Format: Abstract

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Effects of High Versus Low Protein Intake on Body Composition and Maximal Strength in Aspiring Female Physique Athletes Engaging in an 8-Week Resistance Training Program.

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Abstract

Aspiring female physique athletes are often encouraged to ingest relatively high levels of dietary protein in conjunction with their resistance training programs. However, there is little to no research investigating higher versus lower protein intakes in this population. This study examined the influence of a high versus low-protein diet in conjunction with an 8-week resistance training program in this population. A total of 17 females (21.2 ± 2.1 years; 165.1 ± 5.1 cm; 61 ± 6.1 kg) were randomly assigned to a high-protein diet (HP: 2.5 g·kg^{-1}·day^{-1}; n = 8) or a low-protein diet (LP: 0.9 g·kg^{-1}·day^{-1}, n = 9) and were assessed for body composition and maximal strength prior to and after the 8-week protein intake and exercise intervention. Fat-free mass increased significantly more in the HP group as compared with the LP group (p = .009), going from 47.1 ± 4.5 to 49.2 ± 5.4 kg (+2.1 kg) and from 48.1 ± 2.7 to 48.7 ± 2 kg (+0.6 kg) in the HP and LP groups, respectively. Fat mass significantly decreased over time in the HP group (14.1 ± 3.6 to 13.0 ± 3.3 kg; p < .01), but no change was observed in the LP group (13.2 ± 3.7 to 12.5 ± 3.0 kg). Although maximal strength significantly increased in both groups, there were no differences in strength improvements between the two groups. In aspiring female physique athletes, a higher protein diet is superior to a lower protein diet in terms of increasing fat-free mass in conjunction with a resistance training program.

KEYWORDS: bodybuilding; hypertrophy; sports nutrition

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