

# **Paediatric Neurology Device Market Forecasts to 2032 – Global Analysis By Product (Neurostimulation Devices, Neurosurgery Devices, Interventional Neurology Devices, Cerebrospinal Fluid (CSF) Management Devices and Other Products), Condition, Service & Treatment, End User and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Pediatric Neurology Device Market is accounted for \$4.3 billion in 2025 and is expected to reach \$7.9 billion by 2032 growing at a CAGR of 8.9% during the forecast period. A Pediatric Neurology Device is a medical instrument or technology specifically designed to diagnose, monitor, or treat neurological disorders in children, from newborns to adolescents. These devices address conditions affecting the brain, spinal cord, and peripheral nervous system, including epilepsy, cerebral palsy, developmental delays, and neurodegenerative disorders. They range from neuroimaging tools and electroencephalography (EEG) systems to neuromodulation devices and wearable monitoring solutions. Tailored to pediatric patients, these devices prioritize safety, comfort, and accuracy, enabling early detection, effective intervention, and improved long-term neurological health outcomes in children.

According to the American Cancer Society (2023), it was estimated that more than 4,000 brain and spinal cord tumors were diagnosed each year in children and teens.

Market Dynamics:

Driver:

## Rising prevalence of paediatric neurological disorders

Hospitals and clinics are expanding diagnostic and therapeutic capabilities to manage complex neurological conditions in children. Early-onset disorders are prompting long-term device use and multidisciplinary care models. Technological advancements in imaging, monitoring, and CSF management are supporting precision treatment. Public health initiatives and caregiver awareness are reinforcing early intervention. These dynamics are positioning disease prevalence as a key driver of the pediatric neurology device market, thereby boosting overall market growth.

### Restraint:

#### High costs of advanced devices and procedures

Smaller hospitals and low-resource regions face challenges in acquiring and maintaining high-end systems. Reimbursement gaps and limited insurance coverage are slowing adoption in emerging markets. Customization for pediatric use adds complexity and cost to device development. Training requirements and regulatory compliance further increase operational overhead. These factors are tempering market expansion despite rising clinical demand.

### Opportunity:

#### Growing emphasis on early diagnosis and intervention

Expansion of neonatal and pediatric neurology programs is enabling earlier detection of structural and functional abnormalities. Integration with imaging, genetic testing, and digital monitoring is enhancing diagnostic accuracy. Public and private investments in pediatric research and care infrastructure are accelerating innovation. Awareness campaigns and school-based screening initiatives are expanding reach. These developments are creating favorable conditions for market growth, thereby accelerating adoption of pediatric neurology devices.

### Threat:

#### Technical challenges and device reliability issues

Device malfunction, infection risk, and revision surgeries are raising concerns among clinicians and caregivers. Manufacturers must invest in rigorous testing, real-world

validation, and post-market surveillance to ensure safety. Regulatory scrutiny and liability risks are increasing across global markets. Limited data on pediatric-specific outcomes is slowing innovation and approval timelines. These limitations are introducing strategic risk and constraining full-scale market deployment.

#### Covid-19 Impact:

The Covid-19 pandemic disrupted the Paediatric Neurology Device market, causing temporary supply chain interruptions, production halts, and delays in elective procedures. Paediatric hospitals and neurology centres experienced reduced patient volumes, impacting device utilization and procurement. However, the increased focus on tele-neurology, remote monitoring, and digital diagnostics partially offset the slowdown. Post-pandemic recovery is driven by growing demand for resilient, minimally invasive, and technology-enabled paediatric neurology solutions, along with innovations in CSF management and neuro-monitoring across care settings.

The cerebrospinal fluid (CSF) management devices segment is expected to be the largest during the forecast period

The cerebrospinal fluid (CSF) management devices segment is expected to account for the largest market share during the forecast period owing to its widespread use in treating hydrocephalus and intracranial pressure disorders. Shunt systems, drainage kits, and monitoring tools are being deployed across paediatric neurosurgical units. OEMs are optimizing device design for durability, infection control, and age-specific compatibility. Demand remains strong across hospitals, specialty clinics, and home care settings. Regulatory support for paediatric device innovation is reinforcing adoption. This segment continues to anchor the paediatric neurology device market, thereby boosting overall market growth.

The neurology clinics segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the neurology clinics segment is predicted to witness the highest growth rate driven by demand for specialized, outpatient-based paediatric neurological care. Clinics are expanding services in neurodiagnostics, developmental assessments, and device-based interventions. Integration with telehealth, EMR systems, and multidisciplinary teams is enhancing care delivery. Public and private investments in paediatric neurology infrastructure are accelerating clinic expansion. Demand for accessible, family-centered care is reinforcing momentum. This segment is

emerging as a high-growth frontier for paediatric neurology device deployment, thereby accelerating market expansion.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share due to its advanced healthcare infrastructure, high disease awareness, and strong reimbursement ecosystem. The U.S. and Canada are leading in paediatric neurology research, device innovation, and clinical adoption. Public initiatives in rare disease management and neurodevelopmental care are reinforcing demand. OEMs and academic institutions are driving product development and regulatory approvals. Insurance coverage and clinical trial activity are supporting widespread deployment.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR driven by rising paediatric population, expanding healthcare access, and government investment in child health. Countries like China, India, Japan, and South Korea are scaling paediatric neurology programs and device procurement. Public-private partnerships and mobile health initiatives are improving diagnosis and treatment in underserved areas. Demand for affordable, age-specific devices is reinforcing innovation. Regional manufacturers and global players are collaborating to localize and scale solutions.

Key players in the market

Some of the key players in Paediatric Neurology Device Market include Medtronic plc, Boston Scientific Corporation, Philips Healthcare, Siemens Healthineers, GE Healthcare, Natus Medical Incorporated, Stryker Corporation, B. Braun Melsungen AG, Integra LifeSciences Corporation, Elana, Inc., Ethicon Inc., Inova Health System, The Nemours Foundation, BrainSpec Inc. and St. Jude Medical, Inc.

Key Developments:

In June 2025, Philips launched IntelliSpace Cognition, a cloud-based platform for automated neuropsychological testing, now being adapted for pediatric use. The tool enables longitudinal tracking of cognitive development and supports early intervention in neurodevelopmental disorders.

In January 2025, Boston Scientific launched Cartesia™ directional leads and the Lumina 3D programming algorithm for DBS, now being adapted for paediatric use. These innovations improve precision and reduce side effects in children with epilepsy and dystonia.

#### Products Covered:

Neurostimulation Devices

Neurosurgery Devices

Interventional Neurology Devices

Cerebrospinal Fluid (CSF) Management Devices

Other Products

#### Conditions Covered:

Epilepsy

Cerebral Palsy

Hydrocephalus

Brain Tumors

Neurogenetic Disorders

Traumatic Brain Injury (TBI)

#### Service & Treatments Covered:

Diagnostic Services

Surgical Interventions

## Rehabilitation Services

### End Users Covered:

Hospitals

Neurology Clinics

Rehabilitation Centers

Research Institutes

Other End Users

### Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

## Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

## South America

Argentina

Brazil

Chile

Rest of South America

## Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

#### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

#### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

#### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

## Contents

### **1 EXECUTIVE SUMMARY**

### **2 PREFACE**

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
  - 2.4.1 Data Mining
  - 2.4.2 Data Analysis
  - 2.4.3 Data Validation
  - 2.4.4 Research Approach
- 2.5 Research Sources
  - 2.5.1 Primary Research Sources
  - 2.5.2 Secondary Research Sources
  - 2.5.3 Assumptions

### **3 MARKET TREND ANALYSIS**

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Product Analysis
- 3.7 End User Analysis
- 3.8 Emerging Markets
- 3.9 Impact of Covid-19

### **4 PORTERS FIVE FORCE ANALYSIS**

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

## **5 GLOBAL PAEDIATRIC NEUROLOGY DEVICE MARKET, BY PRODUCT**

- 5.1 Introduction
- 5.2 Neurostimulation Devices
  - 5.2.1 Deep Brain Stimulation (DBS)
  - 5.2.2 Transcranial Magnetic Stimulation (TMS)
  - 5.2.3 Vagus Nerve Stimulation (VNS)
- 5.3 Neurosurgery Devices
  - 5.3.1 Surgical Navigation Systems
  - 5.3.2 Neuroendoscopy
  - 5.3.3 Stereotactic Surgery Systems
- 5.4 Interventional Neurology Devices
  - 5.4.1 Intracranial Stents
  - 5.4.2 Neurovascular Catheters
- 5.5 Cerebrospinal Fluid (CSF) Management Devices
  - 5.5.1 Shunts
  - 5.5.2 Drainage Systems
- 5.6 Other Products

## **6 GLOBAL PAEDIATRIC NEUROLOGY DEVICE MARKET, BY CONDITION**

- 6.1 Introduction
- 6.2 Epilepsy
- 6.3 Cerebral Palsy
- 6.4 Hydrocephalus
- 6.5 Brain Tumors
- 6.6 Neurogenetic Disorders
- 6.7 Traumatic Brain Injury (TBI)

## **7 GLOBAL PAEDIATRIC NEUROLOGY DEVICE MARKET, BY SERVICE & TREATMENT**

- 7.1 Introduction
- 7.2 Diagnostic Services
- 7.3 Surgical Interventions
- 7.4 Rehabilitation Services

## **8 GLOBAL PAEDIATRIC NEUROLOGY DEVICE MARKET, BY END USER**

- 8.1 Introduction
- 8.2 Hospitals
- 8.3 Neurology Clinics
- 8.4 Rehabilitation Centers
- 8.5 Research Institutes
- 8.6 Other End Users

## **9 GLOBAL PAEDIATRIC NEUROLOGY DEVICE MARKET, BY GEOGRAPHY**

- 9.1 Introduction
- 9.2 North America
  - 9.2.1 US
  - 9.2.2 Canada
  - 9.2.3 Mexico
- 9.3 Europe
  - 9.3.1 Germany
  - 9.3.2 UK
  - 9.3.3 Italy
  - 9.3.4 France
  - 9.3.5 Spain
  - 9.3.6 Rest of Europe
- 9.4 Asia Pacific
  - 9.4.1 Japan
  - 9.4.2 China
  - 9.4.3 India
  - 9.4.4 Australia
  - 9.4.5 New Zealand
  - 9.4.6 South Korea
  - 9.4.7 Rest of Asia Pacific
- 9.5 South America
  - 9.5.1 Argentina
  - 9.5.2 Brazil
  - 9.5.3 Chile
  - 9.5.4 Rest of South America
- 9.6 Middle East & Africa
  - 9.6.1 Saudi Arabia
  - 9.6.2 UAE
  - 9.6.3 Qatar
  - 9.6.4 South Africa

#### 9.6.5 Rest of Middle East & Africa

### **10 KEY DEVELOPMENTS**

10.1 Agreements, Partnerships, Collaborations and Joint Ventures

10.2 Acquisitions & Mergers

10.3 New Product Launch

10.4 Expansions

10.5 Other Key Strategies

### **11 COMPANY PROFILING**

11.1 Medtronic plc

11.2 Boston Scientific Corporation

11.3 Philips Healthcare

11.4 Siemens Healthineers

11.5 GE Healthcare

11.6 Natus Medical Incorporated

11.7 Stryker Corporation

11.8 B. Braun Melsungen AG

11.9 Integra LifeSciences Corporation

11.10 Elana, Inc.

11.11 Ethicon Inc.

11.12 Inova Health System

11.13 The Nemours Foundation

11.14 BrainSpec Inc.

11.15 St. Jude Medical, Inc.

## List Of Tables

### LIST OF TABLES

Table 1 Global Paediatric Neurology Device Market Outlook, By Region (2024-2032) (\$MN)

Table 2 Global Paediatric Neurology Device Market Outlook, By Product (2024-2032) (\$MN)

Table 3 Global Paediatric Neurology Device Market Outlook, By Neurostimulation Devices (2024-2032) (\$MN)

Table 4 Global Paediatric Neurology Device Market Outlook, By Deep Brain Stimulation (DBS) (2024-2032) (\$MN)

Table 5 Global Paediatric Neurology Device Market Outlook, By Transcranial Magnetic Stimulation (TMS) (2024-2032) (\$MN)

Table 6 Global Paediatric Neurology Device Market Outlook, By Vagus Nerve Stimulation (VNS) (2024-2032) (\$MN)

Table 7 Global Paediatric Neurology Device Market Outlook, By Neurosurgery Devices (2024-2032) (\$MN)

Table 8 Global Paediatric Neurology Device Market Outlook, By Surgical Navigation Systems (2024-2032) (\$MN)

Table 9 Global Paediatric Neurology Device Market Outlook, By Neuroendoscopy (2024-2032) (\$MN)

Table 10 Global Paediatric Neurology Device Market Outlook, By Stereotactic Surgery Systems (2024-2032) (\$MN)

Table 11 Global Paediatric Neurology Device Market Outlook, By Interventional Neurology Devices (2024-2032) (\$MN)

Table 12 Global Paediatric Neurology Device Market Outlook, By Intracranial Stents (2024-2032) (\$MN)

Table 13 Global Paediatric Neurology Device Market Outlook, By Neurovascular Catheters (2024-2032) (\$MN)

Table 14 Global Paediatric Neurology Device Market Outlook, By Cerebrospinal Fluid (CSF) Management Devices (2024-2032) (\$MN)

Table 15 Global Paediatric Neurology Device Market Outlook, By Shunts (2024-2032) (\$MN)

Table 16 Global Paediatric Neurology Device Market Outlook, By Drainage Systems (2024-2032) (\$MN)

Table 17 Global Paediatric Neurology Device Market Outlook, By Other Products (2024-2032) (\$MN)

Table 18 Global Paediatric Neurology Device Market Outlook, By Condition (2024-2032)

(\$MN)

Table 19 Global Paediatric Neurology Device Market Outlook, By Epilepsy (2024-2032)

(\$MN)

Table 20 Global Paediatric Neurology Device Market Outlook, By Cerebral Palsy (2024-2032) (\$MN)

Table 21 Global Paediatric Neurology Device Market Outlook, By Hydrocephalus (2024-2032) (\$MN)

Table 22 Global Paediatric Neurology Device Market Outlook, By Brain Tumors (2024-2032) (\$MN)

Table 23 Global Paediatric Neurology Device Market Outlook, By Neurogenetic Disorders (2024-2032) (\$MN)

Table 24 Global Paediatric Neurology Device Market Outlook, By Traumatic Brain Injury (TBI) (2024-2032) (\$MN)

Table 25 Global Paediatric Neurology Device Market Outlook, By Service & Treatment (2024-2032) (\$MN)

Table 26 Global Paediatric Neurology Device Market Outlook, By Diagnostic Services (2024-2032) (\$MN)

Table 27 Global Paediatric Neurology Device Market Outlook, By Surgical Interventions (2024-2032) (\$MN)

Table 28 Global Paediatric Neurology Device Market Outlook, By Rehabilitation Services (2024-2032) (\$MN)

Table 29 Global Paediatric Neurology Device Market Outlook, By End User (2024-2032) (\$MN)

Table 30 Global Paediatric Neurology Device Market Outlook, By Hospitals (2024-2032) (\$MN)

Table 31 Global Paediatric Neurology Device Market Outlook, By Neurology Clinics (2024-2032) (\$MN)

Table 32 Global Paediatric Neurology Device Market Outlook, By Rehabilitation Centers (2024-2032) (\$MN)

Table 33 Global Paediatric Neurology Device Market Outlook, By Research Institutes (2024-2032) (\$MN)

Table 34 Global Paediatric Neurology Device Market Outlook, By Other End Users (2024-2032) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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