

Translating Gut Microbiome Research to the Clinic

The gut microbiota and its role in health and disease has become a research ‘hot spot’ in the past 20 years, with more than 25,000 related articles being published by 2019.¹

Much of the early research focused on cataloguing the microorganisms present and identifying correlations between these organisms and disease, or using animal models to understand phenotypes. Current research has now shifted to providing functional insights into specific mechanisms of action and improving our understanding of the role of the microbiota beyond the gut to advance the development of therapies and technologies so that the microbiome can be harnessed in the clinic.

Through investigating the interactions between gut microbiome and diet, we have gained considerable insight into how the microbiome responds to exposure of new microbes at a clinical level. Similarly, on a larger level, studies of environment-microbe interactions investigating microbiome diversity within communities, have provided information about the impact of environmental stimuli on composition and function of an individual’s microbiome and its evolution over time.²

The current tools and growing understanding are now enabling researchers to develop strategies to leverage applications of the microbiome. Analysis techniques have enabled more accurate clinical diagnostics, such as non-invasive sample collections from the skin surface using swabbing methods rather than historic invasive biopsies. Moreover, the expanding knowledge presents potential for interventional strategies like targeted personalised medicine or ecological engineering controls in the environment. Yet, as researchers learn more and develop new tools for studying the microbiome, new questions and challenges will continue to arise. Moreover, the huge variation in results presented in studies looking at the effects of pre- and probiotics on the microbiomes also suggests a need for improved experimental controls and analysis techniques.

Despite the significant progress researchers have made in our understanding of the interactions in the evolution of the gut microbiome, the enormous complexity of this ‘organ’ provides a huge landscape for additional research. Not only does this diverse area of study offer the potential to revolutionise medicine, but through its potential role engineering, biotechnology, computational science and ecology. However, to enable us to continue advancing this field of research, we need more robust informatics tools and analytical methods that can process big data and guide more hypothesis driven research.

Gut Microbiome is open for submissions

The Nutrition Society’s open access journal *Gut Microbiome* aims to support the development of an integrated, interdisciplinary understanding of the gut microbiome. Focusing on the contributing factors that influence the gut microbiota and in turn how the gut microbiome impacts human health.

The scope of the journal includes:

- Research dedicated to the role that different diets, pharmaceuticals and nutraceuticals, prebiotics and probiotics have in shaping an individual’s microbiome composition
- Studies on animals when relevant to understanding the human microbiome and its interactions
- Research on non-gut microbiomes if they have interactions with the gut microbiome; for example the interplay of the mother’s vaginal and skin microbiome in seeding the child’s gut microbiome
- Research focusing on how the gut microbiome influences the immune and nervous systems.

Submit your article and review the current published papers here:
www.cambridge.org/core/journals/gut-microbiome



No Publication Fees Publish in **GUTMICROBIOME**
All Article Processing Charges (APCs) have been waived until October 2022

References: 1. Lynch SV, et al. (2019). Translating the gut microbiome: ready for the clinic? *Nat Rev Gastroenterol Hepatol.*; 16: 656-661. 2. Cullen CM, et al. (2020). Emerging Priorities for Microbiome Research. *Front Microbio.*; doi: 10.3389/fmicb.2020.00136. 3. Daniel H (2020). Diet and the gut microbiome: From hype to hypothesis. *BJN.*; 124(6): 521-530.

Events Calendar

Conferences

- **Winter Conference 22/23 – Food architecture and health.**
Dates & venue: 24-25 January 2023, The Royal Society, London

Webinar

- **Gut Microbiome – Can it really affect our health?**
This on-demand webinar explains the present state of knowledge of the impact of our microbiota on health, how it interacts with its host and its involvement in the pathogenesis of disease.

Register here: www.nutritionociety.org/events/gut-microbiome-can-it-really-affect-our-health

ALL Nutrition Society Events are CPD endorsed by the Association for Nutrition.