

# Protein-Rich Diet Boosts Benefit of Exercise

A study in the August 2005 Journal of Nutrition found that a diet rich in high-quality protein, coupled with a moderate exercise program, helped people improve body composition by losing significantly more fat and maintaining more muscle mass.<sup>1</sup>

## WHAT IS HIGH-QUALITY PROTEIN?

High-quality proteins, like lean beef, lowfat dairy products and eggs, provide the right amounts of all the amino acids, or "building blocks," your body needs in order to grow and function properly.<sup>2</sup>

## TIPSTO GO LEANWITH PROTEIN

### Building Block Breakfasts

- Make that coffee a latte. The lowfat milk will give you a high-quality protein boost.
- Power up your pita. Fill a whole grain pita with scrambled eggs for a portable breakfast.



### Maximized Mid-Day Munchies

- Pack a snack. Carry beef jerky for a handy, lowfat protein-powered treat.
- Mix'n'match. Add some lowfat cheese to apple slices for a savory snack.



### Lean Lunches

- Add some flavor. Grilled sirloin or tuna steak adds a sizzle to any salad.
- Take it with you. Hard-boiled eggs are easy ways to add protein to any meal.
- It's in the middle. An open-face lean deli meat sandwich is a delicious lunch full of lean protein.



### Satisfying Suppers

- Keep it warm. Chili con carne with 95% lean ground beef or ground skinless poultry is a satisfying way to get lean and stay warm.
- Mix things up. Sliced flank steak or boneless pork loin will give a protein boost to any stir-fry.
- Make it a power meal. Pair lean beef tenderloin with colorful veggies for a great-tasting nutrient burst.



**This menu illustrates how easy (and great-tasting) it can be to reap bonus results from your exercise program by choosing high-quality proteins.**

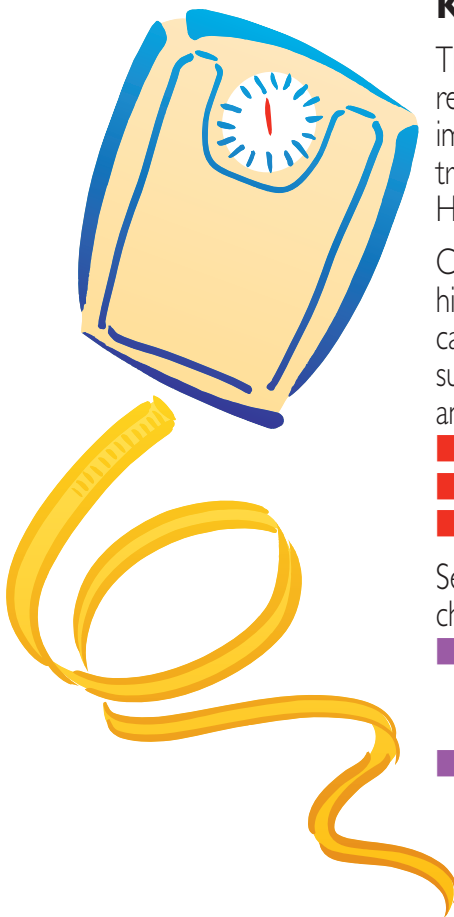
BREAKFAST	LUNCH	DINNER	SNACKS
Breakfast Sandwich Lean Deli Ham (1 oz.) Lowfat Cheddar Cheese (2 oz.) Whole Grain English Muffin (2 oz.)  Lowfat Milk (1 cup)	Turkey Sandwich Skinless Turkey Breast (3 oz.) Cheese (1 oz.) Whole-Grain Bread (1 slice) Mayonnaise (1/2 tbsp.)  Broccoli (2-3 spears)  Half an Apple	Marinated Sirloin Steak (6 oz. broiled)  Whole Grain Dinner Roll (2 oz.) Butter (2 tsp.)  Steamed Asparagus (1 cup)  Seasonal Fruit Medley (1 cup)	Morning: String Cheese (1 oz.)  Afternoon: Sliced Veggies (1/2 cup) wrapped with Lean Roast Beef (1 oz.)

1. Layman D, Evans E, Baum J, Erickson D, Boileau R. Dietary protein and exercise have additive effects on body composition during weight loss in adult women. *Journal of Nutrition*. 2005. 135: 1903-1910.
2. Insel P, Turner R, Ross D. *Nutrition*. Jones and Bartlett Publishers. Sudbury, Massachusetts, 2002.

# 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

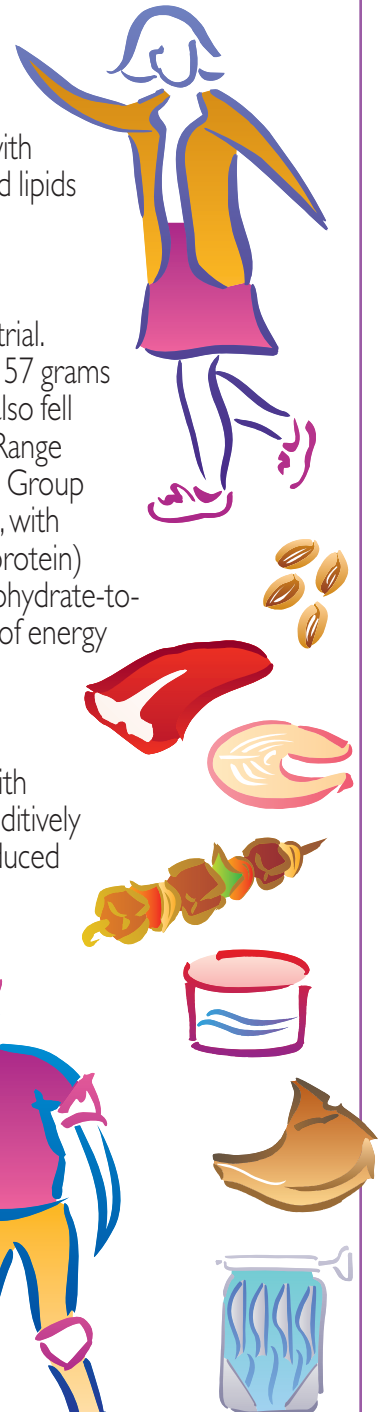
This study demonstrated that a protein-rich diet, with reduced carbohydrates, combined with exercise additively improved body composition during weight loss, reduced triglyceride levels and maintained higher HDL (good) cholesterol levels.

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.