EFFECTS OF A PHYSICIAN-SUPERVISED, STRUCTURED MEAL REPLACEMENT PROGRAM ON BODY COMPOSITION AND WEIGHT LOSS. Francis C. Lau, PhD, FACN; Bruce P. Daggy, PhD, FACN, and Jamie F. McManus*, MD, FAAFP. Shaklee Innovation Center, Pleasanton, CA. *Corresponding Author

Previously we showed that a physician-supervised, structured meal replacement program was effective in facilitating weight loss. The current study was designed to evaluate whether such a program may promote weight loss through alteration in body composition.

The study was conducted as an employee wellness weight loss challenge in a workplace setting. Participants received free physician consultations and were advised to use a customizable 3-meal-a-day structured meal plan featuring 2 meal replacements daily. Meal replacement products were designed to deliver high levels of protein with added leucine. Participants were given the meal replacement products free of charge and were incentivized with prizes at the end of the challenge based on percent of initial body weight lost.

There were 7 brief physician-supervised consultations and weigh-ins: at baseline and at two-week intervals thereafter for 12 weeks. Body composition was assessed at baseline and at 12 weeks by bioimpedance analysis (BIA). To be included in the analysis, participants were required to complete baseline and 12-week bioimpedance measurements. Missing data for bi-weekly weigh-ins were imputed using last-observation-carried-forward method. Student's *t*-test was used for comparisons between two time points. For comparison of reduction in body weight at different time points, ANOVA was used. *P*-values less than 0.05 were considered to be statistically significant.

One out of 30 participants who completed baseline bioimpedance measurements dropped out at the end of 12 weeks. Baseline characteristics for the completers (n = 29) were as follows: average age = 37.7 years, average body weight = 185.4 lb, average BMI = 31.4 kg/m^2, average fat mass = 79.8 lb, and percent of female participants = 72.4%. After 12 weeks the completers lost an average of 12.7 lb or 6.9% of their initial body weight (p<0.0001). Fat mass was significantly reduced by 16.6 lb (p<0.001) with a concomitant increase of 3.9 lb in fat free mass (p<0.03). BMI was significantly reduced from 31.4 to 29.2 kg/m^2 (p<0.0001). Categorical shift in weight classification was observed in 5 out of 14 subjects who were obese at baseline.

The results indicate that combined with physician supervision this structured meal replacement program promoted significant and clinically meaningful weight loss in 12 weeks. Bioimpedance analysis suggests that the observed weight loss was associated with a significant reduction in fat mass. Additional BIA studies are warranted to evaluate the effects of this program on body fat loss and muscle sparing for weight management.