ALZHEIMER'S DISEASE AND THE RESEARCH METHODS OF SCIENTISTS ON THIS DISEASE

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Abstract: Alzheimer's disease is a disease that has been incurable for many years. In this scientific article, we will compare the research methods of scientists on Alzheimer's disease and examine how useful these research methods are for patients.

Keywords: DEMENTIA, Cognitive, neurology, chronological, MRI, episodic memory, dementia, neurofibrillary, plaque.

Introduction: During Alzheimer's disease, a number of pathological processes occur in the body. For example, proteins are formed incorrectly in brain tissue - the accumulation of amyloid beta and tau proteins. Plaques are formed from small peptides. Senile plaques also appear. In addition, there is a "loss" of neurons and synaptic connections. This leads to atrophy of certain areas of the cerebral cortex. Simply put, there is a massive loss of nerve cells. There is a lack of substances necessary for the transmission of nerve impulses. The disease progresses gradually. Every seven seconds, someone in the world is diagnosed with Alzheimer's disease. Alzheimer's disease, which deprives a person of mental abilities, especially memory, is threatening not only the elderly, but also some young people in recent years. Alzheimer's disease is a disease described by ancient doctors, but German psychiatrist Alois Alzheimer was finally able to determine its causes, course and symptoms in 1901. Six years later, he studied the course of the disease in detail in one of his patients. Since then, the disease has been named after him. This disease usually occurs in people over 65 years old. However, early-onset Alzheimer's disease also exists, and this form of the disease is rare. It was ranked among the global diseases in 2006, with 26.6 million people suffering from the disease. There are also suggestions that this number may increase fourfold by 2050.

Relevance of the scientific work: Alzheimer's disease is one of the most incurable diseases in the world. Earlier this year, scientists from the Hefei Academy of Sciences in China introduced a new multi-tasking learning system called DEMENTIA for early detection and progression assessment of Alzheimer's

disease. The researchers explained that Alzheimer's disease is becoming an increasingly urgent problem as the population ages, and early diagnosis is key to improving the condition of patients. One of the first signs of cognitive decline is speech impairment. In recent months, scientists at Stanford University have developed an innovative blood test that can assess the biological age of key organs. "We have developed an age index for your organs based on blood. Using this index, we can assess the age of an organ today and predict the likelihood of developing a disease related to that organ in ten years," said Tony Wiss-Corey, Ph.D., professor of neurology and neurological sciences.

Methods: The scientific article notes that human organs can age at different rates and times. The study, based on the study of protein profiles, allows you to identify differences between the chronological and biological age of the kidneys, muscles, heart, lungs and other organs. However, scientists have long emphasized that the main indicator of life expectancy is brain age. Experts from the American Center for Memory and Alzheimer's Disease followed 404 elderly people for 7 years, wearing special "smart" watches to monitor physical activity. In addition, the participants regularly underwent MRI scans of the brain and passed memory and thinking tests. The participants spent an average of about 13 hours a day sitting or lying down. The results showed that those who remained inactive for longer periods of time had impaired episodic memory, decreased volume in certain parts of the brain, and also showed changes characteristic of the early stages of Alzheimer's disease.

Results: Turning to recent data, experts from the World Health Organization (WHO) have identified the main risk factors for Alzheimer's disease. There are several hypotheses about the causes of Alzheimer's disease, the most common of which are forms of dementia. The disease is characterized by the accumulation of amyloid plaques and neurofibrillary tangles in brain tissue. However, it is still not clear what causes these changes. A person cannot change hereditary conditions, but he can change his habits to prevent the disease. WHO has named several factors that contribute to the development of Alzheimer's disease. Analyzing many years of research on neurodegenerative diseases, scientists have concluded that lack of physical activity, unhealthy diet and excessive alcohol consumption increase the risk of diseases such as Alzheimer's.

Cognitive impairment can also develop against the background of other diseases and health conditions: diabetes, high blood pressure, high cholesterol and obesity. Health experts also warn about the connection between Alzheimer's

disease and hearing loss and depression. In addition, social isolation and mental inactivity can also trigger the development of the disease, the WHO noted.

Summary: Alzheimer's disease, these research methods conducted by scientists may not be a complete cure for the disease, but they can help patients slow the progression of the disease. Although the disease is mainly prevalent in the United States, scientists around the world are conducting research and studies on this disease. We hope that Alzheimer's disease will not become one of the diseases for which no cure has been found in the near future

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