Study identifies earliest stages of Alzheimer's disease

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Addressing the earliest stages of Alzheimer's disease, before a patient shows outward signs of cognitive problems, has sometimes been a challenge for physicians and researchers, in part because they have not been using common and specific terms to describe the disease's initial phases. A Mayo Clinic study recommends adding categories to more effectively identify and treat people and give researchers standard definitions to work with. The study is published in this month's issue of the *Annals of Neurology*.

The researchers assessed new guidelines for preclinical Alzheimer's disease (AD) that were recently published by a working group formed by the National Institute on Aging and the Alzheimer's Association (NIA-AA). The group's work marked the first attempt to define criteria for Alzheimer's preclinical phase, which is increasingly recognized as a long latent stage of the disease in which Alzheimer's pathology and biomarkers of that pathology become abnormal, while subjects remain clinically asymptomatic. The guidelines represented a significant step forward because evidence increasingly suggests this early phase is the best time to treat the disease.

The Mayo researchers concluded, however, that the three stages defined by the workgroup are not sufficient to describe all cognitively normal elderly patients. They recommend adding two more groups.

"The important guidelines developed by the NIA-AA workgroup were a vital step in clarifying the progression of this devastating disease and

aiding in earlier diagnosis," says lead author Clifford R. Jack, Jr., M.D., a Mayo Clinic neurologist and the Alexander Family Professor of Alzheimer's Disease Research. "Our study builds on that work by recommending two additional sub-groups that merit attention."

In addition to stages 1, 2 and 3 identified by the NIA-AA workgroup, the authors suggest two additional categories:

- Stage 0: Patients with normal biomarkers and no evidence of cognitive impairment. An estimated 43 percent of all cognitively normal elderly people would be classified as Stage 0.
- SNAP patients: Those with "suspected non-AD pathophysiology." Such patients have normal brain amyloid imaging studies, but abnormal neurodegeneration biomarkers. An estimated 23 percent of cognitively normal elderly patients would fall into the SNAP category.

"Without the additional categories we recommend, more than half of all preclinical AD patients would be 'forced' into a category that was not descriptive of their current state," says co-author Ronald C. Petersen, M.D., Ph.D., a neurologist and the Cora Kanow Professor of Alzheimer's Disease Research at Mayo Clinic. "By more clearly defining the stages of preclinical Alzheimer's disease and categories of elderly subjects who should not be classified as preclinical AD, we can improve its diagnosis and help in the management of this devastating disease."

According to the Alzheimer's Association, more than 5.4 million Americans have the disease, and its incidence is on the rise; one American develops the disease every 69 seconds. Alzheimer's destroys brain cells, causing memory, thinking and behavioral problems severe enough to affect work, family and social relationships. Eventually, it affects the most basic activities of daily living, is incurable and,

ultimately, is fatal. Alzheimer's is the sixth-leading cause of death in the United States, and the fifth-leading cause for people 65 and older, association statistics show.

Provided by Mayo Clinic

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