

Two cultures, same risk for cognitive impairment

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Diabetes is a known risk factor for cognitive decline and dementia, age-related conditions that affect memory and thinking skills. However, little is known about how the diabetes-cognitive decline link compares across cultures.

Scientists from Mayo Clinic and Huashan Hospital in Shanghai explored the association between Type 2 diabetes and [cognitive impairment](#) to find out if the relationship varies in different populations. Study participants had not been diagnosed with memory-related diseases, such as [vascular dementia](#) or Alzheimer's dementia.

For the study, the researchers evaluated data from two large, ongoing,

population-based studies: the Shanghai Aging Study (SAS) and the Mayo Clinic Study of Aging (MCSA). Both use similar designs and methodologies. For example, both studies recruit participants from a defined population, include an on-site, in-person evaluation, use similar or comparable tests of cognition, and include participants over age 50. The SAS uses neuropsychological tests adapted from Western tests to harmonize with Chinese culture.

The scientists analyzed medical data from 3,348 Chinese adults and 3,734 American adults, all of whom had undergone cognitive testing and were dementia-free. Participants' medical records were used to determine whether they had Type 2 diabetes.

The researchers found that all of the participants who had Type 2 diabetes, regardless of their population study, performed significantly worse on cognitive tests, compared to participants who did not have diabetes. These findings suggest that diabetes is linked to cognitive impairment in both Eastern and Western cultures.

'We wanted to study diabetes and cognitive impairment in these two completely different ethnic groups to see whether there are any differences. We found that in both cohorts, having a history of diabetes was associated with greater impairment in cognitive function,' says study co-author Rosebud Roberts, M.B., Ch.B., an epidemiologist at Mayo Clinic.

The results were the same—even after adjusting for age, gender and education, as well as vascular problems. More specifically, the American and Chinese [study participants](#) with diabetes performed considerably worse on executive function tests, compared to people in both study populations who did not have diabetes. Executive function is the ability to make decisions, plan and problem-solve, and is associated with the frontal lobe of the brain.

In the Shanghai population, a diabetes diagnosis also was associated with poorer performance on tests of memory, visual-spatial skills and language. One possible reason for this difference is that the population studied by the SAS developed diabetes at an earlier age, compared to the MCSA population.

Roberts says the research is important, because it shows that impairment in [executive function](#) may be an early effect of diabetes, and earlier age at diabetes diagnosis results in greater cognitive deficits. However, she adds, the overall effects of [diabetes](#) on cognition are similar in Western and Eastern populations.

The MCSA is a population-based prospective study established in 2004 to investigate the prevalence and incidence of mild cognitive impairment, and identify risk factors for [mild cognitive impairment](#) and dementia.

Provided by Mayo Clinic

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