

Fiber supplement increases insulin secretion in type 2 diabetic patients

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Credit: University at Buffalo

University at Buffalo researchers have found that taking a fiber supplement can help patients with type 2 diabetes boost their insulin secretion even after eating a high-fat, high-carbohydrate meal.

The research was presented on March 20 at ENDO 2018, the annual meeting of the Endocrine Society in Chicago.

The study was led by Paresh Dandona, MD, Ph.D., SUNY Distinguished

Professor and chief of the Division of Endocrinology in the Jacobs School of Medicine and Biomedical Sciences at UB. Dandona, who sees [patients](#) at UBMD Internal Medicine, is an expert in [diabetes](#) research and treatment, and a pioneer in exploring novel ways that patients with both Type 1 and type 2 diabetes can achieve better blood sugar control.

The current work builds on his team's previous research, published last year in the *Journal of Clinical Endocrinology and Metabolism*, showing that adding fiber to the diet after a high-fat, high-carbohydrate meal, which is known to increase inflammation, will have beneficial anti-inflammatory and metabolic effects.

"Dietary fiber is known to reduce the incidence of diabetes and cardiovascular disease in large epidemiological studies," said Dandona. He noted that his team at UB provided the first mechanistic evidence—meaning evidence aimed at determining a mechanism—at cellular and molecular levels that fiber exerts an anti-inflammatory effect, lowering glucose levels and boosting insulin concentration in normal subjects.

The current study was aimed at finding out how fiber might function in patients with type 2 diabetes.

Dandona and his colleagues studied 12 patients at the Clinical Research Center, a part of the UB Division of Endocrinology, Diabetes and Metabolism.

Levels of [blood sugar](#), insulin and proteins involved in inflammation were measured in the patients after they consumed a high-fat, high-carbohydrate meal. The same patients consumed the same meal a week later, but this time they also consumed Fiber One (a commercially available supplement) before and after the meal.

"After eating the meal, diabetics' [insulin secretion](#) increased significantly after the fiber. However, this increase wasn't sufficient to reduce their [glucose levels](#)," said Dandona.

The fiber supplement also resulted in suppressing comprehensively inflammation and oxidative stress in these patients.

"An increase in dietary content of fiber, whether through food or a supplement, should be encouraged in order to reduce oxidative and inflammatory stress and hence, a tendency to induce [insulin](#) resistance," said Dandona.

Provided by University at Buffalo

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