

Carbohydrates Alone or Mixing With Beef or Whey Protein Promote Similar Training Outcomes in Resistance Training Males: A Double Blind, Randomized Controlled Clinical Trial.

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Abstract

Beef powder is a new high-quality protein source scarcely researched relative to exercise performance. The present study examined the impact of ingesting hydrolyzed beef protein, whey protein, and carbohydrate on strength performance (1RM), body composition (via plethysmography), limb circumferences and muscular thickness (via ultrasonography), following an 8-week resistance-training program. After being randomly assigned to one of the following groups: Beef, Whey, or Carbohydrate, twenty four recreationally physically active males (n=8 per treatment) ingested 20 g of supplement, mixed with orange juice, once a day (immediately after workout or before breakfast). Post intervention changes were examined as percent change and 95% CIs. Beef (2.0%, CI, 0.2-2.38%) and Whey (1.4%, CI, 0.2-2.6%) but not Carbohydrate (0.0%, CI, -1.2-1.2%) increased fat-free mass. All groups increased vastus medialis thickness: Beef (11.1%, CI, 6.3-15.9%), Whey (12.1%, CI, 4.0, -20.2%), Carbohydrate (6.3%, CI, 1.9-10.6%). Beef (11.2%, CI, 5.9-16.5%) and Carbohydrate (4.5%, CI, 1.6-7.4%), but not Whey (1.1%, CI, -1.7-4.0%), increased biceps brachialis thickness, while only Beef increased arm (4.8%, CI, 2.3-7.3%) and thigh (11.2%, 95%CI 0.4-5.9%) circumferences. Although the three groups significantly improved 1RM Squat (Beef 21.6%, CI 5.5-37.7%; Whey 14.6%, CI, 5.9-23.3%; Carbohydrate 19.6%, CI, 2.2-37.1%), for the 1RM bench press the improvements were significant for Beef (15.8% CI 7.0-24.7%) and Whey (5.8%, CI, 1.7-9.8%) but not for carbohydrate (-0.9-23.6%). Protein-carbohydrate supplementation supports fat-free mass accretion and lower body hypertrophy. Hydrolyzed beef promotes upper body hypertrophy along with similar performance outcomes as observed when supplementing with whey isolate or maltodextrin.

KEYWORDS:

Fat-Free Mass; Hypertrophy; Maximal Strength; Multi-ingredient; Nutrition; Supplementation