

Singapore scientists have identified a possible early marker of Alzheimer's disease*SCMP: blockage of brain channels may indicate dementia**Photo: Global Look Press/Bulkin Sergey/news.ru*

Singaporean scientists have identified a possible early marker of Alzheimer's disease associated with disruption of the glymphatic system, a network of microscopic channels responsible for removing toxins and metabolic products from the brain. This was reported on January 12 by the South China Morning Post (SCMP) newspaper

We are talking about enlarged perivascular spaces, the so—called cerebral drains, through which cerebrospinal fluid circulates, cleansing brain tissue, mainly during sleep. According to a study by Nanyang Technological University (NTU), in people with early signs of Alzheimer's disease, these channels are more likely to be expanded and partially blocked.

The study involved almost 1,000 Singaporeans of different ethnic groups, which, according to the authors, is crucial for the correct assessment of dementia risks in Asian populations. The head of the work, Associate Professor Nagendran Kandiah, director of the Singapore Dementia Research Center, noted that the mechanisms of development of Alzheimer's disease in Asian and European patients may differ significantly.

In particular, the prevalence of the APOE4 gene, considered a key risk factor for Alzheimer's disease, among Caucasian patients reaches 50-60%, while in Singaporean patients it does not exceed 20%. At the same time, Asians are more likely to have damage to small brain vessels, which can contribute to the accumulation of beta-amyloid, a protein that forms amyloid plaques.

The authors found that enlarged perivascular spaces correlate with four of the seven biomarkers of Alzheimer's disease, including amyloid plaques, tau protein, and signs of neurodegeneration. These changes were detected using standard magnetic resonance imaging, which, according to the researchers, makes the method promising for early screening.

Justin Ong, a co-author of the study and a student at the NTU faculty of medicine, noted that the ability to detect potential signs of Alzheimer's disease on routine MRI scans opens the way to earlier referral of patients for in-depth examinations, including PET scans and analysis of cerebrospinal fluid.

According to Kandiah, although the causes of the "clogging" of the glymphatic system are not fully understood, the process can be influenced by age, sleep disorders, cardiovascular diseases, obesity and chronic inflammation. He added that along with drug therapy, physical activity and risk factor control play an important role.

Last December, a study by the University of Sheffield and the University of Western Sydney showed that improvising to music can help improve cognitive skills in the elderly. The study involved beginners who had been undergoing various types of musical training for a year. In the process of improvisation, people are asked to create a new melody, and during playback, they are asked to repeatedly play a given melody.

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