Cohere Medical Policy - Positron Emission Tomography (PET)/PET-Computed Tomography (CT)

Clinical Guidelines for Medical Necessity Review

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Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

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Other Notices:

Guideline Information:

Specialty Area: Diagnostic Imaging
Guideline Name: Cohere Medical Policy - Positron Emission Tomography (PET), PET/Computed Tomography (CT)
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Positron Emission Tomography (PET), PET/Computed Tomography (CT)

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include a referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- Repeat diagnostic testing due to technical issues—such as patient motion, incomplete exams, or incorrect imaging sequences—may not be considered medically necessary, as it is the responsibility of the imaging center to deliver appropriate, high-quality studies as originally authorized.

Similarly, repeat imaging requested at a different facility based solely on provider preference may not be approved for medical necessity.

- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
  - The medical necessity of each individual request
  - Why prior imaging or procedures were inconclusive or why additional/follow-up studies are needed
  - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.

Cohere Health evaluates imaging exams based on medical necessity, regardless of contrast use. If an initial non-contrast study is completed and the radiologist later determines that contrast is needed to clarify a finding, the original authorization number may be used—provided the contrast-enhanced exam is performed at the same imaging center and within the original request's validity period, unless otherwise directed by the health plan.

Description

Positron emission tomography (PET) is a minimally invasive diagnostic imaging procedure used to evaluate metabolic activity in tissue. Typically, the patient is injected with a radiotracer, often fluorodeoxyglucose (FDG), which allows a scanner to detect the metabolic activity of cells. This technology is particularly useful for assessing oncologic, cardiovascular, and neurological disorders. Before undergoing a PET scan, the patient often undergoes other

imaging studies, including magnetic resonance imaging (MRI) and computed tomography (CT) scans, which guide the need for further metabolic imaging.[1]

PET/CT combines functional and anatomic information and allows for precise tumor staging and evaluation of disease progression, as well as treatment planning, monitoring response to treatment and post-treatment surveillance in at-risk patients.[2,3] Oncologic PET is considered advanced imaging and is best used per institutional oncologic protocols and oncological (e.g., National Comprehensive Cancer Network, NCCN) and radiological society guidelines including those of the Society of Nuclear Medicine and Molecular Imaging (SNMMI), the European Association of Nuclear Medicine (EANM), and the American College of Radiology (ACR). The decision to perform oncologic PET is often made at institutional tumor board meetings after multidisciplinary oncology teams review the case. Teams may include oncologic surgeons, radiation oncologists, medical oncologists, pathologists, and radiologists.[4,5]

Medical Necessity Criteria

Indications

Positron emission tomography (PET) with or without concurrently acquired computed tomography (CT)(PET/CT) using fluorodeoxyglucose (FDG) is considered appropriate if **ANY** of the following is **TRUE**[4,5]:

- Initial evaluation and/or staging[A] of **ANY** of the following biopsy-proven (unless otherwise specified) primary cancer/tumor types:
  - Anal carcinoma and **ALL** of the following[6]:
    - Biopsy-confirmed; **AND**
    - CT or MRI of the abdomen/pelvis with contrast has been performed; **OR**
  - Well-differentiated, grade 3 neuroendocrine tumor and **ALL** of the following[7]:
    - Considering peptide receptor radionuclide therapy (PRRT); **AND**
    - Dotatate PET also being obtained; **OR**
  - Adrenal tumor (pheochromocytoma/paraganglioma) when metastatic or multifocal disease is suspected[7]; **OR**
  - Hypercortisolemia with **ANY** of the following[7]:
    - Tumor greater than 4 cm; **OR**
    - Malignant tumor features on imaging (e.g., inhomogeneous, irregular margins, local invasion); **OR**
  - Adrenocortical carcinoma suspected after conventional imaging and biochemical evaluation[7]; **OR**
  - Bladder cancer (muscle invasive) and **ANY** of the following[61]:
    - Symptomatic, at high-risk, or with laboratory indicators of bone metastasis; **OR**
    - Sites of extraosseous metastatic disease are suspected based on other imaging or previously documented; **OR**
  - Brain metastases suspected and **ALL** of the following[8]:

    - Brain MRI findings suggestive of metastases; **AND**
    - No known history of cancer; **AND**
    - CT chest/abdomen/pelvis with contrast is contraindicated or inconclusive; **OR**
- Breast cancer with **ANY** of the following[9-12]:
    - Stage IIB or greater invasive breast cancer (cancer spread to one or more lymph nodes or tumor larger than 5 cm); **OR**
    - Signs or symptoms of metastatic disease; **OR**
    - Inconclusive chest/abdomen/pelvis CT with contrast; **OR**
    - Inconclusive bone scan; **OR**
- Cervical cancer with **ANY** of the following[13,14]:
    - Fédération Internationale de Gynécologie et d'Obstétrique (International Federation of Gynecology and Obstetrics, FIGO) stage IB1 or greater; **OR**
    - Incidental finding of cervical cancer after total hysterectomy; **OR**
- Chordoma when standard imaging (CT/MR) with contrast is contraindicated or inconclusive[15]; **OR**
- Colorectal cancer with **ANY** of the following[16-18]:
    - Standard imaging (CT/MRI) cannot be performed or is indeterminate; **OR**
    - Potentially surgically curable metastatic disease to the liver; **OR**
    - The patient is under consideration for, or to assess response to, image-guided liver-directed therapies (e.g., thermal ablation, chemo/radioembolization); **OR**
    - Rectal tumors (T2-T4) if incompletely resected; **OR**
- Endometrial carcinoma and **ANY** of the following[19,20]:
    - Standard imaging is inconclusive or contraindicated and **ANY** of the following:
        - Metastatic disease suspected based on clinical symptoms, physical findings, or abnormal imaging findings; **OR**

        - Extrauterine disease suspected; **OR**
        - Stage II or greater cancer; **OR**
    - Biopsy findings of serous carcinoma, clear cell carcinoma, undifferentiated/dedifferentiated carcinoma, or carcinosarcoma; **OR**
- Esophageal and esophagogastric junction cancer and **ALL** of the following[21,22]:
    - Standard imaging with CT or MR; **AND**
    - There is no evidence of metastatic (M1) disease; **OR**
- Gastric cancer that is locally advanced or suspected to be metastatic[23]; **OR**
- Head and neck cancer with **ANY** of the following[24-26]:
    - Neck masses with fine needle aspiration (FNA) revealing squamous cell carcinoma, adenocarcinoma, and anaplastic/undifferentiated epithelial tumors; **OR**
    - **ALL** of the following:
        - Cancer of oral cavity (including mucosal lip), nasopharynx, oropharynx, larynx, or sinuses; **AND**
        - Standard imaging (CT/MR) is contraindicated or inconclusive; **OR**
- Hepatocellular carcinoma when there is an equivocal finding on CT, MRI, or ultrasound[27]; **OR**
- Lung cancer, non-small cell, with **ANY** of the following[28]:
    - Pretreatment evaluation if Stage IA (cancer has formed; does not include carcinoma in situ) or above; **OR**
    - Suspected multiple lung cancers including **ANY** of the following:
        - Biopsy-proven synchronous lesions; **OR**
        - **ALL** of the following:
            - History of lung cancer; **AND**
            - PET not previously performed; **OR**
- Lung cancer, small cell, with equivocal or ambiguous findings on standard CT imaging with contrast[29,30];**OR**

- Lymphoma with **ANY** of the following[31,32]:
  - Waldenström macroglobulinemia/lymphoplasmacytic lymphoma; **OR**
  - Concern for KSHV+ lymphoma (Kaposi sarcoma-associated herpesvirus lymphoma); **OR**
  - Small lymphocytic lymphoma if histologic transformation (Richter transformation) is suspected; **OR**
  - Primary cutaneous B-cell lymphoma; **OR**
  - Peripheral T-cell lymphoma; **OR**
  - Adult T-cell lymphoma; **OR**
  - Suspected lymphoblastic lymphoma in pediatric patients; **OR**
  - Classic or pediatric-type follicular lymphoma; **OR**
  - Extranodal marginal zone lymphoma of the stomach; **OR**
  - Extranodal marginal zone lymphoma of nongastric, noncutaneous sites when systemic therapy is anticipated; **OR**
  - Nodal marginal zone lymphoma when systemic therapy is anticipated; **OR**
  - Breast implant-associated anaplastic large-cell lymphoma (ALCL) with physical signs (effusion, enlargement, mass, ulceration) more than one year after implantation[32]; **OR**
  - Splenic marginal zone lymphoma; **OR**
  - Diagnosed primary CNS lymphoma and chest/abdomen/pelvis CT with contrast is contraindicated or inconclusive; **OR**
  - Mantle cell lymphoma; **OR**
  - Hepatosplenic T-cell lymphoma; **OR**
  - Extranodal NK/T-cell lymphomas; **OR**
  - Subcutaneous panniculitis-like T-cell lymphoma; **OR**
  - Diffuse large B-cell lymphoma; **OR**
- Biopsy-confirmed melanoma with **ANY** of the following[33,34]:

        - Stage III or above melanoma and CT chest/abdomen/pelvis with contrast is contraindicated; **OR**
        - Mucosal melanoma; **OR**
    - Monoclonal gammopathy of unknown significance and **ANY** of the following[35,36]:
        - Intermediate or higher risk; **OR**
        - Bony symptoms; **OR**
        - Standard imaging with CT or MRI is contraindicated or inconclusive; **OR**
    - Multiple myeloma[37]; **OR**
    - Smoldering myeloma[37]; **OR**
    - POEMS syndrome[37]; **OR**
    - Ovarian cancer/fallopian tube cancer/primary peritoneal cancer with **ALL** of the following[38-40]:
        - **ANY** of the following:
            - Newly diagnosed ovarian cancer; **OR**
            - Suspicious/palpable pelvic mass on exam, ascites, abdominal distention, bloating, pelvic or abdominal pain, early satiety or urinary symptoms; **AND**
        - Standard imaging with CT or MRI is contraindicated or inconclusive; **AND**
        - Findings will alter management; **OR**
    - Pancreatic cancer with **ANY** of the following[41,42]:
        - **ALL** of the following:
            - Formal pancreatic CT protocol has been performed; **AND**
            - The patient has high-risk features (e.g., equivocal or indeterminate imaging findings, markedly elevated CA 19-9, primary tumors larger than 4 cm, or large regional lymph nodes)[93-95]; **OR**

- Neuroendocrine tumor of the pancreas and tumor is **ANY** of the following:
  - Gastrinoma affecting the head of the pancreas; **OR**
  - Insulinoma; **OR**
  - Glucagonoma; **OR**
  - VIPoma; **OR**
  - Nonfunctioning pancreatic tumor (i.e., not producing enough excess hormones to cause symptoms); **OR**
- Peritoneal mesothelioma with **ALL** of the following[43]:
  - Standard imaging with CT or MRI is contraindicated or inconclusive; **AND**
  - Suspected based on recurrent ascites or peritoneal thickening/mass; **OR**
- Pleural mesothelioma with **ALL** of the following[44,74-76]:
  - Initial staging has been performed with CT or MRI; **AND**
  - The patient is a candidate for definitive surgical resection; **OR**
- Prostate cancer with **ALL** of the following[64-68]:
  - Equivocal results on initial bone scan; **AND**
  - Standard imaging (CT or MRI) is contraindicated or inconclusive; **AND**
  - No concomitant PSMA PET is being obtained; **OR**
- Spine metastasis suspected based on suspicious abnormality on imaging and **ALL** of the following[8]:
  - Chest/abdomen/pelvis CT with contrast is contraindicated or inconclusive; **AND**
  - Patient is asymptomatic; **OR**
- Ewing sarcoma when standard imaging with contrast is contraindicated or inconclusive[15]; **OR**
- Osteosarcoma when standard imaging with contrast is contraindicated or inconclusive[15]; **OR**

- Occult primary cancer when standard imaging with contrast is contraindicated or inconclusive[45]; **OR**
- Mediastinal mass concerning for thymoma or thymic carcinoma[46]; **OR**
- Penile cancer with **ANY** of the following[47]:
  - Standard imaging with CT or MRI is contraindicated or inconclusive and **ANY** of the following:
    - **ALL** of the following:
      - Intermediate/high risk based on primary lesion (T1b or T2 or greater); **AND**
      - Nonpalpable inguinal lymph nodes; **OR**
    - Palpable inguinal lymph nodes; **OR**
  - Pelvic lymphadenopathy on CT or MRI when percutaneous biopsy is not feasible; **OR**
- Pediatric high-grade glioma/pediatric medulloblastoma with **ALL** of the following[48]:
  - Standard imaging has been performed; **AND**
  - There is a need for **ANY** of the following:
    - Tumor staging; **OR**
    - Guiding biopsy site selection; **OR**
- Neuroblastoma[49]; **OR**
- Bone cancer suspected with **ALL** of the following[15]:
  - Symptomatic bone lesion; **AND**
  - Abnormal radiograph; **AND**
  - The patient is greater than or equal to 40 years of age; **OR**
- Soft tissue sarcoma and **ANY** of the following[50]:
  - **ALL** of the following:
    - Established diagnosis of neurofibromatosis; **AND**
    - There is a need to differentiate between neurofibroma and malignant peripheral nerve sheath tumor (MPNST); **OR**

    - There is a need to differentiate between well-differentiated liposarcoma and dedifferentiated liposarcoma to guide selection of a biopsy site; **OR**
    - **ALL** of the following:
        - Established diagnosis of rhabdomyosarcoma, angiosarcoma, alveolar soft part sarcoma, clear cell sarcoma, epithelioid sarcoma, leiomyosarcoma, or myxoid/round cell sarcoma; **AND**
        - Standard imaging with CT or MRI is contraindicated or inconclusive; **OR**
- Small bowel adenocarcinoma when there is an equivocal finding on CT or MRI[51]; **OR**
- Systemic light chain amyloidosis[52]: **OR**
- Thyroid cancer with **ANY** of the following[53]:
    - Medullary thyroid carcinoma on fine needle aspiration (FNA, cytology, or molecular diagnostics); **OR**
    - Anaplastic carcinoma on FNA (cytology or molecular diagnostics); **OR**
- Upper tract genitourinary cancers (renal pelvis cancer or urothelial cancer of the ureter) with clinical suspicion of bone metastases; **OR**
- Uterine sarcoma when standard imaging is inconclusive or contraindicated; **OR**
- Vaginal cancer to evaluate for metastatic disease[54]; **OR**
- Vulvar cancer (non-melanoma) with **ANY** of the following[55]:
    - Clinical stage II or above; **OR**
    - Suspected metastasis; **OR**
    - Positive sentinel nodes (to assess for additional undissected nodal disease); **OR**
    - Locally advanced disease (i.e., unresectable without removing proximal urethra/bladder/anus); **OR**
    - Unresectable nodes; **OR**

- Leukemia with **ANY** of the following:
  - Acute lymphoblastic leukemia (ALL) if lymphomatous extramedullary disease is suspected[56]; **OR**
  - Acute myeloid leukemia (AML) if extramedullary disease is suspected[57]; **OR**
  - Chronic lymphocytic leukemia (CLL) if histologic transformation (Richter transformation) is suspected[58]; **OR**
  - Adult T-cell leukemia[32]; **OR**
  - T-cell prolymphocytic leukemia[32]; **OR**
- Other unspecified primary cancer/tumor with documentation that PET is required to sufficiently diagnose disease (e.g., initial presentation with suspected metastasis) or plan treatment[59,60]; **OR**

- Restaging, assessing treatment response, or evaluation of suspected recurrence[B] of **ANY** of the following biopsy-confirmed primary cancer/tumor types:
  - Adrenal[7]; **OR**
  - Adrenocortical carcinoma and **ALL** of the following:
    - Known metastatic disease or unresectable locoregional disease; **AND**
    - Conducted in lieu of CT or MR imaging with contrast and **ANY** of the following:
      - Every 12 weeks to 12 months up to 5 years; **OR**
      - After 5 years as clinically indicated; **OR**
  - Anal carcinoma recurrence or progression found on digital rectal exam[6]; **OR**
  - Bladder cancer and **ANY** of the following[61]:
    - Muscle invasive bladder cancer and **ALL** of the following:
      - Status post systemic therapy; **AND**
      - **ANY** of the following:
        - PET/CT not yet performed; **OR**

        - Patient at high risk and metastatic disease suspected; **AND**
      - Symptomatic, at high-risk, or with laboratory indicators of bone metastasis; **OR**
    - Sites of extraosseous metastatic disease are suspected based on other imaging or previously documented[61]; **OR**
  - Bone[15]; **OR**
  - Brain/central nervous system and **ALL** of the following[8]:
    - Adult medulloblastoma status post surgery; **AND**
    - Chest/abdomen/pelvis CT or MRI with contrast is contraindicated or inconclusive; **OR**
  - Breast and **ANY** of the following:
    - Distant recurrence suspected from symptoms, physical examination, or laboratory findings (regardless of clinical stage at time of original presentation)[9-12]; **OR**
    - Treatment response assessment (post chemotherapy, targeted therapy, or endocrine therapy alone or in combination with cyclin-dependent kinase [CDK] 4/6 inhibitor) when CT or MRI is contraindicated or inconclusive; **OR**
  - Cervical[13,14]; **OR**
  - Colorectal and **ANY** of the following[16-18]:
    - Serial carcinoembryonic antigen (CEA) elevation and contrast-enhanced CT or MR are negative; **OR**
    - **ALL** of the following:
      - Documented metachronous metastases by CT, MRI, or biopsy; **AND**
      - Potentially surgically curable metastatic disease to the liver; **OR**
  - Endometrial cancer with suspected recurrence or metastasis based on clinical symptoms, physical findings, or abnormal laboratory results; **OR**
  - Esophageal and esophagogastric junction[21,22]; **OR**
  - Gastric[23]; **OR**

- Gastrointestinal stromal tumor (GIST)[62]; **OR**
- Gestational trophoblastic neoplasia[63]; **OR**
- Head and neck and **ALL** of the following[24-26]:
  - For assessing response to systemic therapy or radiation; **AND**
  - **ANY** of the following:
    - Twelve weeks or longer post-treatment with clinical evidence of response; **OR**
    - Repeat PET/CT 3-6 months after initial post-treatment PET/CT with equivocal findings; **OR**
    - Recurrence suspected; **OR**
- Leukemia with lymphomatous extramedullary disease[56,57]; **OR**
- Lung cancer, non-small cell, with suspected mediastinal lymph node recurrence and **ALL** of the following[28]:
  - The patient has had no prior radiation; **AND**
  - The patient is being treated with concurrent chemoradiation; **OR**
- Lung cancer, small cell with equivocal or ambiguous findings on standard CT imaging with contrast[29,30]; **OR**
- Lymphoma[31,32]; **OR**
- Melanoma (see Non-Indications below) and **ALL** of the following[33]:
  - CT with contrast is contraindicated or inconclusive; **AND**
  - Specific signs and symptoms concerning for recurrence; **OR**
- Multiple myeloma[37]; **OR**
- Ovarian and **ALL** of the following[38-40]:
  - Standard imaging with CT or MRI is contraindicated or inconclusive; **AND**
  - **ANY** of the following:
    - The patient is receiving primary chemotherapy; **OR**
    - Concern for recurrence based on clinical signs and symptoms or rising serial cancer antigen (CA)-125; **OR**
- Pancreatic and **ANY** of the following[41,42]:

- For treatment response assessment with **ALL** of the following:
  - The patient is undergoing neoadjuvant therapy; **AND**
  - Standard imaging with CT or MRI is contraindicated or inconclusive; **OR**
- **ALL** of the following:
  - Post neoadjuvant therapy; **AND**
  - Borderline resectable disease; **AND**
  - EUS-guided biopsy has been performed; **OR**

- Penile and **ALL** of the following:[47]
  - Standard imaging with CT or MRI is contraindicated or inconclusive **AND**;
  - **ANY** of the following:
    - **ALL** of the following:
      - Treatment response assessment post-neoadjuvant chemotherapy; **AND**
      - The patient is a surgical candidate; **AND**
      - **ANY** of the following:
        - Pelvic lymph nodes enlarged on CT or MRI; **OR**
        - Positive percutaneous lymph node biopsy; **OR**
    - **ALL** of the following:
      - Treatment response assessment status post systemic chemotherapy; **AND**
      - Metastatic disease known; **OR**
- Pediatric high-grade glioma/pediatric medulloblastoma with **ALL** of the following[48]:
  - Standard imaging has been performed; **AND**
  - There is a need for **ANY** of the following:
    - Differentiating between neoplasm and radiation necrosis; **OR**
    - Tumor staging; **OR**
    - Guiding biopsy site selection; **OR**

- Neuroblastoma[49]; **OR**
- Prostate and **ALL** of the following[64-68]:
  - Concern for disease progression; **AND**
  - Serum testosterone levels are less than 50 ng/dL; **AND**
  - Equivocal results on initial bone imaging; **AND**
  - Equivocal results on CT or MRI; **AND**
  - PSMA PET is not being obtained; **OR**
- Squamous cell carcinoma of the skin[69]; **OR**
- Soft tissue sarcoma[50,70]; **OR**
- Testes (seminoma cancers only)[71,72]; **OR**
- Thymoma or thymic carcinoma[46]; **OR**
- Thyroid[53,73]; **OR**
- Upper tract genitourinary cancers (renal pelvis cancer or urothelial cancer of the ureter) and **ANY** of the following:
  - Post endoscopic resection; **OR**
  - Post adjuvant treatment; **OR**
  - Post treatment and metastatic disease suspected; **OR**
- Uterine sarcoma if standard imaging suggests metastases[19]; **OR**
- Vulvar and **ALL** of the following[55]:
  - Recurrence suspected; **AND**
  - PET/CT not previously performed during surveillance; **OR**

- Surveillance (post-treatment monitoring)[C] for **ANY** of the following biopsy-confirmed primary cancer/tumor types:
  - Adrenal (pheochromocytoma/paraganglioma) with **ALL** of the following[7]:
    - Locally unresectable disease or distant metastases; **AND**
    - Bone-dominant disease; **AND**
    - CT and MR imaging is contraindicated or inconclusive; **OR**
  - Bladder carcinoma that is known or suspected to be metastatic[61]; **OR**
  - Ewing sarcoma[15]; **OR**

- Osteosarcoma[15]; **OR**
- Cervical cancer with **ANY** of the following[13]:
  - Stage I, non-fertility-sparing cervical cancer with **ANY** of the following:
    - FIGO stage IB3; **OR**
    - The patient required postoperative adjuvant radiation or chemoradiation due to high-risk factors (e.g., positive nodes, positive parametria, positive margins, or local cervical factors); **OR**
  - Stage II-IV4 cervical cancer and **ANY** of the following:
    - Within 3-6 months of therapy completion; **OR**
    - Repeated FDG-PET/CT 3 months after indeterminate first post treatment FDG-PET/CT; **OR**
  - Stage IVB cervical cancer; **OR**
  - Small-cell neuroendocrine carcinoma of the cervix (NECC); **OR**
- Stage IV colon or rectal cancer with **ANY** of the following[16,17]:
  - For assessment of response after image-guided liver-directed therapies for hepatic metastases (i.e., thermal ablation, radioembolization); **OR**
  - With serial CEA elevation during follow-up; **OR**
- Esophageal or esophagogastric cancer with **ALL** of the following[21]:
  - Every 6 months up to 2 years post-treatment, then annually for up to 5 years; **AND**
  - Any T or N tumor classification after neoadjuvant chemotherapy/chemoradiotherapy followed by esophagectomy; **AND**
  - CT imaging is contraindicated or inconclusive; **OR**
- Gastric cancer when standard imaging with CT is contraindicated or inconclusive[23]; **OR**

- Intermediate trophoblastic tumor (placental site trophoblastic tumor [PSTT]/epithelioid trophoblastic tumor [ETT]) on completion of chemotherapy, then every 6-12 months for 2-3 years[63]; **OR**
- Head and neck cancer[24]; **OR**
- Leukemia with lymphomatous extramedullary disease[56,57]; **OR**
- Lung cancer (non-small cell) after definitive treatment (radiation or surgery with or without chemotherapy) and **ALL** of the following[28]:
  - Histopathologic confirmation of disease recurrence; **AND**
  - Ambiguous or equivocal findings on standard CT imaging; **OR**
- Lung cancer (small cell) and contrast CT or MRI is contraindicated[29]; **OR**
- T-cell/non-Hodgkin lymphoma and **ANY** of the following[32]:
  - No more than every 6 months for 2 years; **OR**
  - Annually for 5 years; **OR**
  - As clinically indicated; **OR**
- Melanoma, cutaneous, and **ALL** of the following[33]:
  - Stage IIB-IV; **AND**
  - CT with contrast is contraindicated or inconclusive; **AND**
  - Every 3 to 12 months for up to 5 years, as clinically indicated; **OR**
- Multiple myeloma for **ALL** of the following[37]:
  - Annual surveillance for 5 years; **AND**
  - **ANY** of the following:
    - Solitary extraosseous plasmacytoma; **OR**
    - **ALL** of the following:
      - Solitary osseous plasmacytoma; **AND**
      - Whole body MRI cannot be performed or is contraindicated; **OR**
- Ovarian cancer when standard imaging with CT or MRI is contraindicated or inconclusive[38]; **OR**
- Pediatric high-grade glioma/pediatric medulloblastoma[48]; **OR**
- Neuroblastoma[49]; **OR**

- Squamous cell carcinoma of the skin that is regional/S-ITM (satellite/in-transit metastasis) with an appreciable risk of subclinical local or nodal recurrence[69]; **OR**
- Soft tissue sarcoma[50]; **OR**
- Testicular cancer (seminoma) for **ANY** of the following[71]:
  - Bulky clinical stage IIB, IIC, or stage III and **ANY** of the following:
    - Every 4 months for the first year; **OR**
    - Every 6 months for the second year; **OR**
    - Annually for years 3 and 4; **OR**
    - As clinically indicated for years 5 and beyond; **OR**
  - Any recurrent seminoma as clinically indicated; **OR**
- Thyroid cancer with **ANY** of the following[53]:
  - Medullary carcinoma that is 2-3 months postop and **ANY** of the following:
    - Calcitonin rises significantly (i.e., greater than 150 pg/mL); **OR**
    - CEA is elevated; **OR**
  - Anaplastic carcinoma 3-6 months after completion of initial therapy; **OR**
- Vulvar or vaginal cancer 3-6 months after definitive treatment[55]; **OR**
- Vulvar or vulvovaginal melanoma every 3-12 months[55]; **OR**
- Other evaluation of a new clinical sign or symptom that is concerning for progression, recurrence, or metastasis; **OR**
- Characterization of solitary pulmonary nodules (SPNs) greater than 8 millimeters in diameter, or greater than 6 millimeters for part-solid nodules.[77]

F-18 fluciclovine, choline C-11, or prostate-specific membrane antigen (PSMA [using F-18 piflufolastat, F-18 flotufolastat, or Ga-68 PSMA-11]) PET is considered appropriate if **ALL** of the following are **TRUE**:

- The patient has prostate cancer/tumor; **AND**
- **ANY** of the following[5,64-67]:
  - Initial staging if the patient has a diagnosis of unfavorable intermediate-risk, high-risk, or very high-risk prostate cancer; **OR**
  - The patient has been treated with radical prostatectomy and **ANY** of the following:
    - Serum prostate-specific antigen (PSA) elevation greater than 0.1 ng/ml; **OR**
    - Persistence of PSA (failure to fall to undetectable levels); **OR**
    - Previously undetectable PSA that has been increasing on two or more occasions; **OR**
  - The patient has been treated with radiation therapy and **ANY** of the following:
    - An increase of PSA by 2 ng/mL or greater above the lowest post-treatment PSA; **OR**
    - PSA increasing after radiation therapy and the patient is a candidate for salvage local therapy (even if the lowest PSA value is under 2 ng/mL); **OR**
  - Prior to initiation of androgen deprivation therapy (ADT)[78]; **OR**
  - Three months following completion of ADT[78]; **OR**
  - GA-68 PSMA-11 PET/CT before initial treatment with lutetium Lu 177 vipivotide tetraxetan for metastatic castration-resistant prostate cancer; **OR**
  - Restaging 12 weeks after treatment with Lu177/Pluvicto[79]; **OR**
  - Known metastatic disease and concern for progression on treatment and **ALL** of the following[80,81]:
    - PSMA imaging will influence treatment plan; **AND**

- Inconclusive prior imaging.

Dotatate PET is considered appropriate if **ALL** of the following are **TRUE**:

- The patient has a well-differentiated neuroendocrine tumor; **AND**
- **ANY** of the following[82,92]:
  - Diagnosis; **OR**
  - Staging; **OR**
  - Restaging; **OR**
  - Treatment planning for 177-lutetium Lu Dotatate.

Positron emission tomography (PET) scan for non-oncologic conditions is considered appropriate if **ALL** of the following are **TRUE**[83,84]:

- MRI or CT is contraindicated or inconclusive; **AND**
- **ANY** of the following:
  - Suspected musculoskeletal osteomyelitis; **OR**
  - Biopsy-proven Castleman disease[85]; **OR**
  - Fever of unknown origin (FUO) after clinical (including labs and blood cultures) and other advanced imaging workup (CT or MR) are negative; **OR**
  - Sarcoid when conventional testing (i.e., CT and inflammatory serology) are inconclusive to evaluate **ANY** of the following[96-98]**:**
    - Extent of disease; **OR**
    - Response to treatment, provided that the results will affect a change in management; **OR**
    - If sarcoid is suspected and there is a need for PET/CT to determine the most suitable site to biopsy; **OR**
    - Known or suspected systemic vasculitis (e.g., aortitis, giant cell arteritis, Takayasu arteritis).[99-103]

Non-Indications

Positron emission tomography (PET), with or without concurrently acquired computed tomography (CT)(PET/CT) is not considered appropriate if **ANY** of the following is **TRUE**:

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms in the absence of established guidelines or criteria supporting more frequent imaging[86]; **OR**
- As an initial screening test in asymptomatic individuals; **OR**
- Initial diagnosis or staging of axillary lymph nodes in breast cancer[9-12]; **OR**
- Initial diagnosis of cervical cancer related to anti-tumor treatment strategy[13,14]; **OR**
- Initial staging of regional lymph nodes in melanoma[33]; **OR**
- Non-seminoma tumors of the testes[71,72]; **OR**
- Surveillance after definitive treatment of anal carcinoma[5]; **OR**
- Diagnosis of kidney cancer[87]; **OR**
- Evaluation for relapse after nephrectomy[87]; **OR**
- FDG-PET for non-small cell lung carcinoma in-situ; **OR**
- FDG-PET for routine surveillance of non-small cell lung cancer[28]; **OR**
- Staging of appendiceal carcinoma[88]; **OR**
- Surveillance after definitive treatment of Hodgkin lymphoma (unless pediatric patient with non-bulky Stage IA or IIA NLPHL with incomplete resection)[31]; **OR**
- FDG-PET for stage IV colon cancer[16]; **OR**
- FDG-PET for the staging of prostate cancer[64-68]; **OR**
- NaF-PET for the detection of bone metastasis.

*NOTE: PET/CT in patients with claustrophobia should be requested at the discretion of the ordering provider.

**NOTE: PET/CT in pregnant patients should be requested at the discretion of

the ordering provider and obstetric care provider.[89]
***NOTE: PET scans should be scheduled at least 4–6 weeks after radiation therapy or surgery to avoid false positives due to inflammation from recent treatments.

Definitions

[A]**Initial evaluation or staging:** The establishment or confirmation of a diagnosis or determination of disease progression. Conducted after clinical and laboratory tests indicative or suspicious of disease.
[B]**Restaging, treatment response, or suspected recurrence evaluation:** Imaging to guide or inform treatment. Includes imaging conducted before and after surgical and nonsurgical treatment to evaluate response to treatment. Also includes imaging when there is clinical suspicion of recurrence or change in disease status that may inform treatment.
[C]**Surveillance:** Assessment after completion of treatment. Includes imaging of patients with incomplete treatment response as well as asymptomatic patients, patients in remission, and patients with no measurable disease. Also includes post-treatment imaging after clinical or laboratory findings indicative or suspicious of disease recurrence. Imaging frequency and overall length of the surveillance period vary according to disease, treatment, and patient response to treatment.

Disclaimer on Radiation Exposure in the Pediatric Population

Due to the heightened sensitivity of pediatric patients to ionizing radiation, minimizing exposure is paramount. At Cohere, we are dedicated to ensuring that every patient, including the pediatric population, has access to appropriate imaging following accepted guidelines. Radiation risk is dependent mainly on the patient's age at exposure, the organs exposed, and the patient's sex, though there are other variables. The following technical

guidelines are provided to ensure safe and effective imaging practices:

Radiation Dose Optimization: Adhere to the lowest effective dose principle for pediatric imaging. Ensure that imaging protocols are specifically tailored for pediatric patients to limit radiation exposure.[90,91]

Alternative Modalities: Prioritize non-ionizing imaging options such as ultrasound or MRI when clinically feasible, as they are less likely to expose the patient to ionizing radiation. For instance, MRI or ultrasound should be considered if they are more likely to provide an accurate diagnosis than CT, fluoroscopy, or radiography.[90,91]

Cumulative Dose Monitoring: Implement systems to track cumulative radiation exposure in pediatric patients, particularly for those requiring multiple imaging studies. Regularly reassess the necessity of repeat imaging based on clinical evaluation.[90,91]

CT Imaging Considerations: When CT is deemed the best method for achieving a correct diagnosis, use the lowest possible radiation dose that still yields reliable diagnostic images.[90,91]

Cohere Imaging Gently Guideline

The purpose of this guideline is to act as a potential override when clinically indicated to adhere to Imaging Gently and Imaging Wisely guidelines and As Low As Reasonably Possible (ALARA) principles.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
78811	Positron emission tomography (PET) imaging; limited area (eg, 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 (eg, 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
79101	Radiopharmaceutical therapy, by intravenous administration
A9515	Choline c-11, diagnostic, per study dose up to 20 millicuries

A9552	Fluorodeoxyglucose f-18 fdg, diagnostic, per study dose, up to 45 millicuries
A9587	Gallium ga-68, dotatate, diagnostic, 0.1 millicurie
A9588	Fluciclovine f-18, diagnostic, 1 millicurie
A9593	Gallium ga-68 psma-11, diagnostic, (ucsf), 1 millicurie
A9594	Gallium ga-68 psma-11, diagnostic, (ucla), 1 millicurie
A9595	Piflufolastat f-18, diagnostic, 1 millicurie
A9596	Gallium ga-68 gozetotide, diagnostic, (illuccix), 1 millicurie
A9597	Positron emission tomography radiopharmaceutical, diagnostic, for tumor identification, not otherwise classified
A9607	Lutetium Lu 177 vipivotide tetraxetan, therapeutic, 1 millicurie
A9608	Flotufolastat f18, diagnostic, 1 millicurie
A9609	Fludeoxyglucose f18 up to 15 millicuries
A9800	Gallium Ga-68 gozetotide, diagnostic, (Locametz), 1 millicurie
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 scanners only, for initial diagnosis of breast cancer and/or surgical planning for breast cancer (e.g., initial staging of axillary lymph nodes)

Medical Evidence

Jadvar et al. (2017) published Appropriate Use Criteria for the Society of Nuclear Medicine and Molecular Imaging (SNMMI), the European Association of Nuclear Medicine (EANM), the American Society of Clinical Oncology (ASCO), the American College of Nuclear Medicine (ACNM) the Society for Pediatric Radiology (SPR), and the Canadian Association of Nuclear Medicine (CANM). The group focused on meta-analyses and large individual studies comparing PET or PET/CT with other imaging modalities. It stated that the physician must prioritize which modality to begin with. PET/CT is said to have a strong role in restaging cancers and determining future patient management. Clinical studies cited to support the accuracy of PET/CT in detecting recurrent disease and assessing treatment response.[5]

The American College of Radiology (ACR) published the ACR-ACNM-SNMMI-SPR practice parameter for performing FDG-PET/CT in oncology in 2021. The indications presented in the document include use in the staging of malignancy, monitoring response to therapy, or restaging when the patient has relapsed. Additionally, this imaging modality may help localize the site of the primary tumor in the setting of metastatic disease, clarify indeterminate results, or localize occult disease when testing such as tumor markers indicates neoplastic disease. Finally, FDG-PET/CT may be used to plan treatment goals and to guide biopsy and radiation treatment planning.[4]

In 2023 the American College of Radiology published the ACR-ACNM-SNMMI practice parameter for performing Gallium-68 and Copper-64 Dotatate PET/CT imaging for neuroendocrine tumors (NETs). They noted that this imaging modality is appropriate for diagnosing, staging, restaging, and assessing treatment response in neuroendocrine tumors. Radiotracers such as those discussed in this practice parameter, which target cell membrane

expression of somatostatin receptors (SSTRs), are useful in evaluating well-differentiated NETs compared to anatomical imaging. Fused imaging with computed tomography (PET/CT) in hybrid PET scanners has shown a high level of accuracy in evaluating patients with known or suspected malignancy.[82]

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Clinical Guideline Revision History/Information

Original Date: April 29, 2022		
Review History		
Version 2	8/15/2024	Annual review and policy restructure.
Version 3	10/30/2024	Edited repeat imaging criteria language.
Version 4	11/21/2024	Added solitary pulmonary nodule verbiage/reference and biopsy-proven language to indications
Version 5	03/13/2025	Separated and revised surveillance criteria into new standalone indication based on NCCN guidance. Separated and revised initial diagnosis criteria into new standalone indication based on NCCN guidance. Indication for non-oncologic conditions expanded (Castleman Disease, Sarcoid) Substantial copyediting throughout majority of policy for ease of use and clarity in language. Added references.
Version 6	09/11/2025	Criteria reformatted to better align with NCCN guidelines and for clarity and ease-of-use throughout.

		"Initial diagnosis of strongly suspected primary cancer/tumor" changed to "initial evaluation of and/or staging of biopsy-proven (unless otherwise specified primary cancer/tumor" Added criteria to FDG PET for: well-differentiated grade 3 neuroendocrine tumor; hypercortisolemia; adrenocortical carcinoma; chordoma; colorectal cancer; hepatocellular carcinoma; ovarian, fallopian tube, or primary peritoneal cancer; prostate cancer; spine metastases; occult primary cancer; mediastinal mass concerning for thymoma or thymic carcinoma; penile cancer; pediatric high-grade glioma/medulloblastoma; neuroblastoma; bone cancer; small bowel adenomcarcinoma; systemic ligh-chain amyloidosis; thyroid cancer; upper tract genitourinary cancers; uterine sarcome; vaginal cancer. Clarified and simplified criteria in initial staging (FDG PET) for: adrenal tumor; melanoma. Expanded criteria in initial staging (FDG PET) for: bladder cancer; brain metastases; breast cancer; cervical cancer; endometrial cancer; head and neck cancer; lung cancer, non-small cell; lung cancer, small-cell; lymphoma; pancreatic cancer; peritoneal mesothelioma; pleural mesothelioma; soft tissue sarcoma; vulvar cancer; leukemia.

		Expanded all criteria for response to treatment/restaging. Clarified and simplified criteria in surveillance (FDG PET) for adrenal tumor. Expanded criteria in surveillance (FDG PET) for: cervical cancer; melanoma; multiple myeloma. Clarified and simplified criteria in surveillance (FDG PET) for: esophageal or esophagogastric cancer; t-cell/non-Hodgkin lymphoma; ovarian cancer. Moved indication for meningioma when prior MRI or CT is indeterminate to Brain PET policy. Added definitions for: initial evaluation or staging; restaging, treatment response, or suspected recurrence evaluation; surveillance.