Derron Wilson's research while affiliated with Indiana University School of Medicine - Lafayette and other places

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Publications (32)

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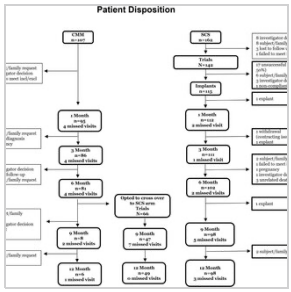

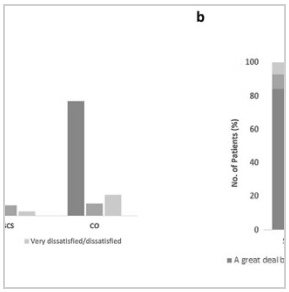

	SCS (N=115)	Crossover
Model		
(Proclaim XR5)	97.4% (112/115)	98.2% (54
(Proclaim XR7)	0.9% (1/115)	1.8% (1/5
(Prodigy)	1.7% (2/115)	0.0% (0/5
Model		
Percutaneous lead	55.7% (46/115)	58.2% (32
Paddle Lead	43.5% (50/115)	41.8% (23
ant Location		
	0.9% (1/115)	1.8% (1/5
	3.5% (4/115)	5.5% (3/5
	45.2% (52/115)	43.6% (24
	52.2% (60/115)	43.6% (24
	10.4% (12/115)	10.9% (6/
	0% (0/115)	1.8% (1/5

onder rate of 85.3% (87/102), compared to 6.2% (5/81) arm. Thirty-one CMM patients reported an unchanged ba core, compared to two patients in the SCS arm. Further an that 49% of SCS responders (43/87) reported a substantia tion of ≥80% [95% CI; 32.4%, 52.3%] [19].

Surgical treatment of refractory low back pain using implanted BurstDR spinal cord stimulation (SCS) in a cohort of patients without options for corrective surgery: Findings and results from the DISTINCT study, a prospective randomized multi-center-controlled trial

Article Full-text available

June 2024 · 51 Reads · 1 Citation

North American Spine Society Journal (NASSJ)

James J. Yue · Chris Gilligan · Steven Falowski · [...] · Timothy R Deer

Background Low back pain (LBP) is a highly prevalent, disabling condition affecting millions of people. Patients with an identifiable anatomic pain generator and resulting neuropathic lower extremity

symptoms often undergo spine surgery, but many patients lack identifiable and/or surgically correcti...

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351 Comparing SCS and Conventional Medical Management in Patients With No Prior Back Surgery (SOLIS RCT)

Article

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Neurosurgery

James North · Julio Paez · Aaron K. Calodney · [...] · Roshini Jain

INTRODUCTION Spinal Cord Stimulation (SCS) as a treatment for chronic pain has been historically designated for patients who have had at least one prior spinal surgery. Modern SCS devices though now offer more novel technological capabilities and neurostimulative approaches than older-...

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EP057 / #173 SPINAL CORD STIMULATION IS EFFECTIVE IN PATIENTS WITH NECK AND UPPER LIMB PAIN

Article

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Neuromodulation

Björn Carsten Schultheis · David M Schultz · Denis Patterson · [...] · Ioannis Skaribas

Citations (12)

... However, how exactly SCS promotes motor function recovery and affects motor neuron recruitment still remains unclear. Several SCS chronic pain studies have investigated the impact of SCS on sensory neural circuits and have addressed these open questions, scoping to unveil on how SCS may interfere with brain circuits relevant for pain by using electrophysiological and/or neuroimaging outcome measures [12][13] [14] [15][16][17][18][19][20][21][22]. ...

Reference: *Unaltered Responses of Distal Motor Neurons to Non-Targeted Thoracic Spinal Cord Stimulation in...*

Surgical treatment of refractory low back pain using implanted BurstDR spinal cord stimulation (SCS) in a cohort of patients without options for corrective surgery: Findings and results from the DISTINCT study, a prospective randomized multi-center-controlled trial

Citing Article | Full-text available | June 2024

North American Spine Society Journal (NASSJ)

James J. Yue · Chris Gilligan · Steven Falowski · [...] · Timothy R Deer

... A forest plot showing the percentage change in pain rating after neuromodulation compared with conventional medical management. [5, 13] Figure 3. ...

Reference: *A meta-analysis of modern neuro-stimulation modalities-Advances in neuro-stimulation techniques*

Treatment of Refractory Low Back Pain Using Passive Recharge Burst in Patients Without Options for Corrective Surgery: Findings and Results From the DISTINCT Study, a Prospective Randomized Multicenter Controlled Trial

Citing Article | August 2023

Neuromodulation

Timothy R Deer · Chris Gilligan · Steven Falowski · [...] · James Yue

... Patients often struggle to accurately recall their pain levels and experiences, leading to less effective treatments. Physicians aim to alleviate these discrepancies through the use of self-reported pain scales and questionnaires, but such methods have limitations because they rely on the patient's subjective reporting [27] . The emergence of modern digital health interventions (DHIs) such as electronic health (eHealth) and mobile health (mHealth) aims to improve this process, which invites opportunity for promising advances in the future of chronic pain management. ...

Reference: *Effectiveness of Digital Health Interventions (DHI) in Chronic Pain Management: A Scoping Review ...*

Objective wearable measures correlate with self-reported chronic pain levels in people with spinal cord stimulation systems

Citing Article | Full-text available | August 2023

npj Digital Medicine

Denis G Patterson · Derron Wilson · Michael A. Fishman · [...] · Anahita Kyani

... Utilizing digital biomarkers in pain management, such as data collected from wearable devices or mobile apps, can provide objective measures of pain intensity, frequency, and impact on daily activities. They can supplement traditional subjective pain assessments and offer a more comprehensive view of the patient's condition [6, 45] . -Digital Therapeutics Digital therapeutics, such as mobile apps or online programs, can provide interactive tools for pain assessment and self-management. ...

Reference: *Innovative Applications of Telemedicine and Other Digital Health Solutions in Pain Management: A...*

Objective wearable measures and subjective questionnaires for predicting response to neurostimulation in people with chronic pain

Citing Article | Full-text available | June 2023

Bioelectronic Medicine

Robert Heros · Denis Patterson · Frank Huygen · [...] · Misagh Mansouri

... Preliminary data suggests that they may not be subject to habituation to the same degree as older generation products. 19, 50 Current closed-loop technology modulates tonic waveforms via Evoked Compound Action Potentials (ECAPs) to deliver consistent stimulation to the axons of the dorsal columns; however, an innovation in this space may be to create constant delivery to the other cell lines in the spinal cord such as wide dynamic neurons and oligodendrocytes which are thought to produce clinical effect as well. 51,52 Comorbid depression, anxiety, sleep deprivation, post-traumatic stress, and sleeping disorders are known to have a limited response to SCS and can skew durability data. ...

Reference: *Spinal Cord Stimulation Explantation and Chronic Pain: A Systematic Review and Technology...*

ID: 196377 Clinical Impact of a Novel Fast-Acting Sub-Perception SCS Therapy Engaging Surround Inhibition (FAST Prospective Study)

Citing Article June 2023

Neuromodulation

Magdalena Anitescu · Eric Loudermilk · Drew Trainor · [...] · Roshini Jain

... There are several SCS paradigms that have demonstrated efficacy for NSLBP. 1,17, 47 The DISTINCT study compared SCS to CMM in patients with NSLBP. The study found a significant reduction in pain and pain-related disability with the use of passive recharge burst stimulation sustained at 12 months post-implant. ...

Reference: *An Evidence-Based Consensus for the Use of Neurostimulation for the Treatment of Non-Surgical...*

ID: 220389 SCS in Patients Without Options for Corrective Surgery; Results From DISTINCT, a Prospective RCT Trial

Citing Article June 2023

Neuromodulation

Marie Fahey · Timothy R Deer · Chris Gilligan · [...] · James Yue

... Wearable devices can objectively measure several features affected by pain, such as activity, sleep, psychological health, and social participation. The feasibility data from our wearable sub-study provides an objective measurement of many necessary biomarkers for continuous symptom monitoring, with minimal data loss (Patterson et al. 2023) . The current study showed that objective features were able to predict both PGIC and NRS outcomes with high accuracy even in the absence of subjective data in our sub study population. ...

Reference: *Objective wearable measures and subjective questionnaires for predicting response to...*

Objective Wearable Measures Correlate with Self-Reported Chronic Pain Levels in People with Spinal Cord Stimulation Systems

Citing Preprint | File available | January 2023

Denis Patterson · Derron Wilson · Michael A. Fishman · [...] · Anahita Kyani

... 14 Surgery for chronic CLBP, such as spinal fusion, has not been shown to offer significant improvement in disability compared to CMM. 15,16 Recent studies have demonstrated the superiority of SCS vs CMM in terms of pain scores, disability, pain catastrophizing, quality of life, and daily opioid use. 1, 17 Along with improvements in pain and patient-related outcomes, there is an economic benefit from the use of SCS for NSLBP. A 2023 prospective, randomized controlled trial comparing SCS to CMM for NSLBP over 12 months found a 33% average reduction in healthcare utilization cost in the SCS arm as compared to CMM. 18 The cost-effectiveness of SCS was estimated to be achieved within 2.1 years. ...

Reference: *An Evidence-Based Consensus for the Use of Neurostimulation for the Treatment of Non-Surgical...*

226. Surgical treatment of refractory low back pain using implanted BurstDR spinal cord stimulation (SCS) in a cohort of patients without options for corrective surgery: findings and results from the DISTINCT study, a prospective randomized multi-center controlled trial

Citing Article September 2022

The Spine Journal

James J. Yue · Chris Gilligan · Steven Falowski · [...] · Timothy R Deer

... 21,25 Studies show that gram-negative bacteria can also cause infections, although these are infrequent. 21,25, 26 Patients known to be colonized with MRSA may be decolonized with nasal mupirocin, which has been demonstrated to decrease the risk of positive clinical cultures or postdischarge infection by 18-30%. 27,28 Although no specific prophylactic antibiotic has been definitively established as superior, weight-based firstgeneration cephalosporins, such as cefazolin, are generally preferred for SSI prevention in neuromodulation procedures. ...

Reference: *Device Evaluation, Treatment, and Explantation Recommendations (DETER): Review and Best...*

The Neurostimulation Appropriateness Consensus Committee (NACC): Recommendations for Surgical Technique for Spinal Cord Stimulation

Citing Article January 2022

Neuromodulation

Timothy R Deer · Marc Russo · Jay Grider · [...] · Robert Levy Md

... To ensure a homotopic eMCS with respect to the painful territory, the activated contacts (bipolar configuration) were chosen according to their anatomo-functional locations, as assessed by intraoperative electrophysiological findings and on postoperative CT scan images co-registered to preoperative MR images. BurstDR waveform was administered applying the same specific parameters as currently described for SCS (Vesper et al. 2019; Deer et al. 2022): trains of five spikes with a pulse width of 1 ms and an internal frequency of 500 Hz, a burst rate of 40 Hz, cyclisation of 30 s "on"/90 s "off". Amplitude was set to 1.0-1.5 mA, i.e., in a range consistent with the settings reported in preliminary burstDR eMCS studies (Sokal et al. 2019(Sokal et al. , 2020Nüssel et al. 2021). ...

Reference: *A Double-Blind Comparative Study of burstDR Versus Tonic Epidural Motor Cortex Stimulation for t...*

Ultra-Low Energy Cycled Burst Spinal Cord Stimulation Yields Robust Outcomes in Pain, Function, and Affective Domains: A Subanalysis From Two Prospective, Multicenter, International Clinical Trials

Citing Article July 2021

Neuromodulation

Timothy R Deer · Derron Wilson · David M Schultz · [...] · Magdalena Anitescu

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