

# Dietary Protein and Exercise Have Additive Effects on Body Composition During Weight Loss in Adult Women

## Summary

Research conducted by Donald Layman, Ph.D., and his team at the University of Illinois at Urbana-Champaign, found that exercise is much more effective when it's coupled with a protein-rich diet. Published in the August 2005 Journal of Nutrition ("Dietary Protein and Exercise Have Additive Effects on Body Composition During Weight Loss in Adult Women"), this study adds to the growing body of evidence supporting protein's beneficial role in weight management.



## Objective

Compare the effects of two reduced-calorie diets with modified ratios of protein and carbohydrate with exercise on changes in body composition and blood lipids in adult women.

## Method

This study was a randomized 4-month weight-loss trial. Both diets were designed to provide 1,700 calories, 57 grams of fat and 17 grams of fiber a day. While both diets also fell within the Acceptable Macronutrient Distribution Range established by the Institute of Medicine, the Protein Group followed a low carbohydrate-to-protein ratio (<1.5, with approximately 30 percent of energy coming from protein) and the Carbohydrate Group followed a high carbohydrate-to-protein ratio (>3.5, with approximately 15 percent of energy coming from protein).

## Key Findings

This study demonstrated that a protein-rich diet, with reduced carbohydrates, combined with exercise additively improved body composition during weight loss, reduced triglyceride levels and maintained higher HDL (good) cholesterol levels.

Compared to the subjects following the higher-carbohydrate diet and higher-carbohydrate diet plus exercise plan, subjects following the protein-rich diet and protein-rich diet plus exercise plan:

- lost more total weight
- lost more fat
- maintained muscle tissue

Serum lipids improved in all groups, but changes varied among diet treatments.

- Those following the carbohydrate diet had larger reductions in total cholesterol and LDL cholesterol.
- Those following the protein-rich diet had greater reductions in triglyceride levels and maintained higher HDL (good) cholesterol levels.



Donald K. Layman, et al. *Journal of Nutrition*. 135: 1903-1910, August 2005.