

Poster presentation

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Effects of diet cycling during training on weight loss and resting energy expenditure: a preliminary analysis

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Background

Long-term dieting has been reported to reduce resting energy expenditure (REE) leading to weight regain once the diet has been curtailed. Diets are also difficult to follow for a significant length of time. The purpose of this preliminary proof of concept study was to examine the effects of short-term intermittent dieting during exercise training on REE and weight loss in overweight women.

Methods

16 sedentary women (37 ± 7 yrs, 162 ± 6 cm; 89 ± 17 kg; $42.5 \pm 3\%$ body fat) were assigned to an exercise & normal diet group (E, $n = 6$) or an exercise and diet intervention group (ED, $n = 10$). Diets were maintained for 30 days and consisted of 1,200 kcal/d for 1-wk followed by ingesting 1,500 kcal/d for 3-wks. Subjects then followed a 2,200 kcal/d maintenance diet for 4 wks and repeated the cycle each month for 6-months. Diets were either 45% CHO, 30% PRO, and 25% F or 45% PRO, 30% CHO, and 25% F. Subjects participated in a supervised Curves circuit training program 3-d per wk and walked for 30-min 3-d per wk. Body weight, DEXA body composition, and REE measurements were obtained at 0, 1, 2, 3, 4, and 5 months and were analyzed by repeated measures ANOVA. Data

are presented as means \pm SD changes from baseline for the E and ED groups, respectively, at 1, 2, 3, 4, and 5 months.

Results

Preliminary results revealed that subjects in the ED group lost significantly more weight ($E 0.4 \pm 2.9$, -2.9 ± 2.5 ; -1.8 ± 4.1 , -1.9 ± 5.1 ; $ED -6.7 \pm 3.0$; -8.7 ± 4.5 , -10.8 ± 6.7 ; -11.3 ± 7.3 lbs, $p = 0.03$) and tended to lose more fat mass ($E 0.83.0$, -3.0 ± 3.8 ; -1.0 ± 4.5 , -1.5 ± 3.7 ; $ED -4.4 \pm 3.6$; -6.4 ± 3.5 , -7.5 ± 5.2 ; -7.5 ± 6.6 lbs, $p = 0.11$) than subjects in the E groups. REE rebounded after dieting during each maintenance phase in the ED group ($E 19.4 \pm 2.2$, 19.1 ± 1.6 , 18.4 ± 1.7 , 18.4 ± 1.9 ; $ED 19.0 \pm 1.3$, 18.1 ± 1.6 , 19.3 ± 2.2 , 18.2 ± 1.7 , 18.6 ± 1.5 , kcal/kg, O4 $p = 0.004$).

Conclusion

Preliminary results indicate that following 30 day cycles of dieting/maintenance can promote gradual weight loss while allowing for a rebound in REE during the maintenance phase. This strategy may be an effective way to promote weight loss without concomitant reductions in resting metabolism.

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