

Essential Nutrients for Healthy Mitochondria

Mitochondrial function, and consequently ATP production, is often impaired by a deficiency of these core mitochondrial nutrients:

Co-enzyme Q10: Central to the electron transport chain and essential for linking the energy pathways, CoQ10 is also a powerful antioxidant.

N-Acetyl Carnitine: Delivers fatty acids to the mitochondria to be burnt for fuel, also able to cross the blood brain barrier and assist with mental fatigue.

Lipoic Acid: A powerful antioxidant that protects the inner mitochondrial membrane and enhances glucose uptake into the cell.

Vitamin E: Broadly dispersed throughout the tissues, vitamin E protects the body from oxidants produced during energy production.

Magnesium: Is an essential co-factor required for ATP production in all cells, and without adequate intracellular levels of magnesium, fatigue is inevitable.

B vitamins: Essential co-factors needed throughout the ATP production process (NAD, FAD); in fact, without adequate B vitamin intakes the Krebs' Cycle, Electron Transport Chain and Oxidative Phosphorylation would cease to function.

Omega-3 Essential Fatty Acids: A vital component of mitochondrial membranes; docosahexanoic acid (DHA) in particular is an essential structural component required for optimal function of the Electron Transport Chain. Eicosapentanoic acid (EPA), on the other hand, has been shown to increase mitochondrial growth.

Treatment Strategy

Initially, most patients will require treatments based around individual products containing larger, therapeutic doses of these essential nutrients. Over time and as a maintenance strategy, combination products with lower doses of these nutrients can be used for increased convenience.

These products will vary depending on the patient needs and type of fatigue.. We use a lot of powdered nutrients, in therapeutic doses for example vitamin c, magnesium and herbal formulas for the adrenals.

Bio-Cleanse is highly recommended for fatigue patients, which is considered the ultimate re-charging technology, giving you more energy at the cellular level. (see [biocleanse](#))

Dr James Wilsons program for adrenal fatigue has been accredited with huge success. We may suggest this to be the best program for you!