



ORIGINAL ARTICLE

The role of conjugated linoleic acid in reducing body fat and preventing holiday weight gain

AC Watras¹, AC Buchholz², RN Close¹, Z Zhang¹ and DA Schoeller¹

¹Department of Nutritional Sciences, University of Wisconsin-Madison, Madison, WI, USA and ²Family Relations and Applied Nutrition, University of Guelph, Ontario, Canada

Objective: The incidence of obesity and overweight in the US has increased considerably during the past two decades and currently affects 65% of the adult population. Research has indicated that small, yet irreversible, gains during the holiday season contribute to increases in weight during adulthood. Conjugated linoleic acid (CLA), a naturally occurring dietary fatty acid, has been found to reduce weight gain and dramatically decrease fat mass in animals. Although research in humans has shown inconsistent results, most studies have been of insufficient duration or have utilized body composition methods that are less accurate than the currently accepted criterion.

Design: Randomized, double-blind, placebo-controlled study of 3.2 g/day CLA for 6 months.

Subjects: Forty healthy, overweight subjects (age: 18–44 years; body mass index: 25–30 kg/m²)

Measurements: Body composition by the four-compartment model, resting metabolic rate (RMR) by indirect calorimetry, self-reported physical activity and dietary intake, and blood chemistries were determined at baseline and after 6 months. Body weight was measured monthly during the pre-holiday season (August–October), holiday season (November–December) and post-holiday season (January–March). Adverse events were assessed monthly.

Results: Compared to CLA, the placebo group showed a greater rate of weight gain during the holiday season ($P=0.01$). Within the placebo group, holiday weight change was significantly greater compared to the pre-holiday period (August–October) ($P=0.03$). Six-month change in body composition was improved with CLA compared to placebo ($P=0.02$), and body fat was significantly reduced within the CLA group (-1.0 ± 2.2 kg, $P=0.05$). CLA had no effect on RMR, physical activity or dietary intake. The rate of reported negative emotions decreased significantly with CLA, although there was no difference in any other category of adverse event. In comparison to the placebo, CLA did not affect insulin resistance, blood lipids and markers of liver function or markers of inflammation, with the exception of a significant decrease in a biomarker of endothelial dysfunction.

Conclusion: CLA supplementation among overweight adults significantly reduced body fat over 6 months and prevented weight gain during the holiday season. Although no adverse effects were seen, additional studies should evaluate the effect of prolonged use of CLA.

International Journal of Obesity advance online publication, 22 August 2006; doi:10.1038/sj.ijo.0803437

Keywords: CLA; body composition; four-compartment model; body weight; overweight