

# **CASE STUDY #1172: A Case Study Evaluating the Effects of a Combination Formula including Chromium, Green Tea, Cinnamon, and Alpha-Lipoic Acid in an Obese Female with Metabolic Syndrome**

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## **PURPOSE**

*The purpose of this case study was to show how a combination formula including chromium, green tea, cinnamon, and alpha-lipoic acid, along with dietary and lifestyle changes may be useful in the management of some obese patients with metabolic syndrome.*

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## **PATIENT'S PRESENTATION AND HISTORY**

A 54-year-old obese Caucasian female presented with a long-term history of weight gain, starting in adolescence. She was currently at her heaviest weight ever, and reported feeling lethargic. She also noted symptoms of hypoglycemia following consumption of high carbohydrate meals. She was not on any particular diet, and was participating in water aerobics 30-45 minutes 3 times weekly.

The patient's current health history included hypertension (controlled with medication); very loose/diarrheic stools with occasional blood secondary to Crohn's disease and bowel resection; intermittent joint and muscle pain, particularly in the right ankle; psoriasis on hands and feet, treated with topical calcipotriol; and occasional menopausal hot flashes.

The patient's previous medical conditions included Crohn's disease treated with bowel resection. Her colonoscopies had been normal since then. Her family history included a paternal history of hypertension and Alzheimer's disease; a maternal history of heart disease, Alzheimer's disease, and breast cancer; and alcoholism in two siblings.

### *Patient's Objective Information*

- HT: 68", WT: 247 lb, BP: 140/78, BMI\*: 37.6 kg/m<sup>2</sup>
- Physical exam revealed dry skin and pedal edema
- Prescriptive medications and supplements: lisinopril, 20 mg qd; HCTZ 25 mg qd; calcipotriol ointment, as needed
- Significant laboratory findings: elevated 2-hr PP insulin, tChol, TG, and TG/HDL-C. HOMA score: 2.70 (Figures 1 and 2)
- Compromised physical and mental functioning, as indicated by the MSQ\*\* quality of life questionnaire (Figure 3)

## **ASSESSMENT AND PLAN**

The assessment indicated metabolic syndrome, obesity, hypertension, hyperlipidemia, and occasional digestive problems secondary to Crohn's disease. The patient was instructed to begin:

- 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
- Minimum 100-150 min/weekly aerobic activity

## **RESULTS**

### ***4 and 8 Weeks after Starting the Program***

At the 4-week visit, the patient had lost 19 lb and her BP had improved to 104/64. She noted more energy and an improvement in generalized muscle and joint pain. She noted a decrease in food cravings since starting the program.

After 8-weeks, the patient reported that she was sleeping better and felt more rested. She noted that on the days she forgot to take the supplement, she was considerably hungrier. She had lost an additional 8 lb, and her BP continued to be under control. Her lab results indicated improved fasting insulin along with improved TG, suggesting improved insulin sensitivity. The patient's HOMA score had decreased considerably (from 2.70 to 1.40). A soy protein medical food or bar, as required for satiation, was added to the protocol.

### ***Additional Follow-Up***

The patient was seen at monthly intervals after the addition of the medical food to the protocol. She continued to be reasonably compliant with the program, and her weight continued to decrease. After 5 months, she had lost a total of 48 lb, her body fat had decreased by 5%, her TG and HDL-C had normalized, and her TG/HDL-C was at a low of 2.5. She reported an absence of hypoglycemic headaches since starting the program, and reiterated how missing a dose of the supplement diminished her feeling of satiety. Five months after starting the protocol, the patient was encouraged to continue on the program and to discontinue use of HCTZ medication, assessing the effect on BP.

**61% Decrease in Triglyceride Levels**

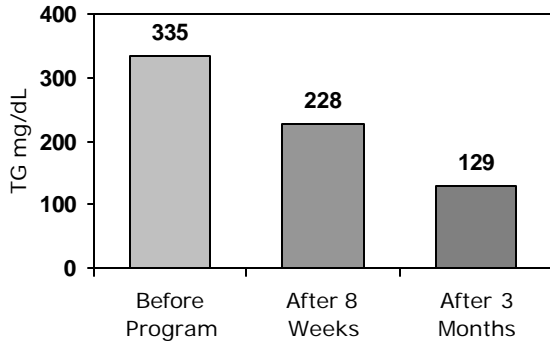


Figure 1. A dramatic improvement in TG level was observed over a 3-month period, with values normalizing to 129 mg/dL after a highly elevated initial level of 335 (reference range: 10-175 mg/dL).

**59% Improvement in Triglyceride/HDL-Cholesterol Ratio**

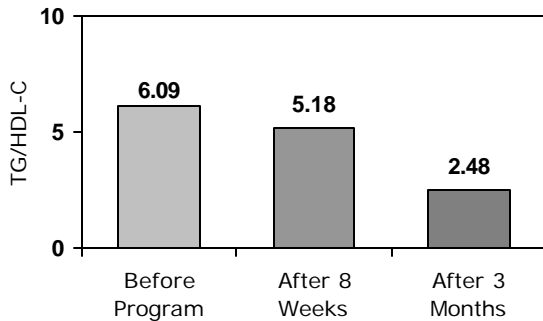


Figure 2. After 3 months on the program, the patient's TG to HDL ratio decreased from 6.09 to 2.48 (reference range: > 3.0), suggesting a considerable improvement in both blood lipid levels and insulin sensitivity.

**71% Improvement in General Physical Symptoms**

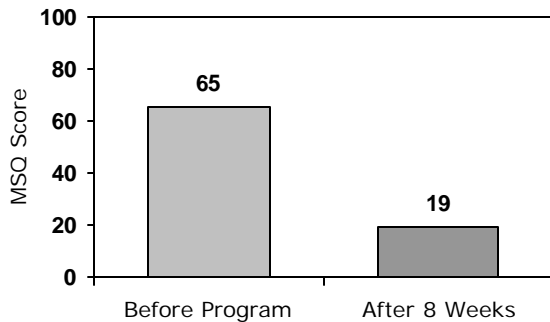


Figure 3. The patient's MSQ\*\* score decreased from 65 to 19 in just 8 weeks, suggesting a substantial improvement in general physical symptoms.

**SUMMARY**

This case study shows a positive effect of the combination nutritional supplement for healthy glucose and insulin metabolism and lifestyle changes on blood pressure and other metabolic syndrome markers in an obese female. The supplement also seemed to have a positive effect on satiety and carbohydrate cravings in this subject.

**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.

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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).

\*\* The MSQ is a clinical tool for the evaluation of general physical symptoms. Total scores above 75 are generally associated with substantial symptomatology and disability; scores below 30 generally indicate few or low intensity symptoms.

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