

Day of Physiology and Medicine for University Students

12.02.2026

| NEUROSCIENCES | METABOLIC RESEARCH | CARDIOVASCULAR RESEARCH |
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| PROGRAM | | | | |
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| Introduction | Welcome to IPHYS | Odřej Kuda, director of IPHYS Olga Zimmermannová | 9:00 - 9:15 | |
| Laboratory Pain Research | Topic | Speaker/s | For students | Time |
| | Neuroinflammation and pain | Jiří Paleček Diana Špicarová | PhD | 9:15 - 9:30 |
| | The role of Dorsal Root Ganglion (DRG) neurons in neuropathic pain | | PhD | |
| Biomaterials and Tissue Engineering | Mechanisms of neuropathic pain | | PhD | |
| | The effect of galectins and their inhibitors on vascular wall remodeling in pulmonary hypertension | Lucie Bačáková | PhD | 9:30 - 9:45 |
| | Interaction of oral cavity cells with dental biomaterials patterned with silver nanoparticle-containing microdomains | Antonín Sedlář | Bc, MSc | |
| | The role of galectin-3 in extracellular vesicle-mediated intercellular communication in pulmonary hypertension | | Bc, MSc | |
| Adipose Tissue Biology | Thermoneutrality in laboratory animal husbandry – an important but poorly defined variable in practice | Kristína Bardová Petr Zouhar | Bc | 9:45 - 10:20 |
| | Metabolism in preterm and term newborns | | Bc | |
| | Bariatric surgery: Mechanism of its beneficial effects on adipose tissue and factors determining its efficiency | | Bc | |
| | Thermogenic muscle: Molecular keys to obesity resistance | | MSc | |
| | Adipose-derived extracellular vesicles and their effect on muscle cells: Role of sex and genetic differences | | MSc | |
| | Secretory function of epicardial adipose tissue and its role in the development of atrial fibrillations | | PhD | |
| | Novel strategies to investigate the origins of metabolic dysfunction-associated steatohepatitis | Martin Rossmeisl | PhD | |
| Translational Metabolism | Study and treatment of fibrotic changes in Dupuytren's disease | Adam Eckhardt | Bc, MSc, PhD | 10:20 - 10:30 |
| Coffee break | | | | 10:30 - 10:45 |
| Molecular Physiology of Bone | Studying the role of antioxidant dipeptides in stem cell metabolism | Michaela Tencerová Mariana de Souza Santos | PhD | 10:45 - 11:00 |
| | Uncovering sex-related differences in the role of Nox4-ROS signaling in bone homeostasis | | MSc | |
| Metabolism of Bioactive Lipids | Deciphering lipid metabolism in cancer: Integrative approaches in metabolomics, fluxomics, and metabolic engineering | Ondřej Kuda Kristýna Brejchová | PhD | 11:00 - 11:15 |
| | Biochemical regulation of human milk composition in gestational diabetes | | PhD | |
| | Impact of gestational diabetes management strategies on breast milk composition and early neonatal metabolic health | | PhD (MSc) | |
| Cardiometabolism | Characterizing the role of sex chromosomes in mitochondrial energy metabolism | Lukáš Chmátl | MSc | 11:15 - 11:30 |
| | The impact of biological sex on mitochondrial metabolism in cardiomyocytes | | PhD | |
| | The impact of the inactive X chromosome on metabolic differences between male and female tissues throughout the body | | PhD | |
| Developmental Cardiology | The role of HIF-1α and mitochondria in heart failure | Lukáš Chmátl on behalf of Petra Aláňová | Bc, MSc | 11:30 - 11:35 |
| Experimental Hypertension | The role of mTOR signaling in cardiometabolic diseases | Ivana Vaněčková Jan Neckář | | 11:35 - 11:55 |
| | Sexual differences in protective effects of empagliflozin - the role of mTOR | | | |
| | The role of hypoxia-inducible factor-1α on the progression of heart failure with preserved ejection fraction. | | | |
| | Molecular mechanisms of cellular senescence-associated cardiovascular and renal diseases in hypertensive rats | | | |
| Experiences of PhD students at IPHYS | | | | 11:55 - 12:10 |
| Organizational remarks, questions | | Olga Zimmermannová | | 12:10 - 12:20 |
| Refreshment | | | | 12:20 - 13:00 |
| Visits of laboratories | | | | 13:00 - 15:00 |