

Diabetes mellitus and mild cognitive impairment: Higher risk in middle age?

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In a large population-based study of randomly selected participants in Germany, researchers found that mild cognitive impairment (MCI) occurred twice more often in individuals diagnosed with diabetes mellitus type 2. Interestingly, this strong association was only observed in middle-aged participants (50-65 years), whereas in older participants (66-80 years) the association vanished. This study is published in the *Journal of Alzheimer's Disease*.

The concept of MCI describes an intermediate state between normal cognitive aging and [dementia](#). Although people with MCI have a higher dementia risk, very few actually develop dementia. In fact, many persons with MCI convert back to a cognitively normal state. This transitional – and therefore possibly modifiable – characteristic makes the concept of MCI a promising approach in the development of prevention strategies.

What criteria determine MCI? The following four criteria must be met for a diagnosis of MCI: First, [participants](#) have a subjective impression of a declined cognitive performance over the last two years. Second, this subjective impression is validated in using objective measures (cognitive test battery). Third, participants are capable of handling activities of daily living. Fourth, a diagnosis of dementia is ruled out.

The concept of MCI distinguishes between two subtypes depending on the affected cognitive domain: participants with impairment in the memory domain are categorized as amnesic MCI and those with deficits in non-memory domains are categorized as non-amnesic MCI.

The Heinz Nixdorf Recall (Risk Factors, Evaluation of Coronary Calcium and Lifestyle) study is an observational, population-based, prospective study that examined 4,814 participants (50% men) between 2000 and 2003 in the metropolitan Ruhr area in Germany. After five years a second examination was conducted with 90% of the participants taking part.

For this analysis, 560 participants diagnosed with MCI were compared with 1376 cognitively normal participants. Of participants with MCI, 289 had amnesic MCI and 271 had non-amnesic MCI.

Interestingly, [diabetes mellitus type 2](#) was strongly associated with MCI as well as MCI subtypes, but only in the middle-aged group. Examination of differences by gender revealed a stronger association of [diabetes](#) with amnesic MCI in middle-aged women and by contrast a stronger association with non-amnesic MCI in middle-aged men.

These results suggest that middle-aged individuals with [diabetes mellitus type 2](#) are particularly vulnerable to MCI, with gender specific effects on subtypes of MCI. This underlines the importance of high quality treatment of diabetes especially in middle age, not only because of cardiovascular damage, but also because it might help to prevent or delay cognitive decline.

More information: Association of diabetes mellitus and mild cognitive impairment in middle-aged men and women. Angela Winkler, Martha Dlugaj, Christian Weimar, Karl-Heinz Jöckel, Raimund Erbel, Nico Dragano, Susanne Moebus, on behalf the Heinz Nixdorf Recall Study Investigative Group. *Journal of Alzheimer's Disease*, Volume 42/4 (October 2014): [DOI: 10.3233/JAD-140696](https://doi.org/10.3233/JAD-140696)

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