

Clinical Update

Science builds for L-carnitine and muscle aging

Supplementation with L-carnitine may restore natural losses of the nutrient that occur naturally with age, according to a new study with rats.

(*The Journal of Gerontology*, October 2008)
(*Phytomedicine*, August 2008)

Researchers from the University of Dijon report that supplementation with Lonza's Carnipure ingredient led to increases in the levels of L-carnitine in rat muscle cells, as well as improving muscle capabilities in the old animals. According to results published in *The Journal of Gerontology*, no changes in food intake were observed, while decreases in abdominal fat were observed.

L-Carnitine, a vitamin-like nutrient, occurs naturally in the human body and is essential for turning fat into energy. It is frequently used as a dietary supplement by physically active people to help with post-exercise recovery.

Lonza, which claims to be the world's largest manufacturer of L-Carnitine, has said that extensive scientific research shows the supplement promotes cardiovascular health and that other studies suggest the nutrient may be useful in weight management.

The L-carnitine levels in the muscles of young and old rats were found to be 34% lower in the elderly animals. Old rats were fed a control diet and supplemented with L-carnitine (30 mg/kg body weight) for 12 weeks. Demarquoy and his co-workers report that this led to a restoration of L-carnitine levels in muscle cells.

Furthermore, a 55% improvement in the oxidative capacity in the muscles of the old rats was recorded by the Dijon-based researchers. Normal age-related increases in body weight appeared to be limited by L-carnitine supplementation. This was suggested to be due to a limiting of fat gain by increasing fatty acid oxidation. If the results can be repeated in future studies, including more human studies, then L-carnitine may find a role in supporting healthy ageing.

Researchers from Florida State University reported this summer that L-carnitine supplements had may increase the bone mineral density of rats by 6.3%. (*Phytomedicine*, Vol. 15, pp. 595-601). However, the Florida-state researchers noted that many questions remain unanswered, particularly the nutrient's metabolic role in bone.

Source: www.nutraingredients.com