

Tomsk scientists will spend five and a half million rubles to restore speech in cancer patients

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Tomsk State University of Control Systems and Radioelectronics (TSUCSR) and Research Institute of Oncology will receive a grant from the Russian Science Foundation to develop a unique software package for patients after surgical treatment of oral and oropharyngeal cancer.

A leading researcher at the Department of Head and Neck Tumors of the Research Institute of Oncology Lydia Balatskaya said that oral cancer is a common disease among head and neck tumors. During surgical treatment, a part of the tongue or a certain articulatory organ is removed.

Naturally, the speech function suffers first of all. Patients are diagnosed with dysarthria, their speech is very slurred, they cannot fully communicate. We have been dealing with this problem for a long time and came to the conclusion that an objective assessment of speech before and after surgery is necessary in comparative analysis, based on mathematical modeling," she says.

“Today, a speech restoration technique is used in oncological practice, the effectiveness of rehabilitation of which is no more than 70%. In addition, it is long in terms and takes from two to four months. In Russia, no one is dealing with this problem yet” -Lydia Balatskaya notes. At the same time, this is a difficult and numerous group of patients: the proportion of patients with oral cancer is about 20% in Research Institute of Oncology. These are patients from the regions of Siberia and the Far East.

Scientists of TSUCSR will develop algorithmic and software that allows to evaluate the effectiveness of speech function restoration, to

obtain higher indicators of the patient's speech intelligibility in a significantly short time compared to known methods. As a result, the duration of rehabilitation measures will be up to 30 days.

This will reduce the number of patients recognized as disabled due to the underlying disease, return people of working age to work, significantly improve

the social adaptation and quality of life of patients, – says Associate Professor of the Department of Integrated Information Security of Electronic Computing Systems TSUCSR **Evgeny Kostyuchenko**.

Work on the project will be completed by the end of 2018 according to TSUCSR. Thanks to the convenient interface of the complex it can be installed on any computer and that means that development will be available to specialists of other cancer centers.