

Bilingualism delays onset of Alzheimer's symptoms

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A Canadian science team has found more dramatic evidence that speaking two languages can help delay the onset of Alzheimer's symptoms by as much as five years.

The latest study, led by Baycrest's Rotman Research Institute, examined the clinical records of more than 200 patients diagnosed with probable Alzheimer's disease and found that those who have spoken two or more languages consistently over many years experienced a delay in the onset of their symptoms by as much as five years. The study is published in the Nov. 9th issue of *Neurology*.

The science team includes internationally-renowned cognitive researcher Dr. Fergus Craik of the Rotman Research Institute; Dr. Ellen Bialystok of York University, a leading expert in bilingualism research; and Dr. Morris Freedman, one of Canada's leading clinicians in the diagnosis and treatment of Alzheimer's and other dementias.

"We are not claiming that bilingualism in any way prevents Alzheimer's or other dementias, but it may contribute to cognitive reserve in the brain which appears to delay the onset of Alzheimer's symptoms for quite some time," said Dr. Craik, lead investigator and co-editor of The Oxford Handbook of Memory.

The brains of people who speak two languages still show deterioration from Alzheimer's pathology; however, their special ability with two languages seems to equip them with compensatory skills to hold back the

tell-tale symptoms of Alzheimer's, such as [memory loss](#), confusion, and difficulties with problem-solving and planning.

"These results are especially important for multicultural societies like ours in Canada where bilingualism is common," said Dr. Bialystok, professor of Psychology at York University and associate scientist at the Rotman Research Institute. "We need to understand how [bilingualism](#) changes cognitive ability, especially when there are clinical implications as in this case."

Observations were made on 211 patients diagnosed with probable Alzheimer's from the Sam and Ida Ross Memory Clinic at Baycrest, from 2007 to 2009. The patients' date of diagnosis and age of onset of cognitive impairment were recorded along with information on occupational history, education and language history (i.e. fluency in English and any other languages). Following this procedure, 102 patients were classified as bilingual and 109 as monolingual.

The researchers found that bilingual patients had been diagnosed with Alzheimer's 4.3 years later and had reported the onset of symptoms five years later than the monolingual patients. The groups were equivalent on measures of cognitive and occupational level, there was no apparent effect of immigration status, and there were no gender differences.

The *Neurology* paper replicates findings from the team's widely-reported 2007 study led by Dr. Bialystok and published in *Neuropsychologia*. That study examined the clinical records of 184 patients diagnosed with probable Alzheimer's and other forms of [dementia](#) – and found that bilingual patients delayed the onset of their symptoms by four years compared to monolingual patients.

The current study adds to mounting scientific evidence that lifestyle factors – such as regular cardiovascular exercise, a healthy diet, and

speaking more than one language – can play a central role in how the brain copes with age-related cognitive decline and diseases such as Alzheimer's.

"Although a great deal of research is being focused on the development of new and more effective medications for Alzheimer's disease, there are currently no drug treatments that show any effects on delaying Alzheimer's symptoms, let alone delaying the onset of these symptoms by up to five years," said Dr. Freedman, head of [Neurology](#) and director of the Sam and Ida Ross Memory Clinic at Baycrest.

Provided by Baycrest Centre for Geriatric Care

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