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Global Neuromodulation Market - 2024 -2031

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Abstracts

Report Overview

Global Neuro Modulation Devices Market reached US$5.4 billion in 2022 and is expected to reach US$7.6 billion by 2030, growing with a CAGR of 3.6% during the forecast period 2024-2031, according to DataM Intelligence report.

The trend such as the increasing adoption of organic strategies such as acquisition by key market players to expand its product portfolio, is expected to dominate the Global Neuromodulation Devices Market.

Neuromodulation devices are approved in the United States for the treatment of movement disorders, epilepsy, pain, and depression, and are used off-label for other neurologic indications

Neurostimulation devices involve the application of electrodes to the brain, the spinal cord or peripheral nerves. These precisely placed leads connect via an extension cable to a pulse generator and power source, which generates the necessary electrical stimulation. A low-voltage electrical current passes from the generator to the nerve and can either inhibit pain signals or stimulate neural impulses where they were previously absent.

Furthermore, the global neuromodulation devices are driven by various factors, the rise in the prevalence of lifestyle diseases such as chronic pain and depression, increased investment by private players for research and development of neurological disorders, and the increasing number of neurological diseases are some of the factors driving the market.

Moreover, the adoption of technologically advanced devices, the surge in the geriatric

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population, and the rise in demand for non-invasive and minimally invasive surgery fueled the industry growth having key players like Medtronic Plc, Abbott Laboratories, Boston Scientific Corp, LivaNova Plc and others.

Market Dynamics

Rise in the Prevalence of Neurological Disorders

The rise in the prevalence of neurological disorders is one of the key factors that helps the market to grow during the forecast period. For instance, the rise in the Prevalence of Epilepsy according to the WHO updated factsheet 2023, Epilepsy affects around 50 million individuals worldwide, making it one of the most common neurological illnesses. Almost 80% of epileptics reside in low- and middle-income nations. It is believed that if epilepsy is correctly identified and treated, up to 70% of people can live seizure-free.

Epilepsy affects 5 million people globally, with high-income countries experiencing 49 per 100,000 cases, while low- and middle-income countries have a higher rate of 139 per 100,000. This is due to increased risks of endemic conditions, road traffic injuries, birth-related injuries, and variations in medical infrastructure. Nearly 80% of epilepsy patients live in low- and middle-income countries.

Rise in the Technological Advancements

Key players frequently spend on R&D to generate more novel and effective neuromodulation devices. New technical breakthroughs enable the creation of more accurate, less intrusive technologies that provide improved patient results.

For instance, in addition, in the last few years, there have been various developments in neuromodulation technology. Some examples of these developments are rechargeable batteries with wireless charging, improvements in programming, less invasive single-stage implantation in outpatient settings, and lower-cost new devices.

Over the past decade, software and hardware technologies have advanced significantly, leading to significant technological successes. Hardware improvements have fueled software implementation and algorithmic integration, while sophisticated software enables efficient big data aggregation and biomarker discovery. Patients' familiarity with existing technology will facilitate the integration of digital health with neuromodulation therapies. The building blocks for effective solutions are often used in alternative applications, such as smartphones and smart watches for healthcare add-ons.

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Rise in the Product Launches by Key Players

A rise in the product launches by key players in the market will help the overall market to grow during the forecast period. For instance, in July 2022 Orchestra BackBeat CNT, a highly sophisticated cardiac neuromodulation therapy, was created by collaboration between BioMed and Medtronic. It is combined with several antihypertensive drugs and is designed in a way that it operates automatically without depending on patient compliance. Furthermore, it can be simply modified to work with pacemakers and other cardiac rhythm control devices utilizing standard implant and lead installation techniques.

Additionally, in January 2022 Medtronic received FDA approval for its Intellis and Vanta rechargeable neurostimulator devices for treating chronic pain in diabetic peripheral neuropathy (DPN). DPN is a progressive neurological disorder affecting 30% of diabetes patients, causing numbness, burning, and severe pain. Medications are often only partially effective and can cause serious side effects.

High Cost of Neuromodulation Procedures

The high cost of neuromodulation procedures and devices is a major factor restraining the growth of the global neuromodulation market, especially in developing countries with poor reimbursement policies. The average cost of a standard implantable pulse generator is -USD implantation procedures can cost as high as USD 25,000—35,000.

Spinal cord stimulator devices cost around USD 13,000—40,000. Owing to high costs and a poor reimbursement scenario, a very limited pool of patients in developing countries can afford neurological treatment. As a result, healthcare facilities are reluctant to invest in new or technologically advanced systems, thus limiting the growth of the neuromodulation market.

Segment Analysis

The global neuromodulation devices market is segmented based on type, application, biomaterial, end user and region.

The Invasive Neuromodulation Segment From The Type Segment Accounted For Approximately 41.7% of Neuro Modulation Devices Share

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The invasive neuromodulation segment from the type segment accounted for 41.7% and it is expected to be dominated during the forecast period. SCS devices deliver electrical pulses to the spinal cord to relieve chronic pain. They are often used as a treatment for failed back surgery syndrome, injuries to the spinal cord, complex regional pain syndrome, neuropathic pain, and ischemia-related refractory pain. The main benefits of the therapy are the decreased need for pain medication and overall improvement in the quality of life.

For instance, on April 19 2023 the company announced U.S. Food and Drug Administration (FDA) approval for Prospera, a spinal cord stimulation (SCS) system. The system features RESONANCE, the first and only multiphase stimulation paradigm, paired with Embrace One™, a patient-centric care model that makes proactive care possible by offering automatic, objective, daily remote monitoring and ongoing management and support.

Furthermore, in August 2022 Abbott announced that the U.S. Food and Drug Administration (FDA) has approved its new Proclaim Plus spinal cord stimulation (SCS) system featuring FlexBurst360 therapy. The next generation of Abbott's proprietary BurstDR stimulation, FlexBurst360 therapy, offers pain coverage across up to six areas of the trunk and/or limbs and enables programming that can be adjusted as a person's therapeutic needs evolve.

Designed to fit within a person's life, the Proclaim Plus SCS system is recharge-free with a battery that can last up to 10 years.^ It can be used with Abbott's NeuroSphere Virtual Clinic connected care technology, which allows a person to both communicate with a physician through secure in-app video chat and remotely receive stimulation settings in real-time regardless of location.

Geographical Share

North America Accounted for Approximately 38.4% of the Market Share

North America is estimated to hold about 38.4 % of the total market share throughout the forecast period, owing to the presence of major market players and huge pharmaceutical and biopharmaceutical industries, launches by key players, coupled with the rising investments in the country for the adoption of advanced technologies, an increasing number of patients suffering from neurological disorders, which is increasing the need for the adoption of neuromodulation devices, increased competition among market players, and significant expenditure on research and development.

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On March 24, 2022, Medtronic plc, a global leader in healthcare technology, announced the first patient implants in the TITAN 2 pivotal study that will evaluate the safety and efficacy of Medtronic's investigational implantable tibial neuromodulation (TNM) device in people with overactive bladder (OAB). The minimally invasive technology stimulates the posterior tibial nerve near the ankle, transmitting electrical impulses that regulate the neural activity of the bladder.

For instance, in December 2022, Abbott announced the U.S. Food and Drug Administration (FDA) approval of the company's Eterna spinal cord stimulation (SCS) system – the smallest implantable, rechargeable spinal cord stimulator currently available on the market for the treatment of chronic pain. Eterna SCS utilizes Abbott's proprietary low-dose BurstDR stimulation, the only SCS waveform technology with the highest level of clinical evidence (1A evidence), proven to reduce pain 23% more than traditional waveform technology approaches.

Competitive Landscape

The major global players in the market include Medtronic Plc, Abbott Laboratories, Boston Scientific Corp, LivaNova Plc , Integer Holdings Corporation, ElectroCore, Caputron, NeuroPce Inc, Nevro Corporation, BrainsWay and among others.

COVID-19 Impact Analysis

In the wake of the COVID-19 pandemic, the neurostimulation devices industry witnessed a major slump, due to the supply chain challenges and a limited workforce. Several non-emergency surgical procedures were also postponed during the initial months of the crisis.

Also, in the case of TMS, there was already enthusiastic interest in accelerated TMS protocols for depression before the emergence of COVID-19. During a pandemic, potential reductions in time to response, treatment time, and overall days of treatment with accelerated intermittent theta-burst stimulation (aiTBS), in comparison to standard TMS protocols, may have exciting implications for mitigating viral transmission risk as well as for increasing treatment accessibility.

By Type

Invasive Neuromodulation

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- Spinal Cord Stimulation (SCS)
- Deep Brain Stimulation (DBS)
- Sacral Nerve Stimulation (SNS)
- Vagus Nerve Stimulation (VNS)
- Gastric Electric Stimulation (GES)

- Non-Invasive Neuromodulation
- Transcutaneous Electrical Nerve Stimulation (TENS)
- Transcranial Magnetic Stimulation (TMS)
- Respiratory Electrical Stimulation (RES)

By Application

- Parkinson’s Disease
- Migraine
- Epilepsy
- Pain Management
- Tremor
- Others

By Biomaterial

- Metallic Biomaterials

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- Polymeric Biomaterials
- Ceramic Biomaterials

By End User

- Hospitals
- Ambulatory Surgical Centers
- Specialized Clinics
- Others

By Region

- North America
  - U.S.
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - France
  - Italy
  - Spain
  - Rest of Europe

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South America

Brazil

Argentina

Rest of South America

Asia-Pacific

China

India

Japan

Australia

Rest of Asia-Pacific

Middle East and Africa

Key Developments

In November 2022, CVRx—the developer of the world's first US Food and Drug Administration (FDA)-approved neuromodulation device to treat the symptoms of heart failure—has launched its new Barostim NEO2 implantable pulse generator (IPG). The second-generation device reduces the size of the IPG by 10% and extends battery life by 20%, reducing the frequency of device replacements for patients and their providers, a CVRx press release notes.

In July 2022, Helius Medical Technologies, Inc. received the United States Food and Drug Administration for its PoNSTM which provides electrical pulses to the tongue for use along with physical therapy as a short-term treatment for mild to moderate walking (gait) problems in people.

In July 2022, Abbott received the United States Food and Drug Administration

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(FDA) Breakthrough Device Designation to investigate the use of its deep brain stimulation (DBS) system in treatment-resistant depression (TRD).

Why Purchase the Report?

To visualize the global neuro modulation devices market segmentation based on type, application, biomaterials, end user and region as well as understand key commercial assets and players.

Identify commercial opportunities by analyzing trends and co-development.

Excel data sheet with numerous data points of global neuro modulation devices market level with all segments.

PDF report consists of a comprehensive analysis after exhaustive qualitative interviews and an in-depth study.

Product mapping available as excel consisting of key products of all the major players.

The Global Neuro Modulation Devices Market report would provide approximately 61 tables, 58 figures and 186 Pages.

Target Audience 2023

Manufacturers/ Buyers

Industry Investors/Investment Bankers

Research Professionals

Emerging Companies

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Contents

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6. COVID-19 ANALYSIS

7. BY TYPE

8. BY APPLICATION

9. BY BIOMATERIAL

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List Of Tables

LIST OF TABLES

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List Of Figures

LIST OF FIGURES

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