



Brain Scientific, Inc.
205 East 42nd Street
New York, NY 10017

Tel. +1-917-388-1578
info@brainscientific.com
www.brainscientific.com

Ambulatory EEG Surveillance in Epileptic Patients

BY BRAIN SCIENTIFIC



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Abstract

MemoryMD is unveiling an elegant and robust ambulatory EEG solution. This portable EEG solution gives physicians; and clinicians; remote live access to EEGs that are being performed in the patient's home. In addition, the solution complements a hospital's patient care; by extending its reach of EMU services to outreach clinics and satellite hospitals, as well as the monitoring of post-discharge patients.

The portable EEG enhances the physician's care dramatically, H.J. Raza, MD/Ph.D; the Chief Medical Officer at MemoryMD observed.

"With our solution, physicians can actually log into the patient monitoring; or research study, at any time from any place, and see the live EEG," Raza said. "You cannot do this with any other options. In addition, MemoryMD is the first solution that allows the clinician to stream live EEG data from the patient's location into the cloud safely and securely."

"Physicians and other clinicians can actually start to interpret and analyze the data while it is happening," Raza explained. "This is critical as it allows for the physician to interact directly, and in real time with the patient, and quickly modify the treatment plan or a research study without delays."

What is MemoryMD?

MemoryMD comprises the most critical features requested by leading clinicians and researchers. This includes Bluetooth capability and smartphone application as well as direct and real-time remote monitoring. The solution offers superb medical-grade electrodes and HIPAA compatibility tools.

"The worst possible thing that can happen with any ambulatory EEG is that the treatment or study fails," Raza said. "Now EEG technical staff have immediate access to the patient data from anywhere with internet access; allowing them to monitor the recording for quality, and reduce the risk of a failed recording."

"MemoryMD allows the physician and hospital to deliver care anywhere in the world — effectively creating an extension of their epilepsy monitoring unit," Raza noted. "It's a win/win scenario in which the physician's and hospital's reach is enhanced along with the patient's access to quality healthcare services."



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Ambulatory EEG was originally used in specialized centers as part of the evaluation for epileptic activity and for epilepsy surgery. MemoryMD will make this technology widely available and can be utilized for other indications including clarifying the nature of paroxysmal events, quantifying the frequency of seizures, and identifying the epilepsy syndrome.

What can MemoryMD do for Epilepsy Patients?

Ictal recordings can be obtained in adults and children with refractory seizures during relatively brief periods of time (24–72 hours) in many circumstances. The information gleaned from an analysis of the events can be very helpful in clarifying the true nature of the epilepsies.

The routine EEG continues to be a pivotal diagnostic study in the evaluation of patients with suspected seizure disorders. The identification of potentially epileptiform alterations is important in the classification of epilepsy and in determining the presence of an epileptic syndrome. The electro-clinical correlation observed during long-term ambulatory EEG monitoring may be used for diagnostic classification and localization of the seizure.

Confirmation of a seizure disorder is a priority before initiating antiepileptic drug therapy as well as drug surveillance in these patients. Finally, recognition of the EEG pattern is necessary for evaluating patients with intractable seizure disorders for surgical treatment.

Guidelines from the National Institute for Health and Clinical Excellence (NICE); and the International League against Epilepsy, recommend ambulatory EEG monitoring in patients for whom seizure or syndrome type is unclear, and in patients for whom it is proving difficult to differentiate between epilepsy and non-epileptic attack disorder. Furthermore, the ambulatory EEG is an effective and versatile tool during drug therapy surveillance in diagnostically difficult and refractory cases.

What are the Advantages of MemoryMD?

MemoryMD provides the results and confidence physicians are demanding to manage their epileptic patients. Thus, the one critical issue in MemoryMD's automatic seizure detection program is aimed at taking into account a larger temporal context and thus improving the specificity (the ability of the test to differentiate between epileptic activity from artifact) of the detections.



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This false-detection rate is lowered by our proprietary applications; which include sophisticated cloud-based neural-net algorithms, machine learning, data mining, predictive analytics, noise cancellation, and artifact filtering. To further reduce the false-detection rate, MemoryMD employs a patient alarm/event button since some seizures, having poorly defined EEG activity, are not detected.

Also, the sensitive automatic detection allows capture of many seizures, clinical and subclinical, for which the alarm is not pressed. Lastly, MemoryMD's low false-detection rate allows the user to set a lower detection threshold yielding better seizure detection.

MemoryMD Inc. delivers innovation that empowers successful EEG service providers, pharma leaders, physician practices, and hospitals. Our disruptive technology and cloud-based solutions; deep experience in the EEG space, and unmatched customer service help our partners improve patient care and safety, processes, research, operational efficiency, and financial performance.

Healthcare leaders across the United States are recognizing MemoryMD's technology and innovations for EEG applications through our 'Client First' approach encompassing clinical and business expertise that positions them for success.