

# Altered microbiome and metabolome in Parkinsonian disorders



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Aggregation of alpha-synuclein is a neuropathological hallmark shared by PD and MSA. Experimental proof-of-concept models of prion-like neuron-to-neuron and neuron-to-oligodendrocyte transfer of alpha-synuclein, and its ability to spread from the enteric nervous system (ENS) to the brain, have reignited Braak's theory that environmental insults (pathogens or toxins) acting on the ENS could trigger alpha-synuclein misfolding, leading to propagation into the central nervous system. A recent pre-clinical study demonstrated that gut microbes play an important role in promoting aggregation of alpha-synuclein and motor deficits in PD. Numerous clinical studies from different regions of the world have shown that PD and MSA patients have a distinct gut microbiome and metabolome signature when compared to controls. This lecture will provide a brief overview of published clinical studies in the field.

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