BRAINVIEW

System Overview

BrainView System

The BrainView system is the cutting-edge hardware and software that allows for objective cognitive functional assessment. BrainView is designed to aid physicians in diagnosis by effectively measuring biomarkers related to seizures, to memory loss, concussion, cognitive impairment, and other stress-related neurological conditions.

BrainView captures the electroencephalogram activity of the brain (EEG), electrocardiogram activity of the heart (ECG), visual and auditory processing speeds (evoked potentials), and a subjective neuropsychological survey. In addition, the system provides a comprehensive neuro-functional physiology report of the results, data summary, raw data, and images.

The BrainView system is portable, easy-to-use, and non-invasive.

The BrainView system enables physicians to obtain specific neurophysiological biomarkers, which profile the patient's neurological function. Biomarkers allow the treating physician to gain additional clinical information vital to making a well-informed patient-care decision.

BrainView is designed for accessibility across specialties, including primary care and internal medicine physicians. Data provided by the system facilitates the understanding of cognitive changes. In addition, results help direct nutritional, medicinal, and biofeedback treatment courses.

What do we do?

BrainView offers healthcare providers an understanding of EEG/ERP in association with various neurological disorders and how they correlate to brain performance and behavior.

BrainView offers in-depth analyses, including comparison to normative databases, ERP interpretation and Low-Resolution Electromagnetic Tomography (LORETA).

BrainView assists healthcare providers in understanding what the brain's activity means to their patients in terms of everyday function and behavior. In addition, BrainView provides recommendations for ways neuroscience can improve and optimize brain function. This deep comprehension is essential for the referring treatment team to understand the patient's EEG and ERP data, clinical presentation, and the best treatment options available. Working together, we can help you provide your patients with the best possible quality of care.

BrainView System Benefit

The ability to rapidly, inexpensively, and reliably measure the brain's functional health is vital in identifying numerous medical conditions. Before the BrainView system, the only brain assessment technology available that used EEG was not portable, used complicated accompanying software and was not practical to use in a busy medical practice. BrainView was developed from necessity to create a wireless, automated, rapidly deploying brain function measurement and treatment system that was also non-intrusive and low-cost.

Due to the test length of 25 minutes, the BrainView is ideal for primary care and specialty physicians caring for patients within their offices.

The BrainView system is a 21-channel EEG/ERP amplifier with a dedicated laptop and testing supplies. The system utilizes high-quality circuit boards and components to allow for high-quality brain measurements, as well as essential heart data (HRV).

The BrainView system is designed for technicians with any experience level to reliably record EEG, ERPs, and symptom inventories that are then analyzed and processed into valuable reports that assist the physician with evaluating patient conditions and changes to the treatment plan.
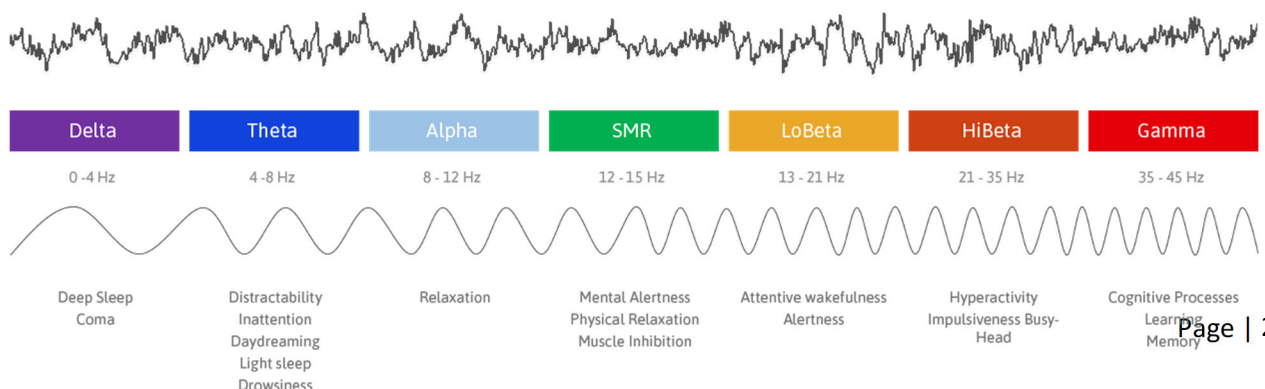
By providing world-class service, BrainView has marked its territory in the industry and is gaining popularity and the strong support of the international medical research community.

Health care providers often state that they feel overwhelmed by the seemingly endless preprocessing steps needed to get results from raw EEG signals. However, analyzing EEG data and designing optimal EEG paradigms requires a high level of expertise. Countless aspects need consideration. These include signal processing, feature extraction, attenuation, and artifact detection and removal.

BrainView combines industry-validated and innovative neuropsychological tests with simultaneous electroencephalography (EEG) recording. Our medical software rapidly analyzes and transforms the EEG's event-related potential (ERP) data into actionable insights on core cognitive functions.

BrainView is backed by over 30 years of globally celebrated, peer-reviewed scientific research.

BrainView system combines electrophysiological biomarkers associated with numerous cognitive conditions. It details known clinical correlation based on over 600 scientific publications and defines electroencephalography-derived metrics. Recommended medical interventions are based on these clinical correlations.

Delta	Theta	Alpha	SMR	LoBeta	HiBeta	Gamma
0 -4 Hz	4 -8 Hz	8 - 12 Hz	12 -15 Hz	13 - 21 Hz	21 - 35 Hz	35 - 45 Hz
Deep Sleep Coma	Distractability Inattention Daydreaming Light sleep Drowsiness	Relaxation	Mental Alertness Physical Relaxation Muscle Inhibition	Attentive wakefulness Alertness	Hyperactivity Impulsiveness Busy-Head	Cognitive Processes Learning Memory

BrainView System Overview

The BrainView system assists physicians with efficiently and objectively assessing cognitive impairment in the office, reducing the time required to achieve an accurate diagnosis. Cognitive impairment can have a significant impact on individuals, families, and society as a whole. A decline in cognitive abilities is believed to be a process that occurs over 20 to 30 years, eventually leading to poor cognitive outcomes. Cognitive testing as early as the age of 45 can be beneficial. The commonly used current paper-based assessments have difficulty determining the dementia subtype, resulting in less successful treatment outcomes. As a result, misdiagnosis occurs too often.

Researchers conducted a study of deceased patients who had dementia. 86% of the individuals in the study were incorrectly diagnosed with Alzheimer's disease. Clinical outcomes would have almost certainly been better with accurate diagnoses.

Experts find that routine testing is beneficial for people aged 45 and above. The BrainView system can identify changes in the brain up to 15 years before symptoms arise.

Early identification and treatment promotes better outcomes. Examples of interventions may include correcting hormonal imbalances, improving nutritional status, stress management techniques, and many more.

Practical Benefits:
- Improves clinical outcomes through early, objective assessment
- Detects declines in memory markers 15 years prior to the manifestation of symptoms
- Detects head injuries that a CT or MRI may be unable to detect
- A quick and easy functional assessment in the office
- Uses qEEG, ERP, and eLoRETA imaging, EEG, and ERP as reliable measures for head injury
- Empowers physicians to initiate the necessary treatment early on
- Allows initiation of effective treatment options, altering the path of the disease state
- Offers innovative diagnostic and treatment methods to patients
- Also uses ANS/HRV, ECG biomarkers

BrainView focuses on multiple core cognitive functions to support: proactive brain health, informed clinical decision-making, customized patient care.

Healthy cognitive function is essential to your patient's overall quality of life. BrainView promotes brain health by analyzing the electrical activity of the brain, and scoring the brain's cognitive performance in information processing, memory, attention, and concentration.

BrainView is a world leader in EEG, ERP, QEEG and functional QEEG (fQEEG) analysis, also known as brain mapping.

The BrainView System quantifies and qualifies electrical impulses and patterns in the brain. We identify how the brain performs. Scored areas include processing abilities, memory, concentration, and attention span. It is vital to understand how your brain performs so that you can live your best life. Prompt treatment is available to ensure that you have a healthy brain for years to come.

What is the BrainView System?

BrainView is both a hardware and software system that utilizes a 21-channel EEG. Patients are asked to complete a neuropsychological questionnaire. The results help physicians reach a more accurate diagnosis. Essentially, the BrainView System provides a 'lab test' for the brain that can be performed in a doctor's office and can assess for potential cognitive disorders. Each test is processed into an easily understandable report that includes brain biomarkers. These biomarkers are determined using an EEG, brain processing speed (event-related potentials).

The BrainView system works well in a variety of patient care settings. By aiding physicians in early and accurate diagnosis, this testing is extremely beneficial to patients. A medical assistant or member of the office staff can easily be trained to perform the test. It takes about 10 minutes to prepare the patient and approximately 25 minutes to perform the test. The test consists of an initial questionnaire, a simple functional assessment of patient response. Free marketing materials for patients and full training are provided to all staff with ongoing support.

The BrainView system is an easy-to-use diagnostic biomarkers tool to aid in diagnosis that is vital to the assessment of memory and other cognitive disorders. All physicians caring for patients suffering from pain, stress, head injuries, or age related cognitive deficiencies can benefit from offering this service. This test provides valuable and easy-to-interpret data that can lead to targeted treatment outcomes and positively impact on patients' lives.

Objective Cognitive Assessment

Memory loss and other cognitive disorders can occur at any age for a variety of reasons, including: stress, dementia, head injury, sleep disorders, and pain. At the primary care level, current testing lacks the sensitivity and specificity to make accurate patient assessments. Until recently, it has been difficult to objectively assess patients for cognitive impairment due to the lack of specificity.

There is an increased need for physician to test neuro-function due to the aging population, the prevalence of stress and pain, and increased awareness of the impact of head injuries on cognition. Memory loss and cognitive symptoms can occur outside of normal age-associated memory loss. When assessing a head injury, physician must be sure to accurately assess brain function in order to avoid legal repercussions. Without proper diagnosis, a head injury can have a severe negative impact on patient outcomes. Patients that are cognitively impaired can present with symptoms of confusion, forgetfulness, "brain fog," and functional impairment.

The BrainView system enables the physician to quickly and objectively assess biomarkers to aid in diagnosis memory loss and cognitive impairment in the office. As the population ages, the prevalence and impact of cognitive impairment can have a significant effect on individuals, families, and society as a whole, A decline in cognitive abilities is now believed to be a process that occurs over 20 to 30 years, eventually leading to poor cognitive outcomes. Cognitive testing as early as the age of 35 can be beneficial. Current paper-based assessments used in primary care have difficulty determining the dementia subtype, resulting in less successful treatment outcomes. As many as 86% of deceased patients suffering from dementia were misdiagnosed with Alzheimer's Disease. The BrainView system can help assess patients' biomarkers to aid in diagnosis up to 15 years prior to the onset of symptoms. Early detection of cognitive disorders allows for quicker treatment of the associated causes, such as nutritional deficiencies, stress, thyroid problems.

The BrainView aids in the assessment of both the Central Nervous Systems (CNS) and Autonomic Nervous Systems (ANS). The function of the CNS is determined through EEG activity, while the ANS is objectively assessed simultaneously through the ECG.
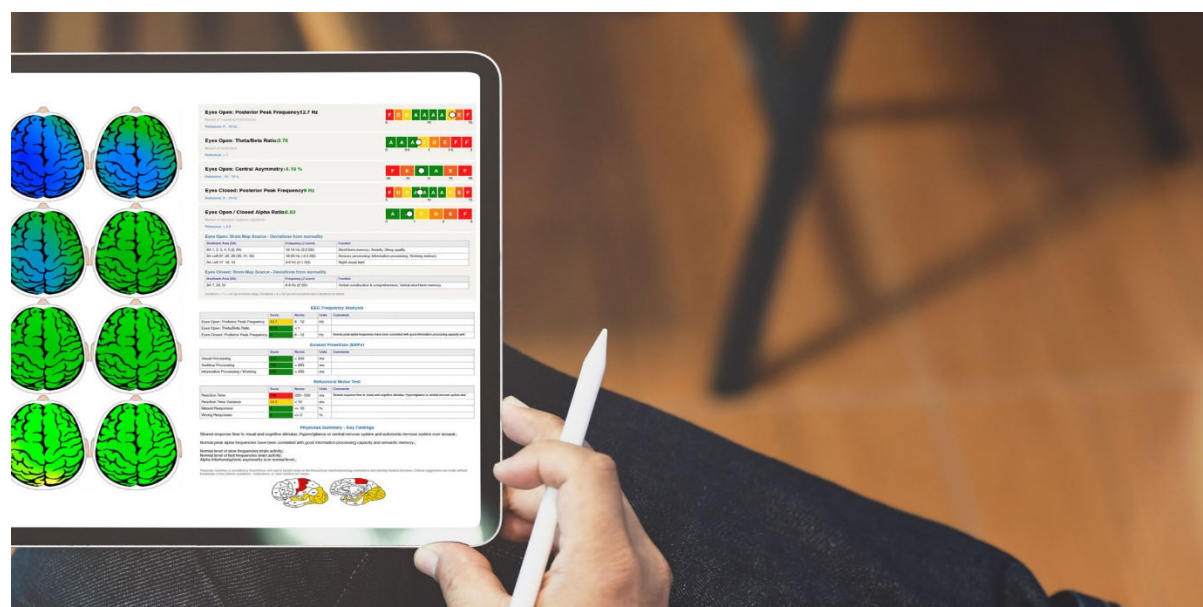
BrainView cognitive measurement and management

The BrainView provides an immediate detailed report on a large variety of cognitive functions. In addition, a brief two-page Cognitive Report can be downloaded. BrainView also provides physicians with the raw electrophysiology data and interpretations for clinical use.

The standard system includes:

- Workstation with a 21-channel EEG amplifier
- Assessment and treatment software
- Two reusable EEG caps
- A package of cloud-based reports
- Supplies for assessment and treatment

An Objective, Easy-to-use Diagnostic Tool to Aid in Identifying and Assessing Cognitive Impairment

Cognitive impairment has been traditionally assessed by subjective tests like the Mini-Mental Status Examination (MMSE).

Cognitive impairment has traditionally been assessed by subjective tests like the Mini-Mental Status Examination (MMSE). However, the system allows for complete, objective measurement of cognition and brain functions through electrophysiological parameters. In addition, BrainView is portable, non-invasive, and used in a clinical office.

The technologies used in BrainView include:

- Electrocardiography (ECG)
- Electroencephalography (EEG)
- Event-Related Potentials (ERP)
  (Visual, Auditory, Go-NoGo)
- Frequency-based analysis of EEG data
- Quantitative Electroencephalography (QEEG)
- Functional QEEG (fQEEG)
- Brain 3D Mapping (eLoreta Source Analysis)
- Behavior Metrics
- Subjective neuropsychological survey
- Heart Rate Variability Analysis (HRV)
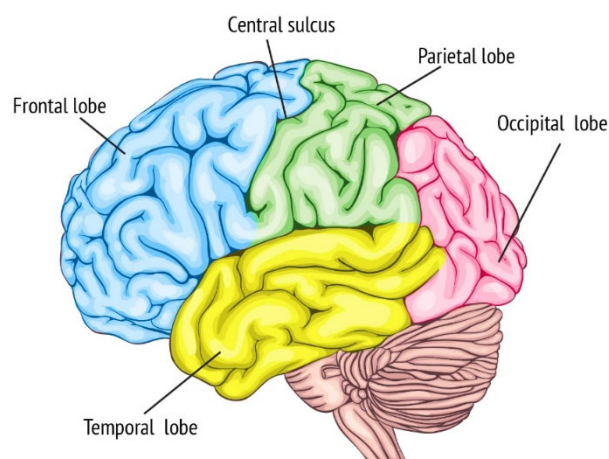
How BrainView helps Physicians

With the BrainView system, these advanced diagnostics can now be an easy-to-use part of primary care practices. The three technologies above permit modeling and assessment of the ever-changing conditions within the brain as tasks that require cognitive processing are performed.

BrainView helps clinicians to Identify:

- Cognitive function / impairment
- Biomarkers associated with cognitive impairment and memory loss
- Autonomic nervous system function
- Physiologic functions associated with sleep disorders, memory loss, anxiety disorders and concentration/attention difficulties

BrainView helps clinicians to Assess:

- The degree of cognitive impairment
- Physiologic changes in cognitive function over time
- Cognitive function response to clinical therapies

Objectively Manage Cognitive Function and Memory Loss Over Time

BrainView provides physicians with highly-sensitive, objective data on brain function. This feature makes BrainView an excellent complimentary assessment tool to traditional subjective clinical questionnaires for long-term patient management. In essence, BrainView can detect subtle variations in brain function that other tests may miss.

The system may be especially adept at illuminating patients' responses to therapy in the beginning stages of the disease. Early detection leads to early intervention, addressing pathologies more effectively and optimizing patient outcomes. Specifically, physicians can obtain meaningful, objective data on patient response to:

- Pharmacologic therapy
- Nutritional supplementation
- Behavioral therapy
- Diet and exercise
- Neurotherapy
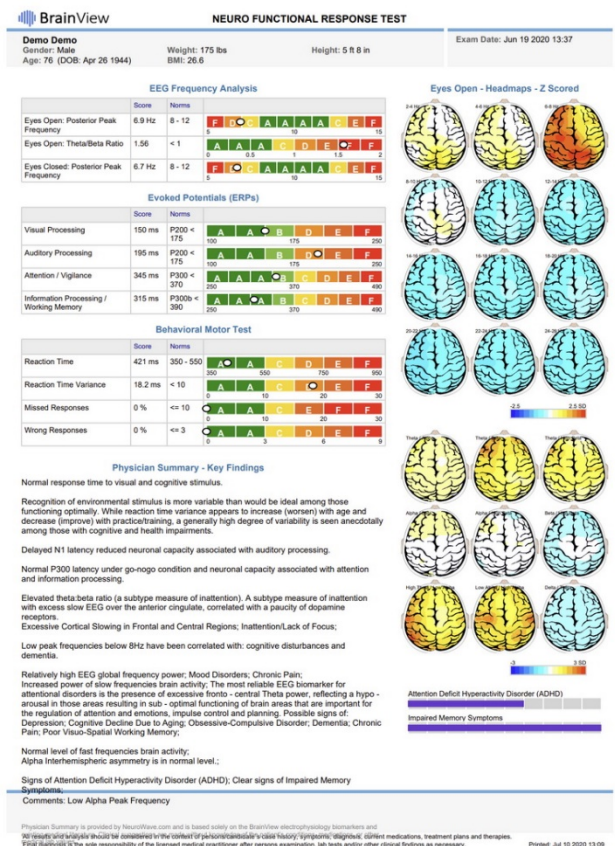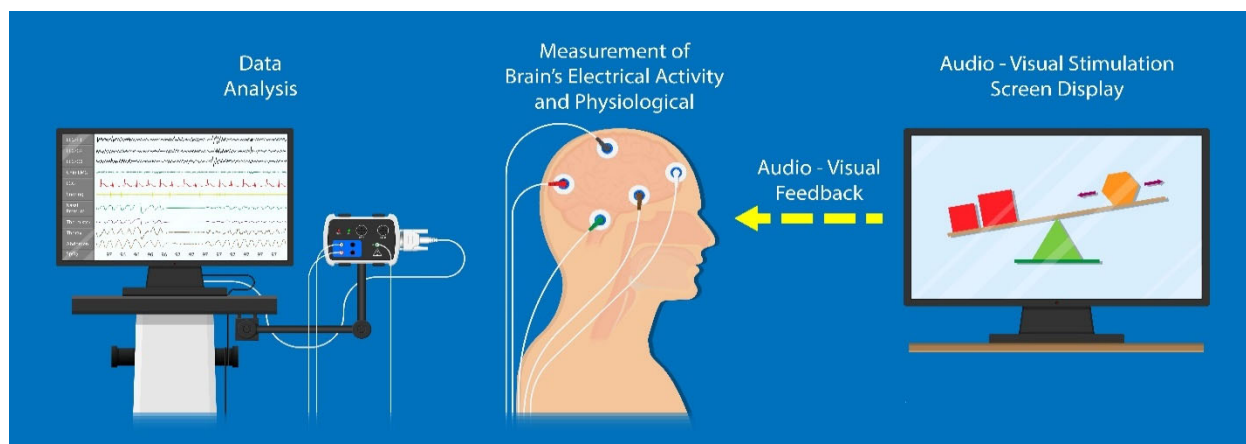
What is the difference between basic qEEG and BrainView?

It is essential to understand the difference between basic qEEG and BrainView. qEEG measures your brainwaves from 1-40 hertz compared to a database and shows activity in deeper brain structures. BrainView goes into much more detail. BrainView includes a functional measurement of cognition using the electroencephalogram (EEG), electrocardiogram activity of the heart (ECG), visual and auditory processing speeds (evoked potentials, and a subjective neuropsychological survey).

The BrainView system is much more comprehensive than a regular qEEG. As a result, it allows clinicians to have a deeper understanding of how patients' brains work. In addition, the BrainView system makes creating individualized treatment plans the lead to excellent patient outcomes possible.

How BrainView can help Neurofeedback

BrainView employs the most up-to-date generation of EEG and neurofeedback hardware and software available today. It remains the gold standard of treatment and will continue to do so in the future. It uses a seamless system that incorporates qEEG technology with peripheral modalities. BrainView combines technology and assessment with ongoing training.

BrainView is easy to use and offers advanced features. Our proprietary Z-builder enables you to create customized training norms and protocols. You may use the Z-builder for individualized training with specific brain Brodmann area targeting using the BrainView real time 3D eLORETA technology. You can individualize it according to your patient population.

BrainView software offers 21 or 64 channels of signal processing and training. Blend conventional training with the power and connectivity measures with Z-Score neurofeedback training.