

ALZHEIMER'S RESEARCH REVIEW

Summer 2005

ADR Study Builds on Diagnostic Breakthrough

Alzheimer's disease is but one of several disorders that causes memory loss. Conditions that can mimic dementia symptoms are as varied as alcoholism, depression, overmedication and neurological disorders such as Huntington's, Pick's and Parkinson's disease.

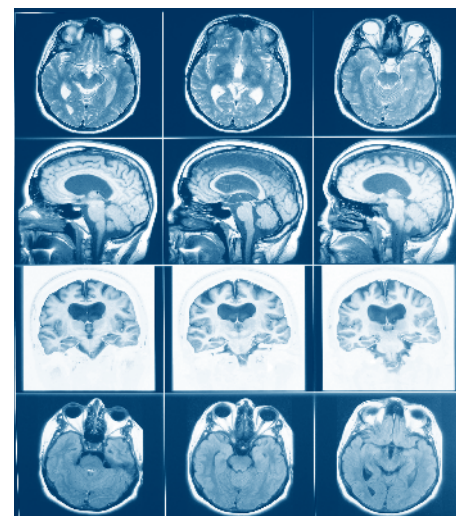
Hip fractures, strokes, heart disease, appendicitis, depression, flu, brain tumors and vitamin deficiency can also lead to confusion and forgetfulness that has sometimes been mistaken for Alzheimer's disease. Therefore, getting a proper diagnosis can often bring relief since many of these conditions are treatable.

Recognizing that one has Alzheimer's disease is also beneficial since there are lifestyle changes and treatments available today that can slow down the progress of the disease.

It was not long ago that the only sure way to identify Alzheimer's disease was to

perform an autopsy upon a person's death. However, new imaging devices used on living patients are now capable of identifying the same hallmarks of Alzheimer's disease, providing for an earlier and more accurate diagnosis.

This breakthrough has been made possible through the development of chemical tracers that attach to amyloid plaques and neurofibrillary tangles in the brains of Alzheimer's patients. These connections can be viewed



with the aid of Positron Emission Tomography (PET).

While PET scan has proven useful for several years as an aid to visualize and quantify amyloid accumulation in patients with

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www.ahaf.org



From the President

As is the case for medical doctors and other professions, health researchers can be either generalists or specialists. As an example, Philip Scheltens, M.D., Ph.D., whose research is featured in our lead article, is a specialist.

Dr. Scheltens background has made him uniquely qualified to lead the study involving amyloid imaging for which he was recently awarded an Alzheimer's Disease Research (ADR) Grant. In 1993 he received his Ph.D., from Vrije Universiteit Amsterdam, The Netherlands, for his work in magnetic resonance imaging in Alzheimer's disease. He has also authored a number of articles involving imaging, Alzheimer's disease and other forms of dementia.

In addition, Dr. Scheltens is a respected member of the research community; he is a regular reviewer for a number of publications including *Annals of Neurology*, *Lancet*, *Science* and *Journal of Neurology and Stroke*. He has also been appointed associate editor to the *Journal of Neurology, Neurosurgery and Psychiatry*.

ADR is pleased to announce the 2005 grant recipients including Dr. Scheltens and 15 other talented researchers. More information is listed on page 4.

Two reports about mood and exercise are also included in this issue. One report is noted in our "News Briefs" section and the other is referenced in the article titled "Weight Control and Alzheimer's Disease." These findings should be of special interest to anyone looking for modifiable, lifestyle choices to better protect themselves against the onset of Alzheimer's disease.

It is my fond hope that something written here will benefit you. That would be a small way to repay you for your support of our endeavors.

Brian K. Regan, Ph.D.
President

Diagnostic Breakthrough

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Alzheimer's disease, the development of genetic markers for amyloid beta has greatly enhanced its ability as a diagnostic tool.

One of these tracer compounds was developed at the University of Pittsburgh. It is called Pittsburgh Compound-B (PIB). It concentrates on the clumps of protein known as amyloid plaques. And, researchers at the University of California, Los Angeles, developed a detection technique using another compound, known as [18F] FDNP, that is able to detect abnormal accumulations of tau as well as amyloid plaques.

Nevertheless, it is unclear which marker does the best job overall. Alzheimer's Disease Research is now supporting a study led by Philip Scheltens, M.D., Ph.D., at Vrije Universiteit Medical Center in Amsterdam, The Netherlands, that will evaluate which tracer is most suitable for imaging of amyloid accumulation within the living body. In addition, the value of these tracers in the early diagnosis of Alzheimer's disease will be determined.

The study will observe patients with mild cognitive impairment (which may be an early manifestation of Alzheimer's disease), patients with probable Alzheimer's disease and healthy control subjects.

The findings will be especially significant for those who are at risk of developing Alzheimer's disease since these individuals could be treated with anti-amyloid drugs to prevent or slow down nerve damage due to Alzheimer's disease.

In addition, determining which marker most effectively tracks disease severity will support studies monitoring the effectiveness of new drugs being developed to treat Alzheimer's disease. 

— Wills & Bequests —

Alzheimer's Disease Research continues to receive inquiries from individuals who say they would like to include the foundation as a beneficiary in their wills. Such bequests are greatly appreciated and constitute an extremely important source of support for ADR's continuing efforts against Alzheimer's disease.

If you would like to designate ADR in your will, the proper wording should read as follows:

"I give, devise and bequeath to Alzheimer's Disease Research, a program of the American Health Assistance Foundation, 22512 Gateway Center Drive, Clarksburg, Maryland 20871, for the general purpose of Alzheimer's Disease Research, (the sum of \$_____ OR a sum equal to ____% of the value of my gross estate at the time of my death under this will or any codicil hereto)."

Our federal ID number is 23-7337229.

There are several other bequest options that may be of interest to you, such as gifts of stock, memorials, real estate and gifts of life income, including Pooled Income Funds, Charitable or Deferred Gift Annuities and Charitable Remainder Trusts.

It is vitally important in making any will arrangements or changes that the well-being of your own family be first and foremost in your planning. Alzheimer's Disease Research strongly advises that you consult an attorney about any changes you plan to make in your will. The ADR Development Department will be happy to assist you with any questions you may have, weekdays from 9 a.m. to 5 p.m. EST at 1-800-437-2423.

Alzheimer's Disease Research Awards New Grants

The Board of Directors of the American Health Assistance Foundation (AHAf) is proud to announce its Alzheimer's Disease Research 2005 grant recipients. These scientists represent some of the best in the world of research into Alzheimer's disease and show great promise for contributing to the growing body of biomedical research. New grants are awarded to scientists at universities and institutions in the United States, Canada and abroad.

Readers should keep in mind that this is a list of only the newest grant awards and does not include the many research projects already under way with ADR support.

M. Olav Andersen, Ph.D.

Max-Delbrueck-Center for
Molecular Medicine
Berlin, Germany

Project: *Role of sorLA in
trafficking and processing of APP*

Meir Aridor, Ph.D.

The University of Pittsburgh
School of Medicine
Pittsburgh, PA

Project: *Presenilin complex
assembly and intracellular traffic*

Gail Anne Breen, Ph.D.

The University of Texas at Dallas
Richardson, TX

Project: *Proteomics of the Oxidative
Phosphorylation System in AD*

Ashley Bush, M.D., Ph.D.

University of Melbourne
Melbourne, Australia

Project: *Copper/cholesterol
interaction in Alzheimer's disease*



In-Young Choi, Ph.D.

The Nathan Kline Institute
Orangeburg, NY

Project: *Antioxidant defense
in Alzheimer's brain in vivo*

Maria Falangola, M.D., Ph.D.

The Nathan Kline Institute
Orangeburg, NY

Project: *MRI Assessment of A β -iron
interaction in PS/APP Mouse Brain*

Gunnar Gouras, M.D.

Weill Medical College of
Cornell University
New York, NY

Project: *Mechanism of A β
accumulation induced synaptic
dysfunction in Alzheimer's disease*

David Kang, Ph.D.

University of California, San Diego
La Jolla, CA

Project: *Presenilin in neurodegeneration:
Role of Akt/ERK Pathways*

Rakez Kaye, Ph.D.

University of California, Irvine
Irvine, CA

Project: *Oligomers role in seeding
and nucleating amyloid fibrils*

Mary Konsolaki, Ph.D.

Rutgers University
Piscataway, NJ

Project: *Modifiers of A β toxicity
in Drosophila*

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Gary Landreth, Ph.D.

Case Western Reserve University
Cleveland, OH
Project: *Mechanisms of Microglial-mediated Oxidative Damage in AD*

Philip Scheltens, M.D., Ph.D.

Vrije Universiteit Medical Center
Amsterdam, The Netherlands
Project: *Amyloid Imaging in Alzheimer's disease and MCI with PET*

Malú Tansey, Ph.D.

University of Texas Southwestern
Medical Center
Dallas, TX
Project: *TNF Signaling in Alzheimer's disease Neuropathology*

Rudolph Tanzi, Ph.D.

Massachusetts General Hospital
Charleston, MA
Project: *Regulation of amyloidogenic Secretases during Apoptosis*

Huaxi Xu, Ph.D.

The Burnham Institute
La Jolla, CA
Project: *Identify genes responsible for AD neuron vulnerability*

Xulun Zhang, Ph.D.

The University of Chicago
Chicago, IL
Project: *Functional analysis of PS1 interacting protein PSIP1*

Weight Control and Alzheimer's Disease



For many years it has been known that keeping your weight under control has health benefits. It can lower your risk of heart attack and helps manage diabetes, but it is becoming increasingly clear that weight control can help protect you from Alzheimer's disease as well.

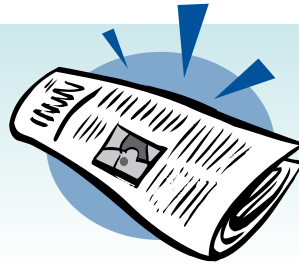
In an earlier issue of *Alzheimer's Research Review*, we reported on a study published in the November 23, 2004 issue of *Neurology* demonstrating that women who have been obese or overweight over their entire adult life may be at increased risk of cognitive decline.

Now, a new population based study (involving over 10,000 individuals in their early to mid-40s and performed by Kaiser Permanente Medical Foundation) provides the most striking evidence. The study found that women who were obese in their 40s were twice as likely to develop Alzheimer's disease and other types of dementia as normal weight women. Men had a 30% increase of risk.

Other studies will be needed to explain why people who are overweight go on to develop Alzheimer's disease in greater numbers. In the meantime, based on what is known so far, it is a good idea to try to keep those extra pounds off.

The Kaiser Permanente findings were published April 29, 2005 in a special online edition of the *British Medical Journal*. 

NEWS



BRIEFS

❖ Three recently published studies lend support to the value of exercise as a way to protect against dementia. The March 11, 2005 issue of the journal *Cell* and the April 27, 2005 issue of *The Journal of Neuroscience* included studies demonstrating that mice that exercised developed fewer amyloid beta plaque deposits in their brains. The April 1, 2005 issue of the *American Journal of Epidemiology* suggests that engaging in a wide variety of activities – such as yard work, walking, biking, etc. – lowers the risk of dementia. However, the latter findings did not apply to test subjects with the APOE-4 genetic predisposition.

❖ On April 11, 2005, the Food and Drug Administration (FDA) issued a warning that the family of drugs called “atypical antipsychotic drugs,” approved to treat mania and schizophrenia, can be fatal to elderly individuals with

dementia. Although none of these medications are currently for this purpose, the drugs had been increasingly prescribed by doctors in treating Alzheimer's patients with behavioral problems. However, a number of studies have indicated a higher death rate among elderly patients with dementia receiving these drugs. The FDA is requesting that the drugs' manufacturers include a boxed warning describing the risks and stating they are not approved for treating behavioral disorders in elderly patients with dementia. However, these advisories do not mean you should stop taking those drugs if your doctor has prescribed them. Check with your doctor and be sure to report any new or unusual symptoms.

❖ Researchers at the Mayo Clinic report that men and women who score very high on a personality test of pessimism and depression

have a 40 percent increased risk for dementia. Testing very high on either trait alone brought about a 30 percent increase of risk. The findings from another study, published in the March 2005 edition of the *Annals of Neurology*, found double the risk for developing Alzheimer's disease, and other forms of dementia, among men – but not women – with depressive symptoms.

❖ Studies have indicated that the use of statin drugs may help lower the risk of Alzheimer's disease. Findings, published in the January 11, 2005 edition of the journal *Public Library of Science Medicine*, are helping explain why. It appears that statins disrupt a chain of enzyme reactions that normally lead to amyloid deposits. This research may help bring about new anti-amyloid drugs for treating Alzheimer's disease.

Alzheimer's Research Review is published by Alzheimer's Disease Research, a program of the American Health Assistance Foundation, a nonprofit organization located at 22512 Gateway Center Drive, Clarksburg, Maryland 20871, 1-800-437-2423, 301-948-3244, www.ahaf.org.

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