



## MEDICAL POLICY STATEMENT

Original Effective Date	Next Annual Review Date	Last Review / Revision Date
12/03/2014	12/03/2015	08/25/2015
Policy Name	Policy Number	
<b>Electrodiagnostic Testing: Nerve Conduction and Needle Electromyography Automated Nerve Conduction Studies</b>	<b>MM-0006</b>	

Medical Policy Statements prepared by CSMG Co. and its affiliates (including CareSource) are derived from literature based on and supported by clinical guidelines, nationally recognized utilization and technology assessment guidelines, other medical management industry standards, and published MCO clinical policy guidelines. Medically necessary services include, but are not limited to, those health care services or supplies that are proper and necessary for the diagnosis or treatment of disease, illness, or injury and without which the patient can be expected to suffer prolonged, increased or new morbidity, impairment of function, dysfunction of a body organ or part, or significant pain and discomfort. These services meet the standards of good medical practice in the local area, are the lowest cost alternative, and are not provided mainly for the convenience of the member or provider. Medically necessary services also include those services defined in any Evidence of Coverage documents, Medical Policy Statements, Provider Manuals, Member Handbooks, and/or other policies and procedures.

Medical Policy Statements prepared by CSMG Co. and its affiliates (including CareSource) do not ensure an authorization or payment of services. Please refer to the plan contract (often referred to as the Evidence of Coverage) for the service(s) referenced in the Medical Policy Statement. If there is a conflict between the Medical Policy Statement and the plan contract (i.e., Evidence of Coverage), then the plan contract (i.e., Evidence of Coverage) will be the controlling document used to make the determination.

For Medicare plans please reference the below link to search for Applicable National Coverage Descriptions (NCD) and Local Coverage Descriptions (LCD):

### A. SUBJECT

**Electrodiagnostic Testing: Nerve Conduction and Needle Electromyography Automated Nerve Conduction Studies**

### B. BACKGROUND

Nerve Conduction Studies are considered medically necessary for the diagnosis of peripheral nervous system disorders and diseases. Nerve Conduction Studies (NCS) assess the integrity and function of the nerves by measuring various electrical components of nerve function, including conduction velocity, wave size and response type. In the hands of appropriately trained physicians various neuropathies can be identified, severity quantified and the distribution of the impairment can be assessed. Demyelination and axon loss can also be identified.

Nerve conduction studies in the absence of needle electromyographic studies are incomplete. Electrodiagnostic studies should be considered as medically necessary only as an adjunct to a complete history and physical examination and in combination with appropriate imaging, laboratory and other diagnostic tests. Nerve conduction studies as a screen for vague neurologic symptoms, without history and physical findings to suggest a neurologic etiology, and without companion electromyographic studies will be considered not medically necessary.

CareSource medical necessity policy for Nerve Conduction Studies is derived from the American Association of Neuromuscular and Electrodiagnostic Medicine guidelines (AANEM). According to AANEM, "the standard of care in clinical practice dictates that using a predetermined or standardized battery of NCSs for all patients is inappropriate". It is the position of the AANEM that, "except in unique situations, NCSs and needle EMG should be performed together on site and interpreted real time by a trained neuromuscular physician". In the opinion of the AANEM,



“standardized nerve conduction studies performed independent of needle EMG studies may miss data essential for an accurate diagnosis.” The AANEM position statement (2006) explains that “[t]he performance of or interpretation of NCS separately from the needle EMG component of the testing should clearly be the exception. Nerve conduction studies performed independent of needle EMG may only provide a portion of the information needed to diagnose muscle, nerve root, and most nerve disorders. When the NCS is used on its own without integrating needle EMG findings, or when an individual relies solely on a review of NCS data, the results can be misleading and important diagnoses may be missed. Moreover, individuals who interpret NCV data without patient interaction or who rely on studies that have delayed interpretation, who have interpretation made off-site, and who interpret results without complementary information obtained from EMG studies are not meeting the standards outlined in the AANEM policy recommendations.” [2011, Jan;43(1):9-13.]

According to AANEM, electrodiagnostic studies are indicated in the following scenarios:

1. Focal neuropathies, entrapment neuropathies, or compressive lesions/syndromes such as carpal tunnel syndrome, ulnar neuropathies, or root lesions for localization
2. Traumatic nerve lesions, for diagnosis and prognosis
3. Diagnosis or confirmation of suspected generalized neuropathies, such as diabetic, uremic, metabolic, or immune
4. Repetitive nerve stimulation of diagnosis of neuromuscular junction disorders such as myasthenia gravis, myasthenic syndrome
5. Symptom-based presentations such as “pain in limb”, weakness, disturbance in skin sensation or “paraesthesia” when appropriate pre-test evaluations are inconclusive and the clinical assessment unequivocally supports the need for the study
6. Radiculopathies-cervical, thoracic and lumbosacral
7. Polyneuropathy-metabolic, degenerative, hereditary
8. Plexopathy-idiopathic, trauma, infiltration
9. Myopathy-including polymyositis and dermatomyositis, myotonic, and congenital myopathies
10. Precise muscle location for injections such as botulinum toxin, phenol, etc.

### **Automated Nerve Conduction Studies**

According to AANEM electrodiagnostic testing with automated, noninvasive nerve conduction testing devices is considered investigational and not medically necessary for all indications, including as an alternative method of performing NCS's. Examination using portable hand-held devices, which are incapable of real-time wave-form display and analysis, should be considered part of the evaluation & management (E/M) service and should not be paid separately.

In a study reported by Schmidt, Chinea, et al. from the department of PM&R at Mayo Clinic and Foundation, their conclusion found that the automated device accurately recorded raw data, but the interpretations provided were overly sensitive and lacked the specificity necessary for a screening or diagnostic examination.

Automated nerve conduction studies are usually performed by non-certified office staff and are limited by the absence of real time testing performed by skilled physicians and certified technologists. Standard NCS can evaluate a wider range of specific nerves while automated tests allow only a limited number of specific nerves to be tested. Unidirectional and distal testing only is available with automated testing, further limiting its usefulness compared with standard testing with EMG. Other limitations also warrant automated testing clinically inferior to standard testing. With standard testing, real time interaction between the technician and the member with regard to member history, physical findings, EMG results and real time test findings allow for an individualized and accurate assessment and report. Automated testing performed by an unskilled



technician provides only a computer generated printout with standardized reporting from a programmed list of statement or possible diagnoses.

According to the AANEM, nerve conduction studies may be considered without needle electromyography in “patients on anticoagulants, patients who have lymphedema, or patients who are being evaluated for carpal tunnel syndrome”. (Risks in Electrodiagnostic Medicine 2014)

### **C. DEFINITIONS**

N/A

### **D. POLICY**

- I. CareSource considers Nerve Conduction Studies to be medically necessary for the diagnosis of peripheral nervous system disorders and diseases only when accompanied by needle EMG performed by physicians appropriately trained in neuromuscular disorders and when performed by appropriately certified or registered technologists when the following indications are present:
  - A. Focal neuropathies, entrapment neuropathies, or compressive lesions/syndromes such as carpal tunnel syndrome, ulnar neuropathies, or root lesions for localization
  - B. Traumatic nerve lesions, for diagnosis and prognosis
  - C. Diagnosis or confirmation of suspected generalized neuropathies, such as diabetic, uremic, metabolic, or immune
  - D. Repetitive nerve stimulation in diagnosis of neuromuscular junction disorders such as myasthenia gravis, myasthenic syndrome
  - E. Symptom-based presentations such as “pain in limb”, weakness, disturbance in skin sensation or “paraesthesia” when appropriate pre-test evaluations are inconclusive and the clinical assessment unequivocally supports the need for the study
  - F. Radiculopathy-cervical, thoracic and/or lumbosacral
  - G. Polyneuropathy-metabolic, degenerative, hereditary
  - H. Plexopathy-idiopathic, trauma, infiltration
  - I. Myopathy-including polymyositis and dermatomyositis, myotonic, and congenital myopathies
  - J. Precise muscle location for injections such as botulinum toxin, phenol, etc.

**NOTE:** CareSource considers the use of automated nerve conduction studies as unproven and investigational and not medically necessary.

**NOTE:** Nerve conduction studies in the absence of needle EMG may be considered medically necessary in members on anticoagulants, those who have lymphedema, or those being evaluated for carpal tunnel syndrome.

**For Medicare Plan members, reference the below link to search for Applicable National Coverage Descriptions (NCD) and Local Coverage Descriptions (LCD):**

**If there is no NCD or LCD present, reference the CareSource Policy for coverage.**

### **CONDITIONS OF COVERAGE**

**HCPCS**

**CPT**



### **Step Therapy**

Under some plans, including plans that use an open or closed formulary, some of the medications in this policy may be subject to step-therapy. Refer to the CareSource formulary tool or PDL for further guidance.

### **AUTHORIZATION PERIOD**

#### **E. REVIEW/REVISION HISTORY**

Date Issued: 07/03/2014, 12/03/2014, 08/25/2015  
Date Reviewed: 07/03/2014, 12/03/2014, 08/25/2015  
Date Revised: 03/03/2015 – Placed in new template and assigned policy number  
08/25/2015 – Revisions to include AANEM criteria recommendations and references

#### **F. REFERENCES**

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2. American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM). Recommended Policy for Electrodiagnostic Medicine. 2004. Retrieved: September 2, 2015. [https://www.aanem.org/getmedia/3275d71c-81dc-4b23-96a7-03173ecf8446/Recommended\\_Policy\\_EDX\\_Medicine\\_062810.pdf](https://www.aanem.org/getmedia/3275d71c-81dc-4b23-96a7-03173ecf8446/Recommended_Policy_EDX_Medicine_062810.pdf)
3. AANEM. Position Statement. Proper Performance and Interpretation of Electrodiagnostic Studies. June 2014. Retrieved: September 2, 2015. [https://www.aanem.org/getmedia/bd1642ce-ec01-4271-8097-81e6e5752042/Position-Statement\\_Proper-Performance-of-EDX\\_-2014.pdf](https://www.aanem.org/getmedia/bd1642ce-ec01-4271-8097-81e6e5752042/Position-Statement_Proper-Performance-of-EDX_-2014.pdf)
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10. Lefevre, Frank. An evidence review of the diagnostic accuracy of automated nerve conduction studies compared to traditional nerve conduction studies. May 22, 2008.
11. National Government Services. Nerve Conduction Studies (NCS)/Electromyography (EMG). L26869.
12. Accuracy of diagnoses delivered by an automated hand-held nerve conduction device in comparison to standard electrophysiological testing in members with unilateral leg symptoms. Schmidt K, Chinea NM, Sorenson EJ, Strommen JA, Boon AJ. Department of Physical Medicine and Rehabilitation, Mayo Clinic and Foundation, 200 First Street SW, Rochester, Minnesota 55902, USA.



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[http://www.researchgate.net/profile/Mark\\_DeLano/publication/11079140\\_Thoracic\\_radiculopathy/links/09e41505a017f73e0a000000](http://www.researchgate.net/profile/Mark_DeLano/publication/11079140_Thoracic_radiculopathy/links/09e41505a017f73e0a000000)

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**The medical Policy Statement detailed above has received due consideration as defined in the Medical Policy Statement Policy and is approved.**