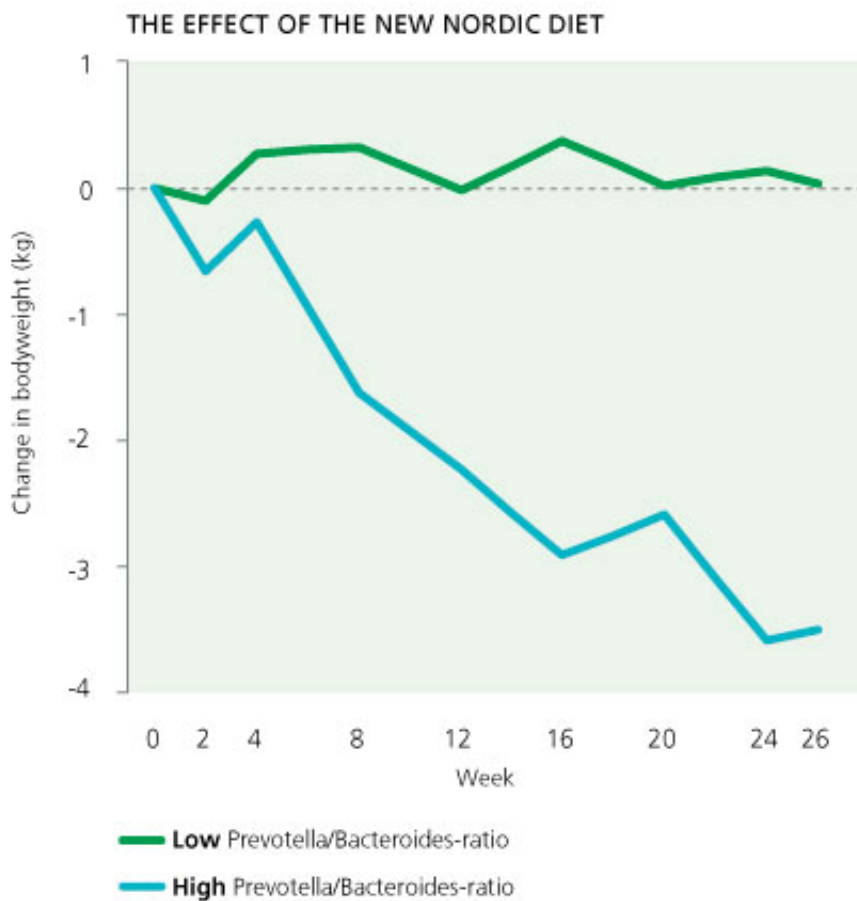


Your stools reveal whether you can lose weight

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The effect of changing the diet from an Average Danish Diet to the New Nordic Diet for people with a low level/high level of *Prevotella*-bacteria in relation to *Bacteroides*-bacteria. Credit: Kenneth Velling Johansen

Something as simple as a faeces sample reveals whether you can lose weight by following dietary recommendations characterized by a high content of fruit, vegetables, fibers and whole grains. This is a finding of a new study conducted at the Department of Nutrition, Exercise and Sports at the University of Copenhagen, Denmark.

Gut microbiota may play a decisive role in personalized nutrition and the development of obesity. This is shown by several studies that have delved into the significance of these bacteria.

"Human [intestinal bacteria](#) have been linked to the increasing prevalence of overweight and obesity, and scientists have started to investigate whether intestinal bacteria can play a role in the treatment of overweight. But it is only now that we have a breakthrough demonstrating that certain bacterial species play a decisive role in [weight](#) regulation and [weight loss](#)," says Professor Arne Astrup, Head of the Department of Nutrition, Exercise and Sports at the University of Copenhagen, Denmark.

A relationship between two groups of intestinal bacteria is decisive for whether overweight people lose weight on a diet that follows the Danish national [dietary recommendations](#) and contains a lot of fruit, vegetables, fiber and whole grains. In the study, 31 subjects ate the New Nordic Diet for 26 weeks and lost an average of 3.5 kg, whereas the 23 subjects eating an average Danish diet lost an average of 1.7 kg. Thus, weight loss was on average 1.8 kilos greater in the subjects on the New Nordic Diet.



The subjects picked up their food in a scientific supermarket at the University of Copenhagen. Credit: Lizette Kabré

When the subjects were divided by their levels of intestinal bacteria, it was found that people with a high proportion of *Prevotella* bacteria in relation to *Bacteroides* bacteria lost 3.5 kg more in 26 weeks when they ate a diet based on the New Nordic Diet principles compared to those consuming an average Danish diet. Subjects with a low proportion of *Prevotella* bacteria in relation to *Bacteroides* did not lose any additional weight on the New Nordic Diet (see Figure 1). Overall, approximately 50 percent of the population has a high proportion of *Prevotella*-bacteria in relation to *Bacteroides*-bacteria.

"The study shows that only about half of the population will lose weight if they eat in accordance with the Danish national dietary recommendations, and eat more fruit, vegetables, fibers and whole grains. The other half of the population doesn't seem to gain any benefit

in weight from this change of diet," says Assistant Professor Mads Fiil Hjorth at the Department of Nutrition, Exercise and Sports at the University of Copenhagen. He says, "These people should focus on other diet and physical activity recommendations until a strategy that works especially well for them is identified."

The researchers emphasize that they have already confirmed the results in two independent studies, so they are certain that these results are credible.

Personalized weight loss guidance

The results show that biomarkers, e.g. faecal samples, blood samples, or other samples should play a far greater role in nutritional guidance, simply because biomarkers allow dieticians to adapt the guidance to the individual.

"This is a major step forward in personalized nutritional guidance. Guidance based on this knowledge of intestinal [bacteria](#) will most likely be more effective than the 'one size fits all' approach that often characterises dietary recommendations and dietary guidance," says Assistant Professor Mads Fiil Hjorth.

The results of the study have been published in the article "Pre-treatment microbial Prevotella-to-Bacteroides ratio, determines body fat loss success during a 6-month randomized controlled [diet](#) intervention" in the *International Journal of Obesity*.

More information: M F Hjorth et al, Pre-treatment microbial Prevotella-to-Bacteroides ratio, determines body fat loss success during a 6-month randomized controlled diet intervention, *International Journal of Obesity* (2017). [DOI: 10.1038/ijo.2017.220](https://doi.org/10.1038/ijo.2017.220)

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