Medical Policy

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Title: Electromyography and Nerve Conduction Studies

Professional / Institutional
Original Effective Date: January 1, 2005
Latest Review Date: August 12, 2025
Current Effective Date: March 1, 2021

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Populations	Interventions	Comparators	Outcomes
Individuals: • With suspected peripheral neuropathy or myopathy	Interventions of interest are: • Electrodiagnostic assessment including electromyography and nerve conduction studies	Comparators of interest are: • Clinical diagnostic workup without electrodiagnostic testing	Relevant outcomes include: • Test accuracy • Symptoms • Functional outcomes • Quality of life

DESCRIPTION

Electromyography and nerve conduction studies, also collectively known as an electrodiagnostic assessment, evaluate the electrical functioning of muscles and peripheral nerves. These tests are diagnostic aids for the evaluation of myopathy and peripheral neuropathy by identifying, localizing, and characterizing electrical abnormalities in the skeletal muscles and peripheral nerves.

OBJECTIVE

The objective of this evidence review is to evaluate whether electromyography and nerve conduction studies improve the net health outcome in individuals with suspected peripheral neuropathy and/or myopathy.

BACKGROUND

Electrodiagnostic Assessment

Electromyography (EMG) and nerve conduction studies (NCS) are used as adjuncts to clinical evaluation of myopathy and peripheral neuropathy.[1,] These tests intend to evaluate the integrity and electrical function of muscles and peripheral nerves. They are performed when there is clinical suspicion for a myopathic or neuropathic process and when clinical examination and standard laboratory testing cannot make a definitive diagnosis.

Test results do not generally provide a specific diagnosis. Rather, they provide additional information that assists physicians in characterizing a clinical syndrome. EMG/NCS may be useful when there is no clear etiology when symptoms are severe or rapidly progressing, or when symptoms are atypical (eg, asymmetrical, acute onset, or appearing to be autonomic).

According to the American Association of Neuromuscular & Electrodiagnostic Medicine (2023), electrodiagnostic assessment has the following goals.[2,]

1. "Identify normal and abnormal nerve, muscle, motor or sensory neuron, and NMJ [neuromuscular junction] functioning.
2. Localize region(s) of pathology.
3. Characterize the pathology.
4. Determine the distribution of abnormalities.
5. Determine the severity of abnormalities.
6. Estimate the chronology of the disease.
7. Determine the progression and/or recovery from abnormal function.
8. Aid in diagnosis and prognosis of the disease.
9. Aid in selecting treatment options.
10. Aid in following response to treatment by providing objective evidence of change in NM [neuromuscular] function.
11. Localize correct locations for injections of intramuscular agents..."

Components of the electrodiagnostic exam may include needle EMG, NCS, repetitive nerve stimulation study, somatosensory evoked potentials, and blink reflexes.

ELECTROMYOGRAPHY

Needle Electromyography

An EMG needle electrode is inserted into selected muscles, chosen by the examining physician depending on the differential diagnosis and other information available during the exam.[2,] The response of the muscle to electrical stimulation is recorded. Three components are evaluated: observation at rest, action potential with minimal voluntary contraction, and action potential with maximum contraction.[3,]

Single Fiber Electromyography
In single-fiber EMG, a needle electrode records the response of a single muscle fiber. This test can evaluate "jitter," which is defined as the variability in the time between activation of the nerve and generation of the muscle action potential. Single fiber EMG can also measure fiber density, which is defined as the mean number of muscle fibers for 1 motor unit.[2,]

Nerve Conduction Studies
In NCS, both motor and sensory nerve conduction are assessed. For motor conduction, electrical stimuli are delivered along various points on the nerve, and the electrical response is recorded from the appropriate muscle. For sensory conduction, electrical stimuli are delivered to 1 point on the nerve, and the response is recorded at a distal point on the nerve. Parameters recorded include velocity, amplitude, latency, and configuration.[2,]

Late Wave Responses
Late waves are a complement to the basic NCS and evaluate the functioning of the proximal segment of peripheral nerves, such as the nerve root and the anterior horn cells. There are 2 types of late responses: the H-reflex and the F wave.

The H-reflex is elicited by stimulating the posterior tibial nerve and measuring the response in the gastrocnemius muscle. It is analogous to the ankle reflex and can be prolonged by radiculopathy at S1 or by peripheral neuropathy.[3,]
The F wave is assessed by supramaximal stimulation of the distal nerve and can help estimate the conduction velocity in the proximal portion of the nerve.[3,] This will provide information on the presence of proximal nerve abnormalities, such as radiculopathy or plexopathy.

Repetitive Nerve Stimulation
Repetitive nerve stimulation studies evaluate the integrity and function of the neuromuscular junction. The test involves stimulating a nerve repetitively at variable rates and recording the response of the corresponding muscle(s).[3,] Disorders of the neuromuscular junction will show a diminished muscular response to repetitive stimulation.

Somatosensory Evoked Potentials
Somatosensory evoked potentials evaluate nerve conduction in various sensory fibers of both the peripheral and central nervous system and test the integrity and function of these nerve pathways.[2,] They are typically used to assess nerve conduction in the spinal cord and other central pathways that cannot be assessed by standard NCS.

Blink Reflexes
The blink reflexes, which are analogs of the corneal reflex, are evaluated by stimulating the orbicularis oculi muscle at the lower eyelid. They are used to localize lesions in the fifth or seventh cranial nerves.[2,]

Differential Diagnosis
The specific components of an individual test are not standardized. Rather, a differential diagnosis is developed by the treating physician, and/or the clinician performing the test, and the specific components of the exam are determined by the disorders being considered in the differential. Also, the differential diagnosis may be modified during the exam to reflect initial findings, and this may also influence the specific components included in the final analysis.[2,]

REGULATORY STATUS

EMG/NCS measure nerve and muscle function and may be indicated when evaluating limb pain, weakness related to possible spinal nerve compression, or other neurologic injury or disorder. A number of electromyographic devices have received marketing clearance from the U.S. Food and Drug Administration. Several devices are listed in Table 1.

Table 1. Electromyographic Devices Approved by the U.S. Food and Drug Administration

Device	Manufacturer	Food and Drug Administration Clearance	510(k) No.	Food and Drug Administration Product Code
NuVasive® NVM5 System	NuVasive	2011	K112718	ETN
CERSR® Electromyography System	SpineMatrix	2011	K110048	IKN
CareFusion Nicolet® EDX	CareFusion 209	2012	K120979	GWF
Physical Monitoring Registration Unit-S (PMRU-S)	Oktx	2013	K123902	IKN
MyoVision 3G Wirefree™ System	Precision Biometrics	2013	K123399	IKN
Neuro Omega™ System	Alpha Omega Engineering	2013	K123796	GZL
EPAD™	SafeOp Surgical	2014	K132616	GWF
Sierra Summit, Sierra Ascent	Cadwell Industries	2017	K162383	IKN, GWF
EPAD 2™	SafeOp Surgical	2019	K182542	GWF, IKN
Mediracer® NCS	Mediracer	2019	K190536	JXE, IKN
Mega-TMS™	Soterix Medical, Inc.	2021	K192823	GWF, JXE
SafeOp 3: Neural Informatix System	Alphatec Spine, Inc	2024	K234092	IKN, GWF, GXZ, GXY, ETN, PDQ

POLICY

A. Electromyography and Nerve Conduction Studies are **medically necessary** as referenced in the following charts:

Chart A - Type of Study / Maximum Number of Studies
Chart B - Nerve Conduction Studies, and
Chart C - Maximum Number of Studies for Additional Codes

Chart A

Type of Study / Maximum Number of Studies*			
Indication	**Limbs Studies by Needle EMG (95860-95864, 95867-95870, 95885-95887)**	**Nerve Conduction Studies (Total Nerves Studied 95907-95913)**	**Neuromuscular Junction Testing (Repetitive Stimulation, 95973)**
Carpal Tunnel (unilateral)	1	7	
Carpal Tunnel (bilateral)	2	10	
Radiculopathy	2	7	
Mononeuropathy	1	8	
Polyneuropathy/ Mononeuropathy Multiplex	3	10	
Myopathy	2	4	2
Motor Neuronopathy (e.g., ALS)	4	6	2
Plexopathy	2	12	
Neuromuscular Junction	2	2	3
Tarsal Tunnel Syndrome (unilateral)	1	8	
Tarsal Tunnel Syndrome (bilateral)	2	11	
Weakness, Fatigue, Cramps, or Twitching (focal)	2	7	2
Weakness, Fatigue, Cramps, or Twitching (general)	4	8	2
Pain, Numbness, or Tingling (unilateral)	1	9	
Pain, Numbness, or Tingling (bilateral)	2	12	

* Adapted from American Association of Neuromuscular & Electrodiagnostic Medicine (2023).
EMG: electromyography; NCS: nerve conduction studies; RNS: repetitive nerve stimulation

Chart B

Nerve Conduction Studies		
Codes	**Nomenclature**	**CPT Instructions**
95907	Nerve conduction studies; 1-2 studies	For the purposes of coding, a single conduction study is defined as a sensory conduction test, a motor conduction test with or without an F wave test, or an H-reflex test. Each type of study (sensory, motor with or without F wave, H-reflex) for each nerve includes all orthodromic and antidromic impulses associated with that nerve and constitutes a distinct study when determining the number of studies in each grouping (e.g. 1-2 or 3-4 nerve conduction studies). Each type of nerve conduction study is counted only once when multiple sites* on the same nerve are
95908	Nerve conduction studies; 3-4 studies	
95909	Nerve conduction studies; 5-6 studies	
95910	Nerve conduction studies; 7-8 studies	
95911	Nerve conduction studies; 9-10 studies	

Nerve Conduction Studies		
Codes	**Nomenclature**	**CPT Instructions**
95912	Nerve conduction studies; 11-12 studies	stimulated or recorded. The number of these separate tests should be added to determine which code to use. *CPT Appendix J lists the nerves that can be tested and coded under nerve conduction study codes. The branches of each nerve are also listed, but the unit of service is limited to the nerve and not the branches.
95913	Nerve conduction studies; 13 or more studies	

Chart C

Maximum Number of Studies for Additional Codes			
Codes	**Units**	**Codes**	**Units**
95865	1	95925	1
95866	1	95926	1
95872	1	95927	1
95885	▪ 1 per extremity ▪ also can be used for muscles on the thorax or abdomen (unilateral or bilateral)	95933	2
95886	1 per extremity	95938	1
95887	1 per day	95939	1

B. Surface EMG (SEMG) (S3900) is **experimental / investigational**. This refers to a recording of electrophysiologic signals from skeletal muscles. The recording is made using electrodes placed on the surface of the skin overlying the muscle, and consists of motor unit action potential (MUAP) discharges. The electrical activity is only observed when the muscle is activated. It does not include any monitoring of externally stimulated muscle activity as occurs in nerve conduction studies, H reflexes, F waves, and other tests. There are no indications for the use of SEMG in the diagnosis and treatment of disorders of nerve or muscle.

C. Current perception threshold (CPT) / sensory nerve conduction threshold (SNCT) (G0255) is **experimental / investigational**. This test diagnoses sensory neurological impairments caused by various pathological conditions or toxic substance exposures. It is a noninvasive test that uses transcutaneous electrical stimulus to evoke a sensation. CPT/SNCT methods quantitate the level of sensory deficit by comparing current output to the nerve conduction threshold, but has the problem, however, that significant variability occurs associated with changing skin resistance.

POLICY GUIDELINES

A. Nerves Tested Must be Limited - CPT includes a reminder that has been included in CPT since 2000: "Nerves tested must be limited to the specific nerves needed for the particular clinical question being investigated." Appendix J includes a chart outlining the maximum number of studies expected for typical neurological complaints. CPT 2013 also includes additional wording that the report must be prepared on-site by the examiner. Electromyography is often conducted at the same session as nerve conduction studies CPT

2012 added codes specifically for these situations: add-on codes 95996, 95886, and 95887. These codes will be added to the new nerve conduction study codes when applicable.[OR3]

B. Testing should be performed using EDX equipment that provides assessment of all parameters of the recorded signals. Studies performed with devices designed only for "screening purposes" rather than diagnosis, are not medically necessary.

C. Like the Wisconsin Physicians Service (WPS), Blue Cross and Blue Shield of Kansas expects healthcare professionals who perform electrodiagnostic (ED) testing will be appropriately trained and/or credentialed, either by a formal residency/fellowship program, certification by a nationally recognized organization, or by an accredited post-graduate training course covering anatomy, neurophysiology and forms of electrodiagnostics (including both NCS and EMG), in order to provide the proper testing and assessment of the patient's condition, and appropriate safety measures. It would be highly unlikely that this training and/or credentialing is possessed by providers other than Neurologists, or Physical Medicine & Rehabilitation physicians.

D. The electrodiagnostic evaluation is an extension of the neurologic portion of the physical examination. Both require a detailed knowledge of a patient and his/her disease. Training in the performance of electrodiagnostic procedures in isolation of knowledge about clinical diagnostic and management aspects of neuromuscular diseases, may not be adequate for proper performance of an electrodiagnostic evaluation and correct interpretation of electrodiagnostic test results. Without awareness of the patterns of abnormality expected in different diseases and knowledge that the results of nerve conduction studies (NCS) and electromyography (EMG) may be similar in different diseases, diagnosis solely by EMG-NCS findings may be both inadequate and ultimately be detrimental to the patient.

E. Guidelines about proper qualifications for qualified health care professionals performing electrodiagnostic evaluations have been developed and published by AANEM (American Association of Neuromuscular and Electrodiagnostic Medicine) and other medical organizations, including the AMA, the American Academy of Neurology, the American Academy of Physical Medicine and Rehabilitation, American Neurological Association, the American Board of Physical Therapy Specialties (ABPTS) in Clinical Electrophysiology, and the Department of Veterans Affairs.

Repeat Testing

A. Repeat testing will be considered for reimbursement in the following clinical situations:
   1. When seen for new symptoms or additional diagnosis we would consider another evaluation for the determination of a second diagnosis. When a diagnosis such as amyotrophic lateral sclerosis (ALS) is suspected, but testing is inconclusive, additional testing may be warranted.
   2. When the disease process is one of rapid change, such as Guillain-Barré syndrome, it may be necessary for monitoring patient progress.
   3. Recovery from injury may warrant retesting to help determine need for surgery and when surgery should be performed.

B. The claim must be submitted with medical record documentation to support medical necessity of repeat testing. Professional providers should report modifier 22.

Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

RATIONALE

This evidence review was created using a search of the PubMed database. The most recent literature update was performed through April 18, 2025.

Evidence reviews assess whether a medical test is clinically useful. A useful test provides information to make a clinical management decision that improves the net health outcome. That is, the balance of benefits and harms is better when the test is used to manage the condition than when another test or no test is used to manage the condition.

The first step in assessing a medical test is to formulate the clinical context and purpose of the test. The test must be technically reliable, clinically valid, and clinically useful for that purpose. Evidence reviews assess the evidence on whether a test is clinically valid and clinically useful. Technical reliability is outside the scope of these reviews, and credible information on technical reliability is available from other sources.

SUSPECTED PERIPHERAL NEUROPATHY OR MYOPATHY

Clinical Context and Test Purpose

The purpose of electrodiagnostic testing in individuals who have suspected peripheral neuropathy or myopathy is to aid in the diagnosis of disease and to guide treatment.

The following PICO was used to select literature to inform this review.

Populations

The relevant population of interest is individuals who have suspected peripheral neuropathy or myopathy. The population falls into the broad categories of compressive neuropathies, nerve root compression, traumatic nerve injuries, generalized and focal neuropathies and myopathies, plexopathy, motor neuron disease, and neuromuscular junction disorders.

Interventions

The relevant intervention of interest is electrodiagnostic assessment, consisting of electromyography (EMG), nerve conduction studies (NCS), and related measures, to evaluate the integrity and electrical function of muscles and peripheral nerves.

Comparators

The relevant comparators of interest are standard clinical diagnostic tools and practices currently being used to inform decisions on the diagnosis of suspected peripheral neuropathy or myopathy: history, physical exam, laboratory studies, and imaging studies when appropriate.

Outcomes

The clinical utility would be supported by a reduction in pain or other symptoms and improvement in functional measures and quality of life measures specific to the condition. Alternatively, evidence of clinical utility may be derived from a chain of evidence linking

improvement in diagnostic accuracy with improvements in treatment guided by a correct diagnosis.

Beneficial outcomes include aiding in the diagnosis of disease and guiding treatment that results in a reduction in symptoms such as pain, numbness, or tingling, and improvements in functional outcomes of muscle strength and quality of life measures.

If individuals are diagnosed with peripheral neuropathies or myopathies based on inaccurate EMG or NCS results, unnecessary treatment may be initiated when watchful waiting may be the more appropriate management approach.

Study Selection Criteria
Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for randomized controlled trials;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse events, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

Clinically Valid
A test must detect the presence or absence of a condition, the risk of developing a condition in the future, or treatment response (beneficial or adverse).

Review of Evidence
In general, EMG and NCS are considered the criterion standards for establishing abnormalities of the electrical system of nerves and muscles, and hence there is a lack of a true reference standard.

Below are examples of representative literature on clinical validity.

CARPAL TUNNEL SYNDROME

Systematic Reviews
A 2016 clinical practice guideline on the management of carpal tunnel syndrome (CTS) was published by the American Academy of Orthopaedic Surgeons (AAOS), which included a systematic review of the literature as part of its guideline development process.[4,] The guideline found moderate evidence (evidence from 2 or more moderate quality studies) to support that "diagnostic questionnaires and/or electrodiagnosis studies could be used to aid the diagnosis of carpal tunnel syndrome." Furthermore, AAOS noted that the evaluation of electrodiagnostic tests requires a reference standard against which the performance of the diagnostic test can be compared, but there is currently no consensus supporting a single diagnostic tool as a reference standard for CTS.

Observational Studies

Two studies identified calculated the sensitivity and specificity of EMG and NCS.[5,6,] One study used Carpal Tunnel Syndrome-6 (CTS-6) test results as a comparator[5,] and the other used mean values of normal controls as comparators.[6,]

Fowler et al (2014) evaluated the diagnostic accuracy of electrodiagnostic testing and ultrasound for diagnosing CTS, using validated clinical diagnostic criteria as the reference standard (Table 2).[5,] The reference standard was a validated clinical diagnostic tool (CTS-6 score). The electrodiagnostic exam was considered positive when there was a distal motor latency of 4.2 ms or more or a distal sensory latency of 3.2 ms or more. Sensitivity, specificity, positive predictive value, and negative predictive values were calculated (Table 3). This study was limited by the imperfect nature of the reference standard (CTS-6 is not a true criterion standard for diagnosis) and suboptimal sensitivity.

Chang et al (2006) examined the sensitivity and specificity of various motor and sensory NCS parameters in 280 consecutive patients (360 hands) with suspected CTS and 150 normal controls (see Table 2).[6,] In the 360 hands with suspected CTS, 328 (91%) had at least 1 electrodiagnostic abnormality and 9% had normal exams. For individual NCS measures, the sensitivity ranged from 73% to 87% and the specificity ranged from 97% to 99% (see Table 3). Among the 150 controls, NCS readings were mostly within the normal range, with a few sensory and motor findings falling in the abnormal range.

Table 2. Summary of Nonrandomized Study Characteristics for Carpal Tunnel Syndrome

Study	Study Type	Country	Dates	Participants	Blinding	Testing
Fowler et al (2014)[5,]	Cross-sectional	U.S.	NR	• Consecutive patients referred to an upper- extremity practice for EMG testing • CTS-6 positive: 55 • CTS-6 negative: 30	EMG technician blinded to CTS-6 results	All patients underwent: (1) CTS-6, (2) ultrasound, and (3) electrodiagnostic testing
Chang et al (2006)[6,]	Cross-sectional	Taiwan	NR	• Consecutive patients presenting with ≥1 of the following: numbness, paresthesia, nocturnal awakening, weakness, or pain • Patients with CTS: 280 • Volunteer controls: 150	EMG technicians blinded to clinical information and diagnosis	All patients underwent the following EMG/NCS testing: motor DL, W-P MCV, sensory DL (D1), sensory DL (D2), sensory DL (D4), W-P SCV (D2), W-P SCT (D2), M-R and M-U

CTS: carpal tunnel syndrome; CTS-6: Carpal Tunnel Syndrome-6; D1: thumb; D2: index finger; D4: ring finger; DL: distal latency; EMG: electromyography; M-R: median-radial sensory latency difference; M-U: median-ulnar sensory latency difference; NCS: nerve conduction studies; NR: not reported; W-P MCV: wrist-palm motor conduction velocity; W-P SCT: wrist-palm sensory conduction time; W-P SCV: wrist-palm sensory conduction velocity.

Table 3. Summary of Nonrandomized Study Results for Carpal Tunnel Syndrome

Study	Sensitivity (95% CI), %		Specificity (95% CI), %		PPV (95% CI), %		NPV (95% CI), %	
	US[a]	EMG[a]	US[a]	EMG[a]	US[a]	EMG[a]	US[a]	EMG[a]
Fowler et al (2014)[5,]	89 (77 to 95)	89 (77 to 95)	90 (72 to 97)	80 (61 to 92)	94 (83 to 98)	89 (71 to 95)	82 (64 to 92)	80 (61 to 92)
Chang et al (2006)[6,]								
Motor DL[b]	65.0		99.3		NR		NR	
SDL (D1)[b]	80.3		98.7		NR		NR	
SDL (D2)[b]	72.5		99.3		NR		NR	
SDL (D4)[b]	76.7		100		NR		NR	
W-P MCV[b]	81.7		100		NR		NR	
W-P SCV[b]	73.6		100		NR		NR	
W-P SCT[b]	80.8		100		NR		NR	
M-R[b]	86.7		98.7		NR		NR	
M-U[b]	87.2		96.7		NR		NR	

CI: confidence interval; D1: thumb; D2: index finger; D4: ring finger; DL: distal latency; EMG: electromyography; M-R: median-radial sensory latency difference; M-U: median-ulnar sensory latency difference; NPV: negative predictive value; NR: not reported; PPV: positive predictive value; SDL: sensory distal latency; US: ultrasound; W-P MCV: wrist-palm motor conduction velocity; W-P SCT: wrist-palm sensory conduction time; W-P SCV: wrist-palm sensory conduction velocity.

[a] Compared with Carpal Tunnel Syndrome-6 test results.

[b] Compared with mean values of normal controls ± 2.5 standard deviations.

Two studies calculated correlations between EMG and NCS with other measures rather than calculating sensitivity and sensitivity.[7,8,] Homan et al (1999) evaluated the association among clinical symptoms, physical exam, and electrodiagnostic studies in 824 individuals with suspected work-related CTS from 6 job facilities.[7,] A total of 449 individuals had at least 1 positive finding on any exam. Of these, only 3% had positive findings on all 3 domains (symptoms, physical exam, NCS). Overall, there was poor agreement across the 3 measures (κ range, 0 to 0.18). Tulipan et al (2017) retrospectively studied 50 patients presenting for CTS treatment.[8,] Patients completed the Disabilities of the Arm, Shoulder, and Hand questionnaire and the 12-Item Short-Form Health Survey. There were no significant correlations between Disabilities of the Arm, Shoulder, and Hand questionnaire and the 12-Item Short-Form Health Survey scores with median motor or sensory latency measures.

Lumbar Radiculopathy

The North American Spine Society published evidence-based guidelines on the diagnosis and treatment of lumbar radiculopathy in 2012.[9,] These guidelines were based on a systematic review of the literature identifying studies of diagnostic techniques. Five studies on the diagnostic accuracy of electrophysiologic tests were discussed; 2 case-control studies and 3 case series. Sensitivities for various EMG and NCS parameters ranged from 17% to 65%. In the 2 studies that

included a normal control group, specificity for EMG abnormalities was 100% and 87%, respectively.

After the North American Spine Society publication, Mondelli et al (2013) evaluated EMG findings in patients with lumbosacral radiculopathy and herniated disc. The diagnosis of radiculopathy due to herniated disc was based on a combination of clinical symptoms and magnetic resonance imaging results.[10,] A total of 108 consecutive patients with monoradiculopathy at L4, L5, or S1 were enrolled from 4 electrodiagnostic laboratories. At least 1 EMG abnormality was recorded in 42% of patients, with the most common being a delay in the F wave minimum latency. EMG abnormalities could be predicted on multivariate regression by the presence of clinical symptoms, including muscle weakness, abnormal reflexes, and the presence of paresthesias.

Peroneal Neuropathy

The Association of Neuromuscular & Electrodiagnostic Medicine (AANEM; 2005) published an evidence review in support of practice parameters on the utility of electrodiagnostic testing for patients with suspected peroneal neuropathy.[11,] Reviewers performed a systematic review of the literature through July 2003 on the utility of EMG/NCS. Eleven studies met inclusion criteria, 4 of which were prospective. Eight studies described the use of motor NCS, 8 described the use of sensory NCS, and 5 described the use of needle EMG. Strength of evidence assessments considered the studies to be class III or IV level of evidence. The strongest study design (n=4 studies) used a cohort of patients with clinically diagnosed peroneal neuropathy and reported the sensitivity of EMG/NCS. Sensitivity rates for EMG/NCS varied widely by the type of measure, and the specific area tested, ranging from 19% to 91%. Specificity was not reported. Reviewers concluded that certain NCS parameters were useful for diagnosing peroneal neuropathy and proposed a specific testing strategy to maximize sensitivity. EMG was not found to be useful for confirming the diagnosis of peroneal neuropathy but was helpful in excluding alternative diagnoses.

Pediatric Myopathy

Evidence was identified comparing the accuracy of EMG and NCS with muscle biopsy in children with a suspected myopathy. The intent of this line of research is to evaluate whether a diagnosis can be made with certainty using clinical exam plus EMG or NCS, thereby avoiding muscle biopsy.

Rabie et al (2007) compared the diagnostic accuracy of EMG with muscle biopsy in children who had neuropathies or myopathies.[12,] The authors retrospectively identified 27 children between the ages of 6 days to 16 years who had EMG studies, a muscle biopsy, and a final diagnosis assigned by the treating physician(s). Final diagnoses were congenital myopathy (5 patients), nonspecific myopathy (6 patients), congenital myasthenic syndrome (3 patients), juvenile myasthenia gravis (1 patient), arthrogryposis multiplex congenital (2 patients), hereditary motor and sensory neuropathy (1 patient), bilateral peroneal neuropathies (1 patient), and normal (8 patients). In general, the sensitivity of EMG for detecting abnormalities implied by the final diagnosis was low. For example, the sensitivity of EMG for detecting myopathic motor unit potentials in any myopathy was 47% (7/15), and the sensitivity for congenital myopathies was 40% (2/5). The sensitivity was especially low for patients younger than 2 years of age compared with older children, but this comparison was limited by small numbers of patients in each group.

Ghosh and Sorenson (2014) performed a retrospective chart review of 227 patients who received EMG studies between 2009 and 2013.[13,] Seventy-two (32%) patients also received muscle

biopsy, and these 72 patients constituted the study group. The criterion standard was myopathy confirmed by muscle biopsy or by genetic testing. The overall sensitivity of EMG was 91%, with the most commonly missed diagnosis being metabolic myopathy. The overall specificity was 67%, which is lower than most other reports of specificity, raises concern whether the sensitivity of muscle biopsy is lower than expected, thus resulting in EMG results that are true-positives being classified as false-positives.

Clinically Useful
A test is clinically useful if the use of the results informs management decisions that improve the net health outcome of care. The net health outcome can be improved if patients receive correct therapy, or more effective therapy, or avoid unnecessary therapy, or avoid unnecessary testing.

Direct Evidence
Direct evidence of clinical utility is provided by studies that have compared health outcomes for patients managed with and without the test. Because these are intervention studies, the preferred evidence would be from randomized controlled trials.

To determine the clinical utility of EMG and NCS, studies need to evaluate the use of EMG and NCS testing to guide treatment decisions and then report health outcomes following the treatments. No studies of this type were identified.

Chain of Evidence
Indirect evidence on clinical utility rests on clinical validity. If the evidence is insufficient to demonstrate test performance, no inferences can be made about clinical utility.

The lack of high-quality evidence on the clinical utility of EMG and NCS is reflected by the lack of evidence-based guidelines. Most existing guidelines rely on expert consensus. This section reviews guidelines from 3 organizations, focusing on the methods of the development process, and the rigor of evidence review. The 3 organizations are AANEM, AAOS (CTS only), and the American Academy of Neurology (AAN). The Practice Guidelines and Position Statements discussion in the Supplemental Information section summarizes the recommendations of the guidelines.

The AANEM (2023) made recommendations on electrodiagnostic medicine based on the consensus of 43 experts in the field of electrodiagnostic medicine.[2,] The AANEM provided no information on the selection process for these individuals but noted that they were neurologists or physiatrists representing diverse practice types and locations.

The AAOS (2016) published practice guidelines on the diagnosis and treatment of CTS.[4,] The authors included both practicing physicians, as clinical experts, and methodologists who were free of potential conflicts of interest. The guideline was developed by creating structured PICO questions, which directed the systematic literature search. Upon completion of the systematic reviews, the physician experts and methodologists evaluated and integrated all material to develop the final recommendations, which were based only on the best available evidence for any given outcome.

The AAN (2004) published a position statement on electrodiagnostic assessment.[14,] According to AAN, "A position statement is a concise explanation of AAN's position on a certain issue that

includes background information and the rationale behind the Academy's position. The position statement, generally not exceeding 1000 words, is in-depth and must reference all supporting evidence." The AAN document on EMG did not provide a literature review or references to accompany recommendations.

Section Summary: Suspected Peripheral Neuropathy or Myopathy
EMG/NCS testing is generally considered to be specific but not sensitive. However, the evidence on the diagnostic accuracy of EMG and NCS is poor, in part because of the lack of a true reference standard. In the scattered evidence identified, sensitivity was often less than 50%, and specificity was most commonly in the range of 80% to 100%. Because of the small quantity and poor quality of the evidence, precise estimates of sensitivity and specificity for specific disorders cannot be made. No studies were identified that evaluated clinical utility. Existing guidelines from prominent major specialty societies in electrodiagnostic medicine consist primarily of expert consensus. For guidelines based on an evidence review, such as the AAOS guidelines, the evidence was not sufficient to make evidence-based recommendations. All 3 societies have included general recommendations on the utility of electrodiagnostic testing as an adjunct to clinical diagnosis for myopathic and neuropathic disorders. Guidelines supporting these recommendations do not offer detailed indications for patient testing by diagnosis.

SUPPLEMENTAL INFORMATION

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the evidence review conclusions.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Association of Neuromuscular & Electrodiagnostic Medicine

The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) has published several position statements and recommended coverage policies for electromyography (EMG) and nerve conduction studies (NCS).

The first iteration of the recommended policy for electrodiagnostic medicine was initially published in 1997. Since then, there have been several updates, most recently in 2023.[2,] This specific position statement provides detailed information on appropriate coding and billing (see Policy Guidelines). They also regularly update their model policy for EMG and NCS (most recently updated in 2022), which outlines AANEM's key positions and recommendations.[15,] Needle EMG and NCS testing is recommended for the following indications:

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. Generalized neuropathies, such as metabolic (ie diabetic, uremic, etc), toxic, hereditary, or immune-mediated.
4. Neuromuscular junction disorders such as myasthenia gravis, myasthenic syndrome, or botulism.

5. Symptom-based presentations such as 'pain in limb', weakness, cramping/twitching, disturbance of skin sensation or 'paresthesia' when appropriate pre-test evaluations are inconclusive and the clinical assessment unequivocally supports the need for the study.
6. Radiculopathy-cervical, thoracic, lumbosacral.
7. Plexopathy - including idiopathic, traumatic, inflammatory or infiltrative, radiation-induced.
8. Myopathy - including inflammatory myopathies like polymyositis and dermatomyositis, myotonic disorders, and congenital myopathies.
9. Precise muscle location for injections such as botulinum toxin, phenol, etc.

This document also listed situations where electrodiagnostic assessment is considered investigational.

In 2005, the AANEM published practice parameters on the utility of EMG/NCS for the diagnosis of peroneal neuropathy.[11,] This evidence-based review focused on whether EMG/NCS are useful in diagnosing peroneal neuropathy and/or in determining prognosis. Table 4 lists recommendations AANEM deemed "possibly useful, to make or confirm" a diagnosis. This guideline was most recently reaffirmed in October 2020.

Table 4. Guidelines on Diagnosis of Peroneal Neuropathy

Recommendation	LOR	COE
Motor NCSs of the peroneal nerve recording from the AT and EDB muscles	C	III
Orthodromic and antidromic superficial peroneal sensory NCS	C	III
At least 1 additional normal motor and sensory NCS in the same limb, to assure that the peroneal neuropathy is isolated, and not part of a more widespread local or systemic neuropathy		
Data are insufficient to determine the role of needle EMG in making the diagnosis of peroneal neuropathy. However, abnormalities on needle examination outside of the distribution of the peroneal nerve should suggest alternative diagnoses	U	IV Expert
In patients with confirmed peroneal neuropathy, EDX studies are possibly useful in providing prognostic information, with regards to recovery of function	C	III/IV

AT: anterior tibialis; COE: class of evidence; EDB: extensor digitorum brevis; EDX: electrodiagnostic; EMG: electromyography; LOR: level of recommendation; NCS: nerve conduction studies.

A 2003 consensus statement on diagnosing multifocal motor neuropathy from AANEM[16,] has stated: "Multifocal motor neuropathy is a diagnosis that is based on recognition of a characteristic pattern of clinical symptoms, clinical signs, and electrodiagnostic findings. The fundamental electrodiagnostic finding is partial conduction block of motor axons."

In 2018, the AANEM published a policy statement on the use of EMG for distal symmetric polyneuropathy.[17,] The statement described 5 situations in which EMG would be beneficial for patients with distal symmetric polyneuropathy: "1) determining primary and alternative diagnoses; 2) determining severity, duration, and prognosis of disease; 3) evaluating risk of associated problems; 4) determining the effect of medications; and 5) evaluating the effect of toxic exposures."

In 2020, the AANEM issued a consensus statement on the utility and practice of electrodiagnostic (EDX) testing in the pediatric population.[18,] The following conclusions were made:

- "…certain categories of inherited diseases such as muscular dystrophy and SMA [spinal muscular atrophy] do not routinely require EMG as part of the diagnostic evaluation. However, in atypical cases EDX testing can provide critical assistance with narrowing of the differential diagnosis."
- "…techniques and practice for this important diagnostic test modality will continue to evolve in the future."
- "EDX testing in children will continue to complement other diagnostic test modalities such as serum tests, muscle biopsy, imaging, and genetic testing."

American Academy of Orthopaedic Surgeons

In 2016, the American Academy of Orthopaedic Surgeons (AAOS)published updated guidelines on the management of carpal tunnel syndrome.[4,] Table 5 lists relevant recommendations to this policy.

Table 5. Guidelines on Management of Carpal Tunnel Syndrome

Recommendation	Strength of Recommendation
"Limited evidence supports that a hand-held nerve conduction study (NCS) device might be used for the diagnostic of carpal tunnel syndrome."	Limited[a]
"Moderate evidence supports that diagnostic questionnaires and/or electrodiagnostic studies could be used to aid the diagnosis of carpal tunnel syndrome."	Moderate[b]

[a]Evidence from 2 or more "Low" strength studies with consistent findings or evidence from a single study for recommending for or against the intervention or diagnostic test or the evidence is insufficient or conflicting and does not allow a recommendation for or against the intervention.
[b]Evidence from 2 or more "moderate" quality studies with consistent findings, or evidence from a single "high" quality study for recommending for or against the intervention.

American Academy of Neurology

In 2004, the American Academy of Neurology (AAN) approved a position statement, endorsed by the AANEM and the American Academy of Physical Medicine & Rehabilitation, on diagnostic electromyography that included the following[14,]:this position statement was updated in 2018 and reaffirmed in 2024.

- "Clinical diagnostic needle electromyography (EMG) is an invasive medical procedure during which the physician inserts an electrode into a patient's muscles to diagnose the cause of muscle weakness or other symptoms. This type of needle EMG allows physicians to distinguish a wide range of nerve and muscle diseases such as carpal tunnel syndrome, ALS (Lou Gehrig's disease), peripheral neuropathy, and muscular dystrophy.
- Diagnostic needle EMG is a direct extension of the neurological examination and while it is a distinct diagnostic procedure, it should be performed in the context of the physician's overall evaluation of the patient. The test is dynamic and depends upon the real-time interpretation of the physician's visual, tactile, and auditory observations.. There is no way for physicians trained in EMG to independently verify the accuracy of reports performed by others.
- Procedures performed by improperly trained individuals may lead to misdiagnosis, causing delayed or inappropriate treatment (including surgery) and a diminished quality of life."

North American Spine Society
In 2012, the North American Spine Society (NASS) published guidelines on the diagnosis and treatment of lumbar disc herniation.[9,] This document made the following statement about the use of EMG/NCS for diagnosis of lumbar disc herniation: "Electromyography, nerve conduction studies and F-waves are suggested to have limited utility in the diagnosis of lumbar disc herniation with radiculopathy. H-reflexes can be helpful in the diagnosis of an S1 radiculopathy, though are not specific to the diagnosis of lumbar disc herniation. (Grade of Recommendation: B)"

While no updates to this guideline are currently scheduled to be published, all future publications of the NASS guidelines will not be freely available.

U.S. Preventive Services Task Force Recommendations
Not applicable.

Ongoing and Unpublished Clinical Trials
A search of ClinicalTrials.gov in April 2025 did not identify any ongoing or unpublished trials that would likely influence this review.

CODING

The following codes for treatment and procedures applicable to this policy are included below for informational purposes. This may not be a comprehensive list of procedure codes applicable to this policy.

Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

The code(s) listed below are medically necessary ONLY if the procedure is performed according to the "Policy" section of this document.

CPT/HCPCS	
95860	Needle electromyography; 1 extremity with or without related paraspinal areas
95861	Needle electromyography; 2 extremities with or without related paraspinal areas
95863	Needle electromyography; 3 extremities with or without related paraspinal areas
95864	Needle electromyography; 4 extremities with or without related paraspinal areas
95865	Needle electromyography; larynx
95866	Needle electromyography; hemidiaphragm
95867	Needle electromyography; cranial nerve supplied muscle(s), unilateral
95868	Needle electromyography; cranial nerve supplied muscle(s), bilateral
95869	Needle electromyography; thoracic paraspinal muscles (excluding T-1 or T-12)
95870	Needle electromyography; limited study of muscles in 1 ~~one~~ extremity or non-limb (axial) muscles (unilateral or bilateral), other than thoracic paraspinal, cranial nerve supplied muscles, or sphincters
95872	Needle electromyography using single fiber electrode, with quantitative measurement of jitter, blocking and/or fiber density, any/all sites of each muscle studied
95885	Needle electromyography, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; limited (List separately in addition to code for primary procedure) (out of sequence)
95886	Needle electromyography, each extremity, with related paraspinal areas, when performed, done with nerve conduction, amplitude and latency/velocity study; complete, five or more muscles studies, innervated by three or more nerves or four or more spinal levels (List separately in addition to code for primary procedure) (out of sequence)
95887	Needle electromyography, non-extremity (cranial nerve supplied or axial) muscle(s) done with nerve conduction, amplitude and latency/velocity study (list separately in addition to code for primary procedure)
95907	Nerve conduction studies; 1-2 studies
95908	Nerve conduction studies; 3-4 studies
95909	Nerve conduction studies; 5-6 studies
95910	Nerve conduction studies; 7-8 studies
95911	Nerve conduction studies; 9-10 studies
95912	Nerve conduction studies; 11-12 studies
95913	Nerve conduction studies; 13 or more studies

CPT/HCPCS	
95925	Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in upper limbs
95926	Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in lower limbs
95927	Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in the trunk or head
95933	Orbicularis oculi (blink) reflex, by electrodiagnostic testing
95937	Neuromuscular junction testing (repetitive stimulation, paired stimuli), each nerve, any 1 method
95938	Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in upper and lower limbs
95939	Central motor evoked potential study (transcranial motor stimulation); in upper and lower limbs
S3900	Surface electromyography (EMG)

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11-12-2008	In Header section: ▪ Replaced previous title of "Electrodiagnostic (EDX) Medicine and Related Services" with current title.
	In Description section: ▪ Expanded to include definition of electrodiagnostic medicine and provided descriptions for identified services.
	In Policy section regarding #1 through #12: ▪ Removed the following: 1. EDX testing should be medically indicated. EDX examinations include history taking, appropriate physical examination, and the design, performance, and interpretation of EDX studies. 3. The number of tests performed should be the minimum needed to establish an accurate diagnosis. 4. A specialty-trained provider should perform NCS. 5. A provider specialty trained in electrodiagnostic medicine must perform the needle EMG examination as these tests are simultaneously performed and interpreted. 8. Examination using portable hand-held devices, which are incapable of waveform analysis, will not be paid. Equipment shall have FDA clearance for performance of nerve conductions studies. The device must be capable of electrically stimulating a nerve and recording the resultant response at a second location on that nerve (sensory study) and /or in a muscle innervated by the stimulated nerve (motor study). Psychophysical measurements (current, vibration, and thermal perceptions) even though they may involve delivery of a stimulus, are not recognized for payment. 10. Determining the proper number of units for nerve conductions has always been a challenge. The AANEM worked with the American Medical Association (AMA) and the American Academy of Neurology (AAN) to create a list of nerves to assist physicians and billing departments to clarify the specific nerves that can be billed for nerve

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	conduction studies. Each study on the list qualifies as one unit for nerve conduction studies (95900, 95903 and 95904). 11. For list of Maximum Number of Studies refer to AANEM web site, http://www.aanem.org/practiceissues/recPolicy/recommended_policy_6.cfm 12. For List of Nerves with Added Specificity refer to AANEM web site, http://www.aanem.org/practiceissues/recPolicy/listofNerves.cfm ▪ Replaced, "6. EDX unit limits are discussed in the 'Coding' section of this document. When exceeding the normal unit limit, the provider should use modifier 22 and submit supplementary documentation to justify the additional testing (American Association of Neuromuscular and Electrodiagnostic Medicine [AANEM] estimates this may occur in 10% of cases). Additional testing may be indicated in patients with a differential diagnosis, which includes peripheral neuropathy, cervical radiculopathy, brachial plexopathy, or more proximal median neuropathy." with current #1. ▪ Added AANEM Recommended Maximum Number of Studies chart. ▪ Added Maximum Number of Studies for Additional Codes chart. ▪ Previous #7 became current #2. ▪ Added new #3.
	▪ Previous #2 and #9 became current #1 and #3 in Policy Guideline subsection. ▪ The following wording from previous #6 "When exceeding the normal unit limit, the provider should use modifier 22 and submit supplementary documentation to justify the additional testing AANEM estimates this may occur in 10% of cases)" became current #2 in Policy Guideline subsection. ▪ Removed Documentation subsection which stated: 1. Documentation should explain what differential diagnostic problems needed to be ruled out in that particular situation. In some patients, multiple diagnoses will be established by EDX testing. It should be noted that in some situations it is necessary to test an asymptomatic contralateral limb to establish normative values for an individual patient. Normal values based on the general population alone are less sensitive than this approach; therefore restrictions on contralateral asymptomatic limb testing will reduce the sensitivity of electrodiagnostic tests. 2. Contralateral (bilateral) extremity counterparts may be billed separately as noted in the Blink Reflexes section. Contralateral means opposite sides of the body, not opposite sides of an extremity. When billing, indicate right (RT) and left (LT). 3. Any services exceeding the unit limit listed by the code must be submitted with medical record documentation to support medical necessity of increased units. Professional providers should report modifier 22. ▪ Removed from Utilization subsection: 1. Units exceeding the unit maximum must have medical records submitted with the claims or the additional units will be denied. Professional providers should report modifier 22. 2c. Polymyositis and myasthenia gravis and other such diseases usually have a course that is not stable and do not respond to treatment consistently; in these cases monitoring of the patient's condition may be needed to monitor disease progress and therapeutic intervention responses. 2d. It may be necessary to retest when a course of a disease changes unexpectedly. ▪ In Utilization subsection 2b. replaced "early treatment to begin with preliminary testing with additional testing for prognosis and status of patient." with "monitoring patient progress." ▪ In Utilization subsection 3 replaced "Repeat EDX is sometimes necessary and when supported by medical documentation will be allowed. The claim must be submitted with medical record documentation to support medical necessity of repeat testing. Professional

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	providers should report modifier 22. Common frequency testing for these diagnosis for a 12 month period, per provider are: a. Two (2) tests - Carpal tunnel-unilateral, carpal tunnel-bilateral, radiculopathy, mononeuropathy, poly–neuropathy, myopathy, and neuromuscular junction (NMJ) disorders. b. Three (3) tests - Motor neuronopathy and plexopathy." with "The claim must be submitted with medical record documentation to support medical necessity of repeat testing. Professional providers should report modifier 22."
	In Coding section: ▪ Replaced Code/Unit charts reflecting descriptions, units, guidelines, and comments with traditional CPT/HCPCS nomenclature. ▪ Units for codes 95860-95864, 95867-95870, 95900, 95903, 95904, 95934, 95936, and 95937 were updated to be in accordance with AANEM guidelines and reflected in the AANEM Recommended Maximum Number of Studies chart. ▪ Units for codes 95865, 95866, 95872, 95921, 95922, 95923, 95925, 95926, 95927, and 95933 were unchanged and reflected in the Maximum Number of Studies for Additional Codes chart. ▪ Replaced individual diagnosis codes with code ranges where applicable. No CPT/HCPCS or Diagnosis codes were removed or added.\
03-13-2012	In Coding section: ▪ Added CPT codes: 95885, 95886, 95887, 95938, 95939 (effective 01-01-2012)
04-12-2013	In Description section: Removed "Autonomic nervous system function testing - The purpose of autonomic nervous system function testing is to determine the presence of autonomic dysfunction, the site of autonomic dysfunction, and the various autonomic systems that may be disordered." as this information was erroneously in the policy.
	In Policy section: ▪ Revised wording of Item 1 from, "Electromyography and Nerve Conduction Studies are medically necessary as referenced in the AANEM (American Association of Neuromuscular and Electrodiagnostic Medicine) Maximum Number of Studies and Maximum Number of Studies for Additional Codes charts." to, "1. Electromyography and Nerve Conduction Studies are medically necessary as referenced in the following charts: Chart A - Type of Study / Maximum Number of Studies Chart B - Nerve Conduction Studies, and Chart C - Maximum Number of Studies for Additional Codes" ▪ Renamed the chart titled, "AANEM Recommended Maximum Number of Studies" to "Type of Study / Maximum Number of Studies". Updated chart and labeled Chart A. ▪ Added Chart B, Nerve Conduction Studies. ▪ Updated Maximum Number of Studies for Additional Codes chart and labeled Chart C. ▪ In Policy Guidelines removed, "2. When exceeding the allowed unit limit, the professional provider should use modifier 22 and submit supplementary documentation to justify the additional testing (AANEM estimates this may occur in 10% of cases)." as this information was located in the Utilization subsection. ▪ In the Policy Guidelines removed, "3. In 2006, the American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) issued a position statement that illustrates how standardized nerve conduction studies performed independent of needle EMG studies may miss data essential for an accurate diagnosis and how nerve disorders are far more likely to be misdiagnosed or missed completely if a practitioner without the proper skill and training is interpreting the data, making a diagnosis, and establishing a treatment plan. (21) The organization states

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	that, "the standard of care in clinical practice dictates that using a predetermined or standardized battery of NCSs for all patients is inappropriate," and concludes that, "It is the position of the AANEM that, except in unique situations, NCSs and needle EMG should be performed together in a study design determined by a trained neuromuscular physician." ▪ In the Policy Guidelines added, "2. Like the Wisconsin Physicians Service (WPS), Blue Cross and Blue Shield of Kansas expects healthcare professionals who perform electrodiagnostic (ED) testing will be appropriately trained and/or credentialed, either by a formal residency/fellowship program, certification by a nationally recognized organization, or by an accredited post-graduate training course covering anatomy, neurophysiology and forms of electrodiagnostics (including both NCS and EMG), in order to provide the proper testing and assessment of the patient's condition, and appropriate safety measures. It would be highly unlikely that this training and/or credentialing is possessed by providers other than Neurologists, or Physical Medicine & Rehabilitation physicians. 3. The electrodiagnostic evaluation is an extension of the neurologic portion of the physical examination. Both require a detailed knowledge of a patient and his/her disease. Training in the performance of electrodiagnostic procedures in isolation of knowledge about clinical diagnostic and management aspects of neuromuscular diseases, may not be adequate for proper performance of an electrodiagnostic evaluation and correct interpretation of electrodiagnostic test results. Without awareness of the patterns of abnormality expected in different diseases and knowledge that the results of nerve conduction studies (NCS) and electromyography (EMG) may be similar in different diseases, diagnosis solely by EMG-NCS findings may be both inadequate and ultimately be detrimental to the patient. 4. Guidelines about proper qualifications for qualified health care professionals performing electrodiagnostic evaluations have been developed and published by AANEM (American Association of Neuromuscular and Electrodiagnostic Medicine) and other medical organizations, including the AMA, the American Academy of Neurology, the American Academy of Physical Medicine and Rehabilitation, American Neurological Association, the American Board of Physical Therapy Specialties (ABPTS) in Clinical Electrophysiology, and the Department of Veterans Affairs.(6)"
	Added Rationale section
	In Coding section: ▪ Added CPT codes: 95907, 95908, 95909, 95910, 95911, 95912, 95913, (effective 01-01-2013) ▪ Removed CPT codes: 95900, 95903, 95904, 95934, 95936 (effective 12-31-2012); 95921, 95922, 95923 ▪ Removed Diagnosis codes: 337.1, 337.3
	Revision section: ▪ Removed the 02-17-2006, 03-07-2006, and 12-01-2006 details.
	References updated
02-28-2014	In Coding Section: ▪ ICD-10 Diagnoses Codes added
07-29-2014	Description section reviewed.
	Policy section reviewed.
	Rationale section reviewed.
	In Coding section: ▪ Revised nomenclature for CPT codes: 95885, 95886, 95887.
	References updated.
10-01-2017	In Coding section:

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	▪ Added ICD-10 Codes: M48.061, M48.062 ▪ Removed ICD-10 Code: M48.06 ▪ Revised Nomenclature on ICD-10 Codes: M33.01, M33.02, M33.09, M33.11, M33.12, M33.19
10-27-2017	Corrected 10-01-2017 Revision section: ▪ Corrected codes in the Added ICD-10 Codes from "M48.61, M48.62" to "M48.061, M48.062". ▪ Added codes in the Revised Nomenclature on ICD-10 Codes, which were missing. The codes are: "M33.01, M33.02, M33.09, M33.11, M33.12, M33.19"
10-01-2018	In the Coding section: ▪ Added ICD-10 Codes: G51.31, G51.32, G51.33, G71.01, G71.02, G71.09 ▪ Remove ICD-10 Codes: G51.3, G71.0
03-01-2021	Description section updated
	In Policy section: ▪ In Item 1 Chart A add "Nerve Conduction Studies (Total Nerves Studied 95907-95913)" for each indication. ▪ In Item 1 Chart B to clarify the policy added "*CPT Appendix J lists the nerves that can be tested and coded under nerve conduction study codes. The branches of each nerve are also listed, but the unit of service is limited to the nerve and not the branches." ▪ In Item 1 Chart B removed the reference to the 2020 CPT AMA publication Appendix J and included this in the References. ▪ In Policy Guidelines revised "Utilization" to "Repeat Testing" information and added information about correct coding for counting nerve studies.
	Rationale section updated
	In Coding section: ▪ Removed CPT code: 51785 ▪ Revised CPT codes: 95860, 95861, 95863, 95864, 95870 ▪ Added ICD-10 codes: G71.20, G71.21, G71.220, G71.228, G71.29 ▪ Removed ICD-10 code: G71.2
	References updated
10-01-2021	In Coding Section: (Effective 10-01-2021) • Changed nomenclature ICD-10 for code M35.03 • Added ICD-10 code M35.05; M35.06; M35.07; M35.08; M54.50; M54.51; M54.59 Deleted ICD-10 code M54.5
10-08-2021	Title change • Electromyography and Nerve Conduction Studies
	Description section updated
	Rationale section update
	Reference section updated
07-26-2022	Updated Description Section
	Updated Rationale Section
	Updated Coding Section ▪ Converted ICD-10 Codes to ranges
	Updated References Section
07-25-2023	Updated Description Section
	Updated Rationale Section
	Updated Coding Section ▪ Removed ICD-10 Codes
	Updated References Section
07-23-2024	Updated Description Section
	Updated Rationale Section

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	Updated References Section
08-12-2025	Updated Description Section
	Updated Rationale Section
	Updated References Section

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