

Short-term study suggests vegan diet can boost gut microbes related to body weight

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New research presented at this year's Annual Meeting of the European Association for the Study of Diabetes (EASD) in Barcelona, Spain (16-20 Sept) suggests that a 16-week vegan diet can boost the gut microbes that are related to improvements in body weight, body composition and blood sugar control. The study is by Dr. Hana Kahleova, Physicians Committee for Responsible Medicine (PCRM), Washington, DC, USA, and colleagues.

Gut microbiota play an important role in weight regulation, the development of metabolic syndrome, and type 2 diabetes. The aim of this study was to test the effect of a 16-week plant-based diet on gut microbiota [composition](#), [body weight](#), [body composition](#), and [insulin resistance](#) in overweight adults with no history of diabetes.

The study included 147 participants (86% women and 14% men; mean age was 55.6±11.3 years), who were randomised to follow a low-fat vegan diet (n=73) or to make no changes to their diet (n=74) for 16 weeks. At baseline and 16 weeks, gut microbiota composition was assessed, using

uBiome kits. Dual energy X-ray absorptiometry was used to measure [body](#) composition. A standard method called the PREDIM index was used to assess [insulin sensitivity](#).

Following the 16-week study, body weight was reduced significantly in the vegan group (treatment effect average -5.8 kg), particularly due to a reduction in fat mass (average -3.9 kg) and in visceral fat. Insulin sensitivity also increased significantly in the vegan group.

The relative abundance of *Faecalibacterium prausnitzii* increased in the vegan group (treatment effect +4.8%). Relative changes in *Faecalibacterium prausnitzii* were associated with decreases in body weight, fat mass and visceral fat. The relative abundance of *Bacteroides fragilis* also increased in the vegan group (treatment effect +19.5%). Relative changes in *Bacteroides fragilis* were associated with decreases in body weight, fat mass and visceral fat, and increases in insulin sensitivity.

The authors conclude: "A 16-week low-fat vegan dietary intervention induced changes in [gut microbiota](#) that were related to changes in weight, body composition and insulin sensitivity in overweight adults."

However, the authors acknowledge that further work is needed to separate out the effects of the [vegan diet](#) itself from that of the reduced calories. They say: "A plant-based diet has been shown to be effective in weight management, and in diabetes prevention and treatment. This study has explored the link between changes in the [gut microbiome](#), and changes in body weight, body composition, and insulin sensitivity. We have demonstrated that a plant-based diet elicited changes in gut microbiome that were associated with weight loss, reduction in fat mass and visceral fat volume, and increase in insulin sensitivity."

They add: "The main shift in the gut microbiome composition was due to an increased relative content of short-chain fatty acid producing bacteria that feed on fibre. Therefore, high dietary fibre content seems to be essential for the changes observed in our study. We plan to compare the effects of a vegan and a standard portion-controlled diet on gut microbiome in people with type 2 diabetes, in order to separate out the positive effects of the reduced calories in the diet from those caused by the vegan composition of the diet."

They continue: "This is a fascinating area of research and we have been collecting data from more study participants. We hope we will be able to present them at the next year's 2020 EASD meeting."

The authors say that fibre is the most important component of plant foods that promotes a healthy gut microbiome. *Faecalibacterium prausnitzii* is one of the short-chain fatty acids producing bacteria, which degrade plant complex sugars and starch to produce health-promoting butyrate and/or other short-chain fatty acids that have been found to have a beneficial effect on body [weight](#), body composition, and insulin sensitivity. The authors say: "Eating more fibre is the number one dietary recommendation for a healthy gut microbiome."

Provided by Diabetologia

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