DIABETES

A novel approach to enhance insulin secretion

Oral glutamine supplementation for patients with type 2 diabetes mellitus (T2DM) increases release of glucagon-like peptide 1 (GLP-1) and enhances insulin secretion, new research has found. "Stimulating GLP-1 release might be an alternative strategy for treating diabetes and obesity, especially since GLP-1 mimetics and *DPP4* inhibitors have such a dramatic effect on [T2DM] control and weight loss," says Fiona Gribble of the University of Cambridge.

Gribble and coworkers, who previously showed *in vitro* that glutamine is a potent stimulator of GLP-1 release, administered glutamine (30 g), oral glucose (75 g), or water to eight individuals from each of three groups—healthy, lean individuals, obese individuals, or patients with T2DM or impaired glucose tolerance. Participants received the three agents on separate days.

"Glutamine stimulated GLP-1 release and increased insulin concentrations in all three groups, and although our group sizes were small, it was just as effective in people with diabetes and obesity as it was in the lean control[s]...," summarizes Gribble, "Slightly disappointingly, it was less effective than glucose."

Gribble concedes that the high dose of GLP-1 used, although well tolerated, is not a viable treatment. Nonetheless, the researchers aim to adapt and improve the approach. "We still hope that related nutritional signals, or agents targeting the pathways involved in nutrient sensing, may be useful for the future treatment of diabetes and obesity," concludes Gribble.

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Original article Greenfield, J. R. *et al.* Oral glutamine increases circulating glucagon-like peptide 1, glucagon, and insulin concentrations in lean, obese, and type 2 diabetic subjects. *Am. J. Clin. Nutr.* **89**, 106–113 (2009).