UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (date of earliest event reported) November 21, 2023

electroCore, Inc.

(Exact name of registrant as specified in its charter)

001-38538 (Commission File Number)

Delaware (State or other jurisdiction of incorporation or organization)

200 Forge Way, Suite 205 Rockaway, NJ 07866 (Address of principal executive offices and zip code)

(973) 290-0097

(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12) Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

	Trading	Name of each exchange
Title of each class	symbol(s)	on which registered
Common Stock, Par Value \$0.001 Per Share	ECOR	The NASDAQ Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company 🗵

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

20-3454976 (I.R.S. Employer Identification Number)

Item 8.01. Other Events.

On November 21, 2023, electroCore, Inc. (the "Company"), conducted an analyst day webinar entitled "Accessing the Power of the Vagus Nerve Stimulation with electroCoreTM". The webinar presentation is attached as Exhibit 99.1 to this Current Report on Form 8-K.

Cautionary Note Regarding Forward-Looking Statements

This report contains forward-looking statements. Forward-looking statements include all statements that are not historical facts including, but not limited to, statements that express the Company's intentions, beliefs, expectations, strategies, predictions or any other statements related to the Company's future activities, or future events or conditions, and in some cases, such statements can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would" or similar expressions and the negatives of those terms. These statements are based on the then current expectations, estimates and projections about the Company's business based, in part, on assumptions made by management. These statements are to guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ motharia terpressed or forecasted in the forward-looking statements due to numerous factors, as well as those risks discussed in the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and in other documents that the Company files from time to time with the Securities and Exchange Commission. Any forward-looking statements speak only as of the date on which they are made, and the Company does not undertake any obligation to update any forward-looking statement to reflect events or circumstances after the date of this report, except as required by law.

Item 9.01. Financial Statements and Exhibits

Exhibit	Description
99.1	Presentation, dated November 21, 2023.
104	Cover Page to this Current Report on Form 8-K in Inline XBRL

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

electroCore, Inc.

/s/ Brian M. Posner Brian M. Posner Chief Financial Officer

November 27, 2023



Accessing the Power of the Vagus Nerve Stimulation with electroCore™

Dr. Peter Staats, MD, MBA, Founder and Chief Medical Officer Dan Goldberger, CEO electroCore, Inc.

November 21, 2023

Forward Looking Statement

In addition to historical information, this presentation may contain forward-looking statements with respect to our business, capital resources, strategy and growth reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are subject to a number of risks, uncertainties and assumptions, and you should not rely upon forward-looking statements as predictions of future events. All forward-looking statements may be based upon current estimates and expectations about future events and financial and other trends. There is no guarantee that future results, performance or events reflected in the forward-looking statements will be achieved or occur. No person assumes responsibility for the accuracy and completeness of the forward-looking statements, and, except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons why actual results could differ materially from those or our situation may change in the future.

Forward-looking statements include all statements that are not historical facts and, in some cases, can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would" or similar expressions and the negatives of those terms. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements represent our management's beliefs and assumptions only as of the date they are made and are only predictions that may be inaccurate. You should read the Risk Factors set forth in our reports filed from time to time with the Securities and Exchange Commission, which factors may cause our actual future results to be materially different from what we expect.



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- 2. History and Science of Vagus Nerve Stimulation and Mechanism of Action (MOA)
- 3. Clinical Progress
- 4. Product Pipeline





The Vagus Nerve

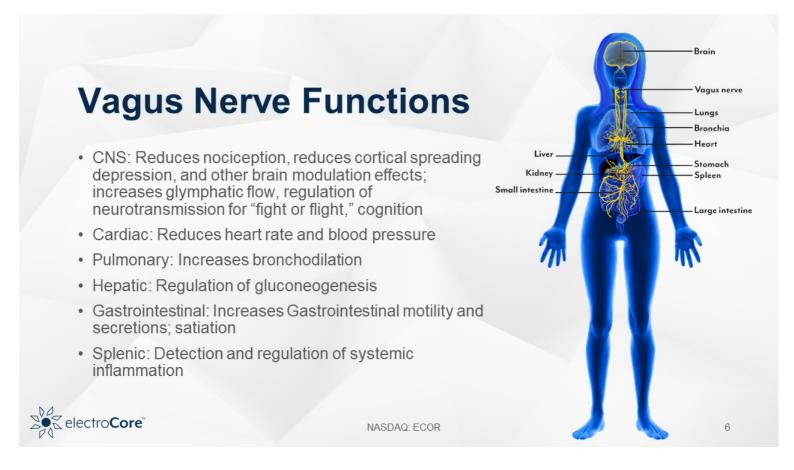


The Vagus Nerve

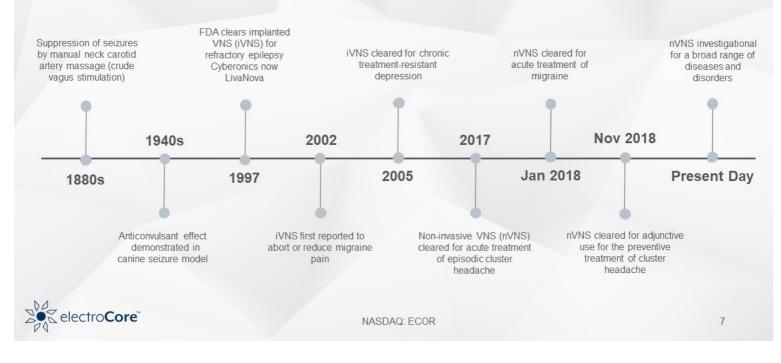
- The tenth cranial nerve, or cranial nerve X
- It is the longest and most widely distributed cranial nerve in the body
- Affects various organ systems in the body-predominantly the head, thoracic and abdominal organs
- Contains both sensory and motor functions







History of Vagus Nerve Stimulation



nVNS Mechanisms of Action (MOA)



nVNS: An Integrative Mechanism of Action

There are multiple known mechanism of vagus nerve stimulation:

NEUROPROTECTION

Decrease inflammation and protect brain integrity

PAIN MITIGATION

Decrease pain signaling and recognition

CORTICAL SPREADING DEPRESSION

Decreases hyperactive electrical patterns in the brain

NEUROTRANSMITTER BALANCE

Balance inhibitory and excitatory neurotransmitters, including serotonin, noradrenaline and glutamate

AUTONOMIC NERVOUS SYSTEM

Rebalance sympathetic and parasympathetic input

nVNS

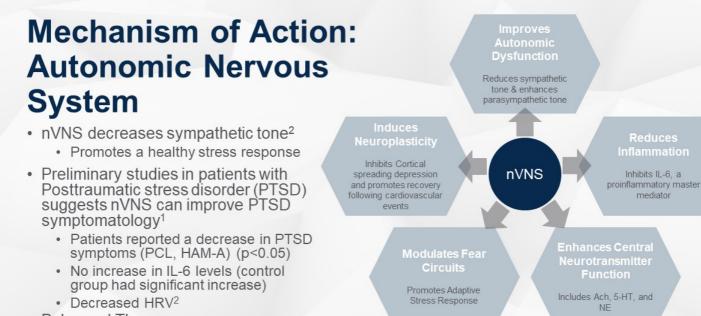
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Polyvagal Theory

- Polyvagal theory states that when a person feels safe, their body is able to engage in homeostatic "rest and digest" behaviors.
 - When the body is locked in a sympathetic state (attack/defense mode), the ability to heal, digest, learn, etc., is inhibited.
- The vagus nerve is the parasympathetic superhighway:
 - · Upregulates parasympathetic responses
 - · Downregulates sympathetic arousal/fear response





Polyvagal Theory



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1. Bremner et. al. Journal of Affective Disorders, 2021 2. Gurel et al, Neurobiology of Stress, 2020 PCL: PTSD Checklist; HAM-A: Hamilton Anxiety Autonomic Scale; 5-HT; serotonin; ACh: acetylcholine; NE: norepinephrine; HMGB-1: high-mobility group box protein 1 11

Mechanism of Action: Pain Management

- nVNS suppresses the activation of trigeminal neurons¹
 - Trigeminal allodynia, a key feature of migraine and other Trigeminal Autonomic Cephalalgia (TACs), responds to VNS
 - Inhibitory effects can last up to 3 hours after stimulation
- Unilateral nVNS treatment reduces pain perception bilaterally²
- The significant reduction in trigeminal firing after 2x2 minute stimulations with gammaCore supports the use of the device as an abortive treatment for cluster headache and migraine
 - Treatment may be beneficial for other types of chronic headache (e.g., medication overuse headache)

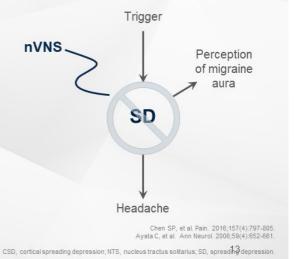
1. Akerman S, et al. Neurobiol Dis. 2017;102:96-104. 2. Peng KP, May A. Pain 2022, Jan 25



Mechanism of Action: Cortical Spreading Depression (CSD)

- nVNS suppresses CSD susceptibility
- Efficacy is comparable to that of migraine preventive drugs
- Mechanistic effect takes ~30 minutes to emerge and extends to ≥180 minutes (vs. 4+ weeks for preventive pharmacologic effects to emerge)
- · Effect likely mediated by afferent input to NTS
- Norepinephrine and serotonin pathways appear to contribute to CSD inhibition





Mechanism of Action: Neuroprotection

- nVNS has an inhibitory effect on pro-inflammatory cytokine activity
 - Cholinergic Anti-Inflammatory Pathway (CAP)
 - · Reduction in cytokine storm, mast cell activity
 - TNF-alpha, IL-6, IL-1, HMGB-1
- Upregulation of NE, ACh, and 5-HT
- nVNS is currently being studied as a potential treatment for
 - Ischemic and hemorrhagic brain injury
 - Long covid
 - TBI/concussion



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Mechanism of Action: Summary

- Autonomic Nervous System functionality: regulation of autonomic nervous system
 Reduces sympathetic tone, leading to anxiety and stress reduction
- Cortical Spreading Depression (CSD): nVNS reduces CSD, a neuronal activity that precedes migraine aura
 - nVNS suppresses CSD within 30 minutes, vs. several weeks for topiramate
- · Neurotransmitter Modulation: short and long-term effects
 - · Increased inhibitory neurotransmitter activity, decreased excitatory neurotransmitter activity
 - Reduction in CRP and inflammatory cytokines through the cholinergic anti-inflammatory pathway (CAP)
- Nociceptive Modulation: Decreased TGM firing
 - · Trigeminal allodynia, a key feature of migraine, responds to VNS



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Clinical Progress



nVNS Research - Neuropsych (PTSD/OUD)

Indication	No. of Patients	Status	Key Endpoints	Institution(s)
PTSD (Veterans)	88	Enrolling	Inflammation, life quality, symptom severity	San Diego VA, UCSD
mTBI with PTSD (Veterans)	100	Enrolling	Imaging, Memory, Stress	Emory, GaTech, Atlanta VA
PTSD – non-TBI (Veterans)	80	Pending	Clinical and Physiological	Emory, GaTech, Atlanta VA
Opioid Use Disorders	20 + 20	Data analysis	Drop in Opioid Cravings Mechanism - PET	Emory, GaTech, Atlanta VA
Opioid Use Disorders	103	Pending	Subjective Opiate Withdrawal Scale (SOWS)	Emory, GaTech, Atlanta VA
Alcohol Use Disorder	20	Enrolling	Safety/ Feasibility Substance Use Recovery (SURE), fMRI	San Diego VA
mTBI, PTSD, Addiction	Animal	Manuscript in progress	Immunological and behavioral outcomes, alcohol intake	University of Washington
electro Core		NASDAQ: I	ECOR	17

Thesis Behind nVNS in Posttraumatic Stress Disorder (PTSD)

nVNS can influence the autonomic, neuroendocrine, and neuroimmunology systems

- The neurobiology of PTSD includes:
- Alterations in brain structure and function

 - Imbalances in neurotransmitters PTSD symptoms are associated with hypothalamic–pituitary–adrenal axis dysfunction as represented by low basal cortisol, a dysregulated immune system, characterized by an elevated pro-inflammatory state, and metabolic dysfunction
 - Cognitive processing and emotional responses, such as hyperarousal, also play a crucial role in the development and manifestation of PTSD
- Projections of the vagus through the nucleus tractus solitarius (NTS) extend to the locus coeruleus (LC) and hypothalamus, key areas involved in PTSD, as well as brain areas like the anterior cingulate, hippocampus, insula and amygdala that are involved in both memory and the fear response. Efferent branches of the vagus also have important effects, including modulation of inflammatory and cardiovascular as well as peripheral organ and autonomic function.
- 9 studies / IIT studies have shown that nVNS can:
 - Significantly reduce PTSD symptoms, as measured by PTSD Checklist (PCL)
 - Attenuate the neurobiological stress-response associated with PTSD
 - Improve attention, declarative and working memory, which can improve the quality of life and productivity in patients with PTSD
 - Significantly decrease peripheral and cardiac sympathetic activity and vascular measures modulate autonomic tone/nervous system, improve recovery from traumatic stress, and enhance parasympathetic function
 - Decrease neural reactivity to an emotional stressor



Posttraumatic Stress Disorder (PTSD) – Breakthrough Designation

gammaCore[™] Non-Invasive Vagus Nerve Stimulation(nVNS) Receives Breakthrough Device Designation for Treatment of Posttraumatic Stress Disorder (PTSD)

January 12, 2022 at 8:00 AM EST

nVNS reduces symptoms of PTSD by 31% in sham-controlled study

ROCKAWAY, N.J., Jan. 12, 2022 (GLOBE NEWSWIRE) -- electroCore, Inc. (Nasdaq: ECOR), a commercial-stage bioelectronic medicine company, today announced that its gammaCore™ nVNS device has received Breakthrough Designation from the U.S. Food and Drug Administration (FDA) for the treatment of posttraumatic stress disorder (PTSD) after showing a reduction of symptoms of PTSD by 31% when compared to sham.

PTSD is a highly prevalent and disabling disorder with limited approved treatment options. According to the U.S. Department of Veterans Affairs National Center for PTSD, approximately 15 million adults in the U.S. experience PTSD each year. In the Military and Veterans Administration alone, PTSD is reported to affect between 10-20% of veterans who served in each Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF), the Gulf War (Desert Storm), and the Vietnam War. More than half of all patients with PTSD report severely impaired quality of life in areas including mood, social and family relationships, leisure activities, sense of well-being and life satisfaction.



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Substance Abuse Disorder and Opioid Use Disorder (OUD)

- Pain is an important component of opioid withdrawal; detoxification period can involve intense pain both can complicate recovery from OUD
- · Pain conditions are often a precursor to the development of OUD
- nVNS may reduce behavioral and physiological manifestations of opioid withdrawal
- Study (Gazi 2022) showed:
 - Statistically significant reductions in opioid withdrawal symptoms, subjective distress, and heart rate
 - Reductions in pain in patients with OUD experiencing opioid withdrawal.



National Institute on Drug Abuse (NIDA) Grant

National Institutes of Health Awards Grant for Pivotal Clinical Trial of gammaCore[™] (nVNS) in Patients with Opioid Use Disorders

April 26, 2023 at 8:00 AM EDT

ROCKAWAY, N.J., April 26, 2023 (GLOBE NEWSWIRE) -- electroCore, Inc. (Nasdaq: ECOR), a commercial-stage bioelectronic medicine and wellness company, today announced that the National Institute on Drug Abuse (NIDA), part of the National Institutes of Health (NIH), has awarded Emory University and the Georgia Institute of Technology a 3-year, \$6.0 million grant through the NIH Helping to End Addiction Long Term (HEAL) Initiative to conduct a pivotal clinical trial of gammaCore (non-invasive vagus nerve stimulator; nVNS) for the treatment of opioid use disorder (OUD).

Opioid use disorder represents a national crisis with devastating consequences. Deaths from overdoses of opioids increased 8.5 fold from 1999 to 2020¹ making opioid overdose, including overdose involving prescription opioids and opioid-like synthetics like OxyContin and Percocet, as well as heroin and other illegal opioid substances like fentanyl, the leading cause of accidental death in the United States.² Recurrent stress and exposure to triggers of traumatic memories in everyday life are a common precipitator of relapse in patients with OUD^{3,4} especially for women misusing prescription opioids.⁵

The double-blind, randomized, sham-controlled study is based on the successful completion and publication of a pilot study that showed that gammaCore nVNS reduced both the psychological and physiological symptoms of acute opioid withdrawal.⁶ The study to be funded by the grant will recruit approximately 100 patients with OUD. The primary efficacy endpoint of this study will be peak difference in the Subjective Opioid Withdrawal Score (SOWS) between nVNS and sham treatment on day 2 and 3 of the initial withdrawal period.



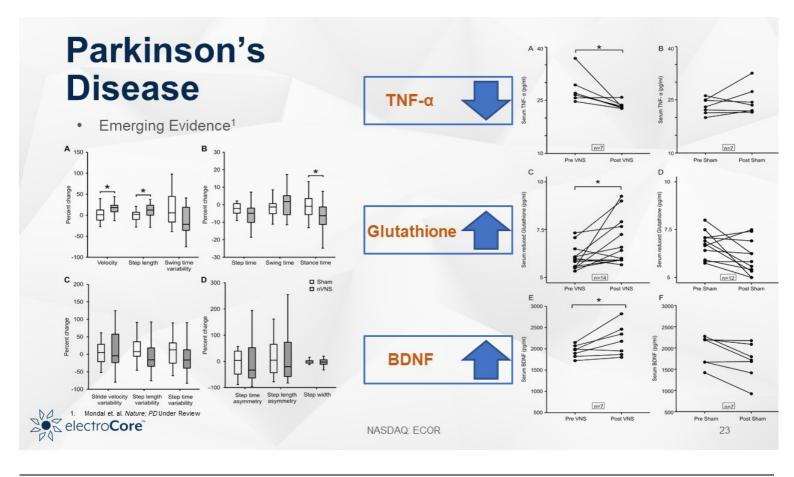
Parkinson's Disease (PD)

- Parkinson's Disease as a complex multisystem disorder in which core impairments are underpinned by deficits in multiple neurotransmitter systems as well as age-related neurodegeneration
- Recent research has shown that there is a loss of acetylcholine in the brain such as:
 - It is thought that acetylcholine has an important role in memory, thinking and walking
- It is thought that by stimulating the vagus nerve we may increase the amount of acetylcholine available in the brain
- Pilot study (33 participants) indicates that a single dose nVNS may improve walking in patients with Parkinson's (current study ADVANSING has the protocol published)
- Enrolling patients in 40 subject Gait and Mobility trial in Parkinson's Disease at the University of Newcastle, UK









NFLPA Grant

gammaCore[™] Non-Invasive Vagal Nerve Stimulation Selected for Study Funded by the National Football League (NFL) and National Football League Players Association (NFLPA) on Alleviating Concussion Symptoms

ROCKAWAY, NJ, July 06, 2023 (GLOBE NEWSWIRE) -- electroCore, Inc. (Nasdaq: ECOR), a commercial-stage bioelectronic medicine and wellness company, today announced that its gammaCore non-invasive vagus nerve stimulation ("nVNS") has been selected to be a part of studies on effects of cannabinoids and alternative care on athlete pain management and performance. The NFL and NFLPA are jointly awarding two research grants to independent medical researchers at the American Society of Pain and Neuroscience (ASPN) and Emory University.

The grants will fund investigations into innovative, first-of-their-kind, alternative pain management methods that could benefit NFL players, and society at large. These awards are the second round chosen by the NFL-NFLPA Joint Pain Management Committee (PMC), which aims to facilitate research to better understand and improve potential alternative pain management treatments for NFL players.





Stroke Data Presented at World Stroke Conference

Data Highlighting Non-invasive Vagus Nerve Stimulation (nVNS) for Treatment of Acute Neurological Injury Presented at 2023 World Stroke Congress

"VANQUISH" Clinical Trial (n=40) suggests safety and efficacy of nVNS for the Treatment of Headache Associated with Subarachnoid Hemorrhage (SAH)

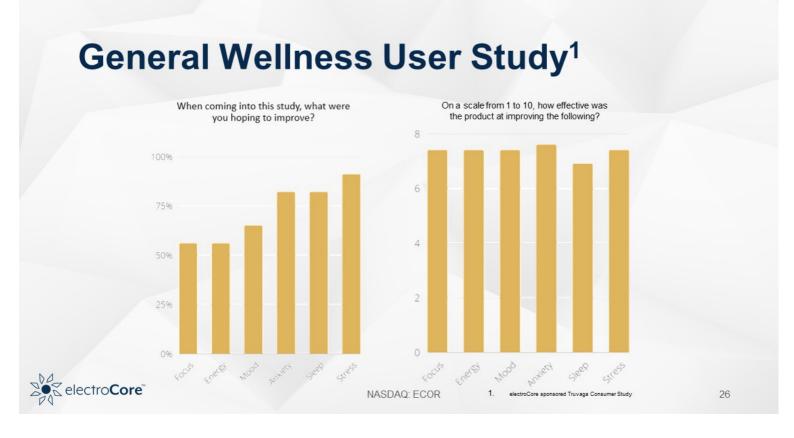
"NOVIS" Clinical Trial (n=150) of nVNS for the acute treatment of Ischemic Stroke will complete recruitment in 2023

ROCKAWAY, N.J., Oct 10, 2023 (GLOBE NEWSWIRE) -- electroCore, Inc. (Nasdaq: ECOR), a commercial-stage bioelectronic medicine and wellness company, today announced top line data from two abstracts being presented at the 15th World Stroke Congress held October 10-12, 2023, in Toronto, Canada on the possible role of nVNS in the treatment of acute neurological injuries.

Stroke trial in Leiden, Netherlands is nearing complete enrollment



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TAC-STIM

TRAINING

- Foreign Language Initial Acquisition Program
- School Houses
- Special Ops training
- Other specific training environments

MISSION SUPPORT

- Preparation
- Increase vigilance
- Decrease fatigue
- Improve performance

POST MISSION

- After action debrief
- Facilitate decompression
- Learning consolidation
- Physical and mental restoration



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FORCE AND MISSION RELEVANT RESULTS¹

TAC-STIM Enhances ISR Synthetic Aperture Radar Training

TAC-STIM Improves Cognitive Skill After Sleep Deprivation

TAC-STIM Boosts Mood and Performance During ISR FMV Training

TAC-STIM Improves Difficult Language Recall and Recognitions

1. Visit tac-stim.com for additional information

Product Pipeline



6 FDA Cleared Indications to Treat Medical Conditions

gammaCore[™] (non-invasive vagus nerve stimulator) is intended to provide non-invasive vagus nerve stimulation (nVNS) on the side of the neck. gammaCore is indicated for:

- The acute treatment of pain associated with episodic cluster headache.
- The acute treatment of pain associated with migraine headache.
- Adjunctive use for the preventive treatment of cluster headache in adult patients.
- The preventive treatment of migraine headache in adult patients.
- · The use of gammaCore by adolescent patients.
- Treatment of hemicrania continua and paroxysmal hemicrania in adult patients.





Clinical Data & Regulatory Timeline

- Pivotal Data complete to support a 510(k) De Novo submission to treat the Symptoms of PTSD with nVNS
 - Working with the FDA now, timing uncertain
- \$6.5M grant from NIH and NIDA to support a Pivotal trial on the use of nVNS to treat the Symptoms of withdrawal from Opioid Addiction (OUD)
 - Data read out in 2025
 - 510(k) pathway previewed with FDA
- Parkinson's trial in Newcastle, UK should complete enrollment early 2024
 - If Parkinson's data is positive in 2024, discuss pathway and additional data required (if any) with FDA
- Stroke trial in Leiden, Netherlands is nearing completion
 - Last patient follow up in early 2024
 - Top line data in mid 2024



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Adding Products to the nVNS Portfolio for Greater Market Access and Adoption

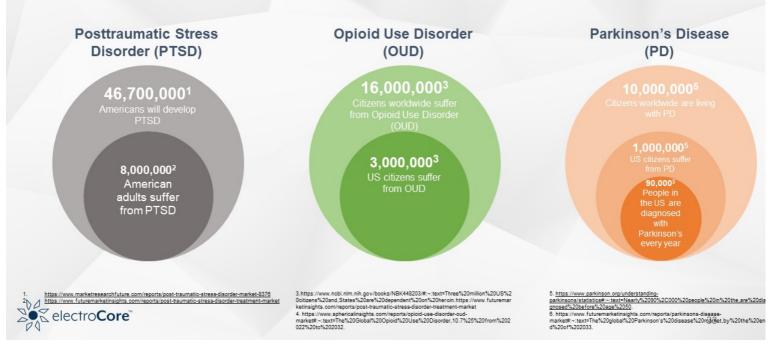


Headache Market

- Tens of millions of migraine sufferers worldwide
 - · Therapies include lifestyle, diet, exercise, nutraceuticals, OTC medications
 - Roughly 8M Americans are seeing a professional about headache¹ and about approximately 2.5M Americans have a prescription therapy²
 - Triptans are first line prescription therapy, followed by injectables (Botox and CGRP antibodies) and neurostimulation
- nVNS is considered first line therapy in Cluster Headache, about 400,000³ patients in the US
- Big Pharma is heavily invested in headache, but nVNS is making progress
 - About 600,000 headache patients in the VA Hospital System⁴
 - About 4,000, or less than 1%, are being treated with nVNS

1.	https://www.ihateheadaches.org/headache-statisticg				
2.	Company estimate based off: https://my.develand/olnic.org/health/treatments/24998-trigtang and Raymond James CGRP Industry Research.				
3.	Cephalagia. 2008 Jun;28(8):614-8. doi: 10.1111/j.1488-2982.2008.01592.x. Epub 2008 Apr 16.				
4.	Company estimate from VA Headache Center of Excellence				
	electro Core	NASDAQ: ECOF			

Increasing the Size of the Rx nVNS Total Addressable Market



Leveraging nVNS in the \$5 trillion Digital Health and Wellness Market

