

Repetitive negative thinking linked to dementia risk

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Persistently engaging in negative thinking patterns may raise the risk of Alzheimer's disease, finds a new UCL-led study.

In the study of people aged over 55, published in *Alzheimer's & Dementia*, researchers found 'repetitive negative thinking' (RNT) is linked to subsequent cognitive decline as well as the deposition of harmful brain proteins linked to Alzheimer's.

The researchers say RNT should now be further investigated as a potential risk factor for dementia, and psychological tools, such as mindfulness or meditation, should be studied to see if these could reduce [dementia risk](#).

Lead author Dr. Natalie Marchant (UCL Psychiatry) said: "Depression and anxiety in mid-life and old age are already known to be [risk factors](#) for dementia. Here, we found that certain thinking patterns implicated in depression and anxiety could be an underlying reason why people with those disorders are more likely to develop dementia.

"Taken alongside other studies, which link depression and anxiety with dementia risk, we expect that chronic negative thinking patterns over a long period of time could increase the risk of dementia. We do not think the evidence suggests that short-term setbacks would increase one's risk of dementia.

"We hope that our findings could be used to develop strategies to lower people's risk of dementia by helping them to reduce their negative thinking patterns."

For the Alzheimer's Society-supported study, the research team from UCL, INSERM and McGill University studied 292 people over the age of 55 who were part of the PREVENT-AD cohort study, and a further 68 people from the IMAP+ cohort.

Over a period of two years, the study participants responded to questions about how they typically think about [negative experiences](#), focusing on RNT patterns like rumination about the past and worry about the future. The participants also completed measures of depression and anxiety symptoms.

Their cognitive function was assessed, measuring memory, attention, spatial cognition, and language. Some (113) of the participants also underwent PET brain scans, measuring deposits of tau and amyloid, two proteins which cause the most common type of dementia, Alzheimer's disease, when they build up in the brain.

The researchers found that people who exhibited higher RNT patterns experienced more cognitive decline over a four-year period, and declines in memory (which is among the earlier signs of Alzheimer's disease), and they were more likely to have amyloid and tau deposits in their brain.

Depression and anxiety were associated with subsequent cognitive decline but not with either amyloid or tau deposition, suggesting that RNT

could be the main reason why depression and anxiety contribute to Alzheimer's disease risk.

"We propose that repetitive negative thinking may be a new risk factor for dementia as it could contribute to dementia in a unique way," said Dr. Marchant.

The researchers suggest that RNT may contribute to Alzheimer's risk via its impact on indicators of stress such as high blood pressure, as other studies have found that physiological stress can contribute to amyloid and tau deposition.

Co-author Dr. Gael Chételat (INSERM and Université de Caen-Normandie) commented: "Our thoughts can have a biological impact on our [physical health](#), which might be positive or negative. Mental training practices such as meditation might help promoting positive- while down-regulating negative-associated mental schemes.

"Looking after your mental health is important, and it should be a major public health priority, as it's not only important for people's health and well-being in the short term, but it could also impact your eventual risk of dementia."

The researchers hope to find out if reducing RNT, possibly through mindfulness training or targeted talk therapy, could in turn reduce the risk of dementia. Dr. Marchant and Dr. Chételat and other European researchers are currently working on a large project to see if interventions such as meditation may help reduce dementia risk by supporting mental health in old age.

Fiona Carragher, Director of Research and Influencing at Alzheimer's Society, said: "Understanding the factors that can increase the risk of dementia is vital in helping us improve our knowledge of this devastating condition and, where possible, developing prevention strategies. The link shown between repeated negative thinking patterns and both cognitive decline and harmful deposits is interesting although we need further investigation to understand this better. Most of the people in the study were already identified as being at higher risk of Alzheimer's disease, so we would need to see if

these results are echoed within the general population and if repeated negative thinking increases the risk of Alzheimer's disease itself.

"During these unstable times, we are hearing from people every day on our Alzheimer's Society Dementia Connect line who are feeling scared, confused, or struggling with their [mental health](#). So it's important to point out that this isn't saying a short-term period of negative thinking will cause Alzheimer's disease. Mental health could be a vital cog in the prevention and treatment of [dementia](#); more research will tell us to what extent."

More information: Natalie L. Marchant et al, Repetitive negative thinking is associated with amyloid, tau, and cognitive decline, *Alzheimer's & Dementia* (2020). [DOI: 10.1002/alz.12116](https://doi.org/10.1002/alz.12116)

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