Is a marker of preclinical Alzheimer's disease associated with loneliness?

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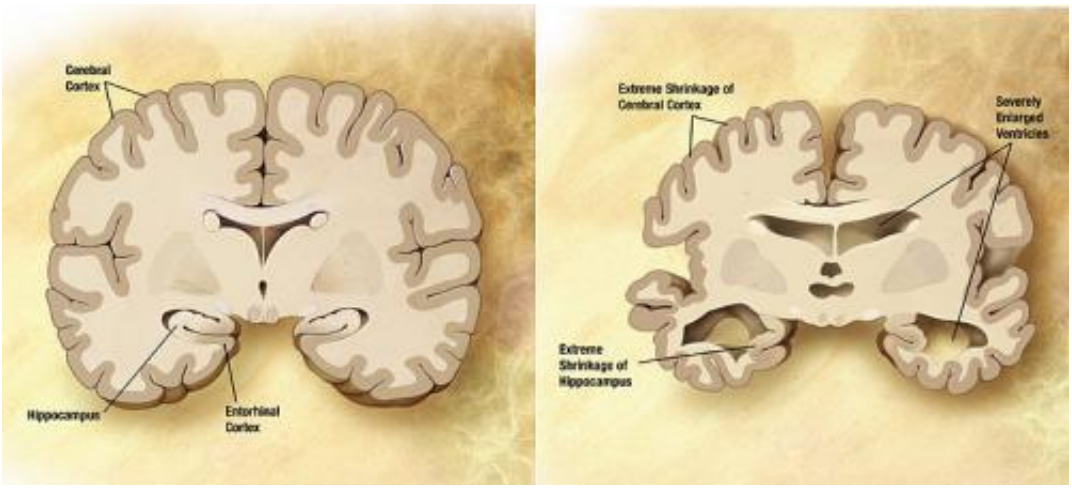

Diagram of the brain of a person with Alzheimer's Disease. Credit: Wikipedia/public domain.

A new article published online by *JAMA Psychiatry* used data from a study of 79 cognitively normal adults to examine whether cortical amyloid levels in the brain, a marker of preclinical Alzheimer disease, was associated with self-reported loneliness.

Alzheimer disease (AD) is a process that moves through preclinical, mild cognitive impairment and dementia stages before it leads to progressive neuropsychiatric, cognitive and functional declines. Loneliness has been associated with cognitive and functional decline and an increased risk of AD dementia.

Nancy J. Donovan, M.D., of Brigham and Women's Hospital and Harvard Medical School, Boston, and coauthors used imaging as a measure of cortical amyloid levels in the brain and a loneliness scale to indicate levels of loneliness. The study included 43 women and 36 men with an average age of about 76.

Of the participants, 22 (28 percent) were carriers of the genetic risk factor apolipoprotein E ?4 (APOE?4) and 25 (32 percent) were in the amyloid-positive group based on volume in imaging. The participants' average loneliness score was 5.3 on a scale of 3 to 12.

The authors report higher cortical amyloid levels were associated with greater loneliness after controlling for age, sex, APOE?4, socioeconomic status, depression, anxiety and social network. Participants in the amyloid-positive group were 7.5 times more likely to be classified as lonely then nonlonely compared with individuals in the amyloid-negative group. The association between high amyloid levels and loneliness also was stronger in APOE?4 carriers than in noncarriers, according to the results.

Limitations of the study include the demographic profile of the participants who had high intelligence and educational attainment but limited racial and socioeconomic diversity. The participants also had better mental and physical health.

"We report a novel association of loneliness and cortical amyloid burden in cognitively normal adults and present evidence for loneliness as a neuropsychiatric symptom relevant to preclinical AD. This work will inform new research into the neurobiology of loneliness and other socioemotional changes in late life and may enhance early detection and intervention research in AD," the study concludes.

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