

Your body's microbiome has a unique 'fingerprint'

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The microbiome is your body's set of microbial communities; microbial cells outnumber human cells roughly ten to one. Through studying the microbiome, scientists are learning more the relationship between these microbes and human health and disease. In looking at the effect of diet on the composition of the gut microbiome, Dr. Nanette Steinle of the University of Maryland's School of Medicine and Dr. Emmanuel Mongodin of the University of Maryland Institute of Genome Sciences wanted to determine if the Mediterranean diet would cause changes in an individual's microbiome. This diet was selected because it has already been associated with reduced risk of cardiovascular disease.

In this small study, 8 women and 1 man ages 50-65 were provided with foods that fit the Mediterranean diet profile: high fiber, whole grains, dry beans/lentils, olive oil, and 5 servings of fruits/vegetables a day. After 2 weeks, they provided blood for the analysis of fasting lipids and stool samples to determine the microbes present.

The results indicated a decrease in total cholesterol and [LDL cholesterol levels](#). In addition, there was clustering of individuals' microbial profiles.

"What we expected to find was that a particular microbe species increased, but we haven't observed that," said Steinle. "Instead, each individual appears to have a unique microbiome signature, like a fingerprint. A sample from 5 people would result in 5 unique profiles. It's the first time we've observed that this signature remained true, even after manipulation of diet," Steinle added.

This study adds another clue to the complicated nature of the gut microbiome. Dr. Steinle will present the data for the American Society for Nutrition's poster sessions on Tuesday, April 23. Prior to the poster session on the microbiome on April 23, there is a symposium "Managing the Microbiome in Human [Gastrointestinal Disease](#)" on Saturday, April 20, 8-10 am.

Provided by Federation of American Societies for Experimental Biology

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