



MASSACHUSETTS

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Medical Policy

Automated Point of Care Nerve Conduction Tests

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Policy Number: 222

BCBSA Reference Number: 2.01.77

Related Policies

- Quantitative Sensory Testing, #[258](#)

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

Automated nerve conduction tests are [INVESTIGATIONAL](#).

Prior Authorization Information

Commercial Members: Managed Care (HMO and POS)

This is **NOT** a covered service.

Commercial Members: PPO, and Indemnity

This is **NOT** a covered service.

Medicare Members: HMO BlueSM

This is **NOT** a covered service.

Medicare Members: PPO BlueSM

This is **NOT** a covered service.

CPT Codes / HCPCS Codes / ICD-9 Codes

The following codes are included below for informational purposes. Inclusion or exclusion of a code 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 as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes

CPT codes:	Code Description
95905	Motor and/or sensory nerve conduction, using preconfigured electrode array(s), amplitude and latency/velocity study, each limb, includes F-wave study when performed, with interpretation and report

ICD-9 Diagnosis Codes

Investigational for all diagnoses.

Description

Portable devices have been developed to provide point-of-care nerve conduction studies. These devices have computational algorithms that are able to drive stimulus delivery, measure and analyze the response, and provide a report of study results. Automated nerve conduction could be used in various settings, including primary care, without the need for specialized training or equipment.

Nerve conduction studies and needle electromyography are considered the gold standard of electrodiagnostic testing. However, the need for specialized equipment and personnel may limit the availability of electrodiagnostic testing for some patients. One proposed use of automated nerve conduction devices is to assist in the diagnosis of carpal tunnel syndrome (CTS). CTS is a pressure-induced entrapment neuropathy of the median nerve as it passes through the carpal tunnel, resulting in sensorimotor disturbances. Electrodiagnostic studies may also be used to confirm the presence or absence of a median neuropathy at the wrist, assess the severity of the neuropathy, and assess alternate associated diagnoses. Nerve conduction is typically assessed prior to surgical release of the carpal tunnel, but the use of electromyography in the diagnosis of CTS is controversial.

Point-of-care nerve conduction testing has also been proposed for the diagnosis of peripheral neuropathy and, in particular, for detecting neuropathy in patients with diabetes.

Examples of portable nerve conduction test devices include NC-stat® from NeuroMetrix, the Neurometer from Neurotron and the ADVANCE™ system from NeuroMetrix. All point of care nerve conduction tests are considered investigational regardless of the commercial name, the manufacturer or FDA approval status.

Summary

Studies have shown the correlation of portable automated nerve conduction test results with standard testing; however, questions remain about the diagnostic performance and clinical utility (i.e., impact on outcomes) of point-of-care automated testing. Particularly needed are data on the sensitivity and specificity of automated nerve conduction tests performed by non-specialists at the point-of-care in

comparison with the “gold standard” of laboratory NCS/EMG. One recent study at a tertiary care clinic found high sensitivity but low specificity for the diagnosis of lumbosacral radiculopathy. Another potential clinical use could be early identification of asymptomatic diabetic neuropathy to institute-appropriate clinical management before the onset of ulcerations, but no studies were identified that assessed the influence of point-of-care nerve conduction tests on clinical outcomes in this population. There is no peer-reviewed published medical literature on the use of voltage-actuated sensory nerve conduction tests and their impact on clinical outcomes. Overall, evidence remains insufficient to evaluate the effect of automated point-of-care nerve conduction tests on health outcomes. Therefore, automated point-of-care nerve conduction tests are considered investigational.

Policy History

Date	Action
4/2013	New references from BCBSA National medical policy.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
1/2011	Medical Policy Group – Neurology and Neurosurgery. No changes to policy statements.
10/18/2010	No changes to policy statements.
8/1/2010	Medical Policy 222 effective 8/1/2010 describing ongoing non-coverage.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

References

1. MacDermid JC, Doherty T. Clinical and electrodiagnostic testing of carpal tunnel syndrome: a narrative review. *J Orthop Sports Phys Ther* 2004; 34(10):565-88.
2. Boulton AJ, Vinik AI, Arezzo JC et al. Diabetic neuropathies: a statement by the American Diabetes Association. *Diabetes Care* 2005; 28(4):956-62.
3. Kong X, Gozani SN, Hayes MT et al. NC-stat sensory nerve conduction studies in the median and ulnar nerves of symptomatic patients. *Clin Neurophysiol* 2006; 117(2):405-13.
4. Vinik AI, Emley MS, Megerian JT et al. Median and ulnar nerve conduction measurements in patients with symptoms of diabetic peripheral neuropathy using the NC-stat system. *Diabetes Technol Ther* 2004; 6(6):816-24.
5. Jabre JF, Salzsieder BT, Gnemi KE. Criterion validity of the NC-stat automated nerve conduction measurement instrument. *Physiol Meas* 2007; 28(1):95-104.
6. Rotman MB, Enkvetchakul BV, Megerian JT et al. Time course and predictors of median nerve conduction after carpal tunnel release. *J Hand Surg Am* 2004; 29(3):367-72.
7. Elkowitz SJ, Dubin NH, Richards BE et al. Clinical utility of portable versus traditional electrodiagnostic testing for diagnosing, evaluating, and treating carpal tunnel syndrome. *Am J Orthop (Belle Mead NJ)* 2005; 34(8):362-4.

8. Kong X, Lesser EA, Megerian JT et al. Repeatability of nerve conduction measurements using automation. *J Clin Monit Comput* 2006; 20(6):405-10.
9. Kong X, Schoenfeld DA, Lesser EA et al. Implementation and evaluation of a statistical framework for nerve conduction study reference range calculation. *Comput Methods Programs Biomed* 2010; 97(1):1-10.
10. Leffler CT, Gozani SN, Cros D. Median neuropathy at the wrist: diagnostic utility of clinical findings and an automated electrodiagnostic device. *J Occup Environ Med* 2000; 42(4):398-409.
11. Katz RT. NC-stat as a screening tool for carpal tunnel syndrome in industrial workers. *J Occup Environ Med* 2006; 48(4):414-8.
12. Perkins BA, Grewal J, Ng E et al. Validation of a novel point-of-care nerve conduction device for the detection of diabetic sensorimotor polyneuropathy. *Diabetes Care* 2006; 29(9):2023-7.
13. Fisher MA, Bajwa R, Somashekar KN. Routine electrodiagnosis and a multiparameter technique in lumbosacral radiculopathies. *Acta Neurol Scand* 2008; 118(2):99-105.
14. Schmidt K, Chinea NM, Sorenson EJ et al. Accuracy of diagnoses delivered by an automated hand-held nerve conduction device in comparison to standard electrophysiological testing in patients with unilateral leg symptoms. *Muscle Nerve* 2011; 43(1):9-13.
15. England JD, Franklin GM. Automated hand-held nerve conduction devices: raw data, raw interpretations. *Muscle Nerve* 2011; 43(1):6-8.
16. Armstrong TN, Dale AM, Al-Lozi MT et al. Median and ulnar nerve conduction studies at the wrist: criterion validity of the NC-stat automated device. *J Occup Environ Med* 2008; 50(7):758-64.
17. Kong X, Lesser EA, Gozani SN. Repeatability of nerve conduction measurements derived entirely by computer methods. *Biomed Eng Online* 2009; 8:33.
18. Bourke HE, Read J, Kampa R et al. Clinic-based nerve conduction studies reduce time to surgery and are cost effective: a comparison with formal electrophysiological testing. *Ann R Coll Surg Engl* 2011; 93(3):236-40.
19. Megerian JT, Kong X, Gozani SN. Utility of nerve conduction studies for carpal tunnel syndrome by family medicine, primary care, and internal medicine physicians. *J Am Board Fam Med* 2007; 20(1):60-4.
20. Hardy T, Sachson R, Shen S et al. Does treatment with duloxetine for neuropathic pain impact glycemic control? *Diabetes Care* 2007; 30(1):21-6.
21. American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM). Proper performance and interpretation of electrodiagnostic studies. *Muscle Nerve* 2006; 33(3):436-9.
22. Jablecki CK, Andary MT, Floeter MK et al. Practice parameter: Electrodiagnostic studies in carpal tunnel syndrome. Report of the American Association of Electrodiagnostic Medicine, American Academy of Neurology, and the American Academy of Physical Medicine and Rehabilitation. *Neurology* 2002; 58(11):1589-92.