

Alzheimer's disease neuroimaging initiative

Weiner, Michael¹; Thal, Leon²; Petersen, Ron²; Jagust, William³; Trojanowski, John⁴; Toga, Arthur⁵; Beckett, Laurel⁶; Jack, Clifford⁷

¹UCSF/ SFVAMC, Radiology/ Magnetic Resonance, San Francisco, United States; ²UCSD, San Diego, United States; ³UC, Berkeley, Berkeley, United States; ⁴University of Pennsylvania, Philadelphia, United States; ⁵UCLA, Los Angeles, United States; ⁶UC, Davis, Davis, United States; ⁷Mayo Clinic, Rochester, United States

A goal of the NIH-industry funded Alzheimer's Disease Neuroimaging Initiative (ADNI) is to determine the extent to which the presence of cerebrovascular disease affects cognition, brain structure and brain function in the elderly. Specific aims are to: 1) Develop improved methods and uniform standards for acquiring longitudinal, multi-site MRI and PET for Alzheimer's disease (AD), mild cognitive impairment (MCI), and elderly controls. 2) Data repository describing longitudinal changes in brain structure and metabolism together with clinical, cognitive and biomarker data for validation. 3) Determine methods, which provide maximum power to determine treatment. All subjects will have clinical/cognitive assessments and 1.5 T structural MRI every 6 months for 2-3 years. 50% will also have FDG PET scans and 25% will have MRI at 3 Tesla. CSF will be collected on more than 20% of subjects. AD subjects (n=200) will be studied at 0, 6, 12, and 24 months. MCI subjects (n= 400) at 0, 6,12, 18, 24, and 36 months. Controls (n=200) at 0, 6, 12, 24 and 36 months. MRI scans will be analyzed for cerebrovascular disease. All raw, processed, and analyzed data will be fully and rapidly accessible to the public. The results of this study will be extremely useful for design of future AD and MCI trials. Furthermore, the data which is obtained may be used to determine the influence of cerebrovascular disease on the progression of cognitive impairment in the elderly.