Alzheimer Neuroimaging Initiative Enters Next Phase of Research, Seeks New Volunteers

The National Institutes of Health is expanding the Alzheimer's Disease Neuroimaging Initiative (ADNI), a groundbreaking study that will recruit hundreds of new volunteers to help define the subtle changes that may take place in the brains of older people many years before overt symptoms of Alzheimer's disease appear. ADNI is the largest public-private partnership to date in Alzheimer's disease research. It is led by the National Institute on Aging (NIA) at NIH, through a grant to the non-profit Northern California Institute for Research and Education (NCIRE), with private sector support provided through the Foundation for the National Institutes of Health (FNIH).

Researchers are seeking new volunteers to join those already participating in the study as it enters a second phase, called ADNI2. Over the next five years, approximately 1,000 people aged 55 to 90 will be enrolled at approximately 55 sites in the United States and Canada. They will be followed to define any changes in brain structure and function as people transition from normal cognitive aging to mild cognitive impairment (MCI), often a precursor to Alzheimer's, to Alzheimer's dementia. The study will use imaging techniques and biomarker measures in blood and cerebrospinal fluid specially developed to track changes in the living brain. Researchers hope to identify who is at risk for Alzheimer's, track progression of the disease and devise tests to measure the effectiveness of potential interventions.

"ADNI2 will build upon the successes of this ongoing effort to identify the earliest signs of Alzheimer's disease, when damage to the brain may begin well before symptoms appear," said NIA Director Richard J. Hodes, M.D. "This phase of the study, which includes greater numbers of volunteers in the earliest stages of cognitive impairment, should give us new insights into the onset and progression of Alzheimer's disease."

Michael Weiner, M.D., of the San Francisco Department of Veterans Affairs Medical Center and the University of California, San Francisco, is principal investigator for the study.

"By determining how brain scans, biomarker measures and cognitive testing results relate to each other and the symptoms a person is having, we are getting a much clearer picture about the onset and progression of this devastating neurodegenerative disorder," Weiner said.

NIA is joined in federal support of the project by the National Institute of Neurological Disorders and Stroke, the National Institute of Mental Health and the National Institute of Biomedical Imaging and Bioengineering, also parts of the NIH. NIH anticipates providing $40 million to the project over the next five years; $8 million was awarded in fiscal year 2010, with a further $32 million committed, subject to funds availability The Food and Drug Administration is also participating. An anticipated $22 million in private sector funding through the FNIH will come from pharmaceutical, imaging, and clinical trial management companies and non-profit organizations, including the Alzheimer's Association and Alzheimer's Drug Discovery Foundation, as well as from private donations. Included in that sum is $1.5 million the Canadian Institute of Health Research is directly providing to the Canadian sites to fund a portion of their total costs.

ADNI2 will recruit 550 new volunteers. The study also will continue to follow participants recruited during two earlier phases: ADNI1, started in 2004, and ADNI-GO (Grand Opportunity), begun in 2009 from an NIH grant under the Recovery Act (ARRA). Grand Opportunity Recovery Act grants support high-impact projects with short-term, non-renewable funding. For more information, go to http://recovery.nih.gov/ <http://recovery.nih.gov/> .

This effort will continue to track changes in the brain with clinical and cognitive testing and brain scans measuring glucose metabolism and the amount of beta-amyloid protein—a hallmark of Alzheimer's disease—deposited in the brain. Researchers are also collecting serum and plasma for biomarker measures and blood samples for genetic analysis. All new participants in ADNI2 will receive lumbar punctures to measure cerebrospinal fluid biomarkers and will have blood drawn for plasma biomarkers.

One important aspect of the study is the sharing of data soon after it is obtained. Study data are posted to a publicly accessible database available to qualified researchers worldwide. To date, more than 1,700 researchers have signed up for ADNI database access.
ADNI is stimulating the development of a worldwide collaboration among academia, government and industry researchers and has resulted in over 170 published papers. The ongoing study has resulted in new findings about how changes in the structure of the hippocampus, a brain area important to learning and memory, may help detect disease progression and effectiveness of potential treatments. It has also established biomarker and imaging measures that predict risk for cognitive decline and conversion to dementia in this clinical cohort.

Neil Buckholtz, Ph.D., who has led the study for NIA's Division of Neuroscience, stressed the importance of public participation in the study, particularly as recruitment turns attention to people with the very earliest signs of possible disease. Researchers hope to add 100 more participants with early MCI to the 200 already being followed to achieve a primary goal—identifying the onset of the disease before symptoms appear.

"We are grateful to all the volunteers who have participated in ADNI thus far and who may join the study. Their efforts so far have told us a great deal about Alzheimer's disease, and the next phase should provide even greater insights," Buckholtz said.

To volunteer or learn more about ADNI, contact the NIA Alzheimer's Disease Education and Referral (ADEAR) Center at 1-800-438-4380 or www.nia.nih.gov/Alzheimers <http://www.nia.nih.gov/Alzheimers> . A listing of study locations appears below.

Investigators may apply for access to ADNI study data through the database website at www.loni.ucla.edu/ADNI <http://www.loni.ucla.edu/ADNI> . Qualified scientists may also ask for access to the cerebrospinal fluid and blood samples.

Private sector funders supporting the study through the FNIH are: Abbott; Alzheimer's Association; Alzheimer's Drug Discovery Foundation; Amorfix Life Sciences Ltd.; AstraZeneca; BioClinica, Inc.; Bristol-Myers Squibb Company; Eisai Inc.; Elan Pharmaceuticals Inc.; Eli Lilly and Company; F. Hoffmann-La Roche Ltd and its affiliated company Genentech, Inc.; GE Healthcare; Innogenetics, N.V.; Janssen Alzheimer Immunotherapy Research & Development, LLC.; Johnson & Johnson Pharmaceutical Research & Development LLC.; Medpace, Inc.; Merck & Co., Inc.; Novartis Pharmaceuticals Corporation; Pfizer Inc.; Servier, Synarc Inc.; and Takeda Pharmaceutical Company. FNIH expects additional commitments over the next five years.

The NIA leads the federal government effort conducting and supporting research on aging and the health and well-being of older people. The NIA provides information on age-related cognitive change and neurodegenerative disease specifically at its Alzheimer's Disease Education and Referral (ADEAR) Center. CIHR is the Government of Canada's health research investment agency. CIHR enables the creation of evidence-based knowledge and its transformation into improved treatments, prevention and diagnoses, new products and services, and a stronger, patient-oriented health care system.

Study sites recruiting volunteers in Canada are: Montreal; Vancouver, B.C.; Toronto, London and Hamilton, Ontario.