Provides up-to-date information concerning new applications of brain imaging to the study of Parkinson's disease.

Written by experts in the field, the book focuses on structural and functional imaging methodologies that have recently been applied to study the natural history of Parkinson's disease, with emphasis on the development of the major motor manifestations of the illness as well as cognitive impairment and dementia. Individual chapters address the role of imaging in differential diagnosis and in the evaluation of pharmacologic and surgical treatment effects. In-depth discussion of the use of imaging tools to study disease mechanisms is also provided, with emphasis on the roles of neuroinflammation, protein aggregation, and abnormal network organization in parkinsonism. Additionally, the text covers a number of relevant novel topics including recent advances in volumetric and functional MRI, echosonography, dopaminergic and cholinergic neurotransmitter imaging, and applications to experimental interventions such as gene therapy and transplantation.