Recent Advances in the Application of Neuroimaging to Understand Neurological Disease

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An incredible expansion in brain imaging acquisition and analysis procedures has occurred over the last decade with the development of tools for the robust quantification a range of neural properties allowing for better tools to predict, diagnose, and track neurological disease processes. These technologies allow visualization and quantification of neural properties in ways not previously accessible. We review here recent developments in neuroimaging technologies that provide sensitive metrics of neurological disease processes as well as procedures that facilitate insight into basic mechanisms of disease and potential for novel therapeutic interventions with a focus on the study of brain aging, vascular risk, and age-associated cognitive decline and Alzheimer's disease.

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