

POSTER PRESENTATION

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# Use of higher-protein diets for body composition improvement in non-obese, active individuals

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## Background

A significant amount of weight loss research has been performed on obese, overweight and/or sedentary individuals. There is little research available looking at the same weight loss techniques in athletes, even though this population is continually attempting to lose weight and/or alter body composition. It is hypothesized that a higher-protein diet will result in greater weight loss and a decrease in percent body fat in lean individuals when compared to similar individuals on a low-fat, high-carbohydrate diet.

## Design

Thirty active, military males (age=25 ± 4 yr, body fat=15 ± 7%), competing for a place on the Army Combatives team participated in a six-week training camp that had supervised physical activity 10 hours weekly. During the six-week training program, subjects were prescribed one of three diets: higher-protein (PRO), traditional low-fat, high-carbohydrate (CHO), or control. The PRO diet was designed to be 40% carbohydrates, 30% protein and 30% fats. The CHO diet was designed to be 65% carbohydrates, 15% protein and 20% fats. The control group participated in all physical activity but was not given any dietary restrictions.

## Results

Thirteen subjects completed the study. Control group consumed 16,489±4,823 kJ daily, 41±10% carbohydrates, 23±2% protein and 33±9% fats. PRO group consumed 8,339±2,173 kJ, 36±10% carbohydrates, 30±10% protein and 35±8% fat. CHO group consumed 14,536±6,879 kJ, 58±10% carbohydrates, 17±2% protein and 26±10% fat. Control group consumed 224±62 kJ/kg body weight

with 5±1g carbohydrates/kg body weight, 3±1g protein/kg body weight, and 2±1g fat/kg body weight. PRO group consumed 120±50 kJ/kg body weight with 3±2g carbohydrates/kg body weight, 2±1g protein/kg body weight and 1±0g fat/kg body weight. CHO group consumed 213±122 kJ/kg body weight with 7±3g carbohydrates/kg body weight, 2±1g protein/kg body weight and 2 ± 1g fat/kg body weight. Body weight changes were as follows: CHO group loss 1.1±5.2 kg, PRO group loss 0.2 ±2.2 kg, and control group gained 1.0±1.0 kg. PRO group had the greatest decrease in percent body fat, followed by CHO group and then control group with -1.2 ±0.8 kg, -1.1±0.9 kg and -0.6±1.5 kg, respectively. Control and PRO group increased FFM, 1.7±1.2 kg and 0.8 ±1.5 kg, respectively. CHO group lost -0.2±3.8 kg FFM. PRO and CHO groups lost 1.0±1.0 kg and 1.0±1.8 kg of FM, respectively. Control group lost 0.7±0.7 kg FM.

## Conclusion

It appears that a higher-protein diet can improve FFM retention during weight loss in non-obese, active individuals.

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