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## NUTRITIONAL SUPPORT USING THE ULTRAMEAL® MEDICAL FOOD PROGRAM AND A DIETARY SUPPLEMENT FEATURING CINNAMON, CHROMIUM, GREEN TEA, AND ALPHA-LIPOIC ACID IN A PATIENT WITH ALTERED BODY COMPOSITION AND METABOLIC SYNDROME

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### Purpose

To show how targeted nutritional support with the UltraMeal Medical Food program and a dietary supplement for glucose and insulin metabolism support—including chromium, green tea, cinnamon, and alpha-lipoic acid—may be useful in some patients with altered body composition and metabolic syndrome.

### Patient's Presentation and History

A 28-year-old obese female presented with concerns about her weight, amenorrhea, fatigue, and sleeping difficulties. Her weight gain had been progressive since age 15. Three years prior to presentation she began to experience menstrually related migraine headaches. Initial treatment was oral contraception, which had no positive effect, and then with divalproex sodium, with equally negative results. While on the divalproex sodium she gained 40 pounds. After she was told to discontinue these medications, her menses ceased, and she had not menstruated for 1½ years. A recent referral to a gynecologist resulted in a diagnosis of insulin resistance. She was prescribed metformin and depoprovera, and was scheduled for an ultrasound. She had not filled the prescription yet as she was interested in trying a more natural dietary and exercise approach. Other prescriptive medications included sumatriptan and albuterol, as needed.

Her health history included elevated blood pressure (untreated) developed about 1 year earlier and mononucleosis (1985).

Her family history included obesity on maternal side, and type 2 diabetes and hypertension on paternal side. She had a brother with type 1 diabetes.

### Patient's Objective Information

- BMI<sup>†</sup>: 41.5; HT: 64"; WT: 242 lb; BP: 110/82
- Physical exam revealed a trace of pretibial edema
- Significant laboratory findings included elevated 2-hr postprandial insulin; elevated triglycerides (TG), total cholesterol to HDL cholesterol ratio (tChol/HDL-C), and triglycerides to HDL cholesterol ratio (TG/HDL-C); depressed HDL-C; HOMA<sup>††</sup> score of 4.17 (Figures 1 through 3)

### Assessment and Plan

Along with continuing prescriptive medications, the patient was instructed to begin the following to address insulin

resistance, hyperinsulinemia, metabolic syndrome, altered body composition, and amenorrhea:

- UltraMeal Medical Food, 1-2 scoops twice daily
- Combination formula including chromium, green tea, cinnamon, and alpha-lipoic acid for support of healthy glucose and insulin metabolism, 2 tablets twice daily
- Low-glycemic-load dietary program with no caloric restrictions
- Working up to a minimum of 100-150 minutes weekly of aerobic exercise

### 3 Week Results

At the **3 week** visit, the patient weighed 238 lb. She reported feeling well and having adapted to the diet, along with exercising 100 minutes weekly.

### 9 and 14 Week Results

At the **9 and 14 week** follow-up visits, the patient reported limited compliance with the exercise portion of the program due to her personal schedule. After **9 weeks** she already showed improvement in TG, TG/HDL-C, and tChol/HDL-C. At **14 weeks** she had only a modest total weight loss of 6 lb.

### 18 and 24 Week Results

At **18 weeks** after starting the protocol, the patient was back on track fully with the program and she had lost a total of 8 lb. At **24 weeks** she reported much better compliance. She had her period recently, the first one in almost 2 years.

### 28 Week Results

Laboratory results at **28 weeks** indicated normalization of TG and TG/HDL-C, along with improved tChol/HDL-C. Her weight was 223, for a total loss of 19 lb over the 28 week period.

### Conclusion

This case study shows how the UltraMeal Medical Food program featuring a low-glycemic-load dietary plan and exercise plan, along with a combination nutritional supplement, may result in improved insulin sensitivity and improvement in metabolic syndrome markers in a patient with altered body composition, even if the total weight loss is modest.

# RESULTS

# UltraMeal®

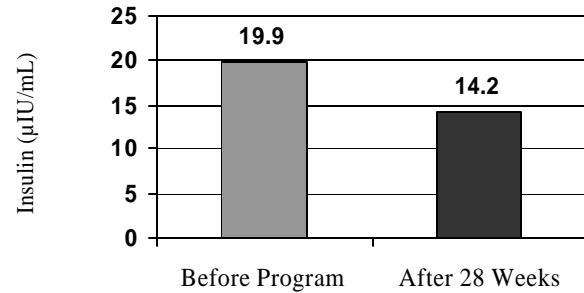
NUTRITIONAL SUPPORT FOR THE  
MANAGEMENT OF CONDITIONS ASSOCIATED WITH  
ALTERED BODY COMPOSITION

**Figure 1**

After 28 weeks, the patient had markedly decreased her fasting insulin level (reference range: 3-30  $\mu$ IU/mL) from 19.9  $\mu$ IU/mL to 14.2  $\mu$ IU/mL.

These results suggest improved insulin sensitivity.

**29% Decrease in Fasting Insulin**

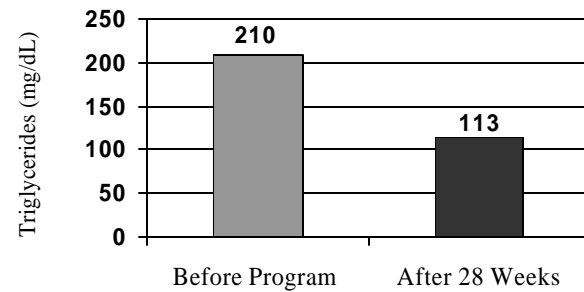


**Figure 2**

The patient's triglycerides were reduced from 210 mg/dL to 113 mg/dL (reference range: 10-175 mg/dL).

The results suggest normalization in triglycerides.

**46% Reduction in Triglycerides**

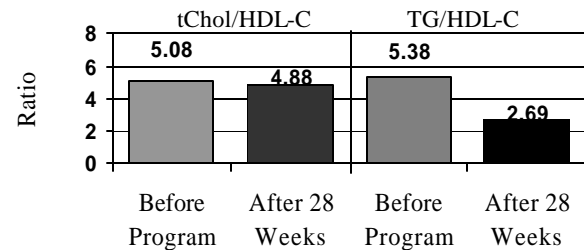


**Figure 3**

The patient's tChol/HDL-C was reduced from 5.08 to 4.88 (reference range:  $>4.5$ ). The patient's TG/HDL-C was reduced from 5.38 to 2.69 (reference range:  $>3.0$ ).

These results suggest an improvement in the ratio of total cholesterol to HDL cholesterol and normalization in the ratio of triglycerides to HDL cholesterol.

**Improvement in tChol/HDL-C & Normalization of TG/HDL-C**



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<sup>†</sup>Body Mass Index (BMI) is computed by the weight (kg) divided by the square of the height (m).

<sup>††</sup>Homeostasis Model Assessment (HOMA)I computed by the fasting insulin level ( $\mu$ IU/mL) multiplied by the fasting glucose level (mmol/L) divided by 22.5. HOMA is a measure of insulin sensitivity.

Note: The information provided in this case study describes the results of one patient under the care of a licensed healthcare practitioner and may not be a typical response. UltraMeal medical food is to be used under the supervision of a physician or other licensed healthcare practitioner.

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