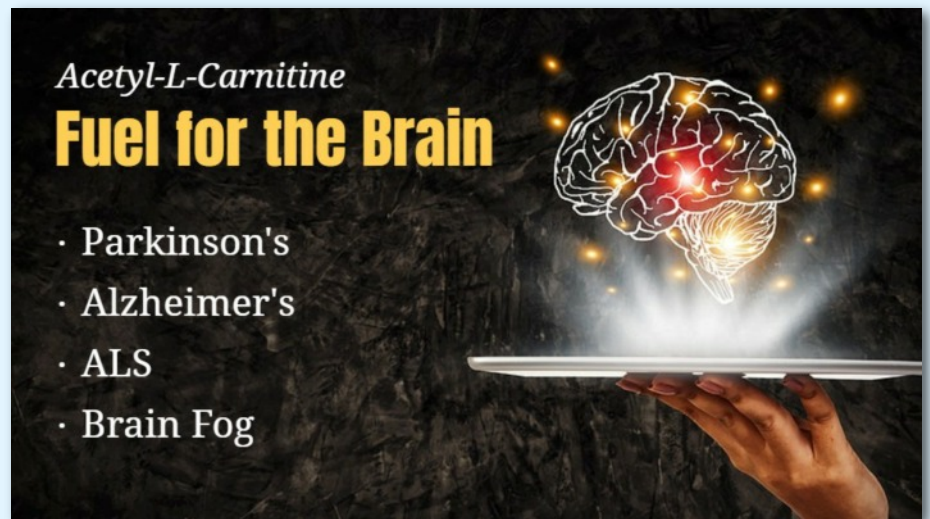


"Acetyl-L-carnitine enhances mitochondrial function, increases dopamine, enhances GABA, increases the concentration of acetylcholine, and increases the life span in animals."

Any nutrient that directs and carries fatty acids into the mitochondria to be used as fuel has my full attention. I am talking about Acetyl-L-carnitine. It's one of my favs. And because it provides fuel for the mitochondria it's one of the key nutrients for mitochondrial support. So, I was really pumped when Dr. Blaylock did a deep dive on this fascinating nutrient in his October 2022 newsletter, the *Blaylock Wellness Report*. I was all over it.

Here are a few of highlights from his article. For example, did you know that damaged mitochondria generate massive numbers of free radicals, and lipid peroxidation products do even more damage. So, anyone with injuries to the nervous system will have damage after the injury occurs. Damage that will impair recovery. Yes, I am talking about: strokes, head injuries, poor supply of oxygen, excess carbon dioxide, reduced blood flow to the brain and infections.

I was fascinated to learn that acetyl-L-carnitine also produces critical phospho-



lipids needed for cell membranes and for efficient brain function. As we age, levels of these phospholipids in the brain decline. Acetyl-L-carnitine comes from the non-essential amino acid L-carnitine which comes from the essential amino acids lysine and methionine. Both L-carnitine and acetyl-L-carnitine play an important role in the metabolism of fats allowing them to be burned in the mitochondria. Acetyl-L-carnitine has the added advantage of entering the brain more easily, where it improves brain cell function, memory, and chelates excess iron from the brain. Acetyl-L-carnitine protects peripheral nerves, the spinal cord, and

the brain against several harmful pathological events, including trauma, loss of blood supply or ischemia, hypoxia, chemical toxins, immune-excitotoxicity, and seizures.

It has also attracted a good deal of interest for preventing and treating neurodegenerative diseases such as ALS, Parkinson's disease, and Alzheimer's. In addition, acetyl-L-carnitine has shown effectiveness for protecting hearing, vision, balance, memory, learning, and muscle strength, as well as improving behavior. Because it acts as an antioxidant, it is also known to suppress excitotoxicity and inflammation, as well as

increasing the level of glutathione in cells.

Another benefit is Acetyl-L-carnitine's ability to raise pain threshold, meaning it took more severe injury to cause the same amount of pain. Acetyl-L-carnitine also relieved neuropathy. Several studies have demonstrated the ability of acetyl-L-carnitine to repair damage in diabetic nerves. It has also been shown that diabetics have low acetyl-L-carnitine levels in their peripheral nerves. Most important of all, not just for Parkinson's but also for Alzheimer's disease and other neurodegenerative disorders, is the ability of both NAC and acetyl-L-carnitine to suppress microglial activation, which triggers the most destructive elements of these disorders. These activated microglia are also the source of immune excitotoxicity. Acetyl-L-carnitine protects dopamine receptors in the brain. These receptors are lost with aging and especially in cases of Parkinson's disease. It also increases dopamine release and enhances GABA, which is important for reducing depression and excitotoxic brain damage, as well as elevating mood and motivation.

As an additional benefit, both L-carnitine and acetyl-L-carnitine prevent a loss of muscle mass commonly seen with aging. And acetyl-L-carnitine supplementation in animals has been shown to extend their lifespan. Finally, acetyl-L-carnitine increases the number of brain cells that utilize the neurotransmitter acetylcholine as well as increasing the concentration of acetylcholine in the brain. This is critical for two reasons: first, acetylcholine plays a major role in memory and learning; and second, it operates a powerful system the brain uses to suppress inflammation. Think about it, as we age, our repair system, especially in our brain, becomes more susceptible to free radical damage. At the same

time, when our brain is more susceptible, our antioxidant defenses decline. For example, by the time we reach 70, DNA damage has 15 times the effect that it does at age 20. Acetyl-L-carnitine has also been shown to improve the function of "nerve growth factor" which helps to repair brain cells and synapses. Dr. Russell Blaylock states, "Anything that increases brain energy production, will reduce excitotoxicity. If you reduce excitotoxicity, you reduce free radical destruction. Nutrients that reduce excitotoxicity include lipoic acid, coenzyme Q10, niacinamide, vitamin E, the B vitamins, and acetyl-L-carnitine (ALC)."

Amino acids are manufactured in huge tanks and are the byproducts of very specific strains of bacteria. When purchasing amino acids, the price varies based on how well the amino acids are filtered and separated from the bacteria. There are four distinct grades or levels of purity. Biotics Research only purchases the purest, grade one, amino acids for their products. Acetyl-L-Carnitine from Biotics Research Corporation contains 500 mg of the grade-one amino acid acetyl-L-carnitine (ALC). Standard doses range from 1 capsule, two times a day for anti-aging prevention to 2 capsules, three times a day for therapeutic applications.

So, here we have a product that enhances mitochondrial function, increases dopamine, enhances GABA, increases the concentration of acetylcholine, and increases the life span in animals. It's been high on my radar for many years. I wanted to remind you about just some of the roles acetyl-L-carnitine plays. See the links to the right for other discussions.

Thanks for taking time to be with me, I look forward to being with you again next Tuesday.