



## How high-protein, high-fiber meal replacements influence dietary intake in overweight women during weight loss

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### Abstract

**Background and objectives:** This study aims to evaluate the effects of high-protein, high-fiber dietary supplements on dietary intake among overweight women.

**Methods:** This experimental study utilized a randomized controlled trial (RCT). A total of 54 women were randomly assigned to a control group or an intervention group. The control group received nutritional counseling to follow a low-calorie diet, while the intervention group received the same counseling along with a daily meal replacement (Flimeal). Dietary intakes were measured using 3 days of dietary food recall before and after intervention.

**Results:** Participants in the intervention group experienced significantly greater weight loss ( $-3.4 \pm 0.43$  kg) compared to the control group ( $-2.4 \pm 0.5$  kg) ( $p = 0.047$ ). Additionally, a higher proportion of participants in the intervention group (62%) achieved the 5% weight loss threshold compared to the control group (28%) (Chi-Square  $p = 0.033$ ). In this study, we found that subjects in both groups had a significant reduction in total energy and overall micronutrient intake (all  $p < 0.05$ ). We found no significant difference in changes of energy intake between intervention and control groups ( $p > 0.05$ ). Energy corrected analysis was done to evaluate changes in macronutrients composition relative to total energy intake. Those in the intervention study had a greater reduction of fat (week 4,  $p = 0.013$ ; week 8,  $p = 0.030$ ) and greater increment in protein composition (week 4,  $p = 0.002$ ; week 8,  $p = 0.082$ ) as well as fiber (all  $p = 0.026$ ).

**Conclusion:** We also showed that despite similar in energy deficit, those in the intervention group (received daily Flimeal product) had a better weight loss improvement of macronutrients compositions by reducing more fat, increasing more protein and fiber.

**Keywords:** meal replacement, overweight women, weight loss

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