Medical Policy
Dopamine Transporter Imaging with Single Photon Emission Computed Tomography - DAT-SPECT

Table of Contents
- Policy: Commercial
- Policy: Medicare
- Authorization Information
- Coding Information
- Description
- Policy History
- Information Pertaining to All Policies
- References

Policy Number: 918
BCBSA Reference Number: 6.01.54

Related Policies
- Miscellaneous Applications of Positron Emission Tomography - PET, #624
- Deep Brain Stimulation, #473

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity
Medicare HMO BlueSM and Medicare PPO BlueSM Members
Dopamine transporter imaging with single photon emission computed tomography (DAT-SPECT) is INVESTIGATIONAL for all indications, including but not limited to aiding in the diagnosis or monitoring of:
- patients with clinically uncertain parkinsonian syndromes,
- essential tremor, or
- dementia with Lewy bodies.

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.

<table>
<thead>
<tr>
<th>Outpatient</th>
<th>Commercial Managed Care (HMO and POS)</th>
<th>Commercial PPO and Indemnity</th>
<th>Medicare HMO BlueSM</th>
<th>Medicare PPO BlueSM</th>
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<tbody>
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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>78607</td>
<td>Brain imaging, tomographic (SPECT)</td>
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### HCPCS Codes

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<th>HCPCS codes:</th>
<th>Code Description</th>
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<tr>
<td>A9584</td>
<td>Iodine I-123 ioflupane, diagnostic, per study dose, up to 5 millicuries</td>
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**Description**

Dopamine transporter imaging with single photon emission computed tomography (DAT-SPECT) is being evaluated to improve the differential diagnosis of degenerative parkinsonian syndromes from non-parkinsonian tremor and of dementia with Lewy bodies (DLB) from Alzheimer’s disease.

Parkinsonian syndromes are a group of diseases that share similar cardinal signs, characterized by bradykinesia, rigidity, resting tremor and gait disturbance. Parkinson’s disease (PD) is the most common cause of parkinsonism; however, diagnosing PD in early stage of the disease can be difficult. This has led to the development of additional tests to improve the accuracy of clinical diagnosis of PD and other parkinsonian syndromes. One recent approach is to evaluate the integrity of dopaminergic pathways in the brain with DAT-SPECT.

DAT-SPECT detects presynaptic dopaminergic deficit by measuring dopamine transporter (DAT) binding. Analysis of DAT-SPECT images can be visual or semi-quantitative. Since patients typically do not become symptomatic before a substantial number of striatal synapses have degenerated, visual interpretation of the scan is thought to be sufficient for clinical evaluation. A variety of methods are being tested to improve the validity and reliability of ratings, including commercially available software to define the region of. Semiquantitative interpretation may aid visual interpretation and, if performed rigorously, may increase diagnostic accuracy; however, interobserver variability tends to be high with manual ROI based semi-quantification.

**Summary**

DAT-SPECT is being evaluated to improve the differential diagnosis of PS from non-parkinsonian tremor and of DLB from Alzheimer’s disease. For diagnosing Parkinson’s disease in patients with parkinsonian symptoms, studies of diagnostic accuracy report good specificity for confirming nigrostriatal degeneration, with less sensitivity for ruling out disease. These findings are dependent, however, on a reference standard (clinical diagnosis) which may be flawed, and it is unknown whether DAT-SPECT would show greater sensitivity when compared with the gold standard of histopathological diagnosis.

For discriminating between DLB and Alzheimer’s disease, the sensitivity and specificity of DAT-SPECT is somewhat lower than for PS, although the comparison standard used in the available studies may be flawed.
Overall, the evidence available at this time is insufficient to determine with certainty the effect of this technology on health outcomes. Therefore, DAT-SPECT is considered investigational.

### Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>10/2016</td>
<td>New references added from BCBSA National medical policy.</td>
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<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 information.</td>
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<td>9/2014</td>
<td>New references added from BCBSA National medical policy.</td>
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<td>10/2013</td>
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<tr>
<td>2/2013</td>
<td>New policy describing non-coverage.</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

123 injection (DaTSCAN) in subjects with clinically uncertain parkinsonian syndromes. Alzheimers Res Ther. 2014;6(5-8):67. PMID 25478029


