

# Positron Emission Tomography (PET) Scan (Including NCDs 220.6-220.6.20)

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[➔ Terms and Conditions](#)

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## Related Medicare Advantage Coverage Summary

- [Positron Emission Tomography \(PET\)/Combined PET-CT \(Computed Tomography\)](#)

## Policy Summary

[➔ See Purpose](#)

### Overview

Positron Emission Tomography (PET) is a minimally invasive diagnostic imaging procedure used to evaluate metabolism in normal tissue as well as in diseased tissues in conditions such as cancer, ischemic heart disease, and some neurologic disorders. A radiopharmaceutical is injected into the patient that gives off sub-atomic particles, known as positrons, as it decays. PET uses a positron camera (tomography) to measure the decay of the radiopharmaceutical. The rate of decay provides biochemical information on the metabolism of the tissue being studied.

### Guidelines

Per Pub. 100-03, Chapter 1, Part 4, Section 220.6, numerous clinical indications have been approved for imaging via a National Coverage Determination (NCD). Note: Manual section 220.6 lists all Medicare-covered uses of PET scans. Except as set forth below in cancer indications listed as “Coverage with Evidence Development,” a particular use of PET scans is not covered unless this manual specifically provides that such use is covered. Although PET scan sections may have some non-covered uses, it does not constitute an exhaustive list of all non-covered uses.

Effective for dates of service on or after March 7, 2013, local Medicare Administrative Contractors (MACs) may determine coverage within their respective jurisdictions for positron emission tomography (PET) using radiopharmaceuticals for their Food and Drug Administration (FDA) approved labeled indications for oncologic imaging.

We emphasize each of the following points:

- Changing the ‘restrictive’ language of prior PET decisions will not by itself suffice to expand Medicare coverage to new PET radiopharmaceuticals.
- The scope of this change extends only to FDA-approved indications for oncologic uses of PET tracers.
- This change does not include screening uses of PET scanning.

The Centers for Medicare & Medicaid Services (CMS) acknowledges the advances relating to the assessment of diagnostic performance and patient safety, as pioneered by the FDA in its regulatory policies and guidelines for diagnostic PET imaging agents and systems during the past decade. We note for completeness that local coverage cannot be in conflict with NCDs or other national policies. Finally, we note that future CMS NCDs, if any, regarding diagnostic PET imaging would not be precluded by this NCD.

## Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
78429	Myocardial imaging, positron emission tomography (PET), metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), single study; with concurrently acquired computed tomography transmission scan
78430	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); single study, at rest or stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan
78431	Myocardial imaging, positron emission tomography (PET), perfusion study (including ventricular wall motion[s] and/or ejection fraction[s], when performed); multiple studies at rest and stress (exercise or pharmacologic), with concurrently acquired computed tomography transmission scan
78432	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (e.g., myocardial viability)
78433	Myocardial imaging, positron emission tomography (PET), combined perfusion with metabolic evaluation study (including ventricular wall motion[s] and/or ejection fraction[s], when performed), dual radiotracer (e.g., myocardial viability); with concurrently acquired computed tomography transmission scan
78434	Absolute quantitation of myocardial blood flow (AQMBF), positron emission tomography (PET), rest and pharmacologic stress (List separately in addition to code for primary procedure)
78459	Myocardial imaging, positron emission tomography (PET), metabolic evaluation
78491	Myocardial imaging, positron emission tomography (PET), perfusion; single study at rest or stress
78492	Myocardial imaging, positron emission tomography (PET), perfusion; multiple studies at rest and/or stress
78608	Brain imaging, positron emission tomography (PET); metabolic evaluation
78811	Positron emission tomography (PET) imaging; limited area (e.g., chest, head/neck)
78812	Positron emission tomography (PET) imaging; skull base to mid-thigh
78813	Positron emission tomography (PET) imaging; whole body
78814	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; limited area (e.g., chest, head/neck)
78815	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; skull base to mid-thigh
78816	Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; whole body
<b>Non-Covered</b>	
78609	Brain imaging, positron emission tomography (PET); perfusion evaluation

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HCPCS Code	Description
A9515	Choline C-11, diagnostic, per study dose up to 20 millicuries
A9526	Nitrogen N-13 ammonia, diagnostic, per study dose, up to 40 millicuries

HCPCS Code	Description
A9552	Fluorodeoxyglucose F-18 FDG, diagnostic, per study dose, up to 45 millicuries
A9555	Rubidium Rb-82, diagnostic, per study dose, up to 60 millicuries
A9587	Gallium ga-68, dotatate, diagnostic, 0.1 millicurie
A9588	Fluciclovine f-18, diagnostic, 1 millicurie
A9597	Positron emission tomography radiopharmaceutical, diagnostic, for tumor identification, not otherwise classified
A9598	Positron emission tomography radiopharmaceutical, diagnostic, for non-tumor identification, not otherwise classified
<b>Non-Covered</b>	
A9580	Sodium fluoride F-18, diagnostic, per study dose, up to 30 millicuries (CED coverage ended 12/14/2017)
G0219	PET imaging whole body; melanoma for non-covered indications
G0235	PET imaging, any site, not otherwise specified
G0252	PET imaging, full and partial-ring PET scanners only, for initial diagnosis of breast cancer and/or surgical planning for breast cancer (e.g., initial staging of axillary lymph nodes)
<b>Covered Under Clinical Trial Only</b>	
A9586	Florbetapir F18, diagnostic, per study dose, up to 10 millicuries
Q9982	Flutemetamol F18, diagnostic, per study dose, up to 5 millicuries
Q9983	Florbetaben F18, diagnostic, per study dose, up to 8.1 millicuries

Modifier	Description
PI	Positron emission tomography (PET) or PET/computed tomography (CT) to inform the initial treatment strategy of tumors that are biopsy proven or strongly suspected of being cancerous based on other diagnostic testing
PS	Positron emission tomography (PET) or PET/computed tomography (CT) to inform the subsequent treatment strategy of cancerous tumors when the beneficiary's treating physician determines that the PET study is needed to inform subsequent anti-tumor strategy
Q0	Investigational clinical service provided in a clinical research study that is in an approved clinical research study

#### Coding Clarifications:

- Local Coverage Determinations (LCDs) and/or Articles vary in coverage per jurisdiction.
- An appropriate diagnosis code must be submitted with each claim and failure to do so may result in denial or delay in claim processing.
- The most current diagnosis code(s) should be used to ensure proper payment.
- HCPCS codes A9597 and A9598 are not to be reported for any CMS approved PET indication where a dedicated PET radiopharmaceutical is already assigned. In other words, HCPCS A9597 and A9598 are not replacements for currently approved PET radiopharmaceuticals A9515, A9526, A9552, A9555, A9580, A9586, A9587, or A9588.

## References

### CMS National Coverage Determinations (NCDs)

[NCD 220.6 Positron Emission Tomography \(PET\) Scans](#)

[NCD 220.6.1 PET for Perfusion of the Heart](#)

[NCD 220.6.2 FDG PET for Lung Cancer](#)

[NCD 220.6.3 FDG PET for Esophageal Cancer](#)

[NCD 220.6.4 FDG PET for Colorectal Cancer](#)

[NCD 220.6.5 FDG PET for Lymphoma](#)

[NCD 220.6.6 FDG PET for Melanoma](#)

- [NCD 220.6.7 FDG PET for Head and Neck Cancers](#)
- [NCD 220.6.8 FDG PET for Myocardial Viability](#)
- [NCD 220.6.9 FDG PET for Refractory Seizures](#)
- [NCD 220.6.10 FDG PET for Breast Cancer](#)
- [NCD 220.6.11 FDG PET for Thyroid Cancer](#)
- [NCD 220.6.12 FDG PET for Soft Tissue Sarcoma](#)
- [NCD 220.6.13 FDG PET for Dementia and Neurodegenerative Diseases](#)
- [NCD 220.6.14 FDG PET for Brain, Cervical, Ovarian, Pancreatic, Small Cell Lung, and Testicular Cancers](#)
- [NCD 220.6.15 FDG PET for All Other Cancer Indications Not Previously Specified](#)
- [NCD 220.6.16 FDG PET for Infection and Inflammation](#)
- [NCD 220.6.17 Positron Emission Tomography \(FDG\) for Oncologic Conditions](#)
- [NCD 220.6.19 Positron Emission Tomography \(NaF-18\) to Identify Bone Metastasis of Cancer](#)
- [NCD 220.6.20 Beta Amyloid Positron Tomography in Dementia and Neurodegenerative Disease](#)

Note: The following NCDs have all been replaced with NCD 220.6.17: 220.6.2, 220.6.3, 220.6.4, 220.6.5, 220.6.6, 220.6.7, 220.6.10, 220.6.11, 220.6.12, and 220.6.14.

### CMS Local Coverage Determinations (LCDs) and Articles

LCD	Article	Contractor	Medicare Part A	Medicare Part B
<a href="#">L33457 Cardiac Radionuclide Imaging</a>	<a href="#">A56476 Billing and Coding: Cardiac Radionuclide Imaging</a>	Palmetto	AL, GA, TN, NC, SC, VA, WV	AL, GA, TN, NC, SC, VA, WV
<a href="#">L35391 Multiple Imaging in Oncology</a>	<a href="#">A56848 Billing and Coding: Multiple Imaging in Oncology</a>	Novitas	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX
N/A	<a href="#">A54666 Positron Emission Tomography Scans Coverage</a>	Noridian	AS, CA (Entire State), GU, HI, MP, NV	AS, CA (Northern), CA (Southern), GU, HI, MP, NV
N/A	<a href="#">A54668 Positron Emission Tomography Scans Coverage</a>	Noridian	AS, CA (Entire State), GU, HI, MP, NV	AS, CA (Northern), CA (Southern), GU, HI, MP, NV
N/A	<a href="#">A53134 Billing and Coding: NCD Coding Article for Positron Emission Tomography (PET) Scans Used for Non-Oncologic Conditions</a>	Novitas	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX
N/A	<a href="#">A53132 Billing and Coding: NCD Coding Article for Positron Emission Tomography (PET) Scans Used for Oncologic Conditions</a>	Novitas	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS NJ, NM, OK, PA, TX
N/A	<a href="#">A54735 Billing Requirements for PET Scan Claims to Identify Bone Metastasis of Cancer</a>	Palmetto	AL, GA, TN, NC, SC, VA, WV	

LCD	Article	Contractor	Medicare Part A	Medicare Part B
N/A	<a href="#">A55052 Billing and Coding: Radiopharmaceutical Agents</a>	WPS	AK, AL, AR, AZ, CA (Entire State), CO, CT, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MO (Entire State), MS, MT, NC, ND, NE, NH, NJ, NM, NV, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY	IA, KS, MO, NE, IN, MI
<a href="#">L38396 Cardiology Non-emergent Outpatient Stress Testing</a>	<a href="#">A56952 Billing and Coding: Cardiology Non-emergent Outpatient Stress Testing</a>	First Coast	FL, PR, VI	FL, PR, VI
N/A	<a href="#">A55411 Coding article for positron emission tomography (PET) scans used for oncological indications</a>	First Coast	FL, PR, VI	FL, PR, VI
L36209 Cardiology – non-emergent outpatient testing: exercise stress test, stress echo, MPI SPECT, and cardiac PET Retired 03/13/2020	A57076 Billing and Coding: Cardiology – non-emergent outpatient testing: exercise stress test, stress echo, MPI SPECT, and cardiac PET Retired 03/13/2020	First Coast	FL, PR, VI	FL, PR, VI

## CMS Claims Processing Manual

### [Chapter 13: § 60 Positron Emission Tomography \(PET\) Scans – General Information](#)

## CMS Transmittal(s)

[Transmittal 120, Change Request 6632, Dated 05/06/2010 \(FDG PET for Solid Tumors and Myeloma\)](#)

[Transmittal 124, Change Request 7148, Dated 09/24/2010 \(Positron Emission Tomography \(FDG PET\) for Initial Treatment Strategy \(PI\) in Solid Tumors and Myeloma\)](#)

[Transmittal 168, Change Request 8739, Dated 05/28/2014 \(Fluorodeoxyglucose \(FDG\) Positron Emission Tomography \(PET\) for Solid Tumors \(This CR rescinds and fully replaces CR8468/TR2873 dated February 6, 2014\)\)](#)

[Transmittal 1755, Change Request 9861, Dated 11/18/2016 \(Coding Revisions to National Coverage Determination \(NCDs\)\)](#)

[Transmittal 3162, Change Request 8739, Dated 01/08/2015 \(Fluorodeoxyglucose \(FDG\) Positron Emission Tomography \(PET\) for Solid Tumors \(This CR rescinds and fully replaces CR8468/TR2873 Dated February 6, 2014\)\)](#)

## MLN Matters

[Article MM5665, Revised Information on PET Scan Coding](#)

[Article MM7125, Billing Clarification for Positron Emission Tomography \(NaF-18\) PET for Identifying Bone Metastasis of Cancer in the Context of a Clinical Trial](#)

[Article MM8381, Positron Emission Tomography \(PET\)](#)

[Article MM8526, Medicare National Coverage Determination \(NCD\) for Beta Amyloid Positron Emission Tomography \(PET\) in Dementia and Neurodegenerative Disease](#)

[Article MM8739, Fluorodeoxyglucose \(FDG\) Positron Emission Tomography \(PET\) for Solid Tumors \(This Change Request \(CR\) rescinds and fully replaces MM 8468, Dated February 6, 2014.\)](#)

[Article MM8888, October Update to the CY 2014 Medicare Physician Fee Schedule Database \(MPFSDB\)](#)

[Article MM9751, Revised, Coding Revisions to National Coverage Determination \(NCDs\)](#)

[Article MM10319, New Positron Emission Tomography \(PET\) Radiopharmaceutical/Tracer Unclassified Codes](#)  
[Article MM11537 Positron Emission Tomography \(PET\) Scan - Allow Tracer Codes Q9982 and Q9983 in the Fiscal Intermediary Shared System \(FISS\)](#)  
[Article MM11652 Quarterly Update for the Temporary Gap Period of the Durable Medical Equipment, Prosthetics, Orthotics, and Supplies \(DMEPOS\) Competitive Bidding Program \(CBP\) - April 2020](#)

## Other(s)

[CMS Decision Memo for Beta Amyloid Positron Emission Tomography in Dementia and Neurodegenerative Disease, CMS Website](#)  
[CMS Decision Memo for Positron Emission Tomography \(FDG\) for Solid Tumors, CMS Website](#)  
[CMS Decision Memo for Positron Emission Tomography \(NaF-18\) to Identify Bone Metastasis of Cancer, CMS Website](#)  
[ICD-10 Coding Revisions to National Coverage Determinations \(NCDs\), Transmittal R1875OTN, MM Article MM10184 Proposed Decision Memo for Positron Emission Tomography \(NaF-18\) to Identify Bone Metastasis of Cancer \(CAG-00065R2\), CMS Website](#)

Title XVIII of the Social Security Act:

- [§1861\(s\)\(3\)](#)
- [§1862 \(a\)\(1\)\(A\)](#)
- [§1862 \(a\)\(1\)\(D\) Investigational or Experimental](#)
- [§1862 \(a\)\(7\)](#)
- [§1833 \(e\)](#)

## Guideline History/Revision Information

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

Date	Summary of Changes
04/01/2021	<p><b>Template Update</b></p> <ul style="list-style-type: none"> <li>• Reformatted policy; transferred content to new template</li> </ul>
03/10/2021	<p><b>Related Policies</b></p> <ul style="list-style-type: none"> <li>• Removed reference link to the Medicare Advantage Reimbursement Policy titled <i>Multiple Procedure Payment Reduction (MPPR) on Diagnostic Cardiovascular and Ophthalmology Procedures Policy</i></li> </ul> <p><b>Policy Summary</b></p> <p><b>Guidelines</b></p> <ul style="list-style-type: none"> <li>• Added language to indicate:           <ul style="list-style-type: none"> <li>○ Effective for dates of service on or after Mar. 7, 2013, local Medicare Administrative Contractors (MACs) may determine coverage within their respective jurisdictions for positron emission tomography (PET) using radiopharmaceuticals for their Food and Drug Administration (FDA) approved labeled indications for oncologic imaging; we emphasize each of the following points:               <ul style="list-style-type: none"> <li>▪ Changing the ‘restrictive’ language of prior PET decisions will not by itself suffice to expand Medicare coverage to new PET radiopharmaceuticals</li> <li>▪ The scope of this change extends only to FDA-approved indications for oncologic uses of PET tracers</li> <li>▪ This change does not include screening uses of PET scanning</li> </ul> </li> <li>○ The Centers for Medicare &amp; Medicaid Services (CMS) acknowledges the advances relating to the assessment of diagnostic performance and patient safety, as pioneered by the FDA in its regulatory policies and guidelines for diagnostic PET imaging agents and systems during the past decade</li> <li>○ We note for completeness that local coverage cannot be in conflict with National Coverage Determinations (NCDs) or other national policies</li> <li>○ We note that future CMS NCDs, if any, regarding diagnostic PET imaging would not be precluded by this NCD</li> </ul> </li> </ul>

Date	Summary of Changes
	<p><b>Applicable Codes</b></p> <ul style="list-style-type: none"> <li>Removed list of applicable ICD-10 diagnosis codes: M86.311, M86.312, M86.321, M86.322, M86.331, M86.332, M86.341, M86.342, M86.351, M86.352, M86.361, M86.362, M86.371, M86.372, M86.38, M86.39, M86.411, M86.412, M86.421, M86.422, M86.431, M86.432, M86.441, M86.442, M86.451, M86.452, M86.461, M86.462, M86.471, M86.472, M86.48, M86.49, M86.511, M86.512, M86.521, M86.522, M86.531, M86.532, M86.541, M86.542, M86.551, M86.552, M86.561, M86.562, M86.571, M86.572, M86.58, M86.59, M86.611, M86.612, M86.621, M86.622, M86.632, M86.641, M86.642, M86.651, M86.652, M86.661, M86.662, M86.671, M86.672, M86.68, M86.69, M866.31, R50.9, T84.50XA, T84.50XD, T84.50XS, T84.51XA, T84.51XD, T84.51XS, T84.52XA, T84.52XD, T84.52XS, T84.59XA, T84.59XD, and T84.59XS</li> </ul> <p><b>Supporting Information</b></p> <ul style="list-style-type: none"> <li>Updated <i>References</i> section to reflect the most current information</li> <li>Archived previous policy version MPG242.07</li> </ul>

## Purpose

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers' submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as NCDs, LCDs, LCAs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the [References](#) section below to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

## Terms and Conditions

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document\* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

Medicare Advantage Policy Guidelines are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support UnitedHealthcare coverage decision making. UnitedHealthcare may modify these Policy Guidelines at any time by publishing a new version of the policy on this website. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the Medicare Advantage Policy Guidelines is believed to be accurate and current as of the date of publication and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

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\*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the [Administrative Guide](#).