

## Translational Insights into Pain After Spinal Cord Injury

## Course ID 117

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Chronic neuropathic pain represents a detrimental outcome of spinal cord injury (SCI) and has a significant impact on the affected individual's quality of life. Major challenges facing effective management of SCIrelated pain is the limited understanding of the complex pathophysiological mechanisms underlying the development and maintenance of neuropathic pain. While preclinical studies have generated a wealth of knowledge with regard to potential therapeutic targets for SCI-related neuropathic pain, the translation to human SCI is often hampered. This proposed session aims to provide a translational perspective on recent advances in the field of SCI-related pain. Dr. Widerstrom-Noga will discuss challenges and recent advances related to the classification and assessment of SCI-related pain. Dr. Grau will provide a pre-clinical perspective on the detrimental impact of pain on the recovery of SCI and describe potential treatment options to alleviate pain. Dr. Detloff will then discuss trauma-induced plasticity and neuroimmune interactions in the CNS and primary afferent pathways in pre-clinical SCI models. The final speaker, Dr. Jan Rosner will discuss the role of primary afferents in central neuropathic pain in individuals with SCI. The session will be ended with a general discussion on the topics presented above. Draft Agenda :00 - 0.12Classification and assessment of SCI-related pain (E. Widerstrom-Noga, Professor) :12 – 0:24 Pain after injury can drive tissue loss: Blocking this effect using regional and general anesthesia (J. Grau, Professor) :24 - 0:36 Neuroimmune interactions associated with pain after SCI (M. Detloff, Assistant Professor) :36 - 0:48 The role of peripheral afferent input in central neuropathic pain – insights from a mechanistic clinical trial (J. Rosner, Postdoc) :48 – 0:60 Discussion

**Learning Objective 1** Discuss recent advances in the classification and assessment of spinal cord injury (SCI)-related pain.

Learning Objective 2 Define the role of pain in SCI recovery from a pre-clinical perspective.

**Learning Objective 3** Describe a translational perspective on trauma-induced plasticity and neuroimmune interactions in the CNS and at the level of primary afferent nociceptors in neuropathic pain.