

# The Influence of Diabetes On Cognitive Functions

## - A Quantitative Meta-Analysis -

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### Abstract

Diabetes has been repeatedly associated with a wide variety of cognitive impairments, compared to non-diabetic control subjects. However, the neuropsychological results of different studies are heterogeneous in terms of affected cognitive domains and the severity of damage. As a consequence, the exact pattern and the magnitude of cognitive dysfunction are still unclear. The main purpose of the meta-analysis is to determine the pattern and the magnitude of cognitive dysfunctions in adults with diabetes compared to non-diabetic control subjects. We also propose to identify the role of diabetes type, the glycemic control and the time since disease onset in the impairment of cognitive processes. The results of this study support the hypothesis that there is a connection between diabetes and cognitive dysfunction. Although the effect sizes of diabetes on cognitive functions generally oscillate between low and moderate values, they should still be considered, as they can affect daily activities. Our study statistically is not significant in terms of metabolic control and duration of disease on cognitive performance, a single field fitting in the parameters of meaning (psychomotor activity).

### Keywords

diabetes, type 1 diabetes, type 2 diabetes, cognitive functions, IQ, memory and learning, working memory, attention, executive functions, visual processing, psychomotor activity, intelligence