

Original Article

Effects of supplementary intake of milk protein in combination with resistance exercise training on lean body mass in female university students

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ABSTRACT

【Aim】

Increasing lean body mass during youth is important to prevent sarcopenia and locomotive syndrome in the future. This study investigated the effects of the supplementary intake of milk protein in combination with resistance exercise training on lean body mass in female university students.

【Methods】

Thirty female university students were recruited and asked to perform bodyweight-based and resistance band-based resistance exercises 4 days a week for 12 weeks. During the training period, the subjects were instructed to consume cookies containing either 10 g of milk protein (MP: n=15) or isoenergetic carbohydrate (CON: n=15) daily. Body composition and muscle thickness were measured before and after the interventions.

【Results】

Twenty-one subjects (CON: n=9; MP: n=12) successfully completed the 12-week nutritional and training interventions. Lean body mass, lower-limb muscle mass, and quadriceps muscle thickness were significantly increased with training in the MP group, but not in the CON group, with the increases in the MP group being greater than those in the CON group.

【Conclusion】

Our results may suggest that the supplementary intake of milk protein during resistance exercise training may be an effective nutritional strategy to increase lean body mass in young women.

Keywords: milk protein, resistance exercise training, female university students, lean body mass