Can Gut Bacteria Affect Weight Loss?

Certain genes in gut bacteria may either support weight loss or trigger resistance to shedding pounds.

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Ever wonder why losing weight seems so extremely hard for many people? Microorganisms in the gut might very well be to blame, according to recent study findings published in the American Society for Microbiology's journal mSystems, reports ScienceDaily.com.

Microbes present in the stomach—called the gut microbiota—exert various effects on people. For example, these vast numbers of good and bad bacteria can influence an individual's ability to battle disease and absorb nutrients and alter their mood, behavior and thought processes.

For the study, researchers targeted 105 individuals participating in a lifestyle intervention inquiry scheduled over a period of six to 12 months. Scientists divided the group into two sections. One group was composed of 48 people who achieved a weight loss of more than 1% of their body weight each month; the other consisted of 57 people who lost no weight over the same time frame and had a fixed body mass index (BMI), or height-to-weight ratio. In addition, the program employed behavioral coaching along with counseling from a dietitian and nurse.

Next, scientists collected blood and stool from all participants and evaluated their blood metabolites and proteins, clinical lab results, dietary questionnaires and gut bacteria.

After controlling for participants' age, sex and baseline BMI, the researchers found a number of genes in the samples that were linked to weight loss. In those who lost no weight, researchers discovered an increase in the ability of gut bacteria to break down starches, a key finding. Additionally, in people who experienced more weight loss, genes that supported bacterial growth, replication and cell wall building multiplied.

"Before this study, we knew the composition of bacteria in the gut were different in obese people than in people who were nonobese, but now we have seen that there are a different set of genes that are encoded in the bacteria in our gut that also responds to weight loss interventions," said Christian Diener, PhD, a scientist at the Institute for Systems Biology in Seattle and the lead author of the study. "The gut microbiome is a major player in modulating whether a weight loss intervention will have success or not."

Diener believes that based on these findings, individuals could perhaps change the makeup of

their gut bacteria to better support weight loss efforts.

To learn more about how gut bacteria affects the body, read “Kitchen Science” and “Will Your Newborn Develop Allergies? Get Their Poop Checked.”
