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Creatine, CLA improve muscle strength and lower body fat in exercising seniors

A report published online on October 3, 2007 in *PLoS One* (Public Library of Science One) described the discovery of researchers at McMaster University in Hamilton, Ontario that supplementing older exercisers with the naturally occurring compound creatine monohydrate and the fatty acid conjugated linoleic acid (CLA) results in increased muscle strength and a reduction in fat mass compared with unsupplemented exercisers.

McMaster professor of pediatrics and medicine Dr Mark Tarnopolsky and associates recruited 19 men and 20 women aged 65 and older to participate in a program of twice weekly resistance exercise training. The subjects were randomized to receive 5 grams of creatinine monohydrate and 6 grams of CLA per day or a placebo for six months. Participants were evaluated before and after the treatment period for strength and muscular endurance, functional tasks, body composition, blood values, urinary markers of compliance, oxidative stress, and bone resorption.

At the end of the 24 week period, functional capacity, as measured by tests involving walking, balance, sitting, standing, and stair climbing, showed improvement in both groups. Additionally, oxidative stress was reduced. Strength, measured by a variety of tests, also improved in all participants, however, among subjects that received creatine and CLA there were greater gains in muscle endurance, as well a significant increase in fat free mass and body fat loss compared with the placebo group.

The trial builds on a study conducted by Dr Tarnopolsky and Dr S. Melov at the Buck Institute of Age Research published in the same journal earlier this year, which found that six months of resistance exercise reversed some aging-associated muscle gene expression abnormalities.

"This data confirms that supervised resistance exercise training is safe and effective for increasing strength and function in older adults and that a combination of creatine monohydrate and CLA can enhance some of the beneficial effects of training over a six month period," Dr Tarnopolsky concluded.

Health Concern

Exercise enhancement

Exercise is a proven life extender. Thousands of clinical trials have documented the benefits of a regular exercise program. It has been shown to reduce the risk of many diseases, including heart disease, the leading killer in the United States. It is effective in preventing obesity and depression, and it helps people of all ages maintain flexibility, strength, and even independence. Yet many people who exercise regularly aren't getting all the benefits they could from their program, and some wonder why they never seem to make any progress at the gym. The fact is, although any sustained exercise is helpful, results are about more

than the time spent in a gym or jogging on a treadmill. That's only half the picture. Nutrition is a critical component of any exercise program, and there are proven ways to maximize your exercise program that you might not hear about from your family physician or from the government.

Studies show that creatine supplementation effectively increases lean muscle mass and strength (Nissen SL et al 2003; Kreider RB 2003; Gotshalk LA et al 2002). Creatine donates a phosphate molecule to adenosine diphosphate in order to produce more ATP for energy demands. The buildup of lactic acid may also be delayed after creatine supplementation.

Studies support the use of creatine to increase strength in older people (Gotshalk LA et al 2002; Chrusch MJ et al 2001). Other studies demonstrate that creatine can help those with degenerative neurological disorders and enhance memory in older adults (Wyss M et al 2002; Beal MF 2003; Tarnopolsky MA et al 2001; Matthews RT et al 1998; Tabrizi SJ et al 2003; Laakso MP et al 2003; Yeo RA et al 2000; Valenzuela MJ et al 2003; Watanabe A et al 2002; Rae C et al 2003).

http://www.lef.org/protocols/lifestyle_longevity/exercise_01.htm

Featured Products

Micronized Creatine Powder

Creatine exerts various effects upon entering the muscle. It is these effects that elicit improvements in exercise performance and may be responsible for the improvements of muscle function and energy metabolism seen under certain conditions. Several mechanisms have been proposed to explain the increased exercise performance seen after acute and chronic creatine intake:

1. Optimizing energy metabolism by maintaining higher levels of the body's energy compound adenosine triphosphate or ATP.
2. Increasing protein synthesis through hyperhydration of cells.
3. Preventing tissue damage by stabilizing cellular membranes and maintaining reserves of ATP.



<http://www.lef.org/newshop/items/item00610.html>

Super CLA Blend with Sesame Lignans

In a study presented at the Experimental Biology 2002 meeting, CLA alone was shown to cause a substantial decrease in fat mass, and for those who received CLA plus guarana, both adipocyte (fat cell) size and number were decreased by 50%. As an added benefit, sesame lignans have been shown to further increase the burning of fat by stimulating fatty acid oxidation in the liver. As with any fatty acid, CLA can be oxidized by free radicals once it has been ingested. Sesame lignans help prevent the oxidation of CLA, providing health benefits without negative impact.



<http://www.lef.org/newshop/items/item00818.html>

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On the cover

As we see it: Should the President declare a National Emergency? By William Faloon

Reports

Novel turmeric compound delivers much more curcumin to the blood, by Dale Kiefer

Adult stem cells: New hope for curing degenerative diseases, by Denis Rodgeron, PhD, Ron Rothenberg, MD, FACEP, and Wayne A. Marasco, MD, PhD

The intimate link between erectile dysfunction and heart disease, by William Davis, MD

Fighting depression and improving cognition with omega-3 fatty acids, by Laurie Barclay, MD

Protecting yourself in a nuclear emergency with potassium iodide, by Mark A. Mitchell, MD

In the news

Men's waistline predicts pelvic dysfunction; estrogen reduces coronary plaques; magnesium beneficial in diabetes; vitamin D's heart benefits; and more

Wellness profile

Dr Brian Boxer Wachler, antiaging "guru to the stars," by Donna Caruso

Nutraceutical Update

Lipoic acid, by Mark A. Mitchell, MD

Superfoods

The healthy onion, by Trish Riley

October 2007 abstracts

Erectile dysfunction, omega-3, lipoic acid

http://www.lef.org/magazine/mag2007/mag2007_10.html

If you have questions or comments concerning this issue or past issues of *Life Extension Update*, send them to ddye@lifeextension.com or call 954 202 7716.

For longer life,



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