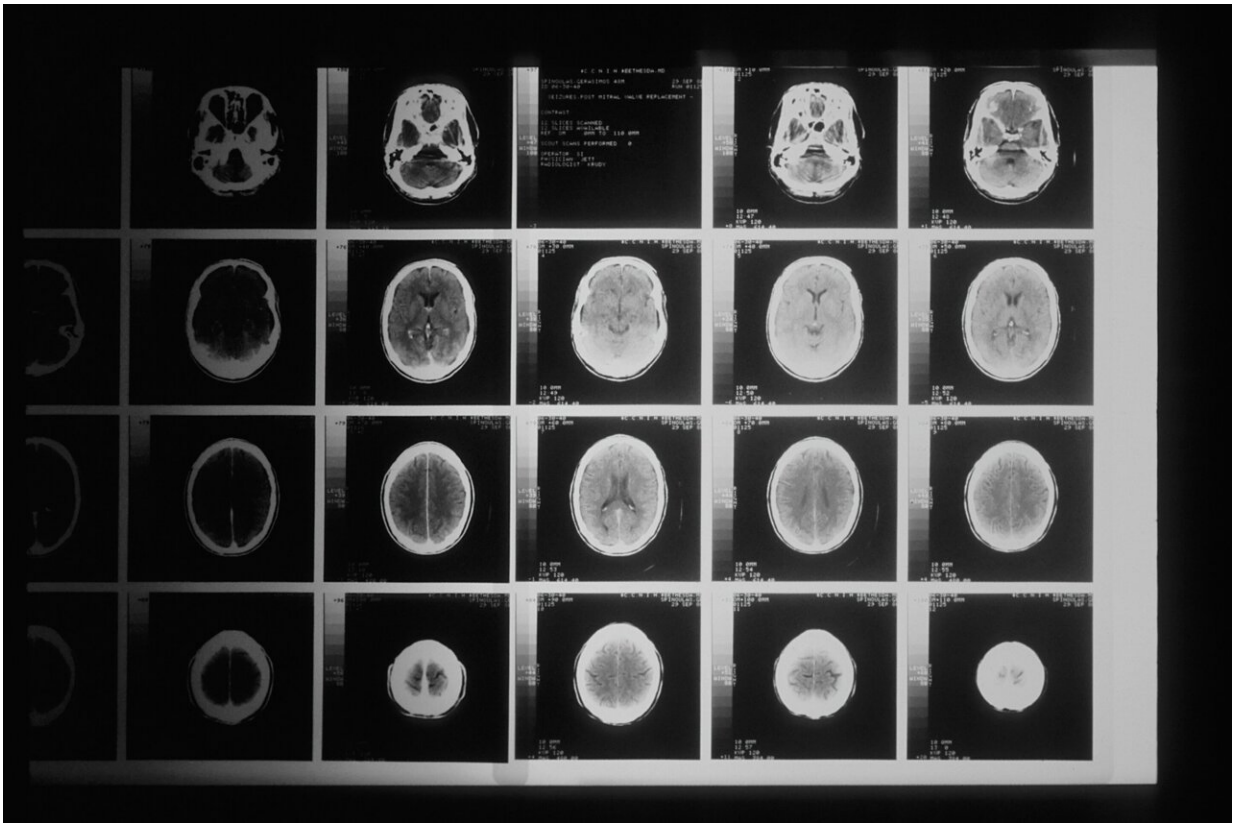


New research aims to understand why women more likely to develop Alzheimer's disease

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Tasmanian researchers are one step closer to understanding why women are more likely to develop Alzheimer's disease, with their research recently published in the journal *Neurology*.

Professor Jane Alty and Aidan Bindoff from the University's Wicking Dementia Research and Education Center led a team of researchers to determine if [cognitive reserve](#) ([education](#) and IQ) slowed down age-related [cognitive decline](#) equally in [males](#) and females.

"We know women have a higher age-adjusted incidence of Alzheimer's disease than men, but the reasons remain unclear. It is not simply related to women living longer than men," Professor Alty said.

"One proposed contributing factor is that, historically, women had less access to education and therefore may have accumulated less cognitive reserve."

Cognitive reserve refers to the ability to buffer the effects of physical changes in the brain so it does not have a direct effect on function.

"People who have developed higher cognitive reserve over their lifetime (through more education and other cognitively stimulating activities such as employment and hobbies) generally do not show as marked decline in their memory and thinking functions," Professor Alty said.

Researchers measured cognitive reserve using total years of education and by measuring their IQ, accessing data through the Wicking Center's Tasmanian Healthy Brain Project (THBP).

The THBP is a long-term cohort study, recruiting healthy Australians aged 50–80 years without [cognitive impairment](#) that began about 10 years ago.

The THBP aimed to determine if university education later in life reduced age-related cognitive decline and significantly decreases risk, or delays the onset, of dementia.

Data from 562 participants (383 females and 179 males) was analyzed for Professor Alty's study.

The study's results showed that cognitive reserve, measured through IQ, moderated the steepness of age-related cognitive decline in males, but not in females.

"Males with higher estimated IQ had a less rapid (less steep) age-related cognitive decline than their lower IQ male peers—this is what we expected," Professor Alty said.

"However, we did not see these same protective effects in females—so those with higher cognitive reserve declined in their memory and thinking tests as they got older at the same rate as females with lower cognitive reserve."

The study's results also showed education did not significantly moderate cognitive trajectories in either males or females.

"The study's findings do not appear to support the hypothesis that historical sex disparities in accessing education contribute to the higher female incidence of Alzheimer disease.

"They do suggest that there are sex-specific effects of cognitive reserve though, with males benefiting more—this highlights that further research studies should assess males and females separately when investigating how we can best protect people against Alzheimer's disease and age-related cognitive decline," Professor Alty said.

The study, "Sex-Specific Protective Effects of Cognitive Reserve on Age-Related Cognitive Decline: a 5-Year Prospective Cohort Study," was published in *Neurology*.

More information: Jane E. Alty et al, Sex-Specific Protective Effects of Cognitive Reserve on Age-Related Cognitive Decline, *Neurology* (2022). [DOI: 10.1212/WNL.0000000000201369](https://doi.org/10.1212/WNL.0000000000201369)

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