



Dr. Jay Sah

Dr. John Z. Srbely

The Role of Central Sensitization and Neurogenic Mechanisms in the Pathophysiology and Management of Myofascial Trigger Points and Chronic Neuromusculoskeletal Pain

This comprehensive lecture integrates the fascinating knowledge emerging from basic neurophysiology and the pain sciences to advance the management of chronic neuro-musculoskeletal pain. It does so by exploring the pivotal role of active myofascial trigger points (MTrPs), the dynamic nature of sensitization and neurogenic inflammation, and the objective and reproducible physical findings of central sensitization in the clinical manifestations of chronic neuro-musculoskeletal pain and dysfunction.

Human and animal models provide emerging evidence for the important role of neurogenic inflammation in the pathophysiology of active MTrPs. Neurogenic inflammation is a common sequela to spinal segmental sensitization (SSS), a hyperactive state of the dorsal horn caused by persistent nociceptive bombardment. Painful MTrPs are a very common source of persistent nociception, sensitization and chronic neuro-musculoskeletal pain. Conversely, maladaptive changes in subcortical structures and dysfunctional descending inhibition may create somatic tissue abnormalities including tissue texture changes, tenderness, and stiffness. Common peripheral manifestations of SSS include dermatomal allodynia/hyperalgesia, sclerotomal tenderness, and MTrPs within the affected myotomes along the myokinetic chain.

Quantitative Sensory Testing (QST) aims to quantify central sensitization in the clinical setting. The underlying basic physiology, clinical application and interpretation of the Windup Ratio (WUR) and the Mechanical Pain Threshold (MPT) will be specifically presented as tools in the assessment of the chronic neuro-musculoskeletal pain patient.

Non-pharmacological approaches aim to deactivate painful MTrPs, desensitize affected segments and neuro-modulate subcortical dysfunction, providing more permanent pain and symptom relief. The diagnostic and treatment techniques highlighted in this lecture are applicable in the management of a variety of chronic neuro-musculoskeletal pain conditions.