Detection of Alzheimer's Disease *via* Neuroimaging and Neuropsychology

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Editorial Note

Over five million Americans above the age of 65 are now living with Alzheimer's disease, and it's estimated that the condition will afflict more than 13 million people in the United States by 2050. Researchers have been reliant on neuroimaging brain scans such as Magnetic Resonance Imaging or Positron Emission Tomography to study Alzheimer's disease and other neurodegenerative disorders for the last three decades, yet these investigations are unable to find treatments or cures and have failed to produce consistent results. Studies of specific disorders or symptoms are assumed to implicate a particular brain region in neuroimaging. Neuropsychiatric and cognitive disorders could be better explained by brain networks than by single brain regions.

Recent research achieved remarkable sensitivity and specificity by combining brain imaging analysis with a neuropsychological assessment, concentrating on people who will develop the disease while eliminating false positives, and those who will remain stable. The biggest revelation of the findings of the study is the accuracy of the classification system. Although, the efficacy of neuroimaging and neuropsychology independently is constrained, the ability to attain such a high level of accuracy was due to the combination and analysis of the results from both techniques. Due to a lack of reliable protocols, Analysts are unable to diagnose this condition at an early stage. Thus, there is a risk of failing to identify when trying to diagnose the condition too early. Identifying sensitive and specific markers that can be used to accurately predict the eventual onset of more severe symptoms greatly lowers the ambiguity of early diagnosis. Therefore, two separate methodologies can be merged to aid in diagnosis, which is a significant advancement.

Alzheimer's disease researchers can build on this progress to make even more future improvements. The clinical advantages as a result of these methods are substantial; Neuroscientists can now test the efficacy of pharmacological and non-pharmacological therapies on the