



FEP Medical Policy Manual

FEP 6.01.66 Oncologic Applications of Positron Emission Tomography Scanning (Thyroid, Neuroendocrine, Head and Neck)

Annual Effective Policy Date: April 1, 2026

Original Policy Date: September 2024

Related Policies:

- 6.01.06 - Miscellaneous (Noncardiac, Nononcologic) Applications of Fluorine 18 Fluorodeoxyglucose Positron Emission Tomography
- 6.01.20 - Cardiac Applications of Positron Emission Tomography Scanning
- 6.01.51 - Interim Positron Emission Tomography Scanning in Oncology to Detect Early Response During Treatment
- 6.01.60 - Therapeutic Radiopharmaceuticals for Neuroendocrine Tumors
- 6.01.62 - Oncologic Applications of Positron Emission Tomography Scanning (Breast and Gynecologic)
- 6.01.63 - Oncologic Applications of Positron Emission Tomography Scanning (Bone Sarcoma and Soft Tissue Sarcoma)
- 6.01.64 - Oncologic Applications of Positron Emission Tomography Scanning (Hematologic)
- 6.01.65 - Oncologic Applications of Positron Emission Tomography Scanning (Lung)
- 6.01.67 - Oncologic Applications of Positron Emission Tomography Scanning (Brain, Melanoma, Unknown Primary)

Oncologic Applications of Positron Emission Tomography Scanning (Thyroid, Neuroendocrine, Head and Neck)

Description

Description

Positron emission tomography (PET) is a nuclear imaging technique that uses positron-emitting tracers attached to molecules like glucose or water to create 3D images of metabolic activity. In cancer care, tracer choice depends on tumor type and cancer stage under evaluation.

OBJECTIVE

The objective of this evidence review is to determine whether the use of positron emission tomography for the diagnosis, staging and restaging, and/or surveillance improves the net health outcome in individuals with head and neck, neuroendocrine, or thyroid cancer.

POLICY STATEMENT

Head and Neck Cancer

FDG-PET or FDG-PET/CT (Positron emission tomography (PET)) scanning may be considered **medically necessary** in the evaluation of head and neck cancer in the

- Initial diagnosis of suspected cancer,
- Initial staging of disease, and restaging of residual or recurrent disease during follow-up, and
- Evaluation of response to treatment.

Neuroendocrine Tumors

SSTR (somatostatin receptor)-PET, SSTR-PET/CT or SSTR PET/MRI scanning with gallium-68 dotatate or gallium-68 dotatoc or and copper-64 dotatate may be considered **medically necessary** as a technique for staging neuroendocrine tumors either during initial staging or for restaging at follow-up.

PET scanning with other radiotracers is considered **investigational** in all aspects of managing neuroendocrine tumors.

Thyroid Cancer

FDG-PET or FDG-PET/CT scanning may be considered **medically necessary** in the restaging of individuals with differentiated thyroid cancer when thyroglobulin levels are elevated and whole-body iodine-131 imaging is negative.

Ga-68-dotatate PET/CT may be considered **medically necessary** as part of the initial diagnostic evaluation for medullary thyroid cancer.

PET scanning is considered **investigational** in the evaluation of known or suspected differentiated or poorly differentiated thyroid cancer in all other situations.

Cancer Surveillance

PET scanning is considered **investigational** when used as a surveillance tool for individuals with cancer or with a history of cancer. A scan is considered surveillance if performed more than 6 months after completion of cancer therapy (12 months for lymphoma) in individuals without objective signs or symptoms suggestive of cancer recurrence (see Policy Guidelines section).

POLICY GUIDELINES

Patient Selection

Use of PET scanning for surveillance as described in the policy statement and policy rationale refers to the use of PET to detect disease in asymptomatic individuals at various intervals. This is not the same as the use of PET for detecting recurrent disease in symptomatic individuals; these applications of PET are considered within tumor-specific categories in the policy statements.

BENEFIT APPLICATION

Experimental or investigational procedures, treatments, drugs, or devices are not covered (See General Exclusion Section of brochure).

FDA REGULATORY STATUS

As of September 2025, the following radiopharmaceuticals have been granted approval by the U.S. Food and Drug Administration, to be used with PET for head and neck, neuroendocrine, or thyroid cancer-related indications (see Table 1).¹

Table 1. Radiopharmaceuticals Approved for Use With PET for Oncologic Applications

| Radiopharmaceutical | Manufacturer | Name | Carcinoma-Related Indication With PET |
|--------------------------------------|-----------------------------------|------------|--|
| Copper-64 dotatate | Curium | Detectnet™ | Localization of somatostatin receptor-positive NETs in adult individuals |
| Fluorine-18 fluorodeoxyglucose (FDG) | Various | | Suspected or existing diagnosis of cancer, all types |
| Gallium-68 dotatoc | UIHC - P E T Imaging Center | | Localization of somatostatin receptor-positive NETs in adult and pediatric individuals |
| Gallium-68 dotatate | Advanced Accelerator Applications | NETSPOT™ | Localization of somatostatin receptor-positive NETs in adult and pediatric individuals |

NET: neuroendocrine tumors; PET: positron emission tomography.

RATIONALE

Summary of Evidence

Head and Neck Cancer

For individuals who have suspected or diagnosed head and neck cancer in need of staging or restaging information who receive fluorine 18 fluorodeoxyglucose (FDG)-positron emission tomography (PET) or FDG-PET/computed tomography (CT), the evidence includes several systematic reviews and meta-analyses. Relevant outcome is test validity. In individuals with head and neck cancers, PET and PET/CT are better able to detect local and metastatic disease compared with other imaging techniques. Evidence has also shown that FDG-PET/CT may be useful in predicting response to therapy. Two meta-analyses calculated the ability of FDG-PET or PET/CT to detect the residual or recurrent disease during various stages of treatment and another meta-analysis calculated the ability of positive PET or PET/CT results to predict overall survival and event-free survival. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are asymptomatic after completing head and neck cancer treatment who receive FDG-PET or FDG-PET/CT, there is no evidence. Relevant outcome is test validity. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Neuroendocrine Tumors

For individuals who have suspected or diagnosed neuroendocrine tumors and in need of staging or restaging information or who are asymptomatic after completing neuroendocrine tumor treatment who receive FDG-PET or FDG-PET/CT, the evidence includes 2 meta-analyses. Relevant outcome is test validity. The evidence did not compare PET or PET/CT with other modalities and, therefore, did not provide comparative effectiveness information. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have suspected or diagnosed neuroendocrine tumors and in need of staging or restaging information who receive gallium 68 (^{68}Ga) or copper 64 (^{64}Cu) PET or PET/CT, the evidence includes several systematic reviews with meta-analyses and prospective, comparative studies. Relevant outcome is test validity. The meta-analyses showed relatively high sensitivities and specificities using ^{68}Ga -PET/CT as the radiotracer compared with other imaging techniques in the diagnosis and staging of neuroendocrine tumors. A study comparing the diagnostic performance between ^{64}Cu PET/CT and ^{68}Ga -PET/CT reported an increase in detection of lesions with ^{64}Cu PET/CT. Current guidelines recommend using somatostatin receptor PET tracers, ^{68}Ga -dotatate, ^{68}Ga -dotatoc, or ^{64}Cu -dotatate, to assess receptor status and presence of distant disease. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are asymptomatic after completing neuroendocrine tumor treatment who receive ^{68}Ga or ^{64}Cu PET or PET/CT, there is no evidence. Relevant outcome is test validity. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Thyroid Cancer

For individuals with diagnosed thyroid cancer and in need of staging or restaging information who receive FDG-PET or FDG-PET/CT, the evidence includes systematic reviews and meta-analyses. Relevant outcome is test validity. Pooled analyses have shown that PET or PET/CT can effectively detect recurrent differentiated thyroid cancer. Clinical guidelines include PET/CT to inform management decisions that may offer clinical benefit. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have suspected thyroid cancer or who are asymptomatic after completing thyroid cancer treatment who receive FDG-PET or FDG-PET/CT, there is no evidence. Relevant outcome is test validity. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

SUPPLEMENTAL INFORMATION

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in 'Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

Current National Comprehensive Cancer Network, American College of Radiology, and other relevant U.S.-based guidelines are summarized in each section of the Rationale.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

The Medicare coverage policy on positron emission tomography scans, effective for claims with dates of service on and after June 11, 2013, is summarized in Table 1.²⁹

Table 1. National FDG PET Coverage for Oncologic Conditions

| FDG PET for Cancers by Tumor Type | Initial Treatment Strategy (formerly "diagnosis" & "staging") | Subsequent Treatment Strategy (formerly "restaging" & "monitoring response to treatment") |
|--|--|--|
| Colorectal | Cover | Cover |
| Esophagus | Cover | Cover |
| Head and Neck (not thyroid, CNS) | Cover | Cover |
| Lymphoma | Cover | Cover |
| Non-small cell lung | Cover | Cover |
| Ovary | Cover | Cover |
| Brain | Cover | Cover |
| Cervix | Cover with exceptions * | Cover |
| Small cell lung | Cover | Cover |
| Soft tissue sarcoma | Cover | Cover |
| Pancreas | Cover | Cover |
| Testes | Cover | Cover |
| Prostate | Non-cover | Cover |
| Thyroid | Cover | Cover |
| Breast (male and female) | Cover with exceptions * | Cover |
| Melanoma | Cover with exceptions * | Cover |
| All other solid tumors | Cover | Cover |
| Myeloma | Cover | Cover |
| All other cancers not listed | Cover | Cover |

CNS: central nervous system; FDG: fluorodeoxyglucose; PET: positron emission tomography.

*Cervix: Nationally non-covered for the initial diagnosis of cervical cancer related to initial anti-tumor treatment strategy. All other indications for initial anti-tumor treatment strategy for cervical cancer are nationally covered.

*Breast: Nationally non-covered for initial diagnosis and/or staging of axillary lymph nodes. Nationally covered for initial staging of metastatic disease. All other indications for initial anti-tumor treatment strategy for breast cancer are nationally covered.

*Melanoma: Nationally non-covered for initial staging of regional lymph nodes. All other indications for initial anti-tumor treatment strategy for melanoma are nationally covered.

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POLICY HISTORY - THIS POLICY WAS APPROVED BY THE FEP® PHARMACY AND MEDICAL POLICY COMMITTEE ACCORDING TO THE HISTORY BELOW:

| Date | Action | Description |
|----------------|---|---|
| September 2024 | New policy- Add to Radiology/Interventional Radiology section | Policy created by separating out head and neck, neuroendocrine, and thyroid indications from policy 6.01.26. Policy revised with literature review through October 13, 2023. No references added. Policy statements unchanged. |
| September 2025 | Replace policy | Policy updated with literature review through September 27, 2024; reference added. Minor editorial refinements made to policy statements; intent unchanged. Policy guidelines updated to acknowledge situations when there are contraindications to contrast agents making initial CT scans unattainable. |
| March 2026 | Replace policy | Policy updated with literature review through September 26, 2025. No references added. Editorial revision throughout policy. Intent of policy statements unchanged. |

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