

Role of dairy products in modulating weight and fat loss: A multi-center trial

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We previously found calcium and dairy-rich diets to modulate adipocyte lipid metabolism, thereby accelerating weight loss during energy restriction. We have now evaluated these concepts in a 12-week randomized controlled multi-center clinical trial of 105 overweight and obese adults. Diets were designed to produce a 500 kcal/day energy deficit with either low calcium (LC; ~600 mg/day), high calcium (HC; ~1,400 mg/day), or high dairy (HD; 3 dairy servings, diet totaling ~1,400 mg/day). Macronutrients were maintained at the US average. Ninety-three subjects completed the trial, and 68 met all *a priori* weekly compliance criteria and were included in this analysis. HC exerted no significant effects on weight loss or body composition compared to LC. HD augmented weight loss compared to LC and HC (HD: -4.70±0.63 kg; LC: -3.02±0.62 kg; HC: -2.32±0.87 kg, p=0.06). HD resulted in nearly two-fold greater decreases in fat loss (HD: -4.43±0.53 kg; LC: -2.69±0.53 kg; HC: -2.23±0.73 kg, p<0.025), trunk fat loss (HD: -2.38±0.30 kg; HC: -1.42±0.30 kg; LC: 1.36±0.42 kg, p<0.05) and waist circumference (HD: -7.84±0.72 cm; LC: -4.76±0.71 cm; HC: 4.85±0.99 cm, p<0.01) compared to HC or LC. HD caused the greatest increase in % lean mass (HD: +3.36±0.45%; LC: 1.87±0.45%; HC 1.59±0.62%, p=0.056). We conclude that dairy-rich diets markedly augment weight loss by targeting the fat compartment during energy restriction.