Traumatic Brain Injury Diagnostics Equipment

Market Report | 2024-02-09 | 305 pages | The Insight Partners

AVAILABLE LICENSES:

- Single User Price $5190.00
- Site Price $7190.00
- Enterprise Price $9190.00

Report description:

The traumatic brain injury diagnostic equipment market size is expected to grow from US$ 3.157 billion in 2022 to US$ 7.872 billion by 2030. Factors such as the accelerated demand for advanced diagnostic equipment and quick and effective diagnosis for TBI patients propel the traumatic brain injury diagnostics equipment market growth. However, the adverse effects of contrast medium/agent impede the growth of the market.

Accelerated Demand for Advanced Diagnostic Equipment Drives Traumatic Brain Injury Diagnostics Equipment Market Growth

According to the Medical Research Council 2022 report, 10 million people across the world sustain traumatic brain injury (TBI) annually. Likewise, the Headway 2024 report revealed that acquired brain injury (ABI) is rising in the UK; a total of 356,699 hospital admissions were registered due to ABI in the UK from 2019 to 2020. Among these, the male population was 1.5 times higher than females admitted to hospitals for a head injury. As per The Economist Intelligence Unit report, the global healthcare burden of TBI is estimated to be around US$ 400 billion annually. The most common form of ABI is TBI due to an accident or stroke. The Centers for Disease Control and Prevention (CDC) report revealed that an estimated 1.7 million TBI-related emergency department visits, hospitalizations, and deaths occur annually in the US, especially among adults aged 75 years and older as they are at high risk of falling due to problems with gait and balance. Also, road accidents are the leading cause of TBI-related deaths in the US and are highest among adults aged 20-24 years. Therefore, manufacturers are developing innovative products to diagnose TBI. In October 2023, bioMerieux announced Conformite Europeenne (CE) marking for "VIDAS TBI (GFAP, UCH-L1)," a test intended to improve the assessment of patients suffering from mild traumatic brain injury (mTBI). VIDAS TBI (GFAP, UCH-L1) test measures the concentration of glial fibrillary acidic protein (GFAP) and ubiquitin C-terminal hydrolase L1 (UCH-L1)-the two brain biomarkers released into the bloodstream starting from the first hour following a brain injury. It is an easy-to-interpret test providing a test window of up to 12 hours after injury, which can help shorten total emergency department workup time. The product's commercial launch was in 2023 for selected European, North African, and South American markets; the global launch is planned in 2024 or 2025.

The emergence of Portable Noninvasive Monitoring Devices to Diagnose TBI Patients Acts as a Future Trend in Traumatic Brain Injury Diagnostics Equipment Market

New noninvasive methods for monitoring tissue metabolism can help improve the diagnosis and monitoring of brain conditions such as concussions, stroke, and TBI, owing to which patients can recover more quickly. The consequences of TBI resulted in

increasing healthcare burden costs, accounting for US$ 76.5 billion annually, as per the BrainScope company white paper. The installation of "BrainScope One" in less expensive care settings-e.g., emergency department and community settings (including urgent care centers)-may result in a significant reduction of healthcare costs by up to 32.2%, as per the findings revealed in the white paper. BrainScope One aids in eliminating unnecessary CT scans, thereby reducing healthcare costs for TBI.

Further, a team of researchers from the University of Michigan developed a cost-effective, portable, noninvasive tool-Super-Continuum Infrared Spectroscopy of Cytochrome C-Oxidase (SCISCCO) system-to detect neuronal dysfunction. This tool is extremely versatile, having a range of uses from serving as a new device for screening concussion patients to use in the intensive care unit and gauging patients' organ response to treatment.

Likewise, the University of Birmingham 2024 report revealed that researchers from the University of Birmingham have designed and developed the eye-safe device (EyeD)-a novel diagnostic device to detect TBI. It is based on Raman spectroscopy, an optical technique performed simultaneously on fundus imaging and spectroscopic analysis using a smartphone camera. The Raman spectra collected by EyeD from the retina and optic nerves help in analyzing the presence of TBI-specific biochemical changes using the artificial neural network algorithm "SKiNET" as a decision support tool. EyeD is quick, accurate, and noninvasive, causes no additional discomfort, and provides information on the severity of the trauma instantly, owing to which it is highly suitable while using on-site-at the roadside of the unfortunate event or on the sports pitch-to assess TBI.

The traumatic brain injury diagnostics equipment market is segmented by technique into noninvasive, invasive, and combination techniques. The invasive segment held the largest market share in 2022. The noninvasive segment is anticipated to register the highest CAGR of 12.8% during the forecast period .

The traumatic brain injury diagnostics equipment market, by device type, is bifurcated into imaging devices and monitoring devices. The imaging devices segment held a larger market share in 2022 and is anticipated to register a higher CAGR of 11.8% during the forecast period .

The traumatic brain injury diagnostics equipment market, by end user, is categorized into hospitals & clinics, diagnostic centers, and others. The hospitals & clinics segment held the largest market share in 2022 and is anticipated to register a CAGR of 12.0% during the forecast period .

Based on geography, the traumatic brain injury diagnostic equipment market is segmented into North America, Europe, Asia Pacific, South & Central America, and the Middle East & Africa. In 2022, North America accounted for the largest global traumatic brain injury diagnostic equipment market share. Asia Pacific is expected to register the highest CAGR during 2022-2030. In North America, the US accounts for the largest market share of the traumatic brain injury diagnostic equipment market. The Centers for Disease Control and Prevention (CDC) report revealed that an estimated 2.5 million people suffer from TBI annually in the US. According to the KNAPP & ROBERTS report, 1 in every 6 Americans live with TBI-related disability in the US alone, accounting for approx. 5.3 million. With the rising prevalence of TBI, the economic cost accounts for US$ 76.5 billion. Among US$ 76.5 billion, US$ 11.5 billion accounts for direct medical costs and nearly US$ 65 billion for indirect costs. The leading causes of TBI include falls (45%), motor vehicle crashes (14.3%), assaults (10.7%), and unknown (19.0%).

Competitive Landscape and Key Companies:

GE HealthCare Technologies Inc, Elekta AB, Integra LifeSciences Holdings Corp, Natus Medical Inc, Raumedic AG, BrainScope Co Inc, Luciole Medical AG, Soterix Medical Inc, Medtronic Plc, Vivonics Inc, NanoDx Inc, Compumedics Ltd, Sense Diagnostics Inc, NeuraSignal Inc, and Neurovigil Inc are the prominent companies in the traumatic brain injury diagnostic equipment market report. These companies focus on new technologies, upgrading existing products, and geographic expansions to meet the growing consumer demand worldwide.

Sense Neuro Diagnostics announced clearance to conduct clinical trials for hemorrhage detection. The new trial approved by the FDA Division of Neurosurgical, Neurointerventional, and Neurodiagnostic Devices began in June 2023, including up to 300 patients at 30 US, Canada, and Indian sites. This noninvasive technology has the potential to collect 360 data points within 2.5 seconds to detect brain hemorrhage or stroke type, thereby helping quick response by physicians, emergency department personnel, neuro ICU teams, and military field hospitals assessing and monitoring TBI. Therefore, the traumatic brain injury diagnostics equipment market size is likely to surge due to innovative product launches by US-based companies to improve outcomes of diagnosis of patients suffering from TBI.

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