



Protein enrichment of familiar foods as an innovative strategy to increase protein intake in institutionalized elderly

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Background

Undernutrition is a common health problem in institutionalized elderly. To prevent and treat undernutrition in older adults, protein intake should be increased. However, simply consuming more is often not an option. Protein enrichment of familiar foods and drinks therefore might be an effective and attractive strategy to prevent and treat undernutrition.

Objective

We performed a feasibility study to test whether using protein enriched familiar products could help institutionalized elderly to reach a protein intake of 1.2 gram per kg body weight per day (g/kg/d).

Results

Protein intake increased by 11.8 g/d ($P=0.003$); from 0.96 to 1.14 g/kg/d ($P=0.002$). This is comparable to one standard portion of ONS. The intake of energy and other macronutrients did not significantly change.

At the end of the intervention more elderly reached a protein intake of 1.2 g/kg/d than before (9 vs 4), see Figure 1. Protein intake significantly increased during breakfast (+3.7 g) and during the evening (+2.2 g), see Figure 2.

Intervention products that contributed most to the increased protein intake at the end of the intervention were bread, fruit juices and soups.

Conclusion

Including familiar protein enriched foods and drinks in the menu helped to meet protein recommendations in institutionalized elderly. Familiar protein enriched food products seem to be a good alternative to nutritional supplements in the treatment and prevention of undernutrition.

Methods

We assessed protein intake before and at the end of an intervention period of 10 days in 22 older adults (13 women, 9 men; mean age 83.0 ± 9.4 years) staying in a local residential care home and a rehabilitation centre. We used newly developed protein enriched familiar foods and drinks; including bread, soups, fruit juices, mashed potatoes, and natural protein-rich veal products.

Dietary intake was assessed on two consecutive days before and at the end of the intervention, using food records filled out by research assistants. Energy and macronutrient intake was calculated using the 2013 Dutch food composition database. Changes in protein intake in g/d and g/kg/d were evaluated using paired t-tests. For participants with a BMI > 27, body weight corresponding with a BMI of 27 was used.

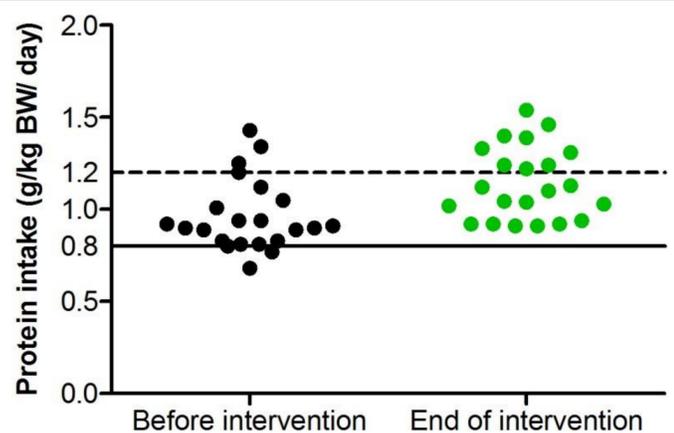


Figure 1. Individual protein intake (g/kg/d) before and at the end of the intervention period.

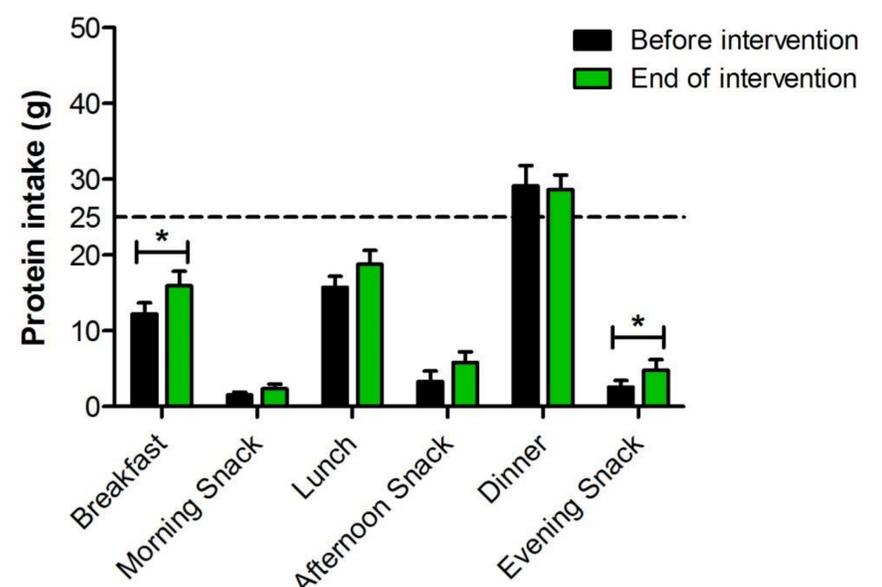


Figure 2. Protein intake per meal moment in g before and at the end of the intervention. Mean and SEM are shown, * indicates a $P < 0.05$.

