The Clinical Impact of Fiber Supplementation for the Reduction of Postprandial Blood Glucose and Risk Reduction of Complications from Type 2 Diabetes

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Objective The prevalence of diabetes has increased dramatically in recent years. However, the role of dietary fiber in blood glucose regulation remains unclear. The purpose of this work was to establish the effects of supplementing the diet with BiosLife 2, a specifically designed fiber drink, on glucose and cholesterol.

Methods After 30 days of monitoring fasting and postprandial blood glucose, baseline values for HbA1c, total cholesterol, Triglycerides, LDL, and HDL were measured. 78 patients with average age 59, were given 5 grams of fiber as a drink, 2 – 3 times daily, 5 – 10 minutes prior to a meal. Fiber consisted of guar gum, gum arabic, locust bean gum, pectin, and oat fiber dispersed in calcium carbonate. In addition this product contained chromium, and B-vitamins. At the conclusion of the 90 day period, all levels were remeasured.

Results and discussion Compliance with the fiber supplementation was excellent. The changes in assessed parameters are listed in the table. The mechanism by which this fiber supplement reduces the glucose levels is thought to be due to delayed gastric emptying. Cholesterol is thought to be lowered through bile-acid sequestration in the digestive tract.

Conclusions As indicated in this study, high intake of dietary fiber, particularly of the soluble type, improves glycemic control, decreases hyperinsulinemia, and lowers plasma lipid concentrations in patients with type 2 diabetes. Reducing postprandial blood glucose significantly caused a decrease of HbA1c by 0.9 % points, thereby reducing the risk of complications from diabetes. This fiber supplement can be used an adjunct therapy for diabetes patients.

Parameter	Baseline average	90-day average	% change
Preprandial gluc.	173 mg/dL	156	-9.8
Postprandial gluc	278 mg/dL	237	-14.7
HbA1c	9.0 %	8.1 %	-10
Total cholesterol	215 mg/dL	184	-14.4
Triglycerides	299 mg/dL	257	-14.0
LDL	129 mg/dL	92	-28.7
HDL	43 mg/dL	55	+27.9