

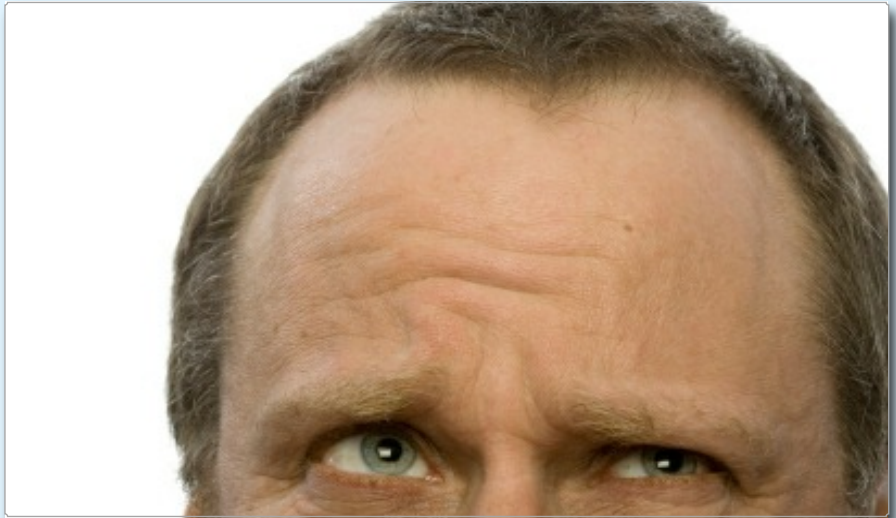
Reverse Brain Aging, Is It Possible?

"Dr. Russel Blaylock says that these two supplements can slow and in some cases even reverse the aging process of the brain."

According to neurosurgeon Dr. Russell Blaylock, when we are young we have an amazing repair system that involves hundreds of highly efficient enzymes, RNA and DNA. As we age that repair system becomes more susceptible to free radical damage. This is especially true of our brain. 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.

Let's examine one of our brain's best friends, acetyl-L-carnitine or ALC. Acetyl-L-carnitine is an ester of the trimethylated amino acid L-carnitine. In humans, it is synthesized in the liver, kidney, and brain from lysine and methionine and actively transported to other areas of the body. 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 facilitates the uptake of acetyl-CoA into the mitochondria during fatty oxidation, enhances acetylcholine production and stimulates



protein and membrane phospholipid synthesis. 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.

Since one of acetyl-L-carnitine's advantages is that it can transport itself across the blood brain barrier and serves to stimulate and fortify the nerve cells within the brain, you may already be considering the prevention of dementia and Alzheimer's. Acetyl-L-carnitine directs fatty acids into the cell mitochondria which is responsible for creating cellular energy. Furthermore it can act as an

antioxidant and can supplement the neurotransmitter acetylcholine.

Human studies have shown acetyl-L-carnitine has the ability to stabilize cell membrane fluidity. Remember as we age our membranes normally get stiff and begin to function poorly. It can also increase ATP levels in humans which prevents neuronal cell death. Acetyl-L-carnitine has also been shown to improve the function of "nerve growth factor" which helps to repair brains 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).

Dr. Blaylock especially likes the combination of lipoic acid and acetyl-L-carnitine. His experience is that these two supplements can slow and in some cases even reverse the aging process of the brain. It may be that the bigger part of the acetyl-L-carnitine picture is its ability to restore mitochondrial function.

Mitochondrial dysfunction has been shown to be a factor in fibromyalgia, migraine headaches, Alzheimer's and inflammation of all kinds. There's a link below to Dr. Vasquez's webinar on "Mitochondrial Dysfunction." One of Dr. Vasquez's favorite interventions is acetyl-L-carnitine.

Due to its role in fatty acid metabolism we normally think of carnitine in terms of cardiac and skeletal muscles but it also enhances carbohydrate utilization as well. Dr. Sherry Rodgers in her book "How To Cure Diabetes" remarks that "Acetyl-L-carnitine has been an effective adjunct in the treatment of syndrome X, repaired cell membrane function, enhanced regeneration of the pancreas and decreased insulin and damaging lipoprotein (a)." She states that "Acetyl-L-carnitine has been shown to repair damaged genes in the mitochondria, reduce kidney disease, anemia, repair the peroxisomes, raise HDL and albumin, lower triglycerides and LDL, and reverse some cases of diabetic neuropathy."

Another benefit with men over 66 was a study comparing testosterone to L-carnitine and acetyl-L-carnitine. The result was that both forms of carnitine worked better than testosterone at increasing erectile function, reducing depression, diminishing fatigue and increasing nocturnal erections. Unlike Viagra or Cialis, carnitine provides additional brain, heart and kidney benefit. Acetyl-L-carnitine has also been

shown to enhance fertility by increasing sperm motility.

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 its products.

Twenty years ago when the bad L-tryptophan was on the market, Biotics in-house phytochemistry lab detected inferior quality from that supplier and rejected their material long before it became an issue to the public. That level of quality control was in place long before the good manufacturing procedures were in place. Making sure that the raw materials are safe and bioavailable before the products are encapsulated is just the right thing to do.

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.

Keep in mind that one nutrient by itself is not the answer. Drs. Rodgers, Blaylock, and Vasquez all agree that mitochondrial repair is accomplished through a vehicle of foundational nutrients, quality fatty acids, and increasing the percentage of plants based foods.

So whether it's anti-aging, the treatment of the degenerative diseases we have just discussed or protecting our brains by enhancing mitochondrial function, acetyl-L-carnitine is a key member of a class of nutrients we want to remember.

Thanks for reading this week's edition of the Tuesday Minute. I'll see you next Tuesday.