

# Successful Weight Loss Intervention Using a Modified hCG Diet

## A Retrospective Six Week Analysis

By David Bryman, DO

### INTRODUCTION

The purpose of this pilot study is to evaluate the effectiveness of a modified hCG diet as compared to a more traditional diet of similar calorie and protein composition.

### ABSTRACT

**Background:** The Simeons diet and use of hCG (Human chorionic gonadotropin) as an appropriate treatment for obesity came under substantial criticism in medical journals (JAMA 1976) as well as the ASBP (2010) for using a very restrictive calorie content as well as insufficient protein nutrition. The original hCG diet used hCG

in an injectable form. This study used hCG in a sub-lingual preparation as well as substantially increasing the calorie and protein content of the diet to study the effects of hCG in weight loss. **Methods:** Nineteen patient charts were selected randomly from patients treated with oral hCG (Optilean) and nineteen charts on patients treated with traditional high protein low calorie meal replacements. The amount of protein and calories in the meal replacement group were as follows: females- 650 calories, 83 grams of protein; males-800 calories, 98 grams of protein. The diet content of the hCG group: female 680 calories, 78 grams of protein; males 750 calories, 114 grams of protein. The patients were followed for 6 weeks. **Results:** The modified hCG diet patients lost an average of 19.84 lbs in 6 weeks, whereas the meal replacement patients lost 14.75 lbs. The average decrease in BMI in the hCG group was 3.18 and 2.48 in the meal replacement group. The loss of lean body mass, based on serial measurements using a bio-impedance scale, was 1.09 lbs in the hCG group and 0.58 lbs in the meal replacement group. **Conclusion:** Sublingual hCG appeared to be significantly better in weight loss than a similar meal replacement diet of comparable protein and calorie composition.

Due to large public demand and positive testimony of patients in the metropolitan Phoenix area regarding the human chorionic gonadotropin (hCG) diet, it was decided by this author to study its effectiveness with this pilot study. Even though the traditional Simeons diet has been studied, there have not been any published reports using the sub-lingual form of hCG. This author agrees with the criticism of the Simeons diet in regards to inadequate protein and calorie content; therefore, a modified protocol was developed that provided a higher calorie and protein content. The modified diet consisted of approximately 88

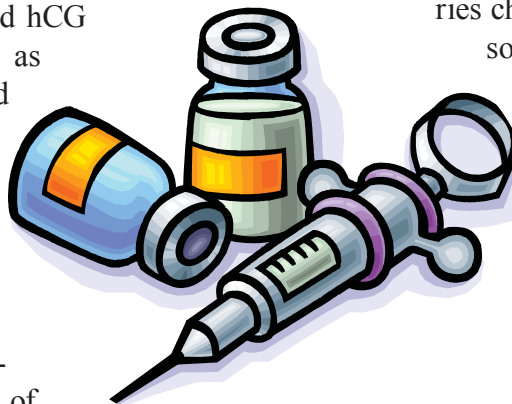
grams of protein and 750 Kcal. The amount of calories chosen was to allow for better comparison to other successful diet programs offered in the weight loss clinic as well as a healthier amount of protein to avoid loss of lean body mass.

### METHODS

A six week retrospective, de-identified study was performed to assess the effectiveness of sublingual hCG using a higher calorie, higher protein diet than the traditional Simeons approach. This new modified hCG diet was compared to a meal replacement diet of similar protein and calorie content. Nineteen patient charts were selected randomly from a group of patients previously treated with sublingual hCG (Optilean) and reviewed, and nineteen charts were similarly selected and reviewed for patients treated with traditional high-protein, low-calorie meal replacements.

The average amount of protein and calories in the meal replacement group were as follows: female patients were instructed to consume 650 calories with 83 grams of protein. Male patients were given a diet program consisting of 800 calories with 98 grams of protein.

Comparative dietary information for the hCG group: females-680 calories, 78 grams of protein; males 750 calories, 114 grams of protein. The patients were followed for



6 weeks. They were seen weekly and data was collected on weight, BMI, lean body mass (LBM), total body water, fat mass and percent body fat. The scale used was a commercially available, bio-impedance, bariatric scale. Patients were given the option to have a prescription appetite suppressant if needed for hunger or if they were not achieving results intended. The medication usage followed the guidelines of the ASBP.<sup>4</sup>

**Meal Replacement Diet:** This diet consisted of approximately 350 calories (female) to 500 calories (male) of a commercially available meal replacement product of either protein drinks or bars 3-4 times per day. The patient then had an evening meal consisting of approximately 300 calories with an average of 38 grams of protein. This provided approximately 650 calories for females with 83 grams of protein and 800 calories for males with 98 grams of protein.

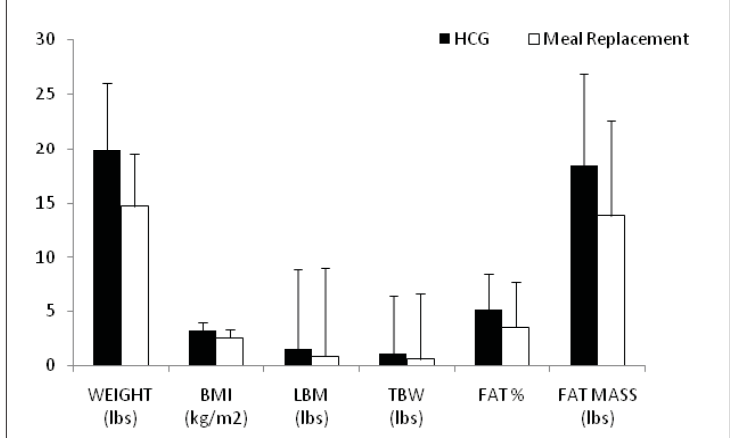
**Modified hCG Diet:** Female and male patients were given meal plans that require protein and calorie intake divided into 2 meals per day, using lean protein consisting of chicken, fish or meat. This diet provides females 698 calories and 78 grams of protein and males 757 calories and 114 grams of protein per day. Both groups were instructed to take a multivitamin daily.

**Statistical Analysis:** Values for mean changes in weight, BMI, lean body mass, body fat mass, and body fat percent were calculated and compared between diet groups using an independent samples t-test. Significance was set at  $p < 0.05$ .

## RESULTS

The modified hCG diet patients lost significantly more weight than the meal replacement patients, with an average of  $19.84 \pm 6.2$  lbs. in 6 weeks for HCG group, and

**Figure 1. Comparison of HCG vs. Meal Replacement After Six Weeks**



Values are means and standard deviations for decreases from pre-intervention values.

\* = significant difference between HCG & Meal Replacement ( $p < 0.01$ ) using a t-test

**Table 1. Subject Characteristics**

	HCG group (n=4 M, 15 F)	Meal Replacement Group (n= 1 M, 18 F)
Age (years)	44 ± 13	46 ± 13
BMI (kg/m <sup>2</sup> )	32.6 ± 4.4	34.8 ± 6.8
Weight (lbs)	202 ± 36	206 ± 55
Lean Body Mass (lbs)	107 ± 31	102 ± 28
Body Fat %	46.5 ± 10.2	50.3 ± 9.5
Body Fat Mass (lbs)	93 ± 28.6	105 ± 43.5

Values are means ± standard deviation

the meal replacement patients lost  $14.75 \pm 4.7$  lbs. The average decrease in BMI in the hCG group was  $3.18 \pm 0.8$  and in the meal replacement group,  $2.48 \pm 0.8$ . The loss of lean body mass based on serial measurements using a bio-impedance scale was  $1.47 \pm 7.3$  lbs. in the hCG group and  $0.84 \pm 8.2$  lbs in the meal replacement group (see Figure 1). The mean age of the patients was 44 years for the hCG diet, consisting of 4 males and 15 females (Table 1).

The meal replacement diet had an average age of 46 years with 1 male and 18 females (Table 1). The starting weight of the hCG ranged from 304 lbs. to 166 lbs., with an average starting weight of 202 lbs. The largest loss of weight was 37.2 lbs in 6 weeks and the lowest weight loss was 10 lbs. For the meal replacement diet the average starting weight was 206 lbs., with highest weight being 400 lbs. and the lowest 143 lbs., respectively. The most weight lost in 6 weeks was 19.8 lbs. and least weight lost in 6 weeks was 6.4 lbs.

There were several notable differences in the groups as well. One difference was that the meal replacement group required more anorectic medication than the hCG group for appetite control. Of 19 meal replacement patients, 15 had requested prescriptions for phentermine compared to only 6 in the hCG group. It appeared that the hCG patients had better weight loss and were less hungry on similar calorie intake. It should be noted that the 6 patients that elected to use phentermine for appetite control while taking the hCG were all female. The average weight loss for these patients taking both phentermine and hCG in 6 weeks was 19 lbs. This was the same weight loss for patients treated only with sublingual hCG. Furthermore, the male patient that lost the most weight (37 lbs.) in 6 weeks was not taking phentermine with the hCG.

For the patients using meal replacement, all 19 of the patients were prescribed anorectic medication. Phentermine was the most commonly used medication and was given for 3 months and a break was taken. During the break time another medication such as Meridia or 5 HTP was prescribed. Out of all of the patient charts that were

reviewed, there were a total of 4 that used the meal replacements without the use of medications. It is important to note that the 4 patients were not consistent with purchasing supplies and therefore it is not known if the program was followed as prescribed.

For the patients using hCG, 6 were prescribed anorectic medication. Out of these patients all but 4 had been prescribed phentermine in the past while on a meal replacement program and were therefore familiar with the medication effects. The other 4 patients were told about an hCG program by others and were advised to use phentermine if available; that it would “make it easier” for them to follow the program. Four of the patients using phentermine stated to me that they rarely took a whole dose and often cut the dose in half. The days that they forgot to take the medication they did not seem to be starving but do see a slight difference in their hunger levels. The patients on the hCG program are advised to take a multivitamin, prescribed potassium, acidophilus, and magnesium. Some patients have been advised to take 5 HTP. All of the hCG patients are given B Complex injections on their weekly follow up visits.

#### DISCUSSION

The “hCG diet” has become both popular and controversial in the past year. It is unclear what the driving force was that led to the diet resurfacing after its popularity diminished many years ago when research revealed that there was basically no benefit to the use of hCG, and it was felt that weight loss was due to the restrictive caloric intake, rather than the hCG injections.<sup>1</sup> Many of the negative remarks by physicians had to do with the lack of adequate protein of less than 30 grams, as well as allowing patients only 500 calories per day.<sup>2,3</sup>

ASBP’s recent position paper on the use of the Simeons hCG diet was reviewed. The paper criticized the use of injectable hCG with a VLCD that provided too little protein and too little calories. The author of this paper agrees with this position. It is necessary to provide adequate nutrition in a weight loss program to promote healthy weight loss that consists of primarily fat. The ASBP position also stated that “...no significant harmful effects of hCG injections have been described in the medical literature”. It is noted that none of the patients in this study complained of any side effects with sublingual treatment of hCG. However, it should also be noted that only 19 patients were examined in this study, and the overall safety implications should be taken with caution.

The diet described above in this study used more calories and higher protein than the original Simeons diet.

The study also used sublingual hCG rather than injections. The author of this study provided an alternative to the traditional Simeons approach. The results revealed a relatively rapid weight loss in 6 weeks with preservation of lean body mass. Furthermore, it appears that this approach could have a benefit to the patients in that they demonstrated reduced usage of controlled substances for appetite. As this study revealed that sublingual hCG with a modified diet was beneficial to patients in assisting them with weight loss, perhaps this therapy should not be abandoned by the bariatric community. However, it should be noted that a placebo was not used in the meal replacement group; therefore, simply providing the sublingual drops may have had effects on appetite or weight loss, independent of the presence of hCG. Further studies are needed to assess long term effectiveness. ■

#### About the Author

David Bryman, DO is a Board certified Family Physician by the American Osteopathic Board of Family Practice and a Diplomate of the American Board of Bariatric Medicine (ABBM). He maintains a private practice in Scottsdale, Arizona and is an Adjunct Clinical Professor at the Mid-Western University Arizona College of Osteopathic Medicine. He is a Senior International Aviation Medical Examiner for the Federal Aviation Administration, Transport Canada, Civil Aviation Authority of New Zealand, the Australian Civil Aviation Safety Authority, and the Joint Aviation Authorities of Europe.

Dr. Bryman is President-Elect of the American Society of Bariatric Physicians (ASBP). Dr. Bryman speaks regularly for the ASBP and the ABBM. He is chair of the Patient Chart Review Committee for the ABBM. In 2010 he received the Dr. Vernon B. Astler Award in recognition for his efforts to advance ASBP’s place and purpose to the media, government, and medical community. Dr. Bryman received his DO degree from Des Moines University in Iowa and completed his residency at Phoenix General Hospital in Arizona.

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