

POLICY TITLE	SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT)
POLICY NUMBER	MP-5.031

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I. POLICY

Routine SPECT imaging may be considered **medically necessary** for the evaluation of the following:

- Abscess localization in any part of the body.
- Bone
 - Assessment of osteomyelitis, to distinguish bone from soft tissue infection
 - Detection of spondylolysis
 - Detection of fractures;
 - To differentiate between infectious, neoplastic, avascular or a traumatic process
- Brain
 - Localized epilepsy when all of the following are present
 - Surgery planned or being considered
 - Results of high-resolution MRI are negative, indeterminate, or inconsistent with symptoms and signs;
 - Differentiation of necrotic tissue from tumor of the brain
 - Differentiation between lymphomas and infections such as toxoplasmosis particularly in the immunosuppressed
- Chronic back pain
- Heart (myocardium);
 - Assessment of the functional and prognostic importance of angina
 - Diagnostic evaluation of patients with chest pain and uninterpretable or equivocal ECG changes caused by drugs, bundle branch block, or left ventricular hypertrophy.
 - Assessment of congenital anomalies of coronary arteries.
 - Risk assessment or re-evaluation of disease in patients who are asymptomatic or have stable symptoms, with known atherosclerotic heart disease on catheterization or SPECT perfusion imaging, who have not had a revascularization procedure within the past two years;

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- Detection of coronary artery disease in patients, without chest pain syndrome, with new-onset of diagnosed heart failure or left ventricular systolic dysfunction.
- Evaluation of ischemic versus non-ischemic cardiomyopathy when cardiac catheterization / coronary angiography are contraindicated or unlikely to be performed.
- Evaluation of myocardial perfusion and/or function before and after coronary artery bypass surgery or other re-perfusion procedures
- Quantification and surveillance of myocardial infarction and prognostication in patients after infarction.
- Preoperative assessment for non-cardiac surgery, when used to determine risk for surgery and/or perioperative management in:
 - Patients with minor or intermediate clinical risk predictors and poor cardiac functional capacity
 - Patients with intermediate or high likelihood of coronary heart disease, or patients with poor functional capacity undergoing high risk non-cardiac surgery. (See definitions).
- Evaluation of ventricular function in patients with non-ischemic myocardial disease.
- Evaluation of patients in whom an accurate measure of ejection fraction is needed to make a determination of whether to implant a defibrillator or biventricular pacemaker.
- Evaluation of a patient receiving chemotherapeutic drugs which are potentially cardiotoxic (e.g. doxorubicin).
- Kidneys – for the diagnosis and treatment of renal diseases, conditions or disorders, including, but not limited to, the following:
 - Acute, chronic or recurrent kidney infections (e.g., pyelonephritis);
 - Pediatric patients with urinary tract infection
 - Assessing the integrity of renal parenchyma in cases of renal wasting diseases;
 - Congenital anomalies of the kidneys;
 - Evaluations of kidney tumors and trauma;
 - Renal cortical damage or defects;
 - Renal infarction or renal masses;
 - Vesicoureteral reflux in children.
- Liver;
 - Diagnosing and assessing hemangiomas of the liver
- Lung
 - Diagnosing pulmonary embolism by means of SPECT ventilation/perfusion scintigraphy
- Lymphoma
 - To distinguish tumor from necrosis
- Neuroendocrine tumors (diagnosis and staging)
- Parathyroid tumors
- Spleen;

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Other applications of SPECT scanning are considered **investigational**, including, but not limited to the evaluation of the following as there is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

- Attention Deficit and hyperactivity disorder
- Chronic fatigue syndrome
- Colorectal carcinoma
- Dementias,
- Head and neck tumors,
- Psychiatric disorders,
- Malignancies other than those listed above as medically necessary
- Motor neuron disorders,
- Neurological disorders,
- Neuropsychiatric disorders without evidence of cerebrovascular disease
- Psychiatric disorders,
- Pulmonary nodules,
- Staging of malignant lung cancer or mediastinal lymph node metastasis.

Cerebrospinal fluid (CSF) flow SPECT imaging is also considered **investigational**, as there is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

Cross-reference:

MP-2.304 Pervasive Developmental Disorders

MP-5.025 PET Scan Including PET/CT Fusion

MP-5.022 Radioimmunoscintigraphy Imaging (Monoclonal Antibody Imaging)/with Indium-111 Capromab Pendetide (ProstaScint®) for Prostate Cancer

MP-5.021 Scintimammography/Breast-Specific Gamma Imaging/Molecular Breast Imaging

II. PRODUCT VARIATIONS

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[N] = No product variation, policy applies as stated

[Y] = Standard product coverage varies from application of this policy, see below

[N] Capital Cares 4 Kids

[N] Indemnity

[N] PPO

[N] SpecialCare

[N] HMO

[N] POS

[Y] SeniorBlue HMO*

[Y] FEP PPO**

[Y] SeniorBlue PPO*

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* Refer to Centers for Medicare and Medicaid Services (CMS) National Coverage Determination (NCD) 220.12, Single Photon Emission Computed Tomography for additional indications.

**The FEP program dictates that all drugs, devices or biological products approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational. Therefore, FDA-approved drugs, devices or biological products may be assessed on the basis of medical necessity

III. DESCRIPTION/BACKGROUND

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Single photon emission computed tomography (SPECT) describes a nuclear medicine imaging technique that shares some similarities to both computerized x-ray tomography (CT) scanning and positron emission tomography (PET) scanning. However, SPECT yields higher resolution three-dimensional images. To perform this procedure, a radiopharmaceutical diagnostic imaging agent is injected or inhaled into the targeted area from which it emits the radiation that produces the images. A specialized camera rotates around the body to acquire data from multiple angles. The data is then fed to a computer, which uses mathematical algorithms to reconstruct images of the body. While CT scans the anatomy of a body area, SPECT assesses the functioning.

IV. RATIONALE

NA

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V. DEFINITIONS

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CLINICAL RISK FACTORS –

- History of ischemic heart disease
- History of compensated or prior heart failure
- History of cerebrovascular disease
- Diabetes mellitus
- Renal insufficiency

HIGH RISK SURGERY – aortic and peripheral vascular surgery

INTERMEDIATE RISK SURGERY – intraperitoneal and intrathoracic surgery, carotid endarterectomy, head and neck surgery, orthopedic surgery, prostate surgery.

LOW RISK SURGERY – endoscopic procedures, superficial surgery, cataract surgery, breast surgery, ambulatory surgery

POOR FUNCTIONAL CAPACITY = less than 4 mets

Tomography is a radiographic technique that allows a cross section of a specific area rather than a composite of all overlapping structures.

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VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's contract. Benefit determinations should be based in all cases on the applicable contract language. Medical policies do not constitute a description of benefits. A member's individual or group customer benefits govern which services are covered, which are excluded, and which are subject to benefit limits and which require preauthorization. Members and providers should consult the member's benefit information or contact Capital for benefit information.

VII. DISCLAIMER

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Capital's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. Capital considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

VIII. CODING INFORMATION

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Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Covered when medically necessary:

CPT Codes®								
78205	78206	78320	78451	78452	78469	78494	78607	78710
78803	78807							

Specific diagnosis coding does not apply to this policy.

Investigational and therefore note covered:

CPT Codes®								
78647								

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*If applicable, please see Medicare LCD or NCD for additional covered diagnoses.

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IX. REFERENCES

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X. POLICY HISTORY

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MP 5.031	CAC 2/25/03
	CAC 4/29/03
	CAC 2/24/04
	CAC 10/26/04
	CAC 11/29/05
	CAC 10/31/06
	CAC 11/27/07
	CAC 1/29/08
	CAC 1/27/09 Consensus
	7/1/09 Cross-Reference for Pervasive Developmental Disorders
	CAC 1/26/10 Consensus review

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	<p>CAC Effective date of variation: 3/22/11 Minor revision. Medicare variation changed for myocardial perfusion test to refer to new LCD L 31187 Cardiovascular Nuclear Medicine.</p> <p>CAC 2/28/12 Deleted first paragraph in policy describing types of SPECT scans not included in this policy. Policy reviewed by ALLMed.</p> <p>Bone – specific indications were added.</p> <ul style="list-style-type: none"> ○ Assessment of osteomyelitis, to distinguish bone from soft tissue infection ○ Detection of spondylolysis ○ Detection of fractures; ○ To differentiate between infectious, neoplastic, avascular or a traumatic process <p>Chronic back pain – added as a new indication</p> <p>Liver – specific indication added -diagnosing and assessing hemangiomas of the liver</p> <p>Lung – specific indications added -diagnosing pulmonary embolism by means of ventilation/perfusion scintigraphy.</p> <p>Lymphoma – added as a new indication - to distinguish tumor from necrosis</p> <p>Heart (myocardium) –specific criteria adopted for all plans. Taken from Medicare policy.</p> <p>Inflammation or Infection- specific indication added - localization of abscess, for suspected or known localized infection or inflammatory process</p> <p>Brain – specific indications added.</p> <ul style="list-style-type: none"> ○ Pre-operative localization of partial seizure activity in anticipation of seizure-related surgery. ○ Differentiation between lymphomas and infections such as toxoplasmosis particularly in the immunosuppressed ○ Differentiation of necrotic tissue from tumor of the brain. <p>Neuroendocrine tumors – added as a new indication</p> <p>Parathyroid tumors– deleted “for preop scanning”</p> <p>CAC 6/4/13, Consensus list review. Administrative code review complete</p> <p>CAC 3/25/14 Consensus. No change to policy statements. References updated.</p>
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