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# NUTRITION & HEALTH

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## *R te Biesebeke*

*HNM Foundation, Switzerland*

### **The impact of diet on the human microbiome and the brain**

Diet strongly affects human health in part by modulating the gut microbiome composition and dependent on the individual genome. The exposure to modifiable risk factors that undermine human health begins in early life and as it seems- at a much higher frequency in high-income countries compared to Africa and parts of Asia. Recent advances show a growing body of evidence supporting that the human microbial population plays a crucial role in the health of the host. The microbes support to maintain intestinal peristalsis, mucosal integrity, pH balance and immune response. Also, emotional behaviour can be mediated through microbial metabolites, enteric endocrine cell activation and nerve stimulation. While the enteric nervous system is facilitating in the so-called gut-brain axis, it may contribute to autism spectrum disorders, Alzheimer's disease, Parkinson's disease, depression and anxiety disorders. As a research concept, the prebiotic fibers and probiotics have gained a lot of attention over the last decennia and this may seem to make micronutrients, fatty acids, carbohydrates and proteins less relevant for the microbiome. In order to provide reliable guidance for human health and wellbeing, the long-term impact of food quality and malnutrition remain the major concerns, while individuality and the microbiome cannot be ignored.

### **Biography**

R te Biesebeke has a PhD from the Top Institute Food and Nutrition, the Wageningen University and Research Centre in the Netherlands, a MSc in Biology from the University of Utrecht, and holds a Biochemistry Engineering (Ing) degree from Saxion Polytechnics (the Netherlands). He started his career in R&D in Molecular Biology in the Unilever Research Laboratory (the Netherlands), followed by Biochemical Research in the Laboratoire de Biochimie of the Ecole Polytechnique (Paris, France) and as PhD fellow in TNO Quality of Life (the Netherlands). He had progressively evolving responsibilities in global operating businesses like Friesland Foods (the Netherlands) and Nestlé (Switzerland). He is former task force member of ILSI Europe (Brussels, Europe) and External Expert of the World Health Organisation (Geneva, Switzerland). As Chief Scientific Officer and Chairman of the HNM Foundation, he is interested in the Quality of life through the interaction of Human Genome, Nutrition and Microbiology.

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