

Counteracting age-related loss of skeletal muscle mass: effect of increased protein intake and exercise

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Aim and Description:

Age-related loss of muscle mass and consequential reduced physical capacity is a well-documented phenomenon. However, the reason for this loss is not yet sufficiently well described. A number of factors are known to affect muscle growth, and particularly the intake of protein in the habitual diet and physical activity is important. It is known that a diet rich in protein combined with heavy resistance training provides great muscle growth, but the relationship and synergies between diet and activity is not so well known in the elderly. Therefore, in this project we will examine two types of strength training (easy home based and heavy supervised) in combination with the addition of whey hydrolyzate on older participants by a 12-month intervention with a follow-up examination after a further 6 months. In addition, we also evaluate the effect of whey hydrolyzate supplement alone compared with both collagen -based protein and energy equivalent carbohydrate supplement. At 0, 6, 12 and 18 months, measurements of muscle size, structure and function will be performed. The overall objective of this study is to gain a better understanding of the mechanisms underlying age-related loss of muscle mass as well as to develop effective and tolerable dietary and activity recommendations for maintaining muscle mass and function in the elderly.