alzheimer's association

the compassion to care, the leadership to conquer

FOR IMMEDIATE RELEASE

Contact: Alzheimer's Association, (312) 335-4078, media@alz.org

NEW STUDY SHOWS COGNITIVE AND SOCIAL ACTIVITY IN MIDLIFE MAY REDUCE DEMENTIA RISK IN MEN

CHICAGO, Sept. 22, 2008 – Participation in a range of cognitively and socially engaging activities in midlife reduced risk for Alzheimer's disease and dementia in men, particularly those at elevated genetic risk for the disease, according to a new study published in the September 2008 issue of *Alzheimer's & Dementia: The Journal of the Alzheimer's Association.* The authors suggest that the new study "supports the 'use it or lose it' hypothesis in aging men."

"This fascinating study provides some of the first relatively strong evidence that cognitive activity, including social interaction, reduces dementia risk," said William Thies, Ph.D., vice president of Medical and Scientific Relations at the Alzheimer's Association. "It is well conducted and of sufficient size to make the findings credible. The results extend earlier twins study data that showed the beneficial impact of similar activities on Alzheimer's and dementia risk in women."

Researchers from the Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, and Duke University Medical Center, Durham, NC, conducted a 28-year prospective cohort study of 147 male twin pairs followed for dementia. They found that participants who had greater midlife cognitive activity in their leisure pursuits had a significantly delayed age of onset of dementia. Protective effects were most apparent in monozygotic (identical) twin pairs in the study, whose genetic and early-life influences were more similar and most tightly controlled, compared with the non-identical twins. Cognitive activity remained protective among identical twin pairs who were at elevated genetic risk for Alzheimer's (because they carried a well established Alzheimer's risk gene, known as ApoE4).

In this study, which is part of the Duke Twins Study of Memory in Aging, the researchers divided cognitive activities into three categories – novel, intermediate novel, and passive/receptive – to discriminate activities that involved the active processing of new information from activities that were more passive or receptive in their processing demands.

- Receptive activities included watching television, listening to radio, and going to movies, theater, art or music.
- Novel activities included reading, studying for courses, and extra work (overtime or other employment).
- Intermediate novel activities included home and family activities, visiting with friends and relatives, club activities (such as attending parties and playing card games), and home hobbies.

The researchers found that participation in intermediate novel activities was most strongly associated with reduced dementia risk. “These activities might be indicative of an enriched environment, which has been shown in animal models to enhance the creation of new brain cells and promote brain repair,” said study author Michelle C. Carlson, Ph.D., Associate Professor in the Department of Mental Health and Center on Aging and Health at the Johns Hopkins Bloomberg School of Public Health.

In the article, the researchers said that they “were surprised to observe that… passive and receptive cognitive activities, including movie and theater going and television viewing, [also] were associated with reduced dementia risk.”

They noted that many of the intermediate and passive activities that were tracked in the study were social in nature, whereas high cognitive activities were primarily solitary (reading, studying). A growing body of evidence suggests that low social activity is associated with increased risk for Alzheimer’s, and that mid-life and late-life social engagement is associated with better cognitive and physical health, even when there is Alzheimer’s pathology in the brain.

“Overall, these findings suggest that engaging in activities that incorporate both cognitive and social activity might confer protection against Alzheimer’s and dementia, particularly among those at elevated genetic risk for the disease,” Carlson said. “These results can help inform future

preventive interventions, especially because they point to a range of activities that individuals are likely to maintain because they are rewarding, entertaining, and engaging."

In the article, the authors added, "These findings have immediate implications for a generation of male baby boomers approaching retirement. Approximately one third of many individuals' lives will be spent after retirement. The expansion of the human life span makes it imperative to identify lifestyle opportunities that increase health and 'add life to years.'"

More About The Study

"Midlife activity predicts risk of dementia in older male twin pairs," by Michelle C. Carlson, Michael J. Helms, David C. Steffens, James R. Burke, Guy G. Potter, and Brenda L. Plassman appears in the September 2008 issue of *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*. The research was supported by grants from the National Institute on Aging.

"Many factors throughout an individual's life contribute to the development of Alzheimer's disease," said Brenda Plassman, Ph.D., director of the Duke Twins Study of Memory in Aging. "Twins studies provide a unique advantage in identifying factors that protect against Alzheimer's because members of a twin pair share many or all of the same genes and have similar early life experiences that often cannot be measured in later life. This means that many unidentified influences are naturally controlled for in twin studies."

The researchers studied 147 male twin-pairs who were discordant for dementia or age of dementia onset and were members of the National Academy of Sciences–National Research Council Twin Registry of World War II veterans and participants in the Duke Twins Study of Memory in Aging. These were white male twin pairs born from 1917-1927. The subjects were community-dwelling and nursing home residents living throughout the continental United States. Participants completed a mail-in questionnaire in 1967 that included items surveying frequency of participation in 13 physical exercise and leisure activities. Total cognitive activity was measured by summing frequency of endorsement for nine of the 13 leisure activities.

Study participants were well-matched for education and prevalence of most health conditions that might influence cognition, such as diabetes, hypertension, and myocardial infarction (P values > .05), with the exception of stroke. Education levels were high, with many twins obtaining some post–high school education. Twins were 44.7 years of age, on average, when they completed the activity questionnaire. During the 15-year follow-up in the Duke Twins Study, 37 of the 147 discordant twin-pair members both developed dementia. Those with dementia had a mean age of onset of 72.7 years, and the nondemented were 81 years of age at the last follow-up.

In the twin pairs, higher cognitive activity scores predicted a significant 26 percent reduction in risk for developing dementia first (odds ratio [OR], 0.74; confidence interval [CI], 0.60 to 0.92). Twin members who developed dementia first had significantly lower total cognitive activity

scores than nondemented twin members (P = .004). Item analyses showed that demented twins went less often to the movies, theater, art, and music.

When stratifying by novel, intermediate, and passive/receptive cognitive activity groupings, passive/receptive activity was associated with a 45 percent reduction in risk for developing dementia first (OR, 0.55; CI, 0.33 to 0.92). Protective effects were most robust in monozygotic twin pairs, where genetic and early-life influences were most tightly controlled, and for activities that were often cognitive and social in nature. Cognitive activity was particularly protective among monozygotic twin pairs carrying the ApoE4 allele, with a 30 percent risk reduction.

The physical activity score did not differ between twin members.

About *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*

Alzheimer's & Dementia: The Journal of the Alzheimer's Association, published six times per year by Elsevier, presents the latest original, peer-reviewed, basic and clinical research advances in the field, including early detection, prevention and treatment. Coverage extends from healthy brain aging to all forms of dementia, including material of interest to both the basic scientist and practitioner. *Alzheimer's & Dementia* focuses on bridging the knowledge gaps across diverse investigations ranging from the bench to the bedside. (www.alzheimersanddementia.org)

About the Alzheimer's Association

The Alzheimer's Association is the leading voluntary health organization in Alzheimer's research, care and support. Our mission is to eliminate Alzheimer's disease through the advancement of research, provide and enhance care and support for all affected, and reduce the risk of dementia through the promotion of brain health. Our vision is a world without Alzheimer's. For more information, visit www.alz.org.

- More about maintaining brain health as we age can be found on the Alzheimer's Association's website at http://www.alz.org/we_can_help_brain_health_maintain_your_brain.asp
- In June 2007, the Centers for Disease Control and Prevention (CDC) and the Alzheimer's Association released the first-ever National Public Health Road Map to Maintaining Cognitive Health. (http://www.alz.org/national/documents/report_healthybraininitiative.pdf)

# # #