

IQ4I Research & Consultancy published a new report on “Brain monitoring devices Global Market – Forecast To 2023”

BOSTON, MASSACHUSETTS, U.S., April 11, 2017 /EINPresswire.com/ -- [Brain monitoring devices](#) are used to monitor and diagnose the neurological conditions by exploring the structure and functions of the brain in patients. These devices provide the information of the brain and greater understanding of neurological problems, with possible new treatments. Among brain monitoring devices CT and MRI are the conventional devices which are being used for the structural diagnosis of the brain like tumour, head injury etc., whereas EEG, MEG, TCD, oximeters and ICP monitors are the recent techniques used for the functional imaging of the brain. EEG measures the electrical activity generated by the various cortical layers of the brain whereas, MEG capture the magnetic fields generated by neural activity within the brain. Similarly, TCD measures the velocity of the blood flow through the brain's blood vessels, oximeters are used to measure the regional cerebral oxygen saturation with in the brain and ICP monitors monitor the intracranial pressure within the skull while treating severe traumatic brain injury in patients. In addition to all these devices, sleep monitoring devices which occupies major share in the brain monitoring devices global market, are being used to understand the person's sleep physiology and track sleep with the aim of finding patterns and correlations with person's behaviours.

Brain monitoring devices market is growing at a steady rate, as estimated by [IQ4I Research](#) the market is expected to reach \$10.01billion by 2023. The major factors driving the brain monitoring device market includes growing incidence and prevalence of neurological disorders, rising awareness about [neurodegenerative disorders](#), growing healthcare spending and technological advancements/innovations offering wider scope of applications for brain monitoring. However, some of the factors like shortage of trained professionals, high cost of complex devices, stringent regulations and unfavorable reimbursement policies may hinder the growth of global brain monitoring device market.

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Brain Monitoring Devices Global Market estimated to be worth \$10.01 billion by 2023”

IQ4I Analyst



The brain monitoring devices global market is segmented based on their products, applications, end

users and geography. Among products, sleep monitoring devices holds the largest market share because of the advancements in portable sleep devices technologies and growing incidence of obstructive sleep apnea. Sleep monitoring devices is expected to grow at the single digit mid-CAGR.

The global brain monitoring devices application segment is classified into neurodegenerative disorders, brain tumor, psychiatric disorders, sleep disorders and other applications.

Neurodegenerative diseases are characterized by progressive loss of neurons in the central nervous system and Epilepsy, Parkinson's disease (PD), Huntington's disease falls under this category. In 2016, the market was estimated to be dominated by neurodegenerative disorders. The large share of this segment can be attributed to the growing incidence of Traumatic Brain Injuries (TBIs) globally owing to various factors like, increasing occurrence of falls, blunt trauma and motor vehicle crashes among other causes of TBIs and along with the increasing aging population.

Advancements and newer technologies like portable EEG and home care sleep monitoring devices are revolutionizing brain monitoring devices market. Portable EEG devices are replacing conventional fixed EEG devices due to easy accessibility, low cost, efficiency and comfort to patient during procedures. In August 2013, Emotiv launched Emotiv Insight which is a faster next generation wireless EEG device popular for collecting the real time data of the user and delivers it to the computer or phone. Mitsar-Port a portable EEG device from Mitsar (Russia) with USB powered amplifier that does not require any extra power source. People do not need to care about battery charge or carry external power supply unit and it is compatible with any type of modern laptops and allows patients to be mobile and perform EEG investigation. Researchers from the University of Pennsylvania and University of Illinois have developed a new type of electronic tiny brain implants/chip about a size of rice grain. This device monitors the intracranial pressure, temperature and epileptic spikes.

Similarly, brain tissue oxygen monitors are the recent advancements in brain monitoring devices which measures the pressure of the oxygen in interstitial space of the brain and reflects the availability of oxygen for oxidative energy production. Licox system from Integra and Neurovent system from Raumedic are the two brain tissue oxygen tension monitors. As the world is advancing with portable devices, like PET helmet, a miniaturized version of the hospital PET scanner is being used for rapid brain injury assessments of stroke victims. According to Julie Brefczynski-Lewis, the neuroscientist leading the project at West Virginia University, the new helmet could dramatically accelerate diagnosis time and make the difference between a positive outcome and devastating brain damage or death for few patients.

Another new technology which is recently patented is portable MRI (researchers from the Los Alamos National Laboratory in the US). According to Julie Brefczynski-Lewis of West Virginia University this MRI scanner is of the size of football helmet and is advanced so that one can wear it on the head. In addition with the structural diagnosis of the brain this new MRI brain can provides the functional changes of the brain. Similarly, in April 2016 FDA has approved two new Siemens MRI applications (for Magnetom Aera and Magnetom Skyra systems)—Simultaneous Multi-Slice application and GoBrain application. These two applications facilitate in faster scanning of the brain and GoBrain helps improve patient throughput and potentially reduce costs per scan. From many years it is known that the accumulation of the amyloid plaques is responsible for Alzheimer's disease and now researchers at the University of California have proven that from PET scan it is possible to spot the sticky amyloid plaques and tau protein tangles which cause the disease and pinpoint the moment that they trigger Alzheimer's disease.

Tests such as the Montreal Cognitive Assessment (MoCA) and the Clock Drawing Test (CDT) monitors specific neurologic domains like memory, attention, problem solving, language, processing speed motor and emotion which are occurring from a various causes, from strokes and concussions

to dementias such as Alzheimer's disease. These tests just comprised of a pen and paper and thus are cost effective, time consuming and non-invasive and can be substitutes for brain monitoring devices.

Geographically, the brain monitoring devices market is segmented into North America, Europe, Asia-Pacific and Rest of the World. North America region held the largest market share within that United States accounted for the largest share this growth is driven due to its high acceptance of advanced technologies and sophisticated universal treatment facilities. Asia-Pacific region is the fastest growing region due to its increase in healthcare spending and advancements in healthcare facilities, the easy access to advanced healthcare technology.

The global brain monitoring devices market is fragmented where key players like GE Healthcare (U.S.), Philips N.V. (Netherlands), Siemens Healthineers (Germany), Medtronic (Ireland) and Natus Medical Inc. (U.S.) holding a major share in 2016. The protection of intellectual property rights plays a very important role as a long term strategy for survival of the company and to maintain a competitive advantage. According to IQ4I Analysis, Advanced Brain Monitoring filed the largest number of PCT applications followed by Siemens Healthineers and Philips N.V. at World Intellectual Property Organization (WIPO).

Some of the prominent players in brain monitoring device market include Advanced Brain Monitoring (U.S.), Cadwell Laboratories (U.S.), CAS Medicals Inc. (U.S.), Compumedics Limited (Australia), Electrical Geodesics Incorporated (U.S.), Elekta AB (Sweden), GE Healthcare (U.S.), Integra Lifesciences (U.S.), Koninklijke Philips N.V. (Netherlands), Masimo corporation (U.S.), Medtronic (Ireland), Natus Medical Inc. (U.S.), Nihon Kohden Corporation (Japan) and Siemens Healthineers (Germany).

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