Early Detection of Alzheimer’s Disease in a Community Population Using Longitudinal Cognitive Assessment

Type of Project: Exploratory Clinical Research
Methods: Imaging, Neuropsychology, and Epidemiology
Status: Funding secured ($250,000)
Study Period: November 1, 2006 – October 30, 2007

In Collaboration With: Utah State University
University of Utah Collaborative Units: Division of Nuclear Medicine, Department of Radiology
University of Utah Investigators: Norman L. Foster, M.D. (Principal Investigator), Gordon J. Chekune, Ph.D., Angela Y. Wang, Ph.D.
Utah State University Investigators: Joanne Tschanz, Ph.D., Chris Corcoran, Ph.D., Ronald Munger, Ph.D., Maria Norton, Ph.D.

Project Summary:
This is a collaborative, feasibility pilot study between investigators at the University of Utah (UU) and faculty at Utah State University (USU) involved in the Cache County Memory and Aging Study (CCMS). The overall goal of this project is to validate with neuroimaging a new approach of using repeated neuropsychological measures to identify Alzheimer’s disease (AD) while cognition is still nominally within normal limits. We hypothesize that the loss of the normal benefits of practice when exposed to repeated cognitive testing can be detected using longitudinal cognitive measures in a longitudinal community-based population and reflects early signs of AD pathology. We also will evaluate whether repeated measures in a single session, which could be used in a clinic setting, provides similar results. We will use positron emission tomography with 18F-fluorodeoxyglucose (FDG-PET) to identify typical abnormalities in AD in individuals even before the onset of clear-cut dementia and positron emission tomography with Pittsburgh compound B (PIB-PET) to image amyloid plaques.

Potential Benefits:
If successful, this approach could identify individuals very early in the course of AD for targeted study and treatment interventions. This also could improve the screening and evaluation for Alzheimer’s disease in individuals with memory complaints.