

The Effects of a Commercially Available Weight Loss Program On Body Weight In Overweight Men and Women

BACKGROUND

Many commercial diet plans are readily available to the weight conscious consumer; however, evidence on their effectiveness for promoting weight loss is often lacking. In three previous short term (one- and two-week) studies examining the effects of Nutrisystem® weight loss plans on changes in body weight and other anthropometric indices, subjects observed an average weight loss of ~5 lb after one week with an aggressive 1000 kcal/d diet (Nutrisystem Fast Five™), and similar weight loss when subjects followed varying combinations of less aggressive Nutrisystem® plans (1200 – 1500 kcal/d) for two weeks. These findings are of interest because previous research has shown that initial weight loss during the first few weeks of treatment is associated with better long-term weight loss outcomes (Handjieva-Darlenska, 2010; Fabricatore, 2009; Craighead, 1981; Dubbert, 1984; Finer, 2006; Wadden, 1992; Dhurandhar, 1999; Hansen, 2001; Hollis, 2008).

OBJECTIVES

The primary purpose of this randomized, parallel group study was to determine changes in body weight and body circumferences when generally healthy adults followed the Nutrisystem® program.

The study compared changes in body weight and body circumference measurements among Nutrisystem program users vs. participants following a self-directed diet (i.e. Dietary Approaches to Stop Hypertension, DASH) for 4 weeks (Part A).

The study also assessed continued changes in body weight and body circumference measurements that result from the Nutrisystem program intervention over an additional 8-week period (Part B).

METHODS

Part A

84 adults (n = 57 women, n = 27 men) with a mean (\pm standard error of the mean) age of 40.5 ± 12.1 y, body weight of 95.0 ± 17.1 kg (~210 pounds), and body mass index (BMI) of 34.1 ± 4.9 kg/m² were stratified by age and BMI prior to being randomized into the Nutrisystem® program or DASH program. Targets for daily energy intake for each program were 1200 kcal/day for women and 1500 kcal/day for men, except for the first week of the intervention where all groups consumed 1000 kcal/day. Subjects with BMI > 40 added 200 additional kcal to their diet each day through grocery food options. Subjects were required to maintain their current activities of daily living and

were encouraged to engage in three, 10-minute exercise sessions per day. Changes in body weight and body circumferences (chest, arm, waist, hip, thigh) were examined in a Per Protocol sample (N=75) using repeated measures analysis of covariance. Statistical significance was accepted at $p < 0.05$.

Part B

Participants randomized to the Nutrisystem program (N = 42) continued to follow the weight loss program protocol outlines in Part A for an additional 8-weeks, for a total of 12-weeks participation in the Nutrisystem program. Changes in body weight and body circumferences (chest, arm, waist, hip, thigh) were examined in an Intent-to-Treat sample (N = 42) using raw data. Within-group statistical significance was accepted at $p < 0.05$.

RESULTS

Part A

Both groups experienced significant reductions in body weight and body circumference parameters (Table 1). Subjects on the Nutrisystem® program lost approximately twice as much weight during weeks 1 - 4 than subjects on the DASH diet (all values $p < 0.0005$). Subjects on the Nutrisystem® program lost significantly more total body circumference (i.e. sum of chest, arm, waist, hip, thigh) than subjects on the DASH diet during weeks 2, 3 and 4 (all values $p \leq 0.002$). Across all four weeks and both genders combined, subjects on the Nutrisystem® program lost significantly more waist circumference than subjects on the DASH diet ($p < 0.05$).

Table 1. Covariate Adjusted Change in Average Weight (lb.), Total Body Circumference (in.), and Waist circumference (in.)

	Week 1	Week 2	Week 3	Week 4
Body Weight (pounds)				
Nutrisystem	-5.50 ± 0.4*	-7.57 ± 0.5*	-9.75 ± 0.6*	-11.63 ± 0.7*
95% CI	(-6.25, -4.75)	(-8.51, -6.62)	(-11.00, -8.49)	(-13.11, -10.19)
DASH	-2.73 ± 0.4	-4.38 ± 0.5	-5.37 ± 0.7	-5.94 ± 0.8
95% CI	(-3.52, -1.92)	(-5.39, -3.37)	(-6.71, -4.05)	(-7.50, -4.38)
Total Body Circumference (inches)				
Nutrisystem	-3.31 ± 0.6	-5.60 ± 0.6*	-6.38 ± 0.6*	-8.00 ± 0.7*
95% CI	(-4.55, -2.09)	(-6.72, -4.49)	(-7.67, -5.09)	(-9.33, -6.68)
DASH	-2.05 ± 0.7	-2.61 ± 0.6	-3.26 ± 0.7	-3.75 ± 0.7
95% CI	(-3.37, -0.73)	(-3.80, -1.41)	(-4.64, -1.89)	(-5.07, -2.23)
Waist (inches)				
Nutrisystem	-1.10 ± 1.5	-1.59 ± 1.9	-1.82 ± 1.8	-2.40 ± 1.9^
95% CI	(-1.68, -0.53)	(-2.18, -1.00)	(-2.41, -1.23)	(-3.00, -1.80)
DASH	-0.48 ± 1.5	-0.79 ± 1.2	-1.12 ± 1.8	-1.68 ± 2.0
95% CI	(-1.00, 0.03)	(-1.24, -0.35)	(-1.76, -0.49)	(-2.38, -0.99)
Values reported are change from baseline ± standard error of the mean. * = statistically significant difference between groups at corresponding weekly time point. ^ = statistically significant main effect over time (i.e. group difference). 95% CI = 95% confidence intervals for change from baseline.				

Part B

Participants randomized to the Nutrisystem program achieved significant reductions in body weight and total body circumference (sum of waist, hip, chest, arm, and thigh) parameters at all time points of the study (Table 2). Participants continuing on the Nutrisystem program continued to lose weight after the conclusion of Part A of the study. Nutrisystem® program participants lost an average of 15.4 ± 9.5 pounds and 9.7 ± 6.2 inches from total body circumference from baseline to week 8 (p < 0.001). At week 12, Nutrisystem participants lost an average of 17.8 ± 11.9 pounds and 11.7 ± 7.1 inches from total body circumference.

Table 2. Change in Average Weight and Total Body Circumference

	Week 8	Week 12
Body Weight (pounds)	- 15.4 ± 9.5*	- 17.8 ± 11.9*
95% CI	(-12.5, - 18.4)	(- 14.2, - 21.6)
Total Body Circumference (inches)	-9.7 ± 6.2*	-11.7 ± 7.1*
95% CI	(- 7.8, -11.7)	(- 9.5, -13.9)
Values reported are change from baseline (week 0) ± standard deviation of the mean.		
* = statistically significant difference within group at corresponding weekly time point. P-value < 0.001		
95% CI = 95% confidence intervals for change from baseline		

CONCLUSIONS

Within the framework of the current experimental design, the Nutrisystem® program is superior to the self-directed DASH diet for weight loss and reductions in waist, hip, chest, and total body (i.e. sum of chest, arm, waist, hip, thigh) circumferences over a 4-week period. Further, the Nutrisystem program results in sustained significant weight loss over a 12-week period.