Abstract

Title: The effect of supplementary protein on frail elderly - A systematic review
Author: Antonia Andersson and Alma Lövenhamn
Supervisor: Heléne Bertéus Forslund
Examiner: Frode Slinde
Programme: Programme in dietetics, 180/240 ECTS
Type of paper: Bachelor’s thesis in clinical nutrition, 15 higher education credits
Date: May 23, 2018

Background
Globally the life expectancy is increasing and the older population is growing into a larger group. It is estimated that 10% of people above 65 years are frail, which means that they rely on support for everyday activities. Sarcopenia is described as age-related, progressive decline of muscle mass. An adequate protein intake provides for a better preservation of existing muscle mass. Preservation of muscle mass in elderly is associated with a reduced risk of illness and an increased quality of life.

Objective
The aim of this systematic review was to evaluate if protein supplementation influence muscle mass, body weight and hand grip strength in elderly people and elderly with sarcopenia.

Search strategy
The literature search was conducted in PubMed, Scopus and Cochrane as well as through snowballing from a meta-analysis by Zhong-ju Tan et al.

Selection criteria
Frail or elderly with sarcopenia, over 65 years of age.

Data collection and analysis
The literature search resulted in 22 articles for a closer review. Three studies were assessed by SBU:s template for quality control of randomized studies. Two studies were assessed with “High quality” and one study was assessed with “Mid high quality”.

Main results
Tieland et al. presented no significant changes on muscle mass, body weight or hand grip strength. Björkman et al. presented no significant changes on muscle mass or hand grip strength. Regarding bodyweight they present significant changes, the intervention group gained weight and the control group lost weight, though the supplementation was not isocaloric which explain the change in body weight.

Conclusions
The scientific evidence presents, following the weighting of Tieland et al. and Björkman et al. high strength of evidence (+ + + +) that protein supplementation does not affect the amount of muscle mass. The scientific evidence presents moderate strength of evidence (+ + +) that protein supplementation contributes to a weight gain. However, this can be explained by a higher energy intake. The scientific evidence presents high strength of evidence (+ + + +) that hand grip strength remains unaffected by protein supplementation.

Keywords Protein supplementation, Frail elderly, Sarcopenia, Muscle mass, Weight, Hand grip strength.