

# **A Prospective Evaluation of a Commercial Weight Loss Program on Body Weight and Body Circumferences in Overweight/Obese 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).

## **Objective**

The primary purpose of this randomized, parallel group study was to determine changes in body weight and body circumferences when generally healthy overweight and obese adults followed the Nutrisystem® program vs. a self-directed diet (i.e. Dietary Approaches to Stop Hypertension, DASH) for 4 weeks.

## **Methods**

84 overweight/obese adults (n = 57 women, n = 27 men) with a mean ( $\pm$  standard error of the mean) age of  $40.5 \pm 12.1$  y, body weight of  $95.0 \pm 17.1$  kg (~210 pounds), and body mass index (BMI) of  $34.1 \pm 4.9$  kg/m<sup>2</sup> 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  $p < 0.05$ .

## **Results**

Both programs resulted in significant reductions in body weight and body circumference parameters. 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 ( $p < 0.05$ ). Subjects on the Nutrisystem® program lost significantly more hip and chest circumference than subjects on the DASH diet during weeks 2, 3 and 4 (all values  $p < 0.05$ ).

## 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.

	<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	<u>Week 4</u>
<b>Body Weight (lb)</b>				
NS	-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)
<b>Total Body Circumference (inches)</b>				
NS	-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)
<b>Waist (inches)</b>				
NS	-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.