

Prebiotics as Adjunctive Therapy in Diabetes: A Review of Prebiotics in Diabetes

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Prebiotic compounds are used by the host microbiome and confer health benefits to the host. Food intake affects the composition of the gut microbiome. The number and composition of gut flora have been linked to metabolic diseases. Diabetes is a chronic condition that alters blood sugar levels. The main form of energy for the body is blood glucose, which is produced from food. Nutritional interventions can be used to manage blood sugar levels. There are different types of compounds that can be used as prebiotics, such as inulin-type fructans, transgalactooligosaccharides, lactulose, isomalto-oligosaccharide, lactosucrose, xylooligosaccharides, soybean oligosaccharide, and glucooligosaccharides. Research evidence suggests that prebiotic consumption supports or improves the gut microbiome, inhibits reactive oxygen species production (ROS), reduces serum glutamic pyruvic transaminase (SGPT) levels, decreases oxidative stress, inhibits NF- κ B activation process, reduces inflammation, improves dysfunction, improves insulin resistance, decreases malondialdehyde levels in serum, improves glucose tolerance, decreases intestinal permeability, inhibits α -glucosidase, and improves glycemic control. This review focuses on the potential of prebiotic use as adjuvant therapy in diabetes.

Keywords: Prebiotic, ROS, diabetes, inulin, oligosaccharides, polyphenols.