



The Gut Microbiota and Diabetes: Clarity on an Emerging Topic and Introduction to a New Partnership and Journal Feature

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In this issue of *Diabetes* we present an expert overview of a topic that has become increasingly common among papers submitted for evaluation: the relationship of the gut microbiota to type 2 diabetes (1). This connection has evolved over the past two decades as research on the gut microbiota has increasingly focused on potential roles in pathophysiology, including in relation to diabetes and related metabolic conditions. Sufficient data have emerged from this work to suggest that the species comprising the gut microbiota differ between people with and people without diabetes. However, well-defined microbiological signatures have not been definitively identified. Moreover, in this complex area of biology, the extent to which the gut microbiota influences human metabolism or is influenced by it remains unclear. Regardless, the topic has engendered considerable interest and may have a bearing on clinical medicine through the development of diagnostic, prognostic, or therapeutic approaches.

In keeping with the widespread interest in the gut microbiome, the editors of the three major diabetes journals sponsored by the American Diabetes Association (ADA) and European Association for the Study of Diabetes (EASD) felt that it was timely and important to address this topic in an accessible manner for our readership. To this end, we assembled a group of experts at the 2023 EASD Annual Meeting to discuss this topic and then present their discussion at a meeting symposium. We included a number of scientists who study the relationship between the gut microbiome and diabetes and asked them to consider the following three questions:

1. What is the current understanding of the interrelationship between the gut microbiota and diabetes?
2. What are the key gaps in knowledge in the field?

3. What technological or methodological developments are critical to advance the field?

These questions provided a framework to explore the present state of research in this area and to develop a foundation from which to follow progress or to contribute to. We hope that, with a greater understanding of microbiome biology, diabetes investigators will be able to incorporate these findings into their research and generate cross-cutting studies and clinical applications.

We were very fortunate to find an interested and engaged partner for this initiative in the Novo Nordisk Foundation, which funds medical science as well as social and humanitarian initiatives. The Foundation agreed with us that the association between the gut microbiome and diabetes was an important topic that warranted an in-depth review and a consensus document accessible to the diabetes community. Thus, they provided the funding that was essential to allow this project to proceed, and for this support we are extremely grateful.

The article included in this month's issue of *Diabetes*, "The Gut Microbiota and Diabetes: Research, Translation, and Clinical Applications" (1), will be published concurrently in *Diabetes Care* and *Diabetologia*. Moreover, along with further support from the Novo Nordisk Foundation, we plan to organize and sponsor additional expert forums on key topics over the next 3 years using a similar format. Our next expert panel and symposium will be held at the ADA's Scientific Sessions in Orlando in June 2024 and will focus on heterogeneity in the pathogenesis, prevention, and treatment of type 1 diabetes. A summary paper on the results of these proceedings will again be published simultaneously in all three journals. We believe that these programs and the overall initiative are in keeping with the scientific and educational missions of our societies, and that the resulting publications in our journals

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See accompanying article, p. 1391.

will be landmark articles that facilitate the understanding and treatment of, and cures for, diabetes.

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Reference

1. Byndloss M, Devkota S, Duca F, et al. The gut microbiota and diabetes: research, translation, and clinical applications—2023 *Diabetes*, *Diabetes Care*, and *Diabetologia* Expert Forum. *Diabetes* 2024;73:1391–1410