Special Issue

Mechanisms of Neuromodulation and Rehabilitation after Spinal Cord Injury

Message from the Guest Editors

Multiple studies have demonstrated that spinal cord neuromodulation, together with rehabilitation, enables volitional motor control of previously paralyzed motor functions in humans diagnosed with severe traumatic spinal cord injury(SCI). However, there is a limited understanding of the underlying electrophysiological mechanisms of action, and the neural structures of the spine, the mechanisms of generating volitional control over tonic and rhythmic patterns of spinal motor outputs using epidural stimulation after SCI are generally unknown. Limited evidence has shed light on the spinal circuits involved in posture and locomotion and their reorganization after injury, nevertheless the role of different components and specific spinal pathways remain unclear. The Special Issue focuses on the mechanisms involved in spinal cord reorganization after injury, and more specifically, insight into circuitry-level mechanisms that underlie spinal cord neuromodulation and neurorehabilitation.

Guest Editors

Dr. Igor A. Lavrov
Department of Neurology, Mayo Clinic, Rochester, MN 55905 USA

Dr. Peter Grahn
Rehabilitation Medicine Research Center, Department of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, MN 55905 USA

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Brain Sciences
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
brainsci@mdpi.com

mdpi.com/journal/brainsci

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Editor-in-Chief

Prof. Dr. Stephen D. Meriney
Department of Neuroscience, University of Pittsburgh, Pittsburgh, PA 15260, USA

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