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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 Stratistics 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:

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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

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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

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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.

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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

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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

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- 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

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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

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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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