

01-95805-18

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## Subject: Quantitative Sensory Testing

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

<a href="#">Position Statement</a>	<a href="#">Billing/Coding</a>	<a href="#">Reimbursement</a>	<a href="#">Program Exceptions</a>	<a href="#">Definitions</a>	<a href="#">Related Guidelines</a>
<a href="#">Other</a>	<a href="#">References</a>	<a href="#">Updates</a>			

### DESCRIPTION:

Quantitative sensory testing (QST) systems are used for the noninvasive assessment and quantification of sensory nerve function in patients with symptoms of or the potential for neurologic damage or disease. Types of sensory testing include current perception threshold testing, pressure-specified sensory testing (PSST), vibration perception threshold testing, and thermal sensory testing. Information on sensory deficits identified using QST has been used in research settings to better understand neuropathic pain.

QST systems measure and quantify the amount of physical stimuli, required for sensory perception to occur. As sensory deficits increase, the perception threshold of QST will increase, which may be informative in documenting the progression of neurologic damage or disease. QST has not been established for use as a sole tool for diagnosis and management but has been used with standard evaluative and management procedures (eg, physical and neurologic examination, monofilament testing, pinprick, grip and pinch strength, Tinel sign, and Phalen and Roos test) to enhance the diagnosis and treatment-planning process, and to confirm physical findings with quantifiable data. Stimuli used in QST includes touch, pressure, pain, thermal (warm and cold), or vibratory stimuli.

Several QST devices have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process.

### POSITION STATEMENT:

Quantitative sensory testing, including but not limited to current perception threshold testing, pressure-specified sensory device testing, vibration perception threshold testing, and thermal threshold testing, is

considered **experimental or investigational**. The evidence is insufficient to determine the effects of the technology on health outcomes.

### **BILLING/CODING INFORMATION:**

#### **CPT Coding:**

0106T	Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation ( <b>Investigational</b> )
0107T	Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation ( <b>Investigational</b> )
0108T	Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia ( <b>Investigational</b> )
0109T	Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia ( <b>Investigational</b> )
0110T	Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation ( <b>Investigational</b> )

#### **HCPCS Coding:**

G0255	Current perception threshold/sensory nerve conduction test, per limb, any nerve ( <b>Investigational</b> )
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### **REIMBURSEMENT INFORMATION:**

Refer to section entitled [POSITION STATEMENT](#).

### **PROGRAM EXCEPTIONS:**

**Federal Employee Program (FEP):** Follow FEP guidelines.

**State Account Organization (SAO):** Follow SAO guidelines.

#### **Medicare Advantage products:**

The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Sensory Nerve Conduction Threshold Tests (sNCTs) (160.23) located at cms.gov.

The following Local Coverage Determinations (LCDs) were reviewed on the last guideline reviewed date and are located at fcso.com:

- Nerve Conduction Studies and Electromyography (L34859)
- Noncovered Services (L33777).

## DEFINITIONS:

**Current perception threshold testing:** involves the quantification of the sensory threshold to transcutaneous electrical stimulation. Typically 3 different frequencies are tested: 5 Hz, designed to assess C fibers; 250 Hz, designed to assess A delta fibers; and 2000 Hz, designed to assess A beta fibers. Results are compared with those of a reference population.

**Pressure-specified sensory testing:** used to assess large myelinated sensory nerve function by quantifying the thresholds of pressure detected with light, static, and moving touch.

**Thermal sensory testing:** used to evaluate pathology of small myelinated and unmyelinated nerve fibers; they can be used to assess heat and cold sensation, as well as thermal pain thresholds.

## RELATED GUIDELINES:

None applicable.

## OTHER:

None applicable.

## REFERENCES:

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2. American Academy of Neurology. Quantitative Sensory Testing (reaffirmed 2016). 2003; accessed 06/26/18 at aan.com.
3. American Association of Electrodiagnostic Medicine, American Academy of Neurology, and American Academy of Physical Medicine and Rehabilitation. Recommended policy for Electrodiagnostic Medicine, updated 2004.
4. Anand P, Privitera R, Yiangou Y et al. Trench foot or non-freezing cold injury as a painful vasoneuropathy: clinical and skin biopsy assessments. Front Neurol. Sep 2017;8:514.
5. Blue Cross Blue Shield Association Medical Policy Reference Manual. 2.01.39 Quantitative Sensory Testing, 06/18.
6. Centers for Medicare & Medicaid Services (CMS), NCD for Sensory Nerve Conduction Threshold Tests (sNCTs) (160.23), accessed cms.gov.
7. ClinicalTrials.gov: Evaluating the Effect of Acupuncture on Pain Relief Using QST; sponsored by Massachusetts General Hospital.
8. ClinicalTrials.gov: QST Study: Predicting Treatment Response in Chronic Pancreatitis Using Quantitative Sensory Testing; sponsored by Dhiraj Yadav.
9. ClinicalTrials.gov: Quantitative Sensory Testing and Pupillometry in Sickle Cell Disease Patient; sponsored by Children's Research Institute
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11. England JD, Gronseth GS, Franklin G, et al. Distal symmetrical polyneuropathy: definition for clinical research. Muscle Nerve. Jan 2005;31(1):113-123.

12. First Coast Service Options, Inc. (FCSO) LCD for Nerve Conduction Studies and Electromyography (L34859), accessed at fcso.com.
13. First Coast Service Options, Inc.(FCSO) LCD for Noncovered Services (L33777), accessed at fcso.com.
14. Goel A, Shivaprasad C, Kolly A, et al; Comparison of electrochemical skin conductance and vibration perception threshold measurement in the detection of early diabetic neuropathy. PLoS One. 2017 Sep 7;12(9):e0183973.
15. Shy ME, Frohman EM, So YT, et al. Quantitative sensory testing: report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. Neurology. Mar 25 2003;60(6):898-904.

### **COMMITTEE APPROVAL:**

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy & Coverage Committee on 07/26/18.

### **GUIDELINE UPDATE INFORMATION:**

11/15/01	Medical Coverage Guideline 01-95805-02 Nerve Conduction Studies; F-wave Studies; H-reflex Studies reformatted and revised.
12/15/02	Added coverage information for current perception threshold testing (G0255).
10/15/03	Annual Review; developed separate MCG for Current Perception Threshold Testing.
10/15/04	Scheduled review and revision; consisting of updated references.
10/15/05	Scheduled review and revision; consisting of updated references.
09/15/06	Scheduled review and revision; consisting of updated references and maintaining investigational statement. MCG name changed from Current Perception Threshold Testing to Quantitative Sensory Testing.
07/15/07	Annual review; investigational status maintained, reformatted guideline, references updated.
07/15/08	Review and revision; consisting of updated references.
06/15/09	Annual review: position statement maintained, and updated references.
05/11/14	Revision: Program Exceptions section updated.
11/01/15	Revision: ICD-9 Codes deleted.
08/15/17	Review; investigational status maintained; description section and references updated.
08/15/18	Review; position statement maintained; description, program exception, and references updated.