

No link between gut bugs and obesity

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(PhysOrg.com) -- The types of bacterial bugs found in our guts are not a major cause of obesity, according to latest findings from Aberdeen researchers.

Recent thinking from researchers in America has linked obesity to the levels of two major groups of bacteria which are found in the large intestine – Bacteroides and Firmicutes.

The US findings claim that obese people have bacteria in their large intestine that are particularly efficient at extracting energy from food. This means that their bodies take in an excess amount of energy from food, which would need to be burnt off to maintain average weight.

However, a study by researchers from the University of Aberdeen Rowett Institute of Nutrition and Health contradicts these claims, revealing there is no relation between these bugs and a person's Body Mass Index (BMI) or weight.

The findings, published in the *International Journal of Obesity*, did however conclude that people who eat a diet which is low in carbohydrates produce lower levels of butyrate – a fatty acid produced in the gut which protects the colon against diseases such as cancer.

33 obese men and 14 average weight men were given both weight maintaining and low carbohydrate weight loss diets in the eight week study, which used cutting edge technology to examine the links between diet, weight and the populations of major bacteria in the large intestine.

Professor Harry Flint, University of Aberdeen Rowett Institute of Nutrition and Health who led the study said: "Our findings differ from the recent US research which claimed to have found a connection between the bacteria found in our guts and obesity.

"The results of our study show that the proportions of Bacteroides and Firmicutes - that together comprise more than 80% of the total bacteria in the large intestine - have no significant function in determining human obesity.

"We know that a certain level of bacteria exist in a person's intestines from birth, whilst the proportions of different bacterial bugs which populate a person's intestines at any given time is dictated by their diet.

"However, there is still very little known about how bacteria found in the gut break down the components in the food we eat, and how this affects a person's overall health. We don't therefore rule out the possibility that a more detailed analysis of the gut bacterial community may reveal

differences between obese and normal weight people in some of different bacteria species that make up the Bacteroides and Firmicutes groups, which is directly linked to the diet they eat.

"We have shown, for example, that eating weight-loss diets low in carbohydrate results in a reduction in the proportions of bacteria that produce butyrate, a compound considered to be beneficial for colonic health."

It is hoped that further examination into the relation between gut bacteria and a person's overall health and diet will lead to a greater understanding of the benefits of different diet compositions.

Professor Flint continued: "We will now use the basis of this research to begin a more in-depth study into how food groups such as carbohydrates and fibres can have different effects on the population of gut bacteria and therefore a person's overall health, depending on the type of food it is found in. For example fibre can be found in cereals, fruit and vegetables, but the bacteria in the gut may deal with the fibre differently depending on the form of food – this kind of examination will be the main emphasis of the research we will be undertaking."

Provided by University of Aberdeen

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