



## Medica Central Coverage Policy

**Policy Name:** Quantitative Electroencephalogram (qEEG) and Referenced Electroencephalogram (rEEG) MP9622

**Effective Date:** 09/01/2024

### Important Information – Please Read Before Using This Policy

These services may or may not be covered by all Medica Central plans. Coverage is subject to requirements in applicable federal or state laws. Please refer to the member's plan document for other specific coverage information. If there is a difference between this general information and the member's plan document, the member's plan document will be used to determine coverage. With respect to Medicare, Medicaid, and other government programs, this policy will apply unless these programs require different coverage.

Members may contact Medica Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions may call the Provider Service Center. Please use the Quick Reference Guide on the Provider Communications page for the appropriate phone number. <https://mo-central.medica.com/Providers/SSM-employee-health-plan-for-IL-MO-OK-providers>

Medica Central coverage policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care, and treatment.

### Coverage Policy

**Note:** This policy is no longer scheduled for routine review of the scientific literature.

**Quantitative electroencephalogram (qEEG; brain mapping) is COVERED for:**

1. Evaluation of epilepsy when used for:
  - a. Identification of epileptic spikes or seizures in individuals requiring long-term EEG monitoring
  - b. Pre-surgical evaluation in individuals with intractable epilepsy
  - c. Monitoring for possible seizures in high-risk individuals in the intensive care unit (ICU).
2. Monitoring for early detection of acute, intracranial surgery-related complications in the operating room or intensive care unit.
3. Evaluation of individuals symptomatic for possible cerebrovascular disease when neuroimaging and standard EEG analysis remains inconclusive.
4. Evaluation of encephalopathy when diagnosis is unresolved after initial clinical evaluation.
5. Evaluation of dementia (e.g., Alzheimer's or Parkinson's related) when diagnosis is unresolved after initial clinical evaluation.

**QEEG** is investigative and therefore **NOT COVERED** for all other indications, including but not limited to:

1. Alcoholism
2. Attention disorders
3. Autism spectrum disorders/pervasive developmental disorders

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4. Depression
5. Drug abuse
6. Learning disabilities
7. Mild or moderate head injury
8. Post-concussion syndrome
9. Prediction of pharmacotherapy response to psychotropic medication
10. Schizophrenia.

There is insufficient reliable evidence in the form of high quality peer-reviewed medical literature to establish the efficacy or effects on health care outcomes.

### Description

**Electroencephalography (EEG)** is the recording of the brain's spontaneous electrical activity by means of multiple electrodes placed on the surface of the scalp. EEG measures voltage fluctuations resulting from ionic current flows within the neurons of the brain. The standard output has traditionally been an analogue pen and ink tracing representing the spikes and troughs of the brain's electrical activity. Digital EEGs are also readily available. A digital EEG system converts the individual's waveform into a series of numerical values. The conversion process is known as Analogue-to-Digital conversion (ADC). These standard procedures can normally be performed within approximately 30 minutes and are routinely done in the outpatient setting, although inpatient applications are also employed. In both cases, wave forms are interpreted by a clinician and compared to waveform patterns seen in disease-free individuals and those seen in individuals with specified conditions (e.g., seizure syndromes). Recently, research has ensued which couples standard digital EEG recordings, with computer modeling systems and normative databases. Examples of these technologies include quantitative EEG (qEEG) and referenced EEG (rEEG).

**Quantitative EEG (qEEG)** is a method for analyzing electrical activity of the brain to obtain quantitative patterns that may correspond to diagnostic information and/or cognitive deficits. QEEG uses computer modeling to quantify and localize cortical electrical activity generated by discrete groups of cortical pyramidal neurons. An individual's specific qEEG pattern is then compared to those within an FDA-registered, normative database. Following analysis, qEEG is suggested for use in the diagnosis and/or monitoring of certain clinical or behavioral conditions. Coupled with a referenced EEG database, it is suggested for use in prediction of response to psychotropic medications.

The **NEBA<sup>®</sup> System** is the first quantitative brainwave medical device cleared by the FDA to assist clinicians to more accurately diagnose attention deficit hyperactivity disorder (ADHD) in children and adolescents. NEBA uses EEG brainwave patterns, along with a clinician's initial diagnostic evaluation, to improve the accuracy of ADHD diagnosis. NEBA measures the electrical activity in the front part of the brain to derive a biomarker and then combines this information with the clinician's diagnostic results. Using this data, along with a patented interpretation methodology, NEBA categorizes children with ADHD symptoms into three diagnostic groups:

- Confirmatory support of ADHD – confirmatory support
- Support for further testing, with the focus on ADHD
- Support for further testing, with the focus on conditions other than ADHD.

**Referenced-EEG<sup>®</sup> (rEEG)** is a patented technology available from CNS Response. It employs qEEG in conjunction with CNS Response's proprietary mathematical modeling database and computer analysis to provide information on the effects of psychotropic medications to waveforms specific to an individual's unique brain activity as measured by their qEEG. The rEEG results purport to correlate medication response to the abnormal qEEG parameters identified within the

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database. REEG is purported for use in selection, monitoring, and management of ongoing psychotropic pharmacotherapy. It has been advocated for use in individuals who have a history of previous treatment resistance. PEER Online is a service offered by CNS Response that allows physicians to compare which medication treatments have or have not been effective for practitioners treating patients with similar brain patterns. PEER Online builds on CNS Response's original Referenced-EEG<sup>®</sup> database.

### FDA Approval

Multiple qEEG software packages have received FDA-approval under the 501(k) approval process. Two examples include, but are not limited to:

1. NeuroGuide Analysis Software (Applied Neuroscience)
2. Neurometric Analysis System (NxLink Ltd.)

The NEBA<sup>®</sup> System (NEBA Health LLC) was cleared for marketing by the FDA in July 2013 to aid in the diagnosis of attention deficit hyperactivity disorder (ADHD). The FDA created a new category of medical device to regulate NEBA, called Neuropsychiatric Interpretive EEG-based Assessment Aids (NIEA). The approved indication for the NEBA<sup>®</sup> System is for use of the calculated theta/beta ratio of the EEG for individuals six to 17 years of age combined with a clinician's evaluation to aid in the diagnosis of ADHD. It is to be used as confirmatory support for a completed clinical evaluation or as support further testing following as equivocal clinical evaluation results. The device is not intended as a stand-alone test in evaluating or diagnosing ADHD.

An example of a reference database using rEEG is Referenced-EEG<sup>®</sup>. Referenced-EEG<sup>®</sup> (rEEG<sup>®</sup>) is a patented, proprietary technology of CNS Response.

### Prior Authorization

Prior authorization is not required. However, services with specific coverage criteria may be reviewed retrospectively to determine if criteria are being met. Retrospective denial may result if criteria are not met.

### Coding Considerations

Use the current applicable CPT/HCPCS code(s). The following codes are included below for informational purposes only, and are subject to change without notice. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement.

### CPT Codes

- **95961** - Functional cortical and subcortical mapping by stimulation and/or recording of electrodes on brain surface, or of depth electrodes, to provoke seizures or identify vital brain structures; initial hour of physician attendance
- **95962** - Functional cortical and subcortical mapping by stimulation and/or recording of electrodes on brain surface, or of depth electrodes, to provoke seizures or identify vital brain structures; each additional hour of physician attendance (List separately in addition to code for primary procedure)



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|                  | <b>Committee/Source</b>  | <b>Date(s)</b>                      |
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