

During the process of aging, the human mental and physical abilities decline. Olfactory abilities are not an exception. A significant decrease of olfactory capabilities in patients with Parkinson's disease was firstly observed a few decades ago. After the discovery of the relationship between olfactory abilities and cognitive abilities in patients with neurodegenerative disease, the same relationship was also found in healthy aging people. It seems that the factors causing the decline of cognition foremost affect the olfactory functions. A number of studies suggests, that this could lead to a possibility of prediction of the future cognitive decline through the assessment of olfactory decline.

Our research followed the results of these studies as a part of the NANOK study. Testing of the smell abilities was done in 2014 and 2015. Participants were screened with the Sniffin 'Sticks. Cognitive functions were tested with an extensive battery of cognitive tests. The processing of data was divided into two parts. In the first part we tested the olfactory identification and discrimination relationship with the general cognitive abilities and the level of the executive functions. In the second part we tested the possibility of prediction of cognitive functions using the smell identification and discrimination test.

The results of these analyses have shown that the olfactory identification ability relates to the general cognition abilities and the level of the executive function. The ability of smell discrimination was linked only to the general cognitive abilities. It has also been shown that the future level of cognitive abilities can be predicted by olfactory identification scores.