NEURODEGENERATION AND BEYOND

3rd Annual Conference of the National Institute for Neurology Research

12th - 13th June 2025

Courtyard by Marriott Brno, Holandská 12

PROGRAM

12. 06. 2025 THURSDAY

09:00 - 09:05	Welcome by Neur-IN director	*M. Brázdil*
09:05 - 09:10	Opening speech by the rector of Masaryk University	*M. Bareš*
09:10 - 09:35	The Burden of Neurological Diseases in the Czech Republic	*M. Koščík*
09:35 - 10:00	Innovative Treatment – Two Sides of the Same Coin	*J. Haberlová*
10:00 - 10:20	*Coffee break*	*15 min*
	BLOCK I: Latest Updates and Research Highlights 2025	
10:20 - 10:30	Stroke	*J. Štefela*
10:30 - 10:40	Multiple Sclerosis	*M. Pail, M. Dufek*
10:40 - 10:55	Neurodegenerative Dementia	*I. Rektorová*
10:55 - 11:05	Panel Discussion: The future of research in neurological disorders	
11:05 - 11:25	*Coffee break*	*20 min*
	BLOCK II: The Brain *in Silico*	
11:25 - 11:55	Modelling Brain Functions	*V. Jirsa*
11:55 - 12:15	Modelling VHFOs and UFOs in Neuronal Signals	*L. Přibylová*
12:15 - 12:35	Modelling switching brain states	*J. Hlinka*
12:35 - 13:00	In silico modelling of proteins and drug candidates	*J. Damborský*
13:00 - 14:00	*Lunch*	*60 min*
	BLOCK III: Selected Key Topics from Pillar I	
14:00 - 14:20	Instrumental Analysis of Tremor: Contributions to Classification, Monitoring, and Understanding of Pathophysiology	*E. Růžička*
14:20 - 14:40	Biomarkers in cohort of subjects at increased risk of developing Parkinson's disease	*D. Školoudík*

14:40 - 15:00	Genetics and genomics are central to understanding complex pathogenesis of rare neurological phenotypes	*J. Sikora*
15:00 - 15:10	Panel Discussion	
15:10 - 15:30	*Coffee break*	*20 min*
	BLOCK IV: Presentation of selected projects from Pillar I	
15:30 - 15:40	Investigating the impact of chemical exposures on development of Parkinson's disease	*E. Price*
15:40 - 15:50	Smartphone-based Longitudinal Assessment of Early Parkinsonism in REM Sleep Behaviour Disorder Using Speech and Motor Active Tasks	*V. Illner*
15:50 - 16:00	Early Detection of Neurodegenerative Diseases in SHARE Survey	*R. Boháček*
16:00 - 16:10	Update on RT-QuIC for prionopathies and synucleinopathies	*T. Moško*
16:10 - 16:20	The Research on Prodromal neurodegeneration in Czechia: metadata from cohort studies	*P. Dušek*
16:20 - 16:30	Spatial Navigation Deficits in Cerebellar Ataxias: Beyond Motor Impairment	*S.* Karamazovová
16:30 - 16:40	Imaging of deep brain stimulation	*R. Jech*
16:40 - 16:50	Beyond Oscillations: Exploring the aperiodic component of subthalamic power spectrum in Parkinson's Disease	*M. Bočková*
16:50 - 17:00	Panel Discussion - Pillar I - questions, comments, suggestions	

18:00 Dinner

13. 06. 2025 FRIDAY

	BLOCK V: Selected Key Topics from Pillar II	
09:00 - 09:20	Uncovering of novel neutrophil immune signatures with stratification potential in post-COVID condition	*I. Papatheodorou*

09:20 - 09:40	Linguistic Digital Biomarkers for Assessing Cognitive Decline in Neurodegenerative Conditions: A Comparative Analysis	*D. Kováč*
09:40 - 10:00	Temporal Interference and modulated kHz Stimulation of Peripheral Nerves - update on mechanistic understanding and new opportunities	*E. Glowacki*
10:00 - 10:10	Panel discussion: Pillar I - questions, comments, suggestions	
10:10 - 10:30	*Coffee break*	
	BLOCK VI: Presentation of selected projects from Pillar II	
10:30 - 10:40	Chronic jet lag in a laboratory rat: impact on behaviour, cognitive functions and neurodegeneration	*T. Petrásek*
10:40 - 10:50	Morphometric MRI changes after Covid-19	*F. Španiel*
10:50 - 11:00	Proteomics from tears: A Promising Source for Biomarker Discovery	*P. Džubák*
11:00 - 11:10	Meta-analysis uncovered novel miRNAs not previously known to be related to Alzheimer's disease	*J. Sebastian*
11:10 – 11:20	New antidiabetics and their cognitive effects in patients with dementia	*J. Senčík*
11:20 – 11:30	Speech and Voice Disorders in Patients with Prodromal Dementia with Lewy Bodies	*K. Novotný*
11:30 – 11:40	Development of peptide-based inhibitors against alpha-synuclein seed-induced aggregation for synucleinopathy therapy	*V. Das*
11:40 – 11:50	CAR-T – treatment is available for patients with GD2 positive glioblastoma	*I. Koutná*
11:50 – 12:00	Serotonin attenuates tumour necrosis factor-induced intestinal inflammation by interacting with human mucosal tissue	*J. Frič*
12:00 – 12:10	Panel Discussion - Pillar II - questions, comments, suggestions	
12:10 - 13:00	*Lunch*	*50 min*

BLOCK VII: Pillar III Selected Key Topics in Neurodevelopmental Disorders and Epilepsy

13:00 - 13:20	Beyond Individual Diffusion Metrics: Challenges and Benefits of Multi-Compartment Diffusion MRI Models in Focal Cortical Dysplasia	*J. Otáhal*
13:20 - 13:40	The role of neurons carrying mTOR mutation in the epileptogenesis and ictogeneisis in FCD type II	*P. Jiruška*
13:40 - 14:00	The Hidden Danger of Seizures: Understanding Mechanisms Behind Ictal Apnoea and SUDEP	*J. Jefferys*
14:00 - 14:10	Panel discussion	
14:10 - 14:30	*Coffee break*	*20 min*

BLOCK VIII: Presentation of selected projects from Pillar III

14:30 – 14:40	Focal Cortical Dysplasia Type I in Children: Phenotypic Variability and Unclear Genetic Background	*B. Splítková*
14:40 – 14:50	The role of GABAB receptors in pathological conditions of the sensory nervous system	*R. Tureček*
14:50 – 15:00	Developmental Trends of Cerebral Blood Flow and Arterial Transit Time in Normal Children: a Study Using Single- and Multi-delay ASL	*Y. Prysiazniuk*
15:00 – 15:10	Can MRI Reveal the Electrical Properties of Brain Tissue?	*D. Kala*
15:10 – 15:20	The effects of cannabidiol during pregnancy	*R. Portillo*
15:20 – 15:30	Regulation of Early Trafficking of NMDA Receptors Through Structural Modifications in the Ligand-Binding Domains of GluN1 and GluN2 Subunits	*M. Horák*
15:30 - 15:40	Altered Morphology and Cytoarchitecture of Focal Cortical Dysplasia Type II Corresponds with Epilepsy Phenotype	*N. Procházková*
15:40 - 15:50	Accelerated epigenetic aging and its role in brain dynamics and cognition in young adulthood	*T. Jordánek*
15:50 – 16:00	Development of white matter in young adulthood: The speed of brain aging and its relationship with changes in fractional anisotropy	*M. Jáni*
16:00 – 16:10	Myelination abnormalities in a mouse model of focal cortical dysplasia type II	*A. Bogdanovič*

16:10 – 16:20 Panel discussion - Pillar III - questions, comments, suggestions

E-posters