

# The link between memory perceptions and Alzheimer's risk

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Over 20 percent of older adults suffer from subjective memory impairment, where a person reports having trouble remembering things with no evidence of actual memory loss. Now Penn State researchers are

looking into the growing evidence that subjective memory impairment can lead to Alzheimer's disease in some older adults.

Principal investigator Nikki Hill, assistant professor of nursing, aims to discover how poor self-perceptions of memory, depression, anxiety, and declines in activity are related to actual [memory decline](#) over time. As part of a four-year project being funded by the National Institute on Aging, Hill, along with Jacqueline Mogle, assistant clinical professor of nursing, and Martin Sliwinski, professor of human development and family studies, will also identify individual characteristics that contribute to these relationships in hopes of developing better early screening and personalized intervention options for Alzheimer's disease.

Subjective memory impairment is associated with several negative outcomes in [older adults](#), including Alzheimer's, but little is known regarding the relationship between subjective memory impairment and memory decline.

"We seek to understand why some older adults with subjective memory impairment are at a greater risk for memory decline and better identify those individuals across clinical and community settings," said Hill.

Feelings of memory loss can cause anxiety, depression and withdrawal from social and other activities, all of which are known to increase the risk of cognitive decline and Alzheimer's disease. Additionally, with the average health-care costs for dementia in the last five years of life averaging almost \$300 thousand and Medicare only paying about a third of these costs, the financial burden on individuals and their families is staggering.

"Early detection is key to reducing the burden of Alzheimer's and related disorders," said Mogle. "Determining factors associated with its onset and the development of non-invasive approaches to identifying

individuals at risk may offer many benefits."

The researchers will study four sets of longitudinal data that include over 40,000 individuals ages 55 and older with and without subjective memory impairment over a 20-year time span. This will allow them to investigate change within an individual over time. "We'll be able to look at their behavior before they began reporting memory problems to see if changes started before the onset of subjective memory impairment, or if these changes occurred as a result of declining memory," Hill explained.

The project will give the researchers a unique opportunity to compare data sets from different geographic regions and examine individual characteristics such as [family history](#), race and ethnicity, personality traits, and other factors such as anxiety and depression. "We know that individuals with subjective memory impairment are often worried about the development of Alzheimer's, especially if they have a family history," said Mogle. "We'd like to see if this worry impacts subjective [memory](#) impairment, and if there are differences in relation to individual characteristics, such as race and ethnicity."

According to Hill, their ultimate goal is to develop interventions based on individual characteristics. "If we can determine who is at highest risk and why, then we can develop better screening tools for healthcare providers and tailor early interventions," she said. "Alzheimer's is a slowly progressing disease; often by the time it is diagnosed it is already having a substantial impact on a patient's daily life. The hope is that early interventions will help delay or prevent the symptoms that are so devastating to patients and their families."

The researchers foresee interventions occurring earlier that are tailored to each person's needs based on individual characteristics (such as personality) and Alzheimer's risk factors (such as depressive symptoms). "Telling a person who is shy that they need join more social activities

may not work. In the future, we envision developing person-centered interventions, tailored to individual needs, preferences and risk factors," explained Mogle.

Provided by Pennsylvania State University

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