

## Dr. Vinzenz Fleischer awarded inaugural Otto Löwenstein Research Prize



For 100 years, the Federal Association for Rehabilitation (BDH) has been supporting the neurorehabilitation and social reintegration of people with brain damage and resulting disabilities. In honor of this momentous anniversary, the BDH created the Otto Löwenstein Research prize to reward young scientists for outstanding work in the field of neurorehabilitation with a focus on clinical translation. After evaluating applications from around the world, the international award jury selected Dr. Vinzenz Fleischer, clinician scientist in the Department of Neurology, as the first recipient of the Otto Löwenstein Research Prize.

Dr. Fleischer's work bridges clinical care and translational research with a focus on non-invasive MRI, which has become one of the cornerstones in multiple sclerosis diagnosis and monitoring. His work uses advanced neuroimaging methods to evaluate brain plasticity, with a particular attention on network science, providing powerful access to essential organizational principles of the human brain. Dr. Fleischer has now investigated the question of whether the brain changes functionally in multiple sclerosis patients, even if, according to the physician's assessment, they are clinically stable, have no new relapses and their brain structure has not changed. While network changes could not be observed in the healthy brain, clinically stable multiple sclerosis patients showed an increase in the strength of the connection from the frontal and temporal lobes of the brain, especially to the cerebellum. The observed association between network organization and clinical performance might serve as an imaging outcome with the potential to capture future neurorehabilitation capability. Dr. Fleischer's work shows how scientific research can help to understand the connections between disability and adaptation processes in the brain; knowledge that we urgently need in order to support these stabilization processes and rehabilitation also through disease management and treatment.

This work was recently published in *Scientific Reports*:

*Fleischer V\*, Muthuraman M\*, Anwar AR, Gonzalez-Escamilla G, Radetz A, Gracien RM, Bittner S, Luessi F, Meuth SG, Zipp F<sup>§</sup>, Groppa S<sup>§</sup>. Continuous reorganization of cortical information flow in multiple sclerosis: A longitudinal fMRI effective connectivity study. **Sci Rep.** 2020 Jan 21;10(1):806*

The official announcement of the BDH is available [here](#).