Conjugated linoleic acid supplementation for 1 y reduces body fat mass in healthy overweight humans

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Abstract

Background: Short-term trials showed that conjugated linoleic acid (CLA) may reduce body fat mass (BFM) and increase lean body mass (LBM), but the long-term effect of CLA was not examined.

Objective: The objective of the study was to ascertain the 1-y effect of CLA on body composition and safety in healthy overweight adults consuming an ad libitum diet.

Design: Male and female volunteers (n = 180) with body mass indexes (in kg/m²) of 25–30 were included in a double-blind, placebo-controlled study. Subjects were randomly assigned to 3 groups: CLA-free fatty acid (FFA), CLA-triacylglycerol, or placebo (olive oil). Change in BFM, as measured by dual-energy X-ray absorptiometry, was the primary outcome. Secondary outcomes included the effects of CLA on LBM, adverse events, and safety variables.

Results: Mean (± SD) BFM in the CLA-triacylglycerol and CLA-FFA groups was 8.7 ± 9.1% and 6.9 ± 9.1%, respectively, lower than that in the placebo group (P < 0.001). Subjects receiving CLA-FFA had 1.8 ± 4.3% greater LBM than did subjects receiving placebo (P = 0.002). These changes were not associated with diet or exercise. LDL increased in the CLA-FFA group (P = 0.008), HDL decreased in the CLA-triacylglycerol group (P = 0.003), and lipoprotein(a) increased in both CLA groups (P < 0.001) compared with month 0. Fasting blood glucose concentrations remained unchanged in all 3 groups. Glycated hemoglobin rose in all groups from month 0 concentrations, but there was no significant difference between groups. Adverse events did not differ significantly between groups.

Conclusion: Long-term supplementation with CLA-FFA or CLA-triacylglycerol reduces BFM in healthy overweight adults.