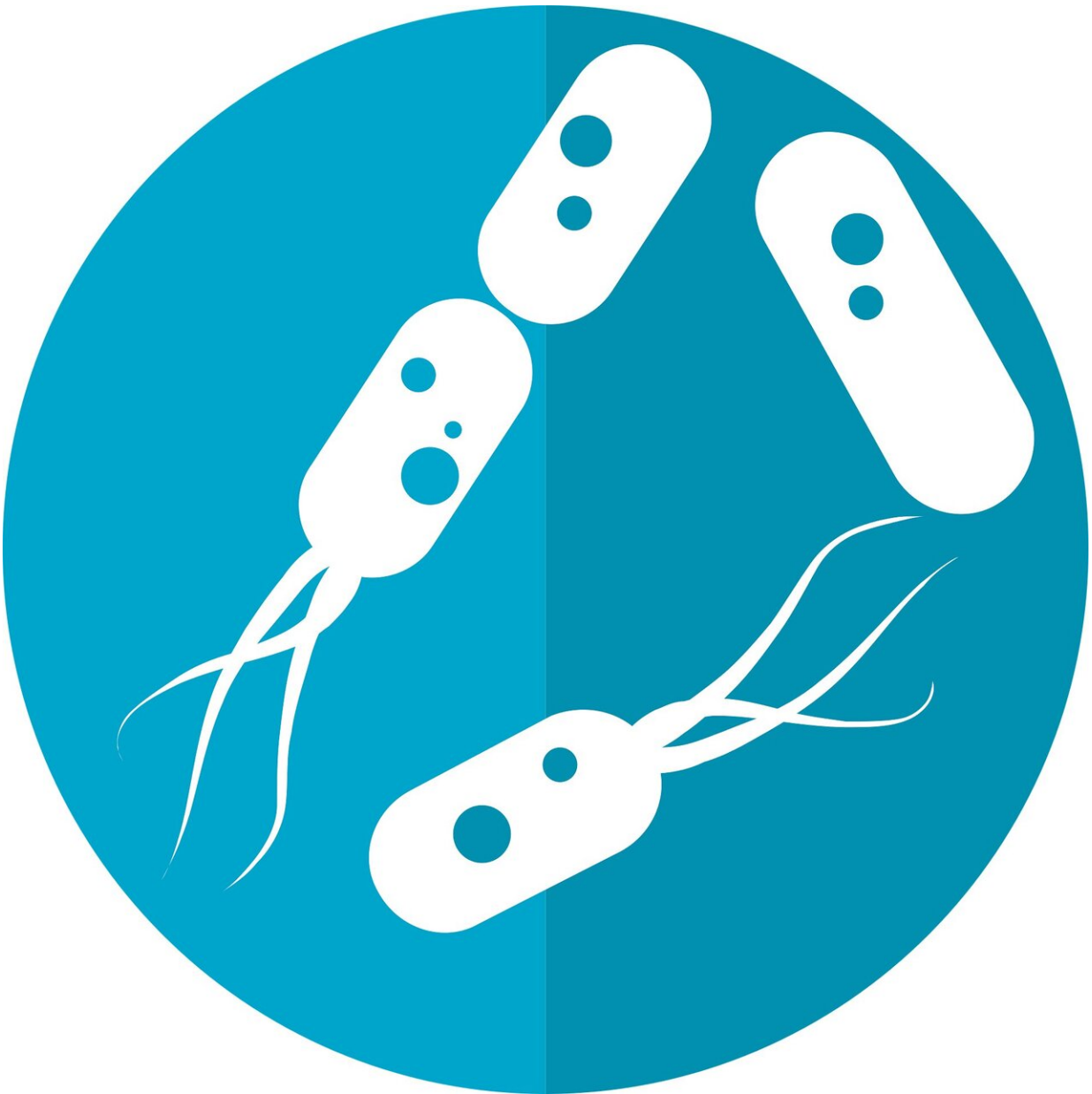


Diet, nutrition have profound effects on gut microbiome

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Nutrition and diet have a profound impact on microbial composition in the gut, in turn affecting a range of metabolic, hormonal, and neurological processes, according to a literature review by scientists from the George Washington University (GW) and the National Institute of Standards and Technology (NIST). The article is published in *Nutrition Reviews*.

Until recently, the [human microbiome](#) remained an understudied target for novel strategies to diagnose and treat disease. The prevalence of diseases that may involve disruption of the gut microbiome are increasing and there is currently no consensus in the scientific community on what defines a "healthy gut" microbiome.

The review from GW and NIST systematically assessed the current understanding of the interactions between nutrition and the gut microbiome in healthy adults.

"As we learn more about the gut microbiome and nutrition, we are learning how influential they are to each other and, perhaps more central to [public health](#), the role they both play in prevention and treatment of disease," said Leigh A. Frame, Ph.D., MHS, program director of the Integrative Medicine Programs at the GW School of Medicine and Health Sciences.

Through their review, the authors found that the bi-directional relationship between nutrition and the gut microbiome is emerging as more research is conducted on how microbiota utilize and produce both macro and micronutrients. The authors found that research has mostly focused on the benefits of dietary fiber, which serves as fuel for [gut](#)

[microbiota](#), and also found that, in contrast, protein promotes microbial protein metabolism and potentially harmful byproducts that may sit in the gut, increasing the risk of negative health outcomes.

"This review reveals that the measurement tools currently in our arsenal are ineffective for identifying the microbial and molecular signatures that can serve as robust indicators of health and disease," said Scott Jackson, adjunct assistant professor of clinical research and leadership at SMHS and leader of the Complex Microbial Systems Group at NIST.

The authors suggest that future research must consider individual responses to diet and how the [gut microbiome](#) responds to dietary interventions, as well as emphasized function of the microbiome (what it does) over merely composition (what is there).

More information: Leigh A Frame et al, Current Explorations of Nutrition and the Gut Microbiome: A Comprehensive Evaluation of the Review Literature, *Nutrition Reviews* (2019). [DOI: 10.1093/nutrit/nuz106](#)

Provided by George Washington University

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