

# Impact of an oral nutritional supplement on the body composition of older adults with or at risk of malnutrition in an institutionalised setting: A randomised controlled trial

## Abstract

**Background:** Malnutrition often manifests as a body weight (BW) reduction and unhealthy alteration in body composition. The present study aimed to assess the efficacy of an oral nutritional supplement (ONS) in improving BW and body composition among older adults with malnutrition.

**Methods:** An open-label randomised controlled, parallel-group study was conducted among older adults (age  $\geq 60$  years) with/at risk of malnutrition (mini nutrition assessment-short form score  $\leq 11$ ). In total, 50 participants were randomly assigned to the intervention (IG) and control (CG) groups (1:1 ratio). The IG received the ONS (57 g/day; 247 kcal/serving, 12 g protein) before bedtime for 12 weeks. CG received 200 mL of water. Anthropometric measurements, body composition analysis, and dietary and physical activity assessments were performed at the beginning and end of the study.

**Results:** Forty-two participants (IG: 20, CG: 22) completed the study. The mean  $\pm$  SD ages of the IG and CG were  $75.4 \pm 6.1$  and  $74.8 \pm 5.2$  years, respectively ( $p = 0.73$ ). The IG had a significant increase in BW ( $+1.68 \pm 1.16$  vs.  $-0.46 \pm 0.95$  kg;  $p < 0.001$ ), lean mass ( $+1.23 \pm 0.93$  vs.  $-0.45 \pm 0.90$  kg;  $p < 0.001$ ) and fat mass ( $+0.54 \pm 0.82$  vs.  $-0.06 \pm 0.82$  kg;  $p = 0.02$ ) compared to the CG. One-quarter of the IG ( $n = 5$ ) achieved a weight gain  $> 5\%$  of BW, whereas none in the CG did ( $p = 0.01$ ). No significant changes were observed in bone mineral content in either group.

**Conclusions:** For malnourished older adults, supplementing with an ONS, along with regular food intake, significantly increased BW, lean mass and fat mass compared to control following the regular diet without supplementation.

**Keywords:** ONS; body composition; body weight; malnutrition; older adults; oral nutritional supplement.