

Drs. Bhadra and Vrabec awarded \$1.7 million NIH grant to study new electrical stimulation technique to treat spasticity

4/8/2021



Niloy Bhadra, MD, PhD, and Tina Vrabec, PhD, research faculty in the department of Physical Medicine and Rehabilitation (PM&R) and the MetroHealth Center for Rehabilitation Research, were awarded a 4-year, \$1.7 million NIH grant entitled, "Transcutaneous Direct Current Motor Nerve Block for

Spasticity."

Spasticity is abnormal muscle tightness from prolonged muscle contraction and is a significant complication of stroke, cerebral palsy, spinal cord injury and traumatic brain injury. It's associated with significant disability including loss of movement, contractures and chronic pain. Electrical nerve block in the form of a non-invasive direct current block has been recently shown to produce motor block when applied through the skin. This block can be adjusted from a complete block to a partial block and the effect can be modulated quickly.

Drs. Bhadra and Vrabec propose an innovative direct current muscle block strategy delivered through the skin that will reduce spasticity and aid in the rehabilitation of limb movement. The proposal focuses on development and testing of commercial and newly designed surface electrodes to show the efficacy of motor nerve block and investigate the parameters that deliver the direct current safely to both the skin and the target nerve.

Dr. Bhadra is Associate Professor of PM&R and Dr. Vrabec is Assistant Professor of PM&R at the Case Western Reserve University School of Medicine.

MetroHealth Information Village © 2021 The MetroHealth System

Connect with MetroHealth 

(<https://www.facebook.com/metrohealthcle>) 

(<https://twitter.com/metrohealthcle>) 

(<https://instagram.com/metrohealthcle/>) 

(<https://www.youtube.com/user/metrohealthcle>)