



L-Carnitine

L-Carnitine is an amino acid produced by the body from the combination the amino acids L-Lysine and L-Methionine. **L-Carnitine** is the nutrient responsible for the transport of long-chain fatty acids into the energy-producing centers of the cells (known as the mitochondria). In other words, **L-Carnitine** helps the body convert fatty acids into energy, which is used primarily for muscular activities throughout the body. The body produces **L-Carnitine** in the liver and kidneys and stores it in the skeletal muscles, heart and brain. It is also used for fat-burning, increasing energy, and improving resistance to muscle fatigue. As a speculated muscle disease, liver disease, and kidney disease combatant, **L-Carnitine** has also been shown to help build muscle and treat some forms of cardiovascular disease. It is also great in dieting, as it reduces feelings of hunger and weakness.

L-Carnitine is essential to building muscle in the ATP energy cycle because of its oxidation properties with Pyruvate and branched chain amino acids (L-Leucine, Isoleucine and Valine). The citrate forms of L-Carnitine such as L-Carnitine magnesium citrate are highly absorbable and support healthy muscle and nerve function. It also prevents the buildup of fatty complexes called Acetyl-Coenzyme A, which destabilizes muscle membranes. **L-Carnitine** inhibits lactic acid buildup in the muscles. Lactic acid buildup is the top cause of muscle atrophy and fatigue, two common contributors to Fibromyalgia.

L-Carnitine deficiencies may be caused by genetic disorders, liver or kidney problems, high-fat diets, certain medications, and low dietary levels of the amino acids L-Lysine and L-Methionine. **L-Carnitine** deficiencies may cause symptoms such as fatigue, chest pain, muscle pain, lower blood pressure and /or confusion.

Cardiomyopathy patients are often deficient in **L-Carnitine**. However, supplemental **L- Carnitine** reduces the risk of congestive heart failure. **L-Carnitine** has shown to lower the heartbeat rate, reducing fluid accumulation and enhancing the ability to breathe effortlessly. Heart disease patients are capable of exercising for longer periods of time when taking **L-Carnitine**. Because **L-Carnitine** is stored in the heart, it facilitates cardiac contractions. **L-Carnitine** is helpful in controlling heart disease. **L-Carnitine** (2000 mg per day) has shown to improve the condition of people who have previously experienced a heart attack.

L-Carnitine (3000 mg per day for at least four months) has shown to improve the condition of Mitral Valve Prolapse patients.

In addition to helping those with **L-Carnitine** deficiencies, **L-Carnitine** supplementation may be beneficial to individuals with the following conditions:

- High Cholesterol
- Intermittent Claudication (blood circulation)
- ADHD
- Fertility
- Hyperthyroidism
- Weight Loss
- Kidney Disease
- Liver Disease

Sources

The Healing Nutrients Within, Carl Pfeiffer MD. 1987.pp.302-303

The Vitamin BT Phenomenon, Brian Liebovitz. 1984.pp.202-203

The New Nutrition, Michael Colgan MD PhD. 1995.pp.174-178

The Journal of Optimal Nutrition, 1993.pp.90-100