

William Jagust, M.D.

The University of California, Berkeley
Berkeley, California

The detection of Alzheimer's disease in normal older people

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Much Alzheimer research has focused on the early detection of age-related cognitive decline. These efforts have led to the creation of a syndrome called mild cognitive impairment (MCI), thought to be a transitional phase between normal cognitive aging and Alzheimer's disease. However, recent studies have found that mild cognitive impairment may, in some cases, be a well progressed stage of Alzheimer's. These studies have found that people with the syndrome have extensive accumulations of the protein fragment beta-amyloid in their brains. Such accumulations are suspected of being a key hallmark of Alzheimer's. Thus many researchers have been searching for methods of assessing MCI risk in older people before those people develop MCI symptoms.

William Jagust, M.D., and colleagues hope to develop such methods by studying a group of healthy elderly participants. First, they will use sophisticated imaging techniques called positron emission tomography (PET) and magnetic resonance imaging (MRI) to study the brains of these individuals. For some of the participants, the researchers expect to find beta-amyloid accumulation and loss of volume in certain brain regions. Dr. Jagust's team will also administer cognitive testing to their group. They expect that the individuals who exhibited brain abnormalities on the scans will also exhibit memory problems. These participants will be followed over time to determine if they experience further cognitive decline. The researchers hope their study will offer an effective avenue for preventing Alzheimer's disease in the healthy elderly population.