# BANT Microbiome & Gut Health

## GASTROINTESTINAL MICROBIOME MODULATOR IMPROVES GLUCOSE TOLERANCE IN OVERWEIGHT AND OBESE SUBJECTS: A RANDOMIZED CONTROLLED PILOT TRIAL.

Rebello, CJ, Burton, J, Heiman, M, Greenway, FL

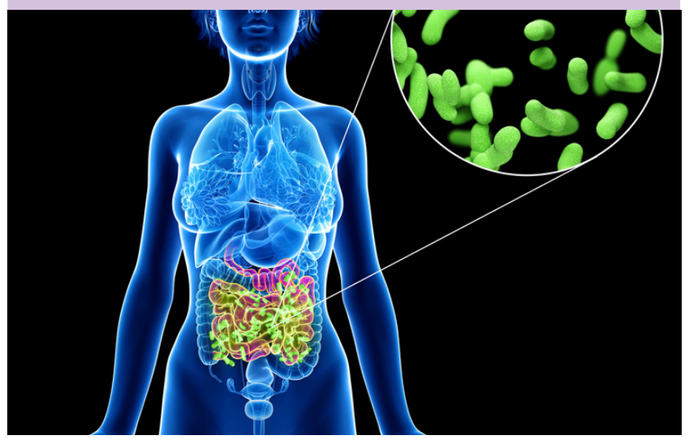
Journal of diabetes and its complications. 2021;29(8):1272-6

There is an increasing need for nutraceuticals that promote satiety and address the adverse health consequences obesity. Recent evidence suggests that the gut microbiome may play an important role in regulating metabolic pathways involved in obesity, particularly those involved in insulin resistance. This study used a gastrointestinal microbiome modulator (GIMM) containing inulin, oat beta-glucan, blueberry anthocyanins and blueberry polyphenols to examine its effects on metabolic parameters, faecal markers of gut microbiota and satiety. Thirty overweight or obese individuals were randomised to either consume the GIMM or placebo tablet for four weeks. Stool and blood samples were collected at the baseline and end of the trial, and satiety was assessed weekly. This study showed that GIMM consumption significantly improved blood glucose tolerance and increased satiety in overweight and obese participants. Further cellular studies are warranted to identify the specific pathways by which GIMM improves glucose control.

## FUNCTIONAL INTERACTIONS BETWEEN THE GUT MICROBIOTA AND HOST METABOLISM.

Tremaroli, V ; Bäckhed, F
Nature. 2012;489(7415):242-9

This literature review aims to discuss evidence for the role of the gut microbiota in metabolism and possible links to obesity. Obesity and caloric intake can influence the microbiota, but whether the reverse is true in humans remains unclear. Much of the mechanisms have been determined in rodents, determining similar pathways in humans is difficult.
The interplay of diet, host and gut microbiota may cause increased gut permeability (leaky gut) that could lead to an increase in inflammation that may cause obesity, fatty liver disease and insulin resistance. It is increasingly accepted that gut microbiota can contribute to diseases such as obesity, diabetes and cardiovascular disease, but exactly how and by how much remains unclear. Evidence for treating the microbiota to help with these metabolic diseases, either by pre- or probiotic supplementation, is building. However, double-blind, placebo-controlled studies are required to determine effects. The influence of the gut microbiota is a promising area, but one that needs further research.



## EXERCISE TRAINING MODULATES GUT MICROBIOTA PROFILE AND IMPROVES ENDOTOXEMIA.

Motiani, KK, Collado, MC, Eskelinen, JJ, Virtanen, KA, Löyttyniemi, E, Salminen, S, Nuutila, P, Kalliokoski, KK, Hannukainen, JC
Medicine and science in sports and exercise. 020;52(1):94-104

The gut microbiome differs between healthy people and those with metabolic diseases, including metabolic syndrome and type 2 diabetes (T2D) and it is suggested that this association is mediated by endotoxemia, the release of toxins, in particular lipopolysaccharides (LPS), from the gut bacteria.
The aim of this study was to investigate the effects of exercise on gut microbiota composition and metabolic endotoxemia in people with prediabetes and T2D. 26 sedentary participants with either prediabetes or T2D took part in either a sprint interval training (SIT) or moderate-intensity continuous training (MICT) three times per week for two weeks. Both training types induced fat loss and improved the gut microbiota, HbA1C (a marker for whole body insulin sensitivity) as well as some markers of systemic and intestinal inflammation, although there were differences in the way the two types of exercise altered the gut bacterial composition. Only SIT improved aerobic capacity.
The authors concluded that exercise training improves the gut microbiota and reduces endotoxemia.

## EFFECT OF PROBIOTICS ON LIPID PROFILES AND BLOOD PRESSURE IN PATIENTS WITH TYPE 2 DIABETES: A META-ANALYSIS OF RCTS.

He, J ; Zhang, F ; Han, Y
Medicine. 2017;96(51):e9166

Type 2 diabetes mellitus (T2DM) is the most common metabolic disorder worldwide. Though many clinical studies have explored the effects of probiotics on T2DM they have concluded mixed results. The purpose of this meta-analysis was to evaluate all current randomised controlled trials and determine the effect of probiotics on lipid profiles and blood pressure in patients with T2DM. According to the existing literature, probiotic supplementation for patients with T2DM has a positive effect by lowering total cholesterol and increasing high-density lipoproteins (HDLs). While these beneficial effects on lipid profiles and blood pressure have been found, the authors conclude there is still a need for a multi-centre, longitudinal study to better understand the effects of probiotics on patients with T2DM.