

ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE FUELS PROGRESS IN RESEARCH

This year, 6,000 participants and 4,000 researchers from around the world gathered in Paris to report the latest advances in Alzheimer's research at the Alzheimer's Association® International Conference 2011 (AAIC 2011). Scientists presented and discussed early detection, medical intervention, and global standardization for the health epidemic of the 21st century – Alzheimer's disease and other dementias.

FRENCH PRESIDENT NICOLAS SARKOZY ADDRESSED THE CONFERENCE

On July 20, French President Nicolas Sarkozy addressed AAIC attendees, speaking about the global crisis of Alzheimer's disease and the comprehensive solution provided by the French National Plan. In his speech, President Sarkozy recognized the strength of the AAIC gathering and praised the audience for their collaborative international efforts to further Alzheimer's research. His presence was a great honor for the Alzheimer's Association and is representative of our leadership in bringing the world together to advance Alzheimer's priorities.

According to the Alzheimer's Association, the French National Alzheimer's Plan can be a model for the creation of similar plans in other nations around the world. It is an example of national leadership deciding that Alzheimer's is a critical issue that must be addressed because of the health and financial impact it will have on the nation as the population ages.

TWO STUDIES WITH OLDER VETERANS WITH TBI AND FOOTBALL PLAYERS

Research from two studies presented at AAIC 2011 focused on clarifying the relationship between brain injury and mild cognitive impairment (MCI). Older veterans who experienced traumatic brain injury (TBI) showed a more than two-fold increase in the risk of developing dementia. Over a seven-year period, the risk of getting a dementia diagnosis was a little more than 15 percent in those who had a TBI compared with just less than 7 percent in those without TBI. In another more preliminary study, researchers compared cognitive test results for a group of former American NFL football players to those of two other groups. The researchers found that former football players were at elevated risk for MCI compared with non-athletes. The relationship between brain injury and risk of dementia remains unclear, with some studies suggesting an increased risk and others finding no association.

FALLS AND CHANGE OF BALANCE MAY BE EARLIEST INDICATOR OF ALZHEIMER'S

Scientists at AAIC 2011 reported on a study suggesting that falls are more common among individuals with the earliest brain changes of Alzheimer's. They measured the rate of falls among seemingly cognitively healthy older adults with and without preclinical Alzheimer's, as determined by a brain PET scan, looking for deposits of a toxic protein called amyloid, a plaque associated with Alzheimer's. Those people with amyloid deposits had twice the risk of falls. These study results suggest that, in some people, changes in gait and balance may appear as early indicators of Alzheimer's, even before memory changes.

HEALTH RISK FACTORS AND ALZHEIMER'S

Scientists used mathematical modeling to calculate the percentage of Alzheimer's cases that may be attributable to diabetes, mid-life hypertension, mid-life obesity, smoking, depression, low educational attainment and physical inactivity. Eliminating these risk factors by 25 percent could potentially prevent 3 million cases of Alzheimer's worldwide, including nearly one half million in the U.S. We need further research to determine the relationship between the risk factors and Alzheimer's disease, and whether modifying the risk factors may lower Alzheimer's risk.

LOW STRESS, ANXIETY, DEPRESSION AND TRAUMA MAY LEAD TO HEALTHY COGNITION

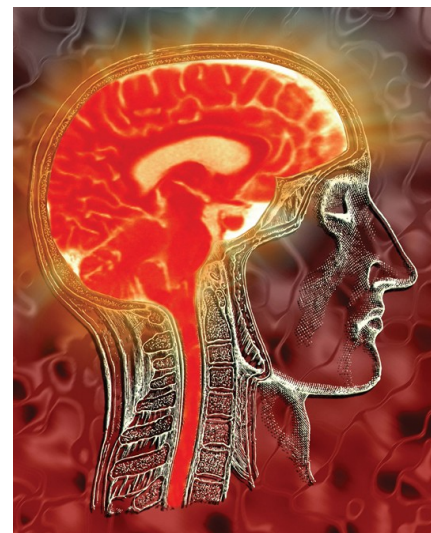
Researchers reported initial findings of characteristics of a group of older adults who have maintained normal cognitive functioning over time. The scientists reported that, in their study group, the most significant factors related to maintaining healthy cognition included scoring lower on stress, anxiety, depression and trauma – despite participants' experiencing life-threatening illnesses, violence, or living with addicted parents and spouses. The investigators hypothesize that resilience in the face of distressing life events is likely related to positive coping styles and the personality trait of "conscientiousness."

STANDARDIZATION OF BIOMARKERS USED IN EARLY DIAGNOSIS

As the Alzheimer's field moves closer to new and earlier tests for the disease, innovative global research is taking the first important steps to confirm and standardize Alzheimer's biomarkers. A biomarker is something that can be objectively measured as an indicator of disease or the body's response to therapy. For example, blood pressure is a biomarker for heart disease. Two studies presented at AAIC 2011 show the importance of global standardization of biomarkers for Alzheimer's and sharing international data. One of the early tests, using MRI, shows that the earliest Alzheimer's related brain changes are usually seen in the hippocampus, the "control center" of memory-related activity in the brain – which often is one of the first brain areas affected by Alzheimer's. Researchers looked at the various measurements of brain volume to identify Alzheimer's in order to standardize diagnosis using MRI. This work was funded by the Alzheimer's Association. The next step will be to create, test and verify one method of MRI-based evaluation of Alzheimer's disease-related brain shrinkage in early diagnosis.

MILD COGNITIVE IMPAIRMENT AND ALZHEIMER'S

A person with mild cognitive impairment (MCI) has problems with memory, language, or another mental function that are severe enough to be noticeable to themselves or to other people and to show up on tests, but not serious enough to interfere with daily life. Not everyone diagnosed with MCI goes on to develop Alzheimer's disease. However, research has shown that individuals with MCI have an increased risk of developing Alzheimer's over the next few years, especially when their main problem is memory. Identification of factors that predict progression from MCI to Alzheimer's dementia has emerged as an important Alzheimer's research priority. A global perspective on MCI, including data from six countries (Australia, France, Germany, Sweden, United Kingdom, and the United States), presented for the first time at AAIC 2011, found that a number of common factors emerge as indicators of the progression from MCI to Alzheimer's. These include depression, apathy, anxiety, age, loss of ability in activities of daily living, cardiovascular factors (including stroke and diabetes), and low levels of education. The studies also call for doctors to pay more attention to subjective memory complaints in otherwise healthy individuals as possible indicators of Alzheimer's.



MEASURING AMYLOID IN THE BRAINS OF PEOPLE WITH ALZHEIMER'S

It is believed that build-up of a toxic molecule known as beta amyloid in the brains of people with Alzheimer's occurs prior to a decline in brain function. An accurate measurement or indicator of increased amyloid deposits in the brain could possibly provide an earlier diagnosis compared to current methods of testing, and also possibly indicate the progression or severity of the disease. Two studies reported at AAIC 2011 investigated new methods for possible use in early detection of Alzheimer's, tracking progression of the disease, identifying participants for research trials and measuring the impact of therapies. One study uses blood measurements for estimating the amount of a toxic substance known as beta amyloid deposited in the brain. The other study suggests that abnormal levels of certain proteins in cerebrospinal fluid (including beta amyloid) in people with MCI may indicate who will develop Alzheimer's within the next 10 years.

BLOOD VESSELS IN THE EYE MAY OFFER NEW BIOMARKER

In a small pilot study presented at AAIC 2011, researchers explored whether characteristics of blood vessels in the back of the eye might serve as possible biomarkers for Alzheimer's disease. The researchers found that the width of certain blood vessels in the back of the eye were significantly different for people with Alzheimer's compared with healthy people, and that this correlated with brain imaging that is indicative of Alzheimer's. While most Alzheimer's-related pathology occurs in the brain, the disease has also been reported to create changes in the eye, which is closely connected to the brain and more easily accessible for examination in a doctor's office. The study is very preliminary, but encouraging.



SCIENTISTS URGE BETTER PUBLIC EDUCATION ABOUT ALZHEIMER'S

Results of a survey of people in France, Germany, Poland, Spain and the U.S. reported that while people fear Alzheimer's second only to cancer, the overwhelming majority say they would go to the doctor if they saw symptoms of memory loss and confusion. The poll was supported by a grant to Alzheimer Europe from Bayer, and was conducted by the Harvard School of Public Health. However, many of the respondents believe there is now an effective medical treatment to slow the progression of Alzheimer's; and many also said there is a reliable test currently available to determine if a person is in the early stages of Alzheimer's. Neither of these statements is true. **The scientists say better public education about Alzheimer's is needed.**

CLOSING SUMMARY

Alzheimer's is growing at an alarming rate in the United States and around the world. At this year's Alzheimer's Association International Conference, it was clear that we are making advances toward earlier detection of Alzheimer's, often as a result of innovative global scientific collaborations.

These advances are critical to helping people live longer, healthier lives free of the disability and death caused by Alzheimer's. Identifying the disease early in its process – even before symptoms start to become evident – and treating it early offers our best hope for stopping its progression.

The most important action we can all take is to join the fight against Alzheimer's disease. In the U.S., the Alzheimer's Association is leading the public effort to inform citizens and implement the recently passed National Alzheimer's Project Act, which mirrors the French National Alzheimer's Plan and clearly illustrates the importance of addressing this international health crisis.

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A Summary of Science

