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The evolving role played by magnetic resonance imaging in our understanding and diagnosis of Alzheimer's disease

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Abstract

The incidence of Alzheimer's disease (AD) is threatening to reach epidemic levels internationally. It is a progressive neurodegenerative disease with an insidious onset and no known treatment to stop its progression. Age is the greatest risk factor for AD. As the population of individuals over the age of 65 in countries such as the United States is expected to double in the upcoming years, predictions are that the incidence of AD could triple. One of the greatest challenges being faced with this disorder is the accurate identification of individual afflicted with this disease early in its course. MRI has been used to study AD for the past 20+ years and has contributed greatly to our understanding of it. MRI provides an effective non-invasive means for looking into the human body in-vivo and assessing health or disease. Recently, worldwide initiatives have been launched that include the use MRI in an effort to find the best methods for the earliest diagnosis of AD and the assessment of treatment efficacy. The use of MRI with AD has fostered an immense amount of development to produce better images and tools to work with the images. Today we have the ability to image the brain in exquisite detail and to build highly complicated network models of its inner workings. The knowledge that we gain through the continued advancement of these methods should allow us to identify individuals on a trajectory towards developing AD at earlier points thereby improving the prognosis as treatments become available.

Biography

Dr. Killiany completed his Ph.D. in Physiological Psychology in 1991 from Northeastern University and when on to complete postdoctoral studies where he began working in Neuropsychology and MRI scanning at Boston University School of Medicine, Brigham and Women's Hospital and Massachusetts General Hospital. He is currently the director of the Center for Biomedical Imaging at Boston University School of Medicine. He has published more than 70 papers in reputed journals and serves as an ad hoc reviewer for a number of scientific journals.

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