

# Cognitive problems associated with diabetes duration and severity

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Individuals with mild cognitive impairment appear more likely to have earlier onset, longer duration and greater severity of diabetes, according to a report in the August issue of *Archives of Neurology*.

Mild cognitive impairment is a transitional stage between normal aging and dementia, according to background information in the article. Previous studies have found an association between mild cognitive impairment and diabetes. Poor blood glucose control over time may lead to neuron loss, and diabetes is associated with cardiovascular disease risk and stroke, which also may increase the risk of cognitive impairment.

Rosebud O. Roberts, M.B.Ch.B., M.S., and colleagues at Mayo Clinic, Rochester, Minn., studied individuals from Olmsted County, Minnesota, who were age 70 to 89 on Oct. 1, 2004. Participants received a neurological examination, neuropsychological evaluation and tests of blood glucose levels, and completed an interview with questions about diabetes history, treatment and complications. A medical records linkage system was used to confirm diabetes history.

Rates of diabetes were similar among 329 individuals with mild cognitive impairment (20.1 percent) and 1,640 participants without mild cognitive impairment (17.7 percent). However, mild cognitive impairment was associated with developing diabetes before age 65, having diabetes for 10 years or longer, being treated with insulin and having diabetes complications.

"Severe diabetes mellitus is more likely to be associated with chronic hyperglycemia [high blood glucose], which, in turn, increases the likelihood of cerebral microvascular disease and may contribute to neuronal damage, brain atrophy and cognitive impairment," the authors write. That individuals with the eye disease diabetic retinopathy were twice as likely to have mild cognitive impairment supports the theory that diabetes-related damage to blood vessels in the brain may contribute to the development of cognitive problems.

Source: JAMA and Archives Journals

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