Effects of whey and fortified collagen hydrolysate protein supplements on nitrogen balance and body composition in older women.

Hays NP, Kim H, Wells AM, Kajkenova O, Evans WJ.

Abstract

Many elderly people have a low intake of dietary protein, yet their protein requirement may be higher than the current Recommended Dietary Allowance. High-quality protein supplements may be useful to enhance nitrogen retention and increase the availability of essential amino acids in elderly people. We compared the nitrogen balance of two protein supplements (Resource Beneprotein Instant Protein Powder, Nestlé HealthCare Nutrition, Minnetonka, MN, a whey protein concentrate; or Pro-Stat 101, Medical Nutrition USA, Englewood, NJ, a concentrated, fortified, collagen protein hydrolysate) varying in type but not amount of protein content using a crossover study design. The study consisted of two 15-day diet trials separated by a > or = 1-week washout period. Nine healthy elderly women (age 71+/-1 years) were provided a eucaic diet containing approximately the protein Recommended Dietary Allowance of 0.8 g/kg body weight/day. The supplements constituted about half of the total protein provided to each subject. Nitrogen balance responses were assessed over days 6 to 10 and days 11 to 14 of each trial. Measured nitrogen content of the foods indicated that subjects consumed 0.81+/-0.02 g protein/kg/day and 0.85+/-0.05 g/kg/day for the whey and fortified collagen protein trials, respectively. Body weight decreased (P=0.02) after consumption of the whey supplement, with no significant changes in body weight or composition resulting from the consumption of the collagen supplement. Nitrogen excretion was higher during the whey supplement trial than during the collagen trial (P=0.047). Therefore, a concentrated, fortified, hydrolyzed collagen protein supplement maintained nitrogen balance and preserved lean body mass during 15 days of consumption of a relatively low-protein diet.