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**Weight Loss Studies**

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## The Efficacy of the NutriMost® 40 Day Weight Loss Program:

*A prospective, longitudinal cohort study using daily weight reports*

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### Background

Despite various recommendations and guidelines, adult obesity in the United States continues to rise at epidemic proportion. Programs designed by NutriMost® combine personal coaching and nutritional resources to drive rapid weight loss and improve health and wellness.

### Objectives

The purpose of this study is two-fold: first, to determine the efficacy of the NutriMost® 40 day weight loss program, and second, to assess the short-term sustainability of the weight loss.

### Research Design

Prospective, longitudinal cohort study including 4,505 program participants, measuring the outcomes of weight loss and weight maintenance.

### Results

Average weight loss of the 40 day program was 23.2 lbs. (95% CI = 22.9–23.4) for women and 33.0 lbs. (95% CI = 32.4–33.5) for men. Average weight loss within the first 20 days was 12.4 lbs. (95% CI = 12.3–12.6) for women and 18.4 lbs. (95% CI = 18.1–18.7) for men. The top 10% of women lost an average of 36.5 lbs. (95% CI = 35.9–37.1) and the top 10% of men lost an average of 52.0 lbs. (95% CI = 50.9–53.1) in the 40 day program. 95.0% of women and 92.1% of men maintained a weight within 2 lbs. of their weight set point 30 days after the last day of calorie-restricted dieting.

### Conclusion

The NutriMost® 40 Day program supports substantial, rapid weight loss, with participants maintaining weight set points for at least 21 to 30 days after return to a considerably

### Highlights:

- The NutriMost® 40 day weight loss program is highly effective—10% of participants lose an average of over 45 pounds in 40 days.
- Overall average weight loss of the 40 day NutriMost® program was 26.2 pounds—14.3 pounds in the first 20 days on the program.
- The weight loss was sustainable during the study period after substantially increasing calories over the next several weeks.

higher caloric diet determined by calculations from the users body composition analysis, consistent with U.S. Department of Health recommendations of 1500 to 2500 calories.

## Introduction

Adult obesity rates continue to rise across the U.S., currently exceeding 35% in seven and can have serious health consequences [Warren et al., 2018]. To help individuals reach goals for weight loss, NutriMost® offers a number of different programs. For this analysis, we reviewed the 40 Day weight loss program which consists of six Phases and provides personal coaching and other resources over a 65 to 70 day period of which between 40 to 45 days involve a combination of a low calorie diet (800 calories), dietary and lifestyle modifications, nutritional supplementation and multiple software and other technologies, under weekly supervision of a natural healthcare facility. We also reviewed the amount of weight loss at 20 days to gain insight into the efficacy of the 20 day weight loss program, which is a 44 day program of which 20 to 25 days involve the same parameters and technology tools as the 40 Day Weight Loss program.

Molecular hydrogen water has been shown to improve obesity, diabetes, and metabolic syndrome. It has been suggested this is a result of its assistance in healing of leptin receptors, insulin receptors, and Fibroblast Growth Factor 21 (FGF21) receptors, all of which are linked to the underlying cause of obesity [Kamimura et al., 2011].

## ***Technology and Personalized Software for Health Monitoring and Coaching***

NutriMost® uses a range of technologies and software in its programs. Tanita scales are used to perform body composition analysis utilizing bioimpedance, which provide an in-depth assessment of an individual's current weight and health status including weight, fat mass, fat percentage, water mass, water percentage, visceral fat, muscle mass, basal metabolic rate, daily caloric intake and metabolic age. Algorithm-based, proprietary NutriMost® software programs are used to integrate past health history and present expressions of health to help identify and assimilate complex health correlations and patterns that humans may not be capable of finding, and to create personalized food plans and personalized nutritional support to help support that particular client's unique needs.

## Background

# **NutriMost uses a combination of personalized nutritional products and technologies and designed to monitor, assess, and enable the body to rapidly move toward a state of optimal health, wellness, and fat burning (ketosis).**

## ***Nutritional Products for Weight Loss***

In addition to personalized nutritional supplements, the NutriMost® program includes four core nutritional products that are used in all of the NutriMost® programs. These four products include: Hydro-Vitalize, MineralMost, the NutriMost® Formula and HydroMolecular. Hydro-Vitalize is a proprietary natural, live-source, excipient free nutritional supplement that is loaded with live-source high mineral plants and fulvic acid, MineralMost, is a proprietary balanced liquid mineral / electrolyte supplement with the active B12 coenzyme 5'-adenosylcobalamin. The proprietary formula has a number of synergistic compounds designed to support the AMP-kinase pathway as well as to assist correcting circadian mismatch [Schroeder et al., 2013]. NutriMost® was one of the first companies to introduce a tablet that when placed in water creates a super-saturated molecular hydrogen infused water.

Another powerful technology used in the NutriMost® programs is an advanced, automated, smart text messaging application that allows users to report their weight by text each morning. The software then interprets the results responds back with recommendations, tips, inspiration and guidance. A user may ask questions that either the software program or the user's coach will answer. These text-based weight updates affords three substantial benefits: first, individually tailored, real-time health coaching, second, increased awareness of the body's response to diet and behavior modifications through daily monitoring (shown by researchers to improve weight loss [Steinberg, 2013], and third, a data record for evaluating efficacy of the NutriMost® program and driving evidence-based methods. Users of the NutriMost® program also had access to a private member only user portal and forum which provided an abundance of resources including additional scientific information, recipes and additional supportive materials.

## Rapid Initial Weight Loss for Long-Term Success

Contrary to popular belief, recent evidence and studies have shown that strategies incorporating rapid initial weight loss, as the NutriMost® programs do, are associated with greater weight reduction and better long-term success and weight maintenance [Nackers et al., 2010]. The 40 Day NutriMost® program consists of an intensive initial 40-day period of caloric restriction (800–815 calories/day), intermittent fasting outside of an 8-hour window, nutritional supplements, coaching and lifestyle changes establishing a weight “set point”, followed by a 21–30 day period substantially increasing caloric intake as determined by using calculations involving daily calorie intake and basal metabolic rate from the users body composition analysis. Calorie intake during this period is typically within the 1500–2500 calorie range (consistent with current U.S. Department of Health recommendations [HHS, 2017]) for focusing on weight maintenance.

In order to evaluate the efficacy of the 40 Day NutriMost® program for weight reduction and maintenance, we performed a longitudinal cohort analysis following more than 4,500 program participants for the program duration. An independent researcher was responsible for data preparation, statistical analysis, and compilation of results (Jane Hall, Ph.D; see references for additional credentials).

## Methods

### *Study Design and Data Source*

We performed a prospective study of weight loss and maintenance using longitudinal daily weight data obtained from individuals enrolled in the NutriMost® weight loss 40 Day program. Weight data were self-reported using a smart texting program designed for these particular programs and reported to Mobile Coach, LLC, an independent third party. Other key information was identified with users during initiation into the program including gender, age, height, and start weight.

### *Data Inclusion and Exclusion Criteria*

The study sample focused on first-time users of the 40 Day NutriMost® weight loss program from April 2017 to April 2019, with the following exclusion criteria applied. First, data were evaluated for accurate classification to the 40 Day program. Of 6,280 program enrollees, the following were excluded: 18 did not begin the program, 72 had already participated in a previous NutriMost® program, 221 did not participate specifically in the 40 Day program or switched to another program such as the 20 Day program before program end. Second, since data entry errors and

data quality gaps occurred due to text-based self-reporting, the following additional enrollees were excluded: 2 with no starting weight recorded, 82 whose text updates ended before day 38, 76 who texted weight updates for fewer than 80% of the days during the weight reduction portion of the program, 68 who missed three or more days of weight text updates in a row, and 63 who texted any daily weight update with a major error, for example due to typos (defined as an excessive weight loss or gain of over 50 pounds from the previous day). For analyses of the maintenance period, 766 enrollees were excluded if they texted weight updates for fewer than 80% of days during that time. Ultimately, the data sample used for analyses of weight reduction included 4,505 total participants, and the data sample for analyses of weight maintenance included 3,741 total participants.

### *Statistical Analyses*

Box plots were used to display the distribution of weight loss values on day 40, day 20, and over the entire program period. Outlying values were defined as values more than 1.5 times the interquartile range away from the lower or upper quartiles. For sample means, 95% confidence intervals were calculated using mean values  $\pm$  1.96 times standard errors of the mean. All data distributions were evaluated for normality.

For hypothesis testing, p-values  $\leq$  0.05 were considered statistically significant. A two-tailed, paired Student's T-test was used to compare weight differences between weight loss on day 40 and maximum weight loss encompassing the subsequent weight maintenance period.

Stata 15.1 (College Station, TX) was used for all data preparation and statistical analyses.

## Results

Participants included in these analyses were between 14 and 90 years of age (Mean=52.1, SD=12.0) and were primarily female (68.8%). Starting weights among women ranged from 103.5 to 424 (Mean = 194.5, SD=38.7), while starting weights among men ranged from 141.8 to 512.0 (Mean = 251.3, SD=46.8).

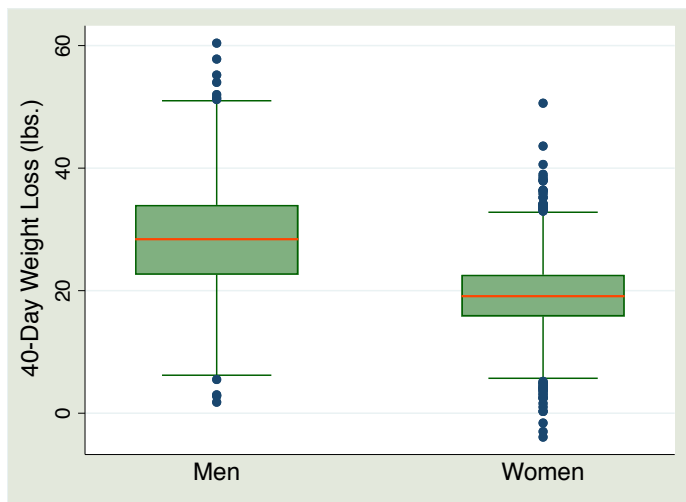
Weight Loss at Day 40 of the Program (“Weight set point”) Average weight loss on day 40 of the 40 Day program was 19.3 lbs. for women (95% CI=19.1–19.5) and 28.5 lbs. for men (95% CI=28.1–29.0). Over 75% of women lost between 16–23 lbs. and over 75% of men lost between 22–34 lbs. (Figure 1A). During the course of the 40 day program, many participants attained weight reductions dramatically more than the average, up to 66.4 lbs. and 75.8



Algorithm-based, proprietary NutriMost<sup>®</sup> software programs are used to integrate past health history and present expressions of health to help identify and assimilate complex health correlations and patterns that humans may not be capable of finding, and to create personalized food plans and personalized nutritional support to help support that particular client's unique needs.

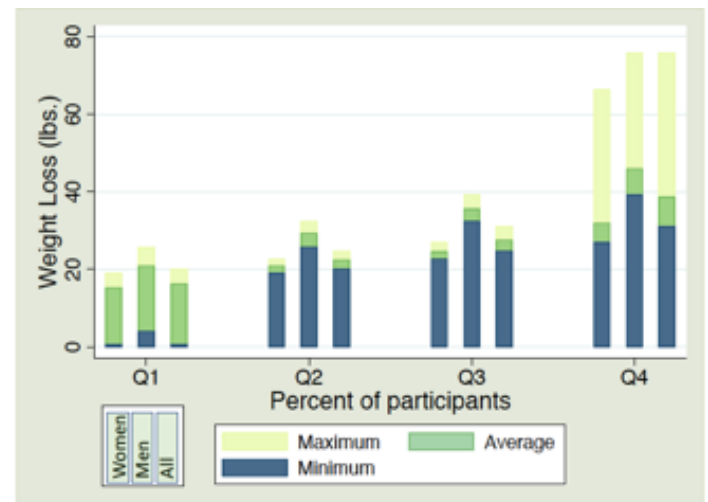
lbs. for men. The top quartile of women attained weight reductions averaging 31.9 lbs. (95% CI=31.7–32.1) and the top quartile of men attained weight reductions averaging 46.0 lbs. (95% C45.6–46.3) (Figure 1B). Additional mean, maximum and minimum weight reductions by gender and quartile can be found in Table 1.

**Figure 1A.**  
**Weight Loss at Day 40 (“Weight Set Point”)**



**Figure 1.**  
Orange line denotes median weight loss value; lower limit and upper limits of green box denote the 25th and 75th percentiles of weight loss, respectively. Circles denote outlying values.

**Figure 1B.**  
**Maximum Weight Loss Attained Over 40 Days, by Quartile**



**Figure 1B.**  
The stacked bar graph displays summary statistics on weight loss for women, men, and all participants from left to right. Quartile 1 (Q1) represents the bottom 25% of weight loss; Q2 represents 25th-50th percentile of weight loss; Q3 represents the 50th-75th percentile of weight loss; and Q4 represents the top 25% of weight loss.



**Table 1:**

*Average, minimum, and maximum total weight loss (lbs) by quartile and gender*

Average Total Weight Loss	Minimum Total Weight Loss	Maximum Total Weight Loss	Gender
<b>Quartile 1: Top 25% of Participants</b>			
<b>46.0 lbs average men</b>	<b>39.2 lbs.</b>	<b>75.8 lbs.</b>	<b>Men</b>
<b>31.9 lbs average women</b>	<b>26.9 lbs.</b>	<b>66.4 lbs.</b>	<b>Women</b>
<b>38.7 lbs average overall</b>	<b>31.1 lbs.</b>	<b>75.8 lbs.</b>	<b>Total (All)</b>

<b>Quartile 2: 50-75% of Participants</b>			
35.7 lbs average men	32.5 lbs.	39.2 lbs.	Men
24.7 lbs average women	22.7 lbs.	26.9 lbs.	Women
27.6 lbs average overall	24.8 lbs.	31.0 lbs.	Total (All)

<b>Quartile 3: 25-50% of Participants</b>			
29.3 lbs average men	25.8 lbs.	32.4 lbs.	Men
20.9 lbs average women	19.0 lbs.	22.7 lbs.	Women
22.5 lbs average overall	20.2 lbs.	24.8 lbs.	Total (All)

<b>Quartile 4: Bottom 25% of Participants</b>			
21.0 lbs average men	4.0 lbs.	25.7 lbs.	Men
15.3 lbs average women	0.6 lbs.	19.0 lbs.	Women
16.3 lbs average overall	0.6 lbs.	20.1 lbs.	Total (All)

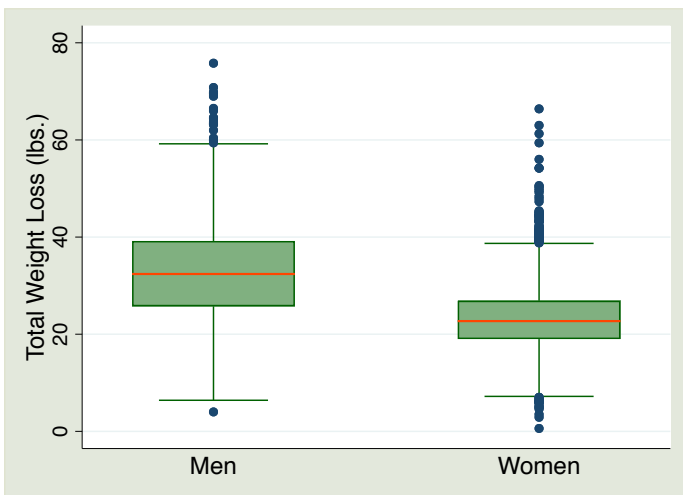
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## Maximum Weight Loss Over Complete Program Duration

Some program participants attained their apex of weight loss some time before 40 days, while others continued to lose weight even after completing the weight reduction portion of the program. Thus, maximum weight loss over the complete program duration was significantly greater ( $p < 0.01$ ) than that measured at the day 40 weight set point: 23.2 lbs. (95% CI = 22.9–23.4) for women and 33.0 lbs. (95% CI = 32.4–33.5) for men. Over 75% of women lost between 19–27 lbs. over the complete program duration, and over 75% of men lost between 26–30 lbs. (Figure 2). Notably, the top 10% of women in the 40 Day program lost an average of 36.5 lbs. (95% CI = 35.9–37.1) and the top 10% of men lost an average of 52.0 lbs. (95% CI = 50.9–53.1).

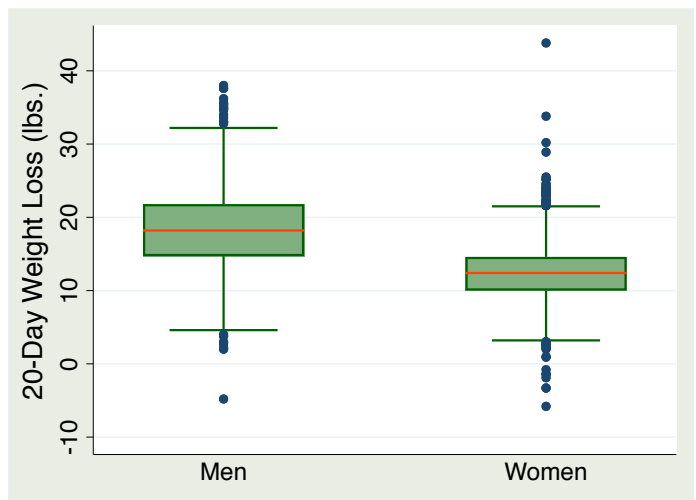
**Figure 2.**  
Maximum Weight Loss Over Complete Program Duration



## Weight Loss at Day 20 in the 40 Day Program (A Parallel to the 20 Day Program)

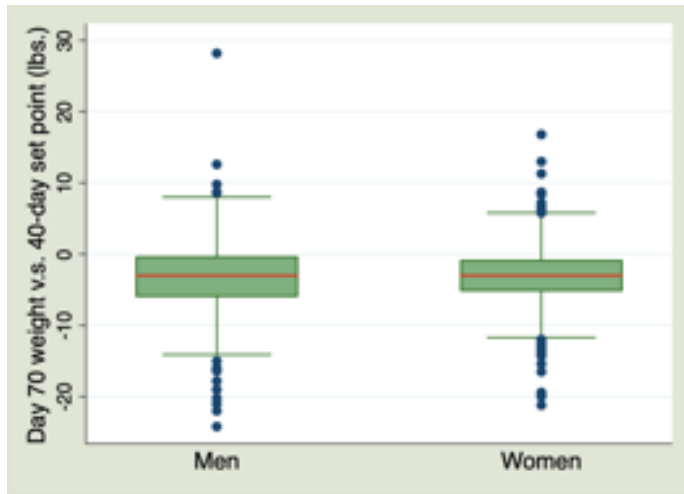
Average weight loss within the first 20 days was 12.4 lbs. (95% CI = 12.3–12.6) for women and 18.4 lbs. (95% CI = 18.1–18.7) for men. 75% of women lost between 12–44 lbs. by day 20, and 75% of men lost between 18–38 lbs. (Figure 3). On average, the first 20 days accounted for 65.3% (95% CI = 65.2–65.9) of the weight loss accumulated over the full 40-day weight reduction period.

**Figure 3.**  
Weight Loss at Day 20



95.0% of women and 92.1% of men maintained a weight within 2 lbs. of their set point weight (Figure 4).

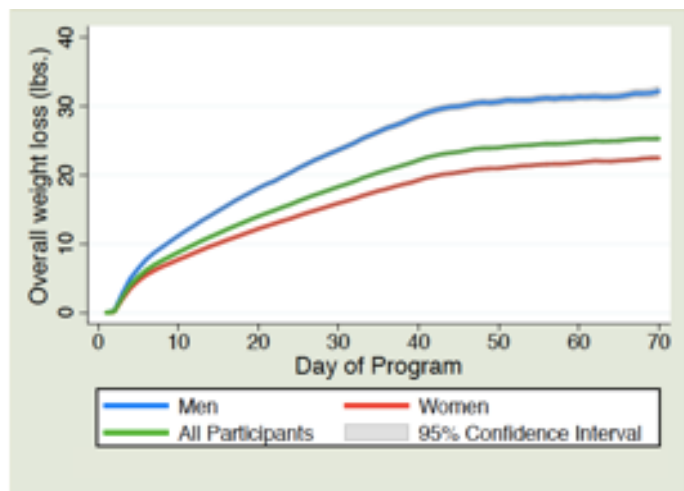
**Figure 4.**  
**Maximum weight during maintenance period versus set point weight**



**Daily Weight Loss Pattern Over Complete Program Period**

Analysis of mean cumulative weight losses by day over the complete program period revealed almost immediate weight loss in the first 10 days (Figure 5). By day 4 of the program, women have already lost an average of 3.6 lbs. (95% CI=3.5–3.6) and men have lost an average of 4.9 lbs. (95% CI=4.8–5.1). By day 10 of the program, women have lost an average of 7.7 lbs. (95% CI=7.6–37.8) and men have lost an average of 11.2 lbs. (95% CI=10.9–11.4). After day 10, rapid, continuous weight loss is observed through day 40, followed by a leveling off of weight loss during the maintenance period.

**Figure 5.**  
**Cumulative Weight Loss Over Time**



**Conclusion**

The NutriMost® 40 Day program is extremely effective for weight loss with an average weight loss of 26.2 pounds on the 40 day program with the top 10% of participants losing an average of 45 pounds. The weight loss remains sustainable after an increase in calories over the remaining one month duration of the program; however, a longer term evaluation and study would be needed to evaluate sustainability over a longer term.

**References**

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\*The NutriMost® 40-Day Weight Loss Program also called the NutriMost® 40-Day Classic program is the name given to the 65+ day program that consists of 6 Phases. NutriMost® provides personal coaching and other resources over a 65+ day period of which between 40 to 45 days involve low calorie (800 calorie) and other dietary and lifestyle modifications.

**Disclaimer:**

This Prospective Longitudinal Cohort Case Study, Biostatistical analysis and white paper was commissioned by NutriMost®, LLC and authored by Jane Hall, PhD, from Jane Hall Biomed Consulting. Data comes from first time clients who submitted data to a third party for tracking of daily weight loss and progress through the NutriMost® weight loss programs and the results have been accurately and transparently presented.

The NutriMost® 40-Day Weight Loss Program is the name given to the 65+ day program which was used in this study. The NutriMost® 40-Day program is a personalized program consisting of 6 phases which includes personal coaching and other resources over a 65 day period of which between 40 to 45 days involve low calorie (800 calorie) and other dietary and lifestyle modifications.

\*Weight loss among participants on the NutriMost® program varies. Federal agencies suggest most people who participate in any weight loss program will lose an average of 1-2 pounds per week. NutriMost® programs involve low calories (~ 800 calories/day) and other dietary and lifestyle restrictions or modifications. There is no guarantee of specific results. Results may vary.

In addition to this Prospective case study, an IRB Approved Double-Blind, Randomized, Placebo-Controlled (non-personalized and unsupervised) Trial was sponsored by NutriMost®, LLC and conducted by an independent contract research organization (Global Clinicals, Inc., Los Angeles, CA), the trial concluded that weight loss can safely be attained, with an average weight loss of 6.13 pounds in 20 days and 8.8 lbs. in 45 days on the 40-day (Non-Personalized and unsupervised) Weight Loss Program. The top 10% of participants average weight loss at day 45 was 24.25 pounds.

**Life Style Change:**

NutriMost programs involve low calories (~ 800 calories/day) and other dietary and lifestyle restrictions or modifications.

