Study Description

Alzheimer’s disease (AD) likely begins its degenerative process several years prior to the onset of clinical symptoms such as memory loss. One of the features of AD is a buildup of amyloid plaques. Until recently, amyloid plaques could only be seen after death at autopsy. However, a new compound, Pittsburgh Compound B (PIB), has been developed to safely detect amyloid in living people. PIB binds to the amyloid plaque and can be detected by a PET scanner.

The main objective of this study is to sample different biomarkers associated with AD and determine their relationship with the risk factors for the disease and cognition. The PET scan will be used to image amyloid and energy use in the brain. MRI will be used to analyze brain structure, blood flow and activity during memory tasks. To examine AD-related proteins, CSF and blood samples will be collected. Evaluating these biomarkers at two time points will help us understand how they change over time. It may be that this research will eventually help diagnose AD earlier so that treatments can begin sooner.

Who Can Participate?

We are currently recruiting:

• **Volunteers ages 50-80 with or without a history of Alzheimer’s Disease**

People with objects implanted in the body (e.g., stents, pacemakers, shrapnel) and people who are claustrophobic should not participate.

What Will I Be Asked to Do?

Participants will be asked to attend 2-3 visits within the first two months and then to repeat these visits after two years.

**Visit 1** will take 3 hours and includes an MRI.

**Visit 2** will take 3 hours and includes two PET scans.

**Visit 3** will take 2 hours and involves a neurological exam and a lumbar puncture. **This visit is optional.**

In addition, participants will complete a few questionnaires. These visits will be repeated after two years.

All participants will be compensated for their time and travel as follows: $50 for MRI, $80 for both PET scans, $80 for Lumbar Puncture. The same compensations apply to the two year repeat visits.

How Can I Receive More Information?

If you have further questions or would like to schedule a study visit, please contact the study coordinator at 608-256-1901 ext. 11075.
University of Wisconsin researchers are utilizing several methods of neuroimaging, including “functional” MRI, “perfusion” MRI, and PET to study the areas of the brain that are most often compromised early in the course of Alzheimer’s Disease. By combining this new technology with other clinical information, we will gain a better understanding of the processes underlying the learning and memory problems in Alzheimer’s Disease. We hope this information will help us detect the disease earlier and provide a way to monitor brain changes associated with disease progression and treatment.

Are these Procedures Safe?

PET imaging involves exposure to small amounts of ionizing radiation (the total for this study is less than one year of background radiation you receive from living on this planet), and this dose is well below federal guidelines. The compounds have been tested to be safe to humans and clear rapidly from the body. Persons with MRI-incompatible devices or implants are not advised to undergo MRI.

Lumbar Puncture is performed under local anesthesia and involves drawing approximately 22 milliliters of spinal fluid which the body will replenish. The procedure may cause temporary pain and discomfort in the back. Some people may experience a headache. In very rare circumstances, an allergic reaction to the local anesthetic may occur.

What if I Change My Mind?

Participation in this research is entirely voluntary and you may discontinue at any time.