Neuromodulation in Tune with the Body’s Rhythms: Enhancing Clinical Outcomes with Respiratory-Gated Auricular Vagal Afferent Nerve Stimulation (RAVANS)

*FOLLOWED BY COFFEE HOUR FROM 9-10AM*

Description: Transcutaneous vagus nerve stimulation (tVNS) is a promising therapy for several visceral and brain disorders such as migraine, depression, and visceral pain. We have proposed that Respiratory-Gated Vagal Afferent Nerve Stimulation (RAVANS) can enhance brainstem targeting, leading to enhanced clinical outcomes. This concept may also underlie theories of respiration rhythm influence on acupuncture needle insertion and stimulation, as evidenced in traditional Chinese medicine texts.

This talk will explore the known and unknown in the links between respiratory rhythm and vagus nerve physiology and clinically-applied stimulation.

Location: Bornstein Family Amphitheater, BWH, 45 Francis St., Boston, MA, 02115

Presenter: Vitaly Napadow, PhD, LicAc
Director, Center for Integrative Pain Neuroimaging, Martinos Center for Biomedical Imaging, Massachusetts General Hospital

HMS CME CREDITS AVAILABLE
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Biography

Vitaly Napadow is an Associate Professor at the Martinos Center for Biomedical Imaging at Massachusetts General Hospital and Harvard Medical School in Boston, MA, where he is also the Director of the Center for Integrative Pain Neuroimaging (CiPNI). Vitaly also holds a secondary appointment at the Pain Management Center at Brigham and Women’s Hospital, where he practices acupuncture. He received his Ph.D. in biomedical engineering from the Harvard-MIT Health Sciences and Technology program.

Dr. Napadow’s laboratory has pioneered the application of non-invasive neuroimaging techniques to better understand the brain circuitry underlying aversive perceptual states, particularly chronic pain, and to better understand how non-pharmacological therapies ameliorate these states. Specifically, somatosensory, cognitive, and affective factors all influence the malleable experience of pain, and Vitaly’s Lab has applied human functional and structural neuroimaging to localize and suggest mechanisms by which different brain circuitries modulate pain perception. Dr. Napadow has more than 130 publications in leading peer-reviewed scientific journals and serves on numerous conference, journal, and NIH review panels.

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**Upcoming Schedule | First Tuesday’s 8:00–9:00AM**

**February 5**  
*Research*  
**Neuromodulation in Tune with the Body’s Rhythms: Enhancing Clinical Outcomes with Respiratory-Gated Auricular Vagal Afferent Nerve Stimulation (RAVANS)**  
Vitaly Napadow, PhD, LicAc, Massachusetts General Hospital

**March 5**  
*Clinical*  
**Managing Uncertainty and Fear of Recurrence in Cancer: A Mind-Body Perspective**  
Daniel Hall, PhD, Massachusetts General Hospital

**April 2**  
*Research*  
**Brain Plasticity Associated with Tai Chi and Qigong Mind-Body Training: Studies in Pain and Aging**  
Jian Kong, MD, Massachusetts General Hospital

**May 7**  
*Clinical*  
**Ryan Zaklin, MD, North Shore Medical Center**

**June 4**  
*Research*  
**Mediterranean Diet to Reduce Cardiovascular Disease and Other Chronic Diseases of Aging**  
Samia Mora, MD, Brigham and Women’s Hospital