

Depressive symptoms may hasten memory decline in older people

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Depressive symptoms are linked to subsequent memory decline in older people, while poorer memory is also linked to an increase in depressive symptoms later on, according to a new study led by researchers at UCL

and Brighton and Sussex Medical School.

The study, published in *JAMA Network Open*, looked at 16 years of longitudinal data from 8,268 adults in England with an average age of 64.

The researchers concluded that depression and memory were closely interrelated, with both seeming to affect each other.

Senior author Dr. Dorina Cadar, of the UCL Department of Behavioural Science & Health and Brighton and Sussex Medical School, said, "It is known that depression and poor memory often occur together in [older people](#), but what comes first has been unclear.

"Our study shows that the relationship between depression and poor memory cuts both ways, with [depressive symptoms](#) preceding memory decline and memory decline linked to subsequent depressive symptoms. It also suggests that interventions to reduce depressive symptoms may help to slow down memory decline."

Lead author Jiamin Yin, who graduated from UCL and is now a doctoral student at the University of Rochester, New York, said, "These findings underscore the importance of monitoring memory changes in older adults with increasing depressive symptoms to identify memory loss early and prevent further worsening of depressive function.

"Conversely, it is also critical to address depressive symptoms among those with memory decline to protect them from developing depression and memory dysfunction."

The research team suggested that depression might affect memory due to depression-related changes in the brain. These include neurochemical imbalances (e.g. lower levels of serotonin and dopamine), structural

changes in regions involved in memory processing, and disruptions to the brain's ability to re-organize and form new connections.

The team said that [memory impairments](#) also might arise from [psychological factors](#) such as rumination—that is, repetitive thinking or dwelling on negative feelings.

On the other hand, people experiencing memory lapses or difficulties in retaining new information can lead to frustration, loss of confidence, and feelings of incompetence, which are common triggers for depressive episodes. Memory impairment may also disrupt daily functioning and social interactions, leading to [social isolation](#) potentially triggering depressive symptoms.

Dr. Cadar added, "Depression can cause changes in brain structures, such as the hippocampus, which is critical for memory formation and retrieval. Chronic stress and high levels of cortisol associated with depression can damage neurons in these areas. However, a further understanding of mechanisms linking memory decline and depression is crucial for developing targeted interventions aimed at improving mood and slowing [cognitive decline](#) in individuals with [depression](#) and memory impairment."

For this study, the researchers looked at data from the English Longitudinal Study of Ageing (ELSA), in which a nationally representative population sample in England answers a wide range of questions every two years.

People who started with higher depressive symptoms were more likely to experience faster memory decline later, while those who started with poorer memory were more likely to experience a later increase in depressive symptoms.

In addition, participants who experienced more of an increase in depressive symptoms during the study were more likely to have a steeper memory decline at the same time, and vice versa—those who had a steeper [memory decline](#) were more likely to have a sharper increase in depressive symptoms.

The same pattern was not found for verbal fluency. While less verbal fluency was linked to more depressive symptoms at the start of the study, changes in one did not predict later changes in the other.

The researchers accounted for a range of factors that might have affected the results, such as physical activity and life-limiting illness. As an observational study, the researchers noted, it could not establish causality.

More information: Bidirectional relation of depressive symptoms and cognitive function over time, *JAMA Network Open* (2024).
[dx.doi.org/10.1001/jamanetworkopen.2024.16305](https://doi.org/10.1001/jamanetworkopen.2024.16305)

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