

Workshops in Neurorehabilitation

Department of Rehabilitation
Medicine Third Faculty of Medicine,
Charles University & University
Hospital Královské Vinohrady (FNKV)

WHEN

June 11, 2026 | 9:00 AM – 11:30 AM
Šrobárova 50, 100 34 Prague 10 – Vinohrady (FNKV)

Participants will be divided into four groups of 15 people. Each group will attend four workshops. Each workshop lasts 20 minutes, followed by a 10-minute transition period.

PROGRAM

The workshops provide an opportunity to explore selected assessment and therapeutic methods applied in clinical practice and scientific research in

the Czech Republic. The program was prepared by Prof. PhDr. Kamila Řasová, Ph.D., Third Faculty of Medicine, Charles University.

WHERE AND HOW TO GET THERE

Best public transport options:

Metro + walking: From Metro Line A – Želivského station, approximately a 10–15 minute walk along Šrobárova Street towards the hospital, then continue across the campus to the lower left corner of the hospital area.

Bus 175: From Flora metro station, take bus 175 towards Háje and get off at the Murmanská stop.

From Strašnická metro station, take bus 175 towards Florenc and get off at the Murmanská stop.

MEETING POINT

8:45 AM, in front of Building O, FNKV, Prague.

[See map here](#)



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The Bobath Concept in Neurorehabilitation

Mgr. Kateřina Macháčková, Ph.D.

This workshop focuses on the principles of the Bobath Concept as applied in neurorehabilitation. The approach is based on neurodevelopmental treatment strategies aimed at improving postural control, movement coordination, and functional performance in individuals with neurological disorders. Practical examples illustrate its use in clinical practice to support motor recovery.

Reference:

Wozniak M, et al. Effects of the Bobath Concept on balance and gait in neurological patients: A systematic review. *Journal of Neurorehabilitation*. 2024;41(3):245–258.

Marques, S., Vaughan-Graham, J., Costa, R., & Figueiredo, D. (2024). The Bobath concept (NDT) in adult neurorehabilitation: A scoping review of conceptual literature. *Disability and Rehabilitation*, 47(6), 1379–1390. <https://doi.org/10.1080/09638288.2024.2375054>



Digital Biomarkers: Inertial Sensor Technology for Upper Limb Tremor and Automated Speech Analysis

Ing. Jan Havlík, Ph.D., Ing. Michal Novotný, Ph.D.

This workshop presents current approaches to the use of digital biomarkers in multiple sclerosis, with a focus on inertial sensor technologies for the assessment of upper limb tremor and automated speech analysis. The session includes a demonstration of objective and automated assessment tools, such as TremLog, and discusses their potential for clinical monitoring and research applications.

Reference:

Jiráček A, Havlík J. Classification of tremor signals from accelerometers and gyroscopes in multiple sclerosis. Proceedings of the 2023 International Conference on Applied Electronics (AE). Pilsen, Czech Republic; 2023:1–4. doi:10.1109/AE58099.2023.10274306. Ruzs, J., Benova, B., Ruzickova, H., Novotny, M., Týkalova, T., Hlavnicka, J., ... & Horakova, D. (2018). Characteristics of motor speech phenotypes in multiple sclerosis. *Multiple Sclerosis and Related Disorders*, 19, 62–69.



rTMS, tDCS, and Vibramoov: Tools for Motor Recovery

*Prof. MUDr. Marcela Grünerová Lippertová, Ph.D., Mgr. Přemysl Vlček, Ph.D.,
Mgr. Helena Zimermanová*

This workshop introduces selected neuromodulation techniques, including repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS), and the Vibramoov system. The focus is on their application in motor recovery, with an emphasis on practical clinical use and current evidence supporting their effectiveness.

Reference:

Wójcik M, Vlček P, Siatkowski I, Grünerová-Lippertová M. Effects of a single tDCS combined with mirror therapy on hand function in healthy individuals. *Frontiers in Human Neuroscience*. 2025;19:1607022. doi:10.3389/fnhum.2025.1607022



Innovative Virtual Reality Application for Upper Limb Neurorehabilitation *Prof. Ing. Libor Váša, Ph.D., Ing. Jakub Frank, Mgr. Lubomír Rodina, Mgr. Anna Herynková, MUDr. Barbora Miznerová, Prof. PhDr. Kamila Řasová, Ph.D.*

This workshop presents an innovative virtual reality system designed for upper limb neurorehabilitation. The application is based on principles of proprioceptive facilitation and inhibition and aims to enhance upper limb function through sensorimotor learning and neurofacilitation. The workshop outlines the conceptual framework, technological background, and current clinical research supporting its use in people with multiple sclerosis.

References:

Miznerová B, Reissigová J, Váša L, et al. Virtual reality-based neuroproprioceptive physiotherapy in multiple sclerosis: protocol for a double-arm randomised assessor-blinded controlled trial. *BMJ Open*. 2025;15(1):e088046. doi:10.1136/bmjopen-2024-088046

Frank J, Váša L, Lavoué G, et al. Innovative virtual reality application based on proprioceptive “facilitation and inhibition” to improve upper limb function: a feasibility and proof-of-concept study in multiple sclerosis. *Computers in Biology and Medicine*. 2026;201:111376. doi:10.1016/j.compbimed.2025.111376. Supported by Ministry of Health of the Czech Republic, grant nr. NW26-09-00096. All rights reserved.

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