Purpose
The purpose of this case study is to show how some patients with metabolic syndrome may benefit from a protocol including UltraMeal Plus Medical Food Program and a combination formula for support of healthy glucose and insulin metabolism.

Patient’s Presentation and History
A 51-year-old obese Caucasian male presented with concerns about his weight and blood pressure (BP). Since he had quit smoking 3 years earlier, he had gained about 50 lb. He consumed a typical American diet, drank coffee all day, and was not exercising. He also consumed alcohol modestly.

The patient’s other symptoms and medical history included peripheral vascular disease in his left calf, which was confirmed by ultrasound and treated with a compression sock. He suffered from abdominal bloating (without specific triggers), mild heartburn, and intermittent constipation and loose stools. He also reported feeling fatigued and complained of knee pain. He noted a history of heavy alcohol use, which he claimed was under control for the previous 4 years. In addition, the patient’s father died at age 57 of cardiac arrest. No other significant family history was reported.

Patient’s Objective Information
- HT: 69”; WT: 255 lb; BP: 154/97; BMI*: 39.5 kg/m² (Figure 3)
- Physical exam revealed dry skin, pedal edema
- Prescriptive medications and supplements: none
- Significant laboratory findings: abnormal lipid profile (Figures 1 and 2); elevated ALT, hsCRP, and homocysteine

Assessment and Plan
The patient’s assessment indicated hyperlipidemia, obesity, hypertension, hyperhomocysteinemia, and metabolic syndrome. The patient was instructed to begin:
- UltraMeal Plus Medical Food, 1-2 servings daily for cardiovascular disease issues
- Combination formula including chromium, green tea, cinnamon, and alpha-lipoic acid for support of healthy glucose and insulin metabolism, 2 tablets twice daily
- Fish oil supplement (600 mg EPA, 100 mg DHA), 2 capsules bid
- Low-glycemic-load dietary program with no caloric restrictions
- 100-150 min. of aerobic activity weekly

4 through 16 Week Results
At the 4-week visit, the patient weighed 247 lb and his BP had improved to 122/82. He reported feeling better, and noted decreased swelling/edema and leg pain. He exercised on a treadmill 30 minutes daily. After 8 weeks, the patient had lost an additional 8 lb, and his BP continued to be under control. He noted more energy and the soreness in his calves had improved with the exercise. His laboratory results indicated a notable improvement in blood lipid levels. His homocysteine and ALT had normalized as well.

The patient was seen at 12 weeks and 16 weeks after starting the protocol. He had been compliant with diet, exercise, and supplements, and was steadily losing weight. By the 16th week he had lost a total of 23 lb and his lipid profile had completely normalized. He was instructed to decrease UltraMeal Plus Medical Food to 1 serving daily, while continuing on the other supplements as prescribed.

20 through 42 Week Results
No changes to the protocol were made at the 20, 24, and 30 week visits. The patient continued to feel well, and reported that his lifestyle changes were well in place. After 30 weeks, his BMI was 32.7 and his body fat decreased by almost 4%. He weighed 222 lb—a total weight loss of 33 lbs since starting the protocol. He was instructed to decrease the dosage of the fish oil supplement to 1 capsule twice daily. Six weeks later, a plant sterol supplement (1 tablet daily) was added to the protocol for additional support of healthy cholesterol levels.

Conclusion
This case study shows a positive effect of UltraMeal Plus Medical Food, a combination formula for healthy glucose and insulin metabolism, and healthy lifestyle changes on blood pressure and other markers of metabolic syndrome in an obese male. Additionally, the patient demonstrated substantial improvements in body composition, BP, blood lipids, ALT, and homocysteine with the targeted protocol.
RESULTS

Figure 1

After 30 weeks, the patient’s total cholesterol decreased from 279 to within normal range at 183 (reference range: 110-200 mg/dL).

This result shows a substantial improvement in total cholesterol levels with nutritional support featuring the UltraMeal Plus Medical Food, combination formula for support of healthy glucose and insulin metabolism, and healthy lifestyle changes.

![Graph showing 34% Decrease in Total Cholesterol Levels](image)

Figure 2

Laboratory results indicated the patient’s triglyceride to HDL cholesterol ratio decreased from 4.84 to 1.76 (reference range: > 3.0) after 30 weeks.

This result suggests a considerable improvement in the patient’s blood lipid levels and insulin sensitivity with the protocol.

![Graph showing 63% Improvement in Triglyceride to HDL Cholesterol Ratio](image)

Figure 3

After 30 weeks, the patient’s BMI* decreased from 39.5 to 32.7.

This result suggests a noteworthy improvement in the patient's BMI with nutritional support featuring the UltraMeal Plus Medical Food, combination formula for support of healthy glucose and insulin metabolism, and healthy lifestyle changes.

![Graph showing 17% Improvement in Body Mass Index](image)

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*BMI is the Body Mass Index and can be computed by the weight (kg) divided by the square of the height (m).

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 Plus Medical Food is to be used under the supervision of a physician or other licensed healthcare practitioner.

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Case Study: Nutritional Support Using the UltraMeal Plus Medical Food Program and a Combination Formula for Healthy Glucose and Insulin Metabolism in a Patient with Metabolic Syndrome. Metagenics, Inc; 074MS204.