



Rule Category:
Medical

Ref: No:
2017-MN-0029

Version Control:
Version No.1.0

Effective Date:
29-12-2017

Revision Date:
29-12-2018



Single Photon Emission Computed Tomography (SPECT) Indications

Adjudication Guideline

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Abstract

For Members

A Single Photon Emission Computed Tomography (SPECT) scan is a type of nuclear imaging test that shows how blood flows to tissues and organs.

- How does a SPECT scan work?

A SPECT scan integrates two technologies to view your body: computed tomography (CT) and a radioactive material (tracer). The tracer is what allows doctors to see how blood flows to tissues and organs.

The test differs from a PET scan in that the tracer stays in your blood stream rather than being absorbed by surrounding tissues, thereby limiting the images to areas where blood flows.

For Medical Professionals

A stress myocardial perfusion scan is used to assess the blood flow to the heart muscle (myocardium) when it is stressed by exercise or medication and to determine what areas of the myocardium have decreased blood flow. This is done by injecting a radionuclide (thallium or technetium) into a vein in the arm or hand.

There are two types of stress myocardial perfusion scans, one that is used in conjunction with exercise (myocardial perfusion scan with exercise) and one that is used in conjunction with medication (pharmacologic myocardial perfusion scan).

The radioisotopes typically used in SPECT to label tracers are iodine-123, technetium-99m, xenon-133, thallium-201, and fluorine-18. These radioactive forms of natural elements will pass safely through your body and be detected by the scanner.

Approved by:
Daman

Responsible:
Medical Standards & Research

Related Adjudication Guidelines:
NA

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Scope

This adjudication rule specifies the coverage details for medically necessary indications of Single Photon Emission Computed Tomography (SPECT) as per the policy terms and conditions of each health insurance plan administered by Daman.

Adjudication Policy

Eligibility / Coverage Criteria

The indications of SPECT are divided into 2 parts, Cardiac and non-cardiac.

In non-cardiac indications, for certain diseases SPECT can be used as a diagnostic, differential diagnosis or a pre-operative exam, for several body organs and systems such as liver, brain, bone, thyroid and certain types of lymphomas.

A SPECT is helpful in determining which parts of the brain are being affected by the seizures, epilepsy or head injuries.

SPECT scanning is also useful for pre-surgical evaluation of medically uncontrolled seizures.

Single photon emission computed tomography has been applied to the heart for myocardial perfusion imaging. It is an effective non-invasive diagnostic technology when evaluating patients for clinically significant coronary artery disease (CAD) in the following circumstances: for diagnosing CAD in patients with an abnormal resting electrocardiogram (ECG) and restricted exercise tolerance; or assessing myocardial viability before referral for myocardial re-vascularization.

Single photon emission computed tomography has proven useful in distinguishing lymphoma from necrosis in the chest and abdomen. Single photon emission computed tomography is also useful in osteomyelitis in distinguishing inflammation of soft tissue from bone.

Guidelines on parathyroid scintigraphy from the Society of Nuclear Medicine (Greenspan et al, 2004) state that there is a developing consensus that SPECT imaging is useful, because, when used in conjunction with planar imaging as a pre-operative tool, SPECT provides increased sensitivity and more precise anatomic localization. They note that this is particularly true in detecting both primary and recurrent hyperparathyroidism resulting from ectopic adenomas.

Requirements for Coverage

ICD and CPT codes must be coded to the highest level of specificity.

Non-Coverage

Daman does not cover SPECT imaging when used in pre-operative settings for low risk surgeries such as endoscopic procedures, superficial procedures, cataract surgery or breast surgeries done under local anesthesia.

Daman considers the use of SPECT in the listed below conditions investigational and experimental, therefore, not covered:

- Detection of air leak/pneumothorax; *or*
- Diagnosis or assessment of members with attention deficit/hyperactivity disorder; *or*
- Diagnosis or assessment of members with autism ; *or*
- Diagnosis or assessment of members with personality disorders (e.g., aggressive and violent behaviors, anti-social personality disorder including psychopathy, schizotypal personality disorder, as well as borderline personality disorder); *or*
- Diagnosis or assessment of members with schizophrenia; *or*
- Diagnosis or assessment of stroke members; *or*
- Differential diagnosis of Parkinson's disease from other Parkinsonian syndromes; *or*
- Differentiating malignant from benign lung lesions; *or*
- Evaluation of members with endoleak; *or*
- Evaluation of members with generalized pain or insomnia; *or*
- Evaluation of members with head trauma; *or*
- Initial or differential diagnosis of members with suspected dementia (e.g., Alzheimer's disease, dementia with Lewy bodies, fronto-temporal dementia, and vascular dementia); *or*
- Multiple sclerosis; *or*
- Pre-surgical evaluation of members undergoing lung volume reduction surgery; *or*
- Prosthetic graft infection; *or*
- Scanning of internal carotid artery during temporary balloon occlusion; *or*
- Vasculitis.

Payment and Coding Rules

Please apply HAAD payment rules and regulations, as well as relevant coding manuals for ICD, CPT, etc.

Denial codes

Code description
Service is not clinically indicated based on good clinical practice
Service is not clinically indicated based on good clinical practice, without additional supporting diagnoses/activities
Prior approval is required and was not obtained

Appendices

A. References

- <https://careweb.careguidelines.com/ed21/index.html>
- <http://bestpractice.bmj.com/best-practice/monograph/544/diagnosis/tests.html>
- https://www.acr.org/~media/ACR/Documents/PGTS/guidelines/CT_SPECT_Brain_Perfusion.pdf
- <http://bestpractice.bmj.com/best-practice/monograph/147/diagnosis/tests.html>
- <http://bestpractice.bmj.com/best-practice/monograph/1089/diagnosis/tests.html>
- <https://careweb.careguidelines.com/ed21/index.html>
- <http://emedicine.medscape.com/article/356522-overview#showall>
- <https://www.ncbi.nlm.nih.gov/pubmed/22623896>

B. Revision History

Date	Change(s)
29/11/2017	Release V1.0