



TEXT

BACKGROUND: Aging is associated with declines in muscle mass, strength and quality, leading to physical impairments. An even protein distribution in daily meals has recently been proposed along with adequate total protein intake as important modulators of muscle mass. In addition, due to its short duration, high-intensity interval training (HIIT) has been highlighted as a promising intervention to prevent physical deterioration. However, the interaction between daily protein intake distribution and HIIT intervention in elderlies remain unknown.

OBJECTIVE: To investigate muscle adaptation following HIIT in older adults according to daily protein intake distribution.

METHODS: Thirty sedentary obese subjects who completed a 12-week elliptical HIIT program were matched [criteria: age (± 2 years), sex, BMI (± 2 kg/m²)] and divided a posteriori into 2 groups according to the amount of protein ingested at each meal: < 20 g in at least one meal (P20-, n = 15, 66.8 \pm 3.7 years) and ≥ 20 g in each meal (P20+, n = 15, 68.1 \pm 4.1 years). Body composition, functional capacity, muscle strength, muscle power, physical activity level, and nutritional intakes were measured pre- and post-intervention. A two way repeated ANOVA was used to determine the effect of the intervention (HIIT) and protein distribution (P20- vs P20+, p < 0.05).

RESULTS: No difference was observed at baseline between groups. Following the HIIT intervention, we observed a significant decrease in waist and hip circumferences and improvements in functional capacities in both P20- and P20 + group (p < 0.05). However, no protein distribution effect was observed.

CONCLUSION: A 12-week HIIT program is achievable and efficient to improve functional capacities as well as body composition in obese older adults. However, consuming at least 20 g of proteins in every meal does not further enhance muscle performance in response to a 12-week HIIT intervention.