Introduction

The potential of leucine to stimulate primarily protein synthesis provides the basis and justification to ingest leucine during resistance exercise training in order to enhance muscle growth and ultimately improve strength and personal performance. An increase in muscle size is generally accompanied by an increase in strength. Strength gains may lead to improved performance in athletic disciplines and everyday life.

Methods (cont’d)

Testing took place at baseline and at the end of the supplementation period. Strength was assessed by one repetition maximum (1-RM) on the bench and squat. Body composition was assessed on a weighing scale and thigh circumference was taken with a measuring tape. The alpha level for significance was set at \( p \leq 0.05 \).

Results (cont’d)

Significant increases were seen from baseline to post training in the 1-RM squat (\( p = 0.0004 \)) and bench (\( p = 0.0000037 \)) as well as body weight (\( p = 0.0092 \)). There was no significant difference found in the thigh circumference (\( p = 0.17 \)).

Results

The baseline values for the eight subjects before starting the L-Leucine supplementation were: body weight 85.12 ± 12.15 kg; 1-RM squat 83.5 ± 18.25 kg; 1-RM bench 76.62 ± 18.18 kg; thigh circumference 20.5 ± 2 cm, while the values after 6 weeks of training and supplement consumption were: body weight 87 ± 12.5 kg; 1-RM squat 91.25 ± 17.75 kg; 1-RM bench 84.12 ± 17.93 kg; thigh circumference 20.87 ± 2.31 cm.

Conclusions

These results suggest that 3 g·d⁻¹ of L-leucine supplementation may be used as a nutritional supplement to enhance strength performance during a 6-week resistance training program in individuals who have been training. While there was not a significant change in thigh circumference (\( p = 0.17 \)), a longer training time or larger amount of the supplement may have resulted in a significant difference.