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Medtronic to highlight sensing-enabled spinal cord stimulation research at 2023 North American Neuromodulation Society meeting

Medtronic plc, a global leader in healthcare technology, today announced that it will highlight clinical and pre-clinical research relating to sensing-enabled spinal cord stimulation (SCS) therapy at the 26th Annual North American Neuromodulation Society (NANS) meeting, taking place January 12-15, 2023, in Las Vegas, Nevada. In addition, Medtronic and its partners will present new research on SCS for diabetic peripheral neuropathy (DPN), Differential Targeted Multiplexed™ SCS endurance therapy, and digital health.

SCS sensing technologies rely on ECAPs (Evoked Compound Action Potentials), or signals generated by the spinal cord in response to electrical stimulation. Poster and oral scientific data presentations at NANS will highlight early clinical data and patient experience of sensing-enabled stimulation technologies.

Scientific Presentations

The following poster and oral scientific data presentations reflect evidence from Medtronic-sponsored research and collaborations with external partners. Poster presentations will be available to all attendees with an option to query the presenters throughout the conference.

Evoked Compound Action Potentials (ECAPS) Data Presentations

- "Early Experience with Closed-Loop SCS During In-clinic Testing" – poster presentation by Dr. Andrew Will et al. on Jan. 13 at 5:30 p.m.
- "Early Outcomes with the Medtronic Closed-Loop Spinal Cord Stimulation Study" – poster presentation by Dr. Vahid Mohabbati et al. on Jan. 14 at 5:30 p.m.
- "Automated ECAP growth curve collection and threshold detection as an assistance to perceptually referenced programming" – podium presentation by Dr. Julie Pilitsis on Jan. 13 at 5:05 p.m.
- "Spinal ECAP morphology: Decoding the spinal cord with an indicator of lead position" – podium presentation by Dr. Jeffrey Arle on Jan. 13 at 11:35 a.m.
- "Clinical Feasibility of ECAP-Controlled, Closed-Loop Spinal Cord Stimulation with Cervically Placed Leads" – poster presentation by Dr. Ricardo Vallejo on Jan. 13 at 5:30 p.m.

- "Spinal ECAP Thresholds Relative to Evoked Muscle Activation in Rats with Clinically Translatable Paradigms" –podium presentations by Dr. David Cedeno on Jan. 14 at 5:05 p.m.
- "Multiplexed High-Rate Program Effects on Spinal ECAPs Elicited by a Low-Rate Program in Rats" –podium presentations by Dr. David Cedeno on Jan. 14 at 5:05 p.m.
- "Quantifying Differential Neural Activation with Burst and Conventional Stimulation Using Spinal Evoked Compound Action Potentials" –poster presentation by Dr. Lawrence Poree on Jan. 14 at 5:05 p.m.
- "Inter-Patient Variability in the Evoked Compound Action Potentials Generated During Spinal Cord Stimulation" – podium presentation by Dr. Scott Lempka on Jan. 14 at 4:50 p.m.

DTM™ SCS Therapy Presentations

- "Long-Term Clinical Outcomes of a Low-Energy Derivative Study of Differential Target Multiplexed™ Spinal Cord Stimulation" – poster presentation by Dr. David Provenzano on Jan. 13 at 5:30 p.m.
- "Modeling the Impact of a Differential Target Multiplexed™ Stimulation Derivative on Rechargeable and Recharge-Free SCS" – poster presentation by Dr. David Provenzano on Jan 13th at 5:30 p.m.
- "Duty Cycling of Differential Target Multiplexed Spinal Cord Stimulation for Analgesia in a Rat Model of Neuropathic Pain" – poster presentation by Dr. David Cedeno on Jan. 13 at 5:30 p.m.

Digital Health Presentations

- "Characterization of Real World Clinical Outcomes in DTM SCS Trials via a Digital Health Platform" – poster presentation by Dr. Nandan Lad on Jan. 13 at 5:30 p.m.
- "Spinal Cord Stimulation (SCS): Using a Digital Health Platform to Characterize the Patient Journey" – poster presentation by Dr. Michael Fishman on Jan. 13 at 5:30 p.m.
- "Characterization of Spinal Cord Stimulation Trial Evaluation subjects: Digital Health Platform Experience" – poster presentation by Dr. Krishnan Chakravarthy K on Jan. 13 at 5:30 p.m.

Diabetic Peripheral Neuropathy Data Presentations

- "The History of Spinal Cord Stimulation to Treat Painful Diabetic Peripheral Neuropathy" – presentation by Dr. Melissa Murphy on Jan. 13 at 4:50 p.m.
- "Multiple randomized trials of SCS show consistent outcomes in the treatment of painful diabetic peripheral neuropathy" – presentation by Dr. Melissa Murphy on Jan. 15 at 11:05 a.m.
- "Painful Diabetic Peripheral Neuropathy and SCS: using the Product Surveillance Registry (PSR) to collect Real World Evidence" – e-poster by Dr. Eric Buchser.
- "Differential Targeted Multiplexed, High Frequency and Conventional Spinal Cord Stimulation Reduce Mechanical Hypersensitivity in an Animal Model for Painful Diabetic Peripheral Neuropathy" – podium presentation by Dr. Bert Joosten on Jan.13 at 11:35 a.m.
- "Use of Laser Speckle Spectroscopy to Characterize and Quantify Blood Flow Changes in Patients During Spinal Cord Stimulation: The SCS Research Study" – e-poster presentation by Maddie LaRue, Ph.D.

Upper Limb Presentation

- "Prospective Evaluation of the Effect of Differential Target Multiplexed SCS on Intractable Upper Limb Pain" – presentation by Dr. Thomas White on Jan 13 at 5:30 p.m.

Targeted Drug Delivery Presentations

- "Updated Longitudinal Data from the TDD PSR: Effect of Pump Durable Design Changes" – podium presentation by Dr. Gobi Paramandam on Jan 15 at 10:00 a.m.
- "Catheter Tip Position – Does It Really Matter?" – poster presentation by Dr. Peter Konrad on Jan 13 at 5:30 p.m.
- "IDDS Safety and Clinical Accuracy – 2-year Registry Data" – poster presentation by Tricia Braun, PharmD on Jan 13 at 5:30 p.m.
- "Longitudinal Data from the TDD PSR: Pump Pocket Location" – poster presentation by Dr. David Schultz on Jan 13 at 5:30 p.m.
- "Longitudinal Data from the TDD PSR: Inflammatory Mass" – podium presentation by Dr. Gobi Paramandam on Jan 15 at 10:00 a.m.
- "Targeted Drug Delivery: Dorsal Receptors Mean Dorsal Catheter Tip Placement is Critical" -poster presentation by Dr. Edward Podgorski III on Jan 13 at 5:30 p.m.
- "Cervical Intrathecal Catheter Placement Leads to Improved Rostral Distribution of Radiolabeled 18F-Baclofen Analog in Cynomolgus Monkeys" - podium presentation by Brian Duclos, Ph.D. on Jan. 14 at 11:35 a.m.

Medtronic Sponsored Events

Medtronic will host an exhibit booth with in-booth presentations and a product innovation suite for healthcare providers throughout the meeting.

- **Exhibit booth #503** featuring interactive displays of Medtronic's range of neuromodulation technologies and latest advances. Physicians visiting during the NANS opening reception will have an opportunity to meet with Medtronic Neuromodulation leadership.
- An **innovation suite** for physicians to discuss the future of neuromodulation.
- A **lunch symposium** on Friday, Jan. 13 at 12:00, featuring Drs. Krishnan Chakravarthy and Melissa Murphy, along with Medtronic leaders Ash Sharan and Jeff Kramer, to discuss transformative innovation, along with sensing research and how it will redefine the future of SCS.

About Medtronic

Bold thinking. Bolder actions. We are Medtronic. Medtronic plc, headquartered in Dublin, Ireland, is the leading global healthcare technology company that boldly attacks the most challenging health problems facing humanity by searching out and finding solutions. Our Mission — to alleviate pain, restore health, and extend life — unites a global team of 90,000+ passionate people across 150 countries. Our technologies and therapies treat 70 health conditions and include cardiac devices, surgical robotics, insulin pumps, surgical tools, patient monitoring systems, and more. Powered by our diverse knowledge, insatiable curiosity, and desire to help all those who need it, we deliver innovative technologies that transform the lives of two people every second, every hour, every day. Expect more from us as we empower insight-driven care, experiences that put people first, and better outcomes for our world. In everything we do, we are engineering the extraordinary. For more information on Medtronic (NYSE:MDT), visit www.Medtronic.com, and follow @Medtronic on Twitter and LinkedIn.

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https://news.medtronic.com/Medtronic-to-highlight-sensing-enabled-spinal-cord-stimulation-research-at-2023-North-American-Neuromodulation-Society-meeting