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## Whey protein could help diabetics

ficial effects of whey protein on blood sugar, insulin and GLP-1 are long lasting.



• By JUDY SIEGEL-ITZKOVICH

Consuming whey protein – a popular protein among sportsmen who want to build muscle – before a regular breakfast reduces the blood sugar “spikes” common after meals rich in carbohydrates. It also is believed by Israeli and other researchers in an Israeli-Swedish study to improve the body’s insulin response. The research was conducted by Prof. Daniela Jakubowicz and Dr. Julio Wainstein at Wolfson Medical Center in Holon, Prof. Oren Froy of the Hebrew University of Jerusalem, Prof. Bo Ahrén of Lund University and colleagues.

It was recently published in *Diabetologia*, the journal of the European Association for the Study of Diabetes.

The scientists noted that protein consumption is known to stimulate the production of glucagon-like peptide-1 (GLP-1), a gut hormone that in turn stimulates insulin production. Thus the researchers hypothesized that stimulating GLP-1 production by consuming whey protein before a meal would improve the body’s blood sugar control following a meal.

The study included 15 people with well-controlled type 2 diabetes who were not taking any medications except for sulfonylureas or metformin (oral diabetes drugs). These participants consumed, on two separate days, 50

grams of whey powder mixed in 250 ml water or a placebo (250 ml water), followed by a standardized high-glycemic-index breakfast in a hospital setting. The breakfast contained three slices of white bread and sugar-containing jelly; a meal designed to produce the maximum post-meal glucose spike. A blood sample was taken 30 minutes before the meal, and the whey protein or placebo was served at that point. Further blood samples were taken when the meal was served and at 15, 30, 60, 90, 120, 150 and 180 minutes.

Patients were randomized to consume either the whey protein or the placebo, but the crossover design of the trial meant that all participants ate both the whey protein and placebo, with two weeks between visits. This design also means that the study was statistically powerful despite the small number of participants.

The results showed that over the whole 180 minute post-meal period, glucose levels were reduced by 28 percent after whey protein pre-load compared with no whey protein. Insulin and C-peptide (a building block of insulin)

responses were both significantly higher (by 105% and 43%, respectively) in the whey protein group. Notably, the early insulin response (meaning within the first 30 minutes following breakfast) was 96% higher after whey protein than with placebo. This is especially important since the loss of early insulin response is the most important deficiency in diabetic individuals and a major contributor to the post-meal rise in blood glucose. Additionally, both total GLP-1 (tGLP-1) and intact GLP-1 (iGLP-1) levels were significantly higher (by 141% and 298%, respectively) with whey protein pre-load.

The authors concluded that “consumption of whey protein shortly before a high-glycemic-index breakfast increased the early and late post-meal insulin secretion, improved GLP-1 responses and reduced post-meal blood sugar levels in type 2 diabetic patients. Whey protein may therefore represent a novel approach for enhancing glucose-lowering strategies in type 2 diabetes,” they wrote.

Such treatment would be cheap and easy to administer, with patients able to use any brand of whey protein concentrate without added sugar or other nutrients, the researchers said. Based on the findings of this study, the authors are considering conducting a long-term clinical trial to discover if the bene-