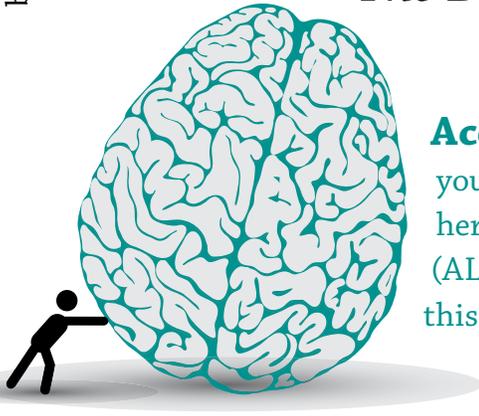


Smarts or Strength?

The Duality of Acetyl L-Carnitine



Acetyl L-carnitine or L-carnitine? That is the question. If you've been wondering what the differences are between the two, we're here to help! With a growing number of studies on acetyl L-carnitine (ALC), the list of accolades lengthens by the day – read on to see what this exceptional nutrient can do beyond “simple” L-carnitine (LC).

First, what's the ALC difference?

We're glad you asked, as while these two nutrients have similar functions such as both having antioxidant skills, they do also have key differences. LC is used in the body to transport fats, in the form of fatty acids, into cells to the mitochondria to be used as fuel for the cells. As such, LC is very necessary. Mitochondria need energy in order for cells – and us – to live. Supplementing with LC may help with muscle energy, especially for high-energy organs like the heart to keep working efficiently. ALC, on the other hand, is a metabolite of LC, which means that left over LC can turn into ALC. ALC is a highly bioavailable nutrient, and is more effectively absorbed than LC. ALC also fuels cells, but it prioritizes reaching the brain, as it is able to cross the blood-brain barrier. Here, ALC can make sure that the cells in the brain are getting the energy they need, nourish neurotransmitters, and fight against cellular damage from oxidants. In other words, LC is helpful for energizing the body first, then the brain, and ALC is helpful for energizing the brain first, then the body.



How does ALC help ME/CFS (SEID)?

In a randomized study of ALC in chronic fatigue (ME/CFS, or SEID) patients, 2 grams a day of ALC exhibited “beneficial effect” for the participants. The researchers' clinical impression after treatment “showed considerable improvement in 59% of the patients” involved, and ALC “significantly improved mental fatigue.” Concentration and the ability to complete tasks improved. With ALC making sure that cells in the brain are getting adequate fuel, it's a no-brainer for help with mental fatigue and concentration.

Can ALC compare to drugs for FMS?

Apparently! A randomized study exploring the effects of ALC supplementation in fibromyalgia (FMS) patients versus placebo found that ALC “provid[ed] improvement in pain as well as the general and mental health” of the patients. In a more recent randomized, controlled trial published in

2015, ALC at 500 mg three times a day was compared to duloxetine (Cymbalta®). Researchers explained that while both had “positive effects on pain and depressive symptoms, [and] the physical component of the quality of life,” ALC is better tolerated. With comparable results without the side effects, ALC may be a superior option for FMS.

Who else can ALC help?

Many different people, especially those seeking extra support for the brain and nervous system. For one, researchers believe that ALC may be able to help with age-related dementias such as Alzheimer's due in part to ALC's mitochondria-specific antioxidant properties. Additionally, in 2004, a randomized, placebo-controlled study of multiple sclerosis patients found that one gram of ALC twice a day was more effective at reducing fatigue and better tolerated than the drug amantadine (Symmetrel®). Those with diabetic neuropathy may consider ALC as well. Two studies of over 1,200 patients supplementing 500 to 1,000 mg a day of ALC “demonstrated that ALC treatment is efficacious in alleviating symptoms, particularly pain, and improves nerve fiber regeneration and vibration perception in patients with established diabetic neuropathy.” This is only a small glimpse into the multitude of ALC studies and list of accolades. Perhaps everyone could use some brain boosting help from ALC!



Any other benefits to add?

In preliminary animal studies, ALC has proven quite helpful. ALC has been shown to help aging rats fight brain degeneration, aiding their learning and memory function. In an interesting study of older beagles, ALC and alpha lipoic acid (ALA) supplementation allowed old dogs to learn new tricks! The beagles supplementing ALC and ALA “made significantly fewer errors” while learning to complete



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Smarts or Strength?

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specific tasks, and the researchers involved stated that ALC and ALA “may be effective in attenuating age-associated cognitive decline by slowing the rate of mitochondrial decay and cellular aging.” In other words, these antioxidants help to keep cells in the brain fueled, acting young and working hard.



Back to the question: brains or brawn? Why not have both? Reap the benefits of ALC and LC and keep the cells of your body *and* brain energized and working efficiently.

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Study Doses*

Alzheimer's1 g 2x/day
Diabetic Nerve Pain500-1,000 mg/day
Fibromyalgia500 mg 3x/day
Multiple Sclerosis1 g 2x/day
SEID (ME/Chronic Fatigue)2 g/day

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