

Microbiome and the gut–brain axis in neurological disorders



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Studies on the gut-brain axis increasingly suggest an important role of gut microbiota in regulating health and neurological diseases, via an intense bidirectional interplay of neuronal, immunological and metabolic signalling. Recent technological advances, open access data libraries, and application of highthroughput sequencing have allowed these microbes to be identified and their contribution to neurological health to be examined. Emerging evidence suggest that there is an intestinal dysbiosis in neuroimmune and neurodegenerative diseases, especially in synucleinopathies such as Parkinson’s disease (PD) and Multiple System Atrophy (MSA). This lecture will provide an overview of pre-clinical and clinical studies on gut-brain-axis in neurological disorders with a focus on studies related to the microbiome.

Understanding the gut-brain-axis and the role of gut microbes is important, as it represent opportunities for the development of novel biomarkers and therapeutic targets, both being major unmet needs for complex neurological disorders. Modulation of gut microbiota composition (via fecal transplantation and medications) may become an important part of the treatment regime in these disabling neurological diseases.
