



Acetyl-L-Carnitine (ALC)

By: Gary E. Foresman, MD

08/23/07

Acetyl-L-Carnitine (ALC) is an exciting, up-and-coming nutrient, a member of the carnitine family which can be obtained dietarily via the consumption of meat and dairy, or synthesized endogenously from the amino acids lysine and methionine. ALC represents the most important member of the cellular “carnitine pool”, vital for its role in lipid metabolism and energy production as one of the mitochondrial nutrients. ALC is also structurally related to the neurotransmitter acetylcholine (AC) and promotes AC production and release, as well as preventing oxidative damage in the brain better than L-carnitine.

Clinically, we use ALC in the treatment of many conditions. Double blind placebo controlled randomized clinical trials (DBPCRCT) exist for its use in the treatment of fibromyalgia, chronic fatigue syndrome, memory loss, neuropathy from a variety of conditions, male infertility and in treating the symptoms of age-related testosterone deficiency. A specific role exists for ALC in the treatment of chronic fatigue and fibromyalgia as DBPCRCT's have repeatedly shown benefits in these “tough to treat” conditions. Furthermore, when combined with other mitochondrial nutrients such as Alpha Lipoic Acid, Co-Q10, and NADH a synergistic benefit ensues and includes improvements in energy, memory and decreased overall pain.

Quite a buzz exists over the use of ALC in the treatment of memory loss and peripheral neuropathy. I have found this nutrient vital along with alpha lipoic acid in the treatment of these conditions. For refractory cases of neuropathy, intravenous ALC has been added with remarkable benefit. For any patient considering platinum-based chemotherapy, this nutrient is essential for the prevention of neuropathy (with no adverse effect on chemotherapy potency), or if you already have this complication, ALC can reverse the physiological changes and restore normal nerve function.

For men with low testosterone and erectile dysfunction, ALC has been shown to be more useful than testosterone replacement therapy in restoring normal sexual function. It has also been shown to improve sperm motility in men with infertility. Furthermore, for men's health a condition known as Peyronie's Disease which causes painful erections, ALC has been used successfully to treat this difficult health issue.

The normal dosage of ALC for most conditions is 500mg twice per day, especially when used synergistically with alpha lipoic acid at 300mg twice per day. If no response occurs, ALC has been used in DBPCRCT 's up to 1,000mg three times per day. At higher dosages mild nausea and agitation might occur. Some people may experience a fishy odor as well at this higher dose (not at the normal dose). The only possible drug interaction occurs with the blood thinner Coumadin. This is only theoretical, but I do recommend monitoring your ProTime should you choose to initiate this supplement. It should be noted that multiple antibiotics and anti-seizure medicines can cause carnitine deficiencies, and

theoretically ALC may help with these drug side-effects. Do not substitute L-Carnitine for ALC, as it is not clear that L-carnitine has the same clinical effect.

Your Journey to Health and Healing,
Gary E. Foresman, MD

References:

1. Natural Medicines Comprehensive Database
2. Double blind, multicenter trial comparing ALC with placebo in the treatment of fibromyalgia. *Clin Exp Rheumatol*. 2007 March-April; 25 (2): 182-8
3. ALC... implications for Alzheimer's Disease *J Neurosci Res*. 2006 Aug 1; 84 (2): 398-408.
4. Mechanisms of ischemic neuroprotection by ALC. *Ann NY Acad Sci*. 2005 Aug; 1053: 153-61.
5. ALC improves pain, nerve regeneration and vibratory perception in chronic diabetic neuropathy. *Diabetes Care*. 2005 Jan; 28 (1): 89-94
6. Carnitine versus androgen administration in the treatment of sexual dysfunction... *Urology*. 2004 Apr.; 63 (4): 641-6.
7. Exploratory open label randomized study of ALC in chronic fatigue. *Psychosomatic Med*. 2004 7. Mar-Apr; 66 (2): 276-82.

Website: www.middlepathmedicine.com

E-mail: info@middlepathmedicine.com