

# **Creatine May Reverse Symptoms of Dementia**

**By Carl Lanore**

Athletes may have to start locking up one of their supplements to keep them away from grandfather if my prediction is correct. A recent study confirms that early onset dementia and Alzheimer's patients suffer from impaired glucose metabolism at the brain. This can be a result of diabetic status and cellular resistance to insulin or simply poor glucose management with periods of hypometabolism.

Glucose is the primary energy source for the brain. In short supply or impaired uptake, the brain starves and the result is impaired cognitive function. Imagine how the computer your using right now would react to a sudden drop in electrical voltage. It may begin to flicker, freeze and eventually shut down. This is your brain without adequate glucose.

Now take a look at a common sports supplement that we've all heard of – creatine. Creatine is an amino acid both produced by the body and found in the diet. It's primarily found in animal protein such as beef, chicken and fish with the highest concentrations per pound found in pork and tuna.

Creatine is also available in supplement form. Its isolated from the magical soy bean and its most popular form is creatine monohydrate, which is favored by athletes when using creatine as an ergogenic aid. Each molecule of creatine monohydrate is made up of one part creatine and one part water and thus the "hydrate" suffix.

Creatine works by being a precursor to Adenosine Triphosphate (ATP), the primary energy source for the cellular mitochondria. As we may recall from high school biology, the mitochondria is the power house of all cells – muscle, tissue and nerve. Every cell in the body requires this energy source.

As I said earlier, our bodies produce some of this creatine – about 50% of what we require each day. This process is known as the creatine kinase cycle and requires the availability of three amino acids – arginine, glycine and methionine. The creatine kinase cycle also produces another amino acid in the process besides creatine and that one isn't so good. Homocysteine is a byproduct of the creatine kinase cycle and is an independent marker for heart disease. Keeping homocysteine levels low is a good thing. More on this later.

So what does all of this have to do with early onset dementia and Alzheimer's disease? Creatine supplementation has been shown to increase cognition and alertness in individuals with mild to moderate cognitive impairment. It has also been clinically shown to have neuro-protective values as well. A variety of studies have shown this. Healthy individuals without any cognitive impairment don't seem to receive the same level of benefit however. That's not to say that if you don't already have cognitive impairment you shouldn't consider creatine as a protective supplement.

Creatine has been shown to resolve neurological damage sustained in a stroke faster. In one study, stroke victims given creatine resolved their stroke in half the time than non-supplemented victims when observed by CT scans. Creatine has neuro-protective benefits to help avoid neurological damage and low levels may precede the brain's exposure to damage.

In most tests designed to evaluate the status and function of the brain through metabolic processes, it's the ratio of creatine to n-acetyl aspartate that is the benchmark of proper brain function – with a ratio of lower creatine to n-acetyl aspartate indicative of poor brain function.

It's no wonder. Creatine facilitates ATP production which fuels the mitochondria and neuron cells depend upon this energy to function. Creatine has been shown to shift the body's utilization of glucose as a preferred energy source in athletes. This may be how it improves brain function in individuals with impairments. It may aid in a more efficient utilization of available glucose.

Creatine is not for everyone however. In its most popular form – creatine monohydrate – it has the ability to increase water retention. While this may not be an issue for healthy individuals, it may prove to be problematic in individuals who already have high blood pressure, poor kidney function or water retention issues.

For those who water retention is not an issue, creatine monohydrate may possess an additional value. By supplementing, you remove your body's need to produce its own creatine. This also reduces the production of homocysteine to near zero.

While most athletes use creatine monohydrate in doses designed to completely saturate the muscle tissue with the maximum amount of creatine uptake, therapeutic supplementation may require much smaller amounts to see results. Most athletes first "load" for five days by taking 20 grams a day. Then a maintenance dose of 5 grams per day is taken to sustain maximum saturation levels throughout. This approach generally adds between 3 and 5 pounds of water weight, mostly in muscle fluid uptake but also subcutaneous water, within the first 10 days of use.

Other protocols suggest simply taking the 5 grams a day without the loading phase. In this method total muscle saturation is achieved over a 20 day period and much of the same water weight occurs – just slower.

To supplement with creatine for cognitive purposes simply using 1 to 2 grams a day may be all that's needed and the associated water weight should not occur to the same degree. One would have to monitor body weight with a bathroom scale to observe this.

There is a new molecule of creatine on the market that promises all the benefits of creatine without the water weight. It's a conjugated creatine instead of monohydrate. It was designed for athletes who want to use creatine to aid in strength and performance but

have to stay within a certain weight class or for those who the water weight gain gives them an uncomfortable bloated feeling.

The product is manufactured by ProMera Health and distributed by a variety of supplement retailers and on-line stores. It's called Con-Cret and while their marketing is targeted towards athletes, the effectiveness of this product may be best realized by the anti-aging community. Along with the lack of water retention, the product also appears to be better absorbed by the body thus requiring smaller – or micro-doses - as compared to monohydrate. As such it comes in capsules instead of raw powder and one capsule is required per hundred pounds of body weight. This could prove not only to be effective but also more convenient for the non-athletic less dedicated user. One or two capsules a day and your done!

Regardless of which creatine you choose to use, I predict this will be a valuable supplement for the cognitively impaired as well as those looking to protect against future impairment. It's naturally occurring in our bodies and our diets so it's an intervention that mimics the body's own normal state, unlike most pharmaceutical drugs.

#### About The Author

Carl Lanore is the host of Super Human Radio - an AM Talk Radio show broadcast weekly on a variety of radio stations in the US. The show covers all topics related to fitness and health with an emphasis on exercise, nutrition and longevity. Super Human Radio can also be heard streaming on the Internet at <http://www.superhumanradio.com> or any of the top Podcast directories.

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