

# Scientists are searching for ways to improve the effectiveness of rehabilitation of people with loss of speech

Researchers at Siberian Federal University have found a connection between the features of the biography of people with aphasia reflected in their speech and the speed of their recovery (project leader – Professor Anastasia Kolmagorova). According to TASS, the data obtained will speed up the rehabilitation of such patients.



Linguists of the School of Philology and Language Communication of Siberian Federal University studied the speech characteristics of patients with aphasia, a disease in which, as a result of damage to specific brain areas, a person completely or partially loses the ability to speak. Comparing these characteristics (vocabulary, the usual key of communication, and even their ability to speak foreign languages) with the pace of rehabilitation of such patients, they came to the conclusion that in the future the effectiveness of speech restoration can be increased with the help of special exercises aimed at strengthening the identified mechanisms. This approach allows building workouts based on a familiar (frequency) vocabulary from the words that they used at work or off work.

*"The scientists wondered whether it was possible to improve the efficiency of restoring such connections during the rehabilitation of patients, if these features of speech biography were taken into account. The relevance of the scientific work is related to the fact that its result will be the development of recovery exercises. The result of the study at this stage was the development of exercises for the rehabilitation of patients with aphasia. The tests carried out confirmed the effectiveness of the approach — the speech returned to the participants of the study faster in comparison with the conditions of the traditional recovery course," said **Lyudmila Kulikova**, the project curator, director of the SibFU's School of Philology and Language Communication.*



The scientists conducted a survey of patients with aphasia, and also studied data on people with a similar disease who underwent recovery courses at the Neurorehabilitation Center of the Siberian Clinical Center of the FMBA of Russia from 2014 to 2018. The authors compared the information obtained with the results of a study of healthy people, analyzing the vocabulary used in speech and its violations. The experiments involved bilingual patients with and without aphasia to create and test the new approach.

As a result, the researchers created a sociolinguistic portrait of a group of people who are at risk for the incidence of aphasia. The authors also compiled lists of frequency words and expressions typical of people without speech pathologies.

It should be added that clinical linguistics is an interdisciplinary scientific and applied field, which is actively developed by the School of Philology and Language Communication of Siberian Federal University. Thus, in cooperation with the Department of Higher Nervous Function Restoration of the FMBA Clinical Research Center, the team developed a set of exercises for speech therapy for patients with aphasia. The innovative technique has already been successfully used in the practice of the department. The measuring shows that the introduction of this training complex makes it possible to increase the efficiency of the therapy. The first stage of work on the preparation of visual and verbal

stimuli for speech diagnostics and speech therapy of Tuvan-Russian bilinguals has ended. A series of experiments with healthy bilinguals was carried out in order to identify the specifics and place of Russian words in the mental vocabulary of bilingual residents of Tuva.

In addition, within the framework of an international scientific project with Ludwig Maximilian University of Munich on Clinical Linguistics and Neuropragmatics: Internationalization of Practices, the researchers are performing a comparative analysis of modern practices of language rehabilitation of patients with cognitive and pragmatic speech disorders in Russia and Germany and their adaptation to the cultural, communicative and technological characteristics of these two countries.

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