

Anxiety can damage brain: Accelerate conversion to Alzheimer's for those with mild cognitive impairment

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Credit: George Hodan/Public Domain

People with mild cognitive impairment (MCI) are at increased risk of converting to Alzheimer's disease within a few years, but a new study warns the risk increases significantly if they suffer from anxiety.

The findings were reported on Oct. 29 online by *The American Journal*

of Geriatric Psychiatry, ahead of print publication, scheduled for May 2015.

Led by researchers at Baycrest Health Sciences' Rotman Research Institute, the study has shown clearly for the first time that anxiety symptoms in individuals diagnosed with MCI increase the risk of a speedier decline in cognitive functions - independent of depression (another risk marker). For MCI patients with mild, moderate or severe anxiety, Alzheimer's risk increased by 33%, 78% and 135% respectively.

The research team also found that MCI patients who had reported anxiety symptoms at any time over the follow-up period had greater rates of atrophy in the medial temporal lobe regions of the brain, which are essential for creating memories and which are implicated in Alzheimer's.

Until now, anxiety as a potentially significant risk marker for Alzheimer's in people diagnosed with MCI has never been isolated for a longitudinal study to gain a clearer picture of just how damaging anxiety symptoms can be on cognition and brain structure over a period of time. There is a growing body of literature that has identified late-life depression as a significant risk marker for Alzheimer's. Anxiety has historically tended to be subsumed under the rubric of depression in psychiatry. Depression is routinely screened for in assessment and follow-up of memory clinic patients; anxiety is not routinely assessed.

"Our findings suggest that clinicians should routinely screen for anxiety in people who have memory problems because anxiety signals that these people are at greater risk for developing Alzheimer's," said Dr. Linda Mah, principal investigator on the study, clinician-scientist with Baycrest's Rotman Research Institute, and assistant professor in the Department of Psychiatry at the University of Toronto. Dr. Mah is also a co-investigator in a multi-site study lead by the Centre for Addiction and

Mental Health, and partially funded by federal dollars (Brain Canada), to prevent Alzheimer's in people with late-life depression or MCI who are at high risk for developing the progressive brain disease.

"While there is no published evidence to demonstrate whether drug treatments used in psychiatry for treating anxiety would be helpful in managing anxiety symptoms in people with [mild cognitive impairment](#) or in reducing their risk of conversion to Alzheimer's, we think that at the very least behavioural stress management programs could be recommended. In particular, there has been research on the use of mindfulness-based stress reduction in treating anxiety and other psychiatric symptoms in Alzheimer's —and this is showing promise," said Dr. Mah.

The Baycrest study accessed data from the large population-based Alzheimer's Disease Neuroimaging Initiative to analyze anxiety, depression, cognitive and brain structural changes in 376 adults, aged 55 - 91, over a three-year period. Those changes were monitored every six months. All of the adults had a clinical diagnosis of amnesic MCI and a low score on the depression rating scale, indicating that [anxiety symptoms](#) were not part of clinical [depression](#).

MCI is considered a risk marker for converting to Alzheimer's disease within a few years. It is estimated that half-a-million Canadians aged 65-and-older have MCI, although many go undiagnosed. Not all MCI sufferers will convert to Alzheimer's - some will stabilize and others may even improve in their cognitive powers.

The Baycrest study has yielded important evidence that anxiety is a "predictive factor" of whether an individual with MCI will convert to Alzheimer's or not, said Dr. Mah. Studies have shown that [anxiety](#) in MCI is associated with abnormal concentrations of plasma amyloid protein levels and T-tau proteins in cerebrospinal fluid, which are

biomarkers of Alzheimer's. Depression and chronic stress have also been linked to smaller hippocampal volume and increased risk of dementia.

Provided by Baycrest Centre for Geriatric Care

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