COMPARISON OF WHEY AND PEA PROTEIN CONSUMPTION ON MUSCLE PERFORMANCE

Kravets Kateryna
PhD student
National University of Physical Education and Sports of Ukraine, Ukraine

A double-blind, randomized, placebo-controlled clinical trial has been registered on ClinicalTrials.gov and confirmed that oral pea protein increased muscle thickness during weight training more than whey protein.

The study included one hundred and sixty-one men between the ages of 18 and 35 who underwent 12 weeks of upper extremity resistance training. According to randomization, they were included in the group of pea protein (n = 53), whey protein (n = 54) or placebo (n = 54). All had to take 25 g of protein or a placebo twice a day during a 12-week training period. Tests were performed on the biceps muscles at start-up (day 0, D0), middle (D42) and after training (D84). Muscle thickness was assessed using ultrasound, and strength was measured on an isokinetic dynamometer.

According to the data, a significant time effect for biceps muscle thickness (p<0.0001) was observed. Thickness increased from 24.9 ± 3.8 mm (D0) to 26.9 ± 4.1 mm and 27.3 ± 4.4 mm at D42 and D84, respectively, with only a trend toward significant differences between groups (p=0.09). When performing a sensitivity study on the weakest participants (regarding inclusion strength), the increase in thickness differed significantly between groups (+20.2 ± 12.3%, +15.6 ± 13.5%, and +8.6 ± 7.3% for peas, serum and placebo, respectively; p<0.05). The increase in thickness was significantly greater in the Pea group compared to placebo, whereas there was no difference between Whey and the other two conditions. Muscle strength also increased over time with no statistical difference between groups.

Our research performed on a group of 12 people on Tanita scales confirmed the data of the above study. In group B (they used pea protein, experienced hypocaloric diet and trained in the gym with weights), the loss of protein mass is less than in group A (they consumed whey protein, while experiencing the same conditions) (Fig.1).

In addition to appropriate training, pea protein supplementation led to greater increases in muscle thickness compared to placebo, especially for people starting or returning to muscle building. Since no difference was found between the two groups of proteins, plant-based pea proteins could be used as an alternative to whey-based dietary products for those who don’t use dairy products for some reasons.
Fig. 1. *Increase in bending strength of the hand, kg*

**References:**
