Medical Policy
Quantitative Sensory Testing

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Policy Number: 258
BCBSA Reference Number: 2.01.39
NCD/LCD: National Coverage Determination for Sensory Nerve Conduction Threshold Tests (sNCTs) (160.23)

Related Policies
Nerve Fiber Density Measurement, #393

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

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 INVESTIGATIONAL.

Medicare HMO BlueSM and Medicare PPO BlueSM Members

BCBSMA does not cover sensory nerve conduction threshold tests to diagnose sensory neuropathies or radiculopathies for Medicare HMO Blue and Medicare PPO Blue members in accordance with CMS NCD.

Prior Authorization Information

Inpatient
- For services described in this policy, precertification/preauthorization IS REQUIRED for all products if the procedure is performed inpatient.

Outpatient
- For services described in this policy, see below for products where prior authorization might be required if the procedure is performed outpatient.

<table>
<thead>
<tr>
<th></th>
<th>Outpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Managed Care (HMO and POS)</td>
<td>This is not a covered service.</td>
</tr>
<tr>
<td>Commercial PPO and Indemnity</td>
<td>This is not a covered service.</td>
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</tbody>
</table>
Medicare HMO Blue<sup>SM</sup>  
This is **not** a covered service.

Medicare PPO Blue<sup>SM</sup>  
This is **not** a covered service.

### CPT Codes / HCPCS Codes / ICD Codes

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.

*The following codes are included below for informational purposes only; this is not an all-inclusive list.*

The following CPT and HCPCS codes are considered investigational for **Commercial Members**: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

### CPT Codes

<table>
<thead>
<tr>
<th>CPT codes:</th>
<th>Code Description</th>
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<tbody>
<tr>
<td>0106T</td>
<td>Quantitative sensory testing (QST), testing and interpretation per extremity; using touch pressure stimuli to assess large diameter sensation</td>
</tr>
<tr>
<td>0107T</td>
<td>Quantitative sensory testing (QST), testing and interpretation per extremity; using vibration stimuli to assess large diameter fiber sensation</td>
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<tr>
<td>0108T</td>
<td>Quantitative sensory testing (QST), testing and interpretation per extremity; using cooling stimuli to assess small nerve fiber sensation and hyperalgesia</td>
</tr>
<tr>
<td>0109T</td>
<td>Quantitative sensory testing (QST), testing and interpretation per extremity; using heat-pain stimuli to assess small nerve fiber sensation and hyperalgesia</td>
</tr>
<tr>
<td>0110T</td>
<td>Quantitative sensory testing (QST), testing and interpretation per extremity; using other stimuli to assess sensation</td>
</tr>
</tbody>
</table>

### HCPCS Codes

<table>
<thead>
<tr>
<th>HCPCS codes:</th>
<th>Code Description</th>
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<tr>
<td>G0255</td>
<td>Current perception threshold/sensory nerve conduction test (SNCT), per limb, any nerve</td>
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</tbody>
</table>

### Description

**NERVE DAMAGE AND DISEASE**

Nerve damage and nerve diseases can reduce functional capacity and lead to neuropathic pain.

### Treatment

There is a need for tests that can objectively measure sensory thresholds. Moreover, quantitative sensory testing (QST) could aid in the early diagnosis of disease, before patients would be diagnosed clinically. Also, although the criterion standard for evaluation of myelinated, large fibers is electromyography nerve conduction study, there are no criterion standard reference tests to diagnose small fiber dysfunction.

**Quantitative Sensory Testing**

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.

The criterion standard for evaluation of myelinated, large fibers is the electromyography nerve
conduction study. However, the function of smaller myelinated and unmyelinated sensory nerves, which
may show pathologic changes before the involvement of the motor nerves, cannot be detected by nerve
conduction studies. Small fiber neuropathy has traditionally been a diagnosis of exclusion in patients
who have symptoms of distal neuropathy and a negative nerve conduction study.

Depending on the type of stimuli used, QST can assess both small and large fiber dysfunction. Touch
and vibration measure the function of large myelinated A alpha and A beta sensory fibers. Thermal
stimulation devices are 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. Pressure-
specified sensory devices assess large myelinated sensory nerve function by quantifying the thresholds
of pressure detected with light, static, and moving touch. Finally, current perception threshold testing
involves the quantification of the sensory threshold to transcutaneous electrical stimulation. In current
perception threshold testing, typically 3 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.

Because QST combines the objective physical, sensory stimuli with the subject patient response, it is
psychophysical and requires patients who are alert, able to follow directions, and cooperative. Also, to
get reliable results, examinations need to include standardized instructions to the patients, and stimuli
must be applied consistently by trained staff. Psychophysical tests have greater inherent variability,
making their results more difficult to reproduce.

QST has primarily been applied in patients with conditions associated with nerve damage and
neuropathic pain. There have also been preliminary investigations to identify sensory deficits associated
with conditions such as autism spectrum disorder, Tourette syndrome, restless legs syndrome,
musculoskeletal pain, and response to opioid treatment.

Summary
For individuals who have conditions linked to nerve damage or disease (eg, diabetic neuropathy, carpal
tunnel syndrome) who receive current perception threshold testing, the evidence includes several
studies on technical performance and diagnostic accuracy. Relevant outcomes are test accuracy and
validity, symptoms, and functional outcomes. The existing evidence does not support the accuracy of
current perception threshold testing for diagnosing any condition linked to nerve damage or disease.
Studies comparing current perception threshold testing with other testing methods have not reported on
sensitivity or specificity. Also, there is a lack of direct evidence on the clinical utility of current perception
testing and, because there is insufficient evidence on test performance, an indirect chain of evidence on
clinical utility cannot be constructed. The evidence is insufficient to determine the effects of the
technology on health outcomes.

For individuals who have conditions linked to nerve damage or disease (eg, diabetic neuropathy, carpal
tunnel syndrome) who receive PSST, the evidence includes several studies on diagnostic accuracy.
Relevant outcomes are test accuracy and validity, symptoms, and functional outcomes. Current evidence
does not support the diagnostic accuracy of PSST for diagnosing any condition linked to nerve damage
or disease. A systematic review found that PSST had low accuracy for diagnosing spinal conditions.
Also, there is a lack of direct evidence on the clinical utility of current perception testing and, because
there is insufficient evidence on test performance, an indirect chain of evidence on clinical utility cannot
be constructed. The evidence is insufficient to determine the effects of the technology on health
outcomes.

For individuals who have conditions linked to nerve damage or disease (eg, diabetic neuropathy, carpal
tunnel syndrome) who receive vibration perception testing, the evidence includes several studies on
diagnostic accuracy. Relevant outcomes are test accuracy and validity, symptoms, and functional outcomes. A few studies have assessed the diagnostic performance of vibration testing using devices not cleared by the Food and Drug Administration. Also, there is a lack of direct evidence on the clinical utility of vibration perception testing and, in the absence of sufficient evidence on test performance, an indirect chain of evidence on clinical utility cannot be constructed. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have conditions linked to nerve damage or disease (e.g., diabetic neuropathy, carpal tunnel syndrome) who receive thermal sensory testing, the evidence includes diagnostic accuracy. Relevant outcomes are test accuracy and validity, symptoms, and functional outcomes. Two studies identified evaluated the diagnostic accuracy of thermal QST using the same Food and Drug Administration–cleared device. Neither found a high diagnostic accuracy for thermal QST, but both studies found the test had potential when used with other tests. The optimal combination of tests is currently unclear. Also, there is a lack of direct evidence on the clinical utility of thermal sensory testing and, because there is insufficient evidence on test performance, an indirect chain of evidence on clinical utility cannot be constructed. The evidence is insufficient to determine the effects of the technology on health outcomes.

Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>7/2017</td>
<td>New references added from BCBSA National medical policy.</td>
</tr>
<tr>
<td>1/2016</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>12/2015</td>
<td>Added coding language. BCBSA National medical policy references added.</td>
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<td>12/2014</td>
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<tr>
<td>1/2014</td>
<td>New references added from BCBSA National medical policy.</td>
</tr>
<tr>
<td>4/2013</td>
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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


