance including CoQ10. Studies suggest that CoQ10 may help to prevent or reverse the immunosuppression associated with ageing or chronic disease. CoQ10 has shown efficacy in reducing tumour size and reducing metastasise.
- **BLOOD SUGAR REGULATING** - CoQ10 levels have been shown to be low in diabetes. It is thought that Q10's role in the electron transport chain may affect carbohydrate metabolism. Studies have indicated that a dose of 120mg administered over a 4-5 month period demonstrated a 30% reduction in fasting blood sugar levels.
- **PERIODONTAL DISEASE** - The healing and repair of periodontal tissue requires CoQ10 and in fact gingival biopsies have revealed low levels in 60-96% of periodontal disease patients. Research using 50mg of CoQ10 in periodontal disease has shown impressive results including 'extraordinary post-surgical healing'.
- **FERTILITY** - Sperm production and function are high energy processes with CoQ10 required within the kreb's cycle for such processes. Research has shown that as little as 10mg of Co Q10 resulted in considerable sperm count and motility in infertile men.

Medium Chain Triglyceride (MCT)

MCTs are derived from coconut oil and consist of a 6 to 12 carbon chain rather than the 18-24 found in polyunsaturated fats (PUFAs). This difference in chain length means that they are metabolised differently. Unlike PUFAs, MCTS do not require pancreatic enzymes and bile acids to be absorbed. Rather than via the lymphatic circulation, MCTs are absorbed directly into the veins and pass through membranes easing their transport, metabolism and bioavailability.

- **CoQ10 TRANSPORT** - As CoQ10 is a lipid soluble nutrient MCTs act as a perfect carrier and provide synergistic effects for energy production and metabolic efficiency.
- **WEIGHT CONTROL** - MCTs appear to offer thermogenic effects and instead of being stored are more readily oxidised for energy production and output. This effect is called diet-induced thermogenesis.

DOSAGE

Doses for CoQ10 vary from 30mg up to 400mg depending upon the condition. For general antioxidant protection 30mg is suggested. Clinical effects are noted at higher levels. Results are often noted 8 weeks or more after supplementation as the synthesis of CoQ10-dependent enzymes is a slow process. Up to 85g of MCTs have been used in athletic performance studies, although results have been conflicting.

POTENTIAL APPLICATIONS

Cardiovascular disease, fatigue/sports, gastric ulcer, obesity, neuro-muscular degeneration, Parkinson's disease, immune support (e.g. HIV), cancer, HIV infection, diabetes, periodontal disease, infertility.

KNOWN CONTRAINDICATIONS

Co Q10 is generally well tolerated with no serious adverse effects over long term use. MCTs are generally regarded as safe although diabetics and those with liver disease should avoid high levels of MCTs due to acidosis.

INTERACTIONS

Cholesterol lowering drugs such as statins have been found to lower CoQ10 levels. The beta blockers propranolol and metaprolol also have adverse effects on CoQ10 levels. Tricyclic antidepressants have also been shown to deplete CoQ10-dependent enzymes. Co Q10 at levels of 100mg/day has shown protective effects against the cardio-toxic effects of the anti-cancer drug ADRIAMYCIN. CoQ10 is structurally similar to vitamin K and has been reported to interact with warfarin. Physician's guidance is suggested in those on warfarin medication. No known interactions for MCTs with any drug.

USE IN CONJUNCTION WITH

- **Cardiovascular protection** - grape seed/pycnogenol, flax seed oil, antioxidant complex, hawthorn berry, folic acid, magnesium with B6 / potassium, vitamin E
- **Fatigue** - rhodiola, B-complex, EFAs, high-five multivit., green food blend, balanced iron (if anaemic)
- **Periodontal disease** - grape seed / pycnogenol, oregon grape root (topical application around gum), ester C, Echinacea, balanced zinc complex

NOTE

Severe medical conditions require physician supervision.

REFERENCES

- Michael T. Murray & Joseph E. Pizzorno Jr. Textbook of Natural Medicine. 2000
- Barry Halliwell and John M. C. Gutteridge. Free Radicals in Biology and Medicine. Oxford university press. 2002

Reference website: http://www.organicfoodee.com/vms/coq10mct/