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The Effects of Beef, Chicken, or Whey Protein Post-Workout on Body Composition and Muscle Performance.

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Abstract

The purpose of this study was to determine the effects of post-workout consumption of beef protein isolate (Beef), hydrolyzed chicken protein (Chx) or whey protein concentrate (WPC), compared to a control on lean mass and strength during 8 weeks of resistance training. Forty-one males and females were randomized into four groups: WPC (m=5, f=5; Age (yrs)=19 ± 2, Height (cm)=171 ± 10, Mass (kg)= 74.60 ± 14.19), Beef (m=5, f=5; Age (yrs)=22 ± 4, Height (cm)=170 ± 7, Mass (kg)=70.13 ± 8.16), ChxC(m=5, f=6; Age (yrs)=21 ± 2, Height (cm)=169 ± 9, Mass (kg)=74.52 ± 13.83) and Maltodextrin (control) (m=4, f=6; Age (yrs)= 21 ± 2, Height (cm)=170 ± 9, Mass (kg)= 73.18 ± 10.96). Subjects partook in an 8-week periodized resistance-training program. Forty-six grams of protein or a control were consumed immediately following training or at similar times on off-days. Dual energy x-ray absorptiometry (DXA) was used to determine changes in body composition. Maximum strength were assessed by one repetition maximum (1RM) for bench press (upper body) and deadlift (lower body). Power output was measured using cycle ergometer. WPC (52.48 ± 11.15 to 54.96 ± 11.85), Beef (51.68 ± 7.61kg to 54.65 ± 8.67kg) and Chx (52.97 ± 12.12kg to 54.89 ± 13.43kg) each led to a significant increase in lean body mass compared with baseline ($p<0.0001$) while the control condition did not (53.14 ± 11.35kg to 54.19 ± 10.74kg). Fat loss was also significantly decreased at 8 weeks compared to baseline for all protein sources (WPC: 18.70 ± 7.38kg to 17.16 ± 7.18kg; Beef: 16.43 ± 5.71kg to 14.65 ± 5.41kg; Chx: 17.58 ± 5.57kg to 15.87 ± 6.07kg), but not the control condition (16.29 ± 7.14kg to 14.95 ± 7.72) ($p<0.0001$). One repetition maximum for both deadlift and bench-press were significantly increased for all treatment groups when compared to baseline. No differences in strength were noted between conditions. Overall, the results of this study demonstrate that consuming quality sources of protein from meat or WPC lead to significant benefits in body composition compared to control.

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