# IRP RESEARCH PROJECTS FUNDED IN 2025-27

## IRP RESEARCH GRANTS – BASIC

**Kathe Claudia**, Department of Fundamental Neuroscience, University of Lausanne, Switzerland
*Deciphering spontaneous recovery: The role of glial-mediated remodelling of extracellular matrix after spinal cord injury*

The study focuses on plasticity, the process that allows spontaneous recovery after SCI. The project will examine the production of perineuronal net molecules and the enzymes to degrade them in glial cells after injury, looking at mRNA levels and protein levels. This data will form the basis of a continuing project where the glial cells and perineuronal nets will be manipulated to enhance plasticity and recovery after injury.

**CHF 150'000.- from 2025-27**

**Taran Olga**, Biomedical Data Science Lab, ETH Zurich, Switzerland
*Advancing Spinal Cord Injury Treatment Evaluation: Data-driven approach to distinguish natural recovery from treatment-induced improvements*

The project follows on from the recent NISCI trial. The investigated drug was not equally effective in all participating patients. This variability complicates efforts to accurately measure treatment efficacy. The project will develop a data-driven framework to improve the evaluation of SCI treatments. This tool is designed to differentiate between natural recovery and treatment-induced improvements. The goal is to identify which patients are most likely to benefit from the treatment investigated, enabling more targeted and effective therapies for SCI. The project will develop an easy-to-use web platform that will allow clinicians, researchers, patients and families to explore and apply SCI findings. This should increase the effectiveness of clinical trials for SCI.

**CHF 150'000.- from 2025-27**

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## IRP RESEARCH GRANTS – CLINICAL

**Glisic Marija**, Swiss Paraplegic Research, Nottwil, Switzerland
*Optimizing Spinal Cord Injury Recovery in Women: The Role of Reproductive Health in Neurorehabilitation*

The project is the first to examine how hormonal changes in women impact their recovery from SCI, focusing on hormonal and reproductive system changes. The focus is reproductive and sexual functioning, psychological adjustment, and the effects of hormone deficiency on neurological and functional recovery. The aim is to identify specific health issues that influence recovery, leading to the development of hormone-based treatments to enhance recovery and quality of life.

**CHF 138'600.- from 2025-27**

**Hubli Michèle**, Balgrist University Hospital, Zurich, Switzerland
*Mapping Anatomical Pain signatures in Spinal Cord Injury*

The study examines how neuropathic pain affects the brain's structure in individuals with SCI. From MRI images they will find brain changes linked to this pain. The study will combine existing brain scan data from Switzerland and Australia with new data collected in Switzerland, totaling 82 participants – making it the largest study of its kind. Understanding these brain changes could lead to better ways to diagnose and treat neuropathic pain in people with SCI, ultimately improving the quality of life for those affected by this debilitating pain.

**CHF 150'000.- from 2025-27**

**Rosner Jan**, Danish Pain Research Centre, Aarhus University, Denmark
*Advanced Neurophysiology for Monitoring Peri- and Infralesional Sensorimotor Function in Human Spinal Cord Injury*

The research project will use innovative techniques in electrophysiology to create new biomarkers for SCI. The approach aims to identify markers that show the health of motoneurons affected by SCI. The project will use a new type of neuroimaging device called an optically pumped magnetometer (OPM). Unlike traditional magnetoencephalography scanners, OPMs are smaller, more flexible, and provide high-quality recordings of brain and spinal cord activity. The project should develop new and sensitive ways to monitor the health of spinal cord neurons and measure the effects of new treatments

**CHF 150'000.- from 2025-27**

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## IRP POSTDOCTORAL FELLOWSHIP – CLINICAL

**Balthazaar Shane**, University of Birmingham, United Kingdom / Balgrist University Hospital, Switzerland
*The Role of Cardiovascular Dysregulation in Predicting Neuropathic Pain following Spinal Cord Injury: A Multimodal Approach*

This pilot study explores how the cardiovascular abnormalities that often follow SCI contribute to neuropathic pain following spinal cord injury (SCI). Neuropahthic pain impacts the quality of life in up to 80% of individuals with SCI. The study will combine detailed cardiovascular assessment, with pain inventories and pain. By tracking these measures, and tracking cardiovascular indices with pain, the aim is to identify early indicators of chronic neuropathic pain severity. This could lead to future larger studies with interventions to improve pain management and quality of life.

**CHF 80'000.- from 2025-26**

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