

Difference from Regular Multivitamins

Physicians often recommend the vitamins and supplements listed because mitochondrial disease patients frequently have decreased levels of cofactors for mitochondrial function. Also, these particular nutrients assist with many body functions, which can be symptomatic in patients with mitochondrial disease.

General Advice for Vitamin Cocktails

- Follow all stability directions (e.g., keep refrigerated)
- Take all doses with a meal
- Take doses with plenty of fluids
- Follow all label instructions carefully

Other Ways Maintain Optimum Health with Mitochondrial Disease

- Avoid fasting and prolonged periods without nutrients
- Exercise regularly within tolerance
- Attend all appointments and follow-ups with your health care providers to maintain optimum care and treatment regimens

Mitochondrial Disease Resources



MitoAction

www.mitoaction.org

United Mitochondrial Disease Foundation

www.umdf.org

Medline Plus

www.medlineplus.gov

****Do not start a vitamin cocktail or
any other medication regimen
without first consulting you doctor****

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Mitochondrial Vitamin Cocktails

A GUIDE FOR PATIENTS



A summary of the most common
components of vitamin cocktails
prescribed for patients with
mitochondrial disease.

ENZYMATIC COFACTORS

Compounds which assist in cellular reactions to create energy and perform other basic cellular functions.

Coenzyme Q 10 (CoQ10)

This electron acceptor component of the Electron Transport Chain (ETC) is often the base for treatment of mitochondrial disease and has the most data supporting its use.

● **Use:**
Used by cells for production of energy required for basic functioning of cells

● **Benefits of therapy:**
Reactions to therapy vary. It has been shown to improve a variety of symptoms including:

- ▶ Exercise tolerance
- ▶ Muscle atrophy
- ▶ Respiratory function
- ▶ Decreased seizure activity
- ▶ Increased mental alertness and interpersonal interaction

● **Common side effects: (not all inclusive)**

- ▶ Stomach upset
- ▶ Diarrhea
- ▶ Sleep disturbances

● Full effects of therapy seen in 4-6 weeks

● Talk with your doctor if you are also taking a medication to prevent blood clots such as Coumadin

VITAMINS

Compounds which are not made by the body, which are essential for cellular reactions which produce energy.

By ensuring that an ample supply of vitamins are accessible to cells they can be utilized to their full extent and help alleviate many symptoms of mitochondrial disease.

Thiamine (Vitamin B1)

● **Uses:**

- Metabolism of carbohydrates to create energy

- Normal growth and maintenance of muscle tone
- Proper nervous system functioning, including memory
- **Common side effects: (not all inclusive)**
 - Large doses may cause drowsiness

Riboflavin (Vitamin B2)

- **Uses:**
- Building and maintaining muscle tissues
 - Maintenance of vision, mucus membranes, skin, nails, and hair
 - Maintenance of cognitive functioning
- **Common Side Effects: (not all inclusive)**
- Yellow-orange discoloration of urine

ANTIOXIDANTS

These compounds decrease free radical accumulation which can help improve energy and functioning.

Alpha Lipoic Acid

Antioxidant which may also increase mitochondrial functioning

- **Use**
- Assists with uptake of glucose (which is used for energy) by nerve cells
 - May assist with normal organ functioning
 - Approved in Europe for treatment of nerve pain
 - May help with mental functioning
- **Common side effects: (not all inclusive)**
- Nausea
 - Rash
 - Tingling

Vitamin C

- **Uses**
- Assists in healing process
 - Ability to ward off infection
 - Absorption of iron
- **Common side effects: (not all inclusive)**
- Stomach upset
 - Headache

Vitamin E

- **Use in body:**
- Protects cellular membrane from destruction
 - Neurological functioning
 - Can interfere with medications that treat blood clots such as Warfarin

SUPPLEMENTS

These substances are often utilized to help provide cells with extra energy in order to maintain proper functioning

Levocarnitine

- **Use in the body:**
- Transportation of fatty acids to the mitochondria for energy production
 - Maintenance of muscle strength and tone
- **Common side effects: (not all inclusive)**
- Body odor
 - Stomach upset/gastritis
 - Diarrhea
 - * Seizures

Creatine

- **Uses**
- Helps improve muscle mass and tone
 - Thought to help create extra energy in the cells
 - Improvement in performance of high intensity activities but not low intensity exercise
- **Common Side effects: (not all inclusive)**
- Diarrhea
 - Dehydration
 - Weight gain

