

Eviti Imaging: Soft Tissue Sarcomas

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For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Please refer to the CMS website at <http://www.cms.gov> for additional information.

For Medicaid members/enrollees, circumstances when state Medicaid coverage provisions conflict with the coverage provisions within this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Soft Tissue Sarcomas Imaging

Discussion

This imaging guideline provides a standardized framework for the use of diagnostic and surveillance imaging in the management of common adult malignancies, specifically soft tissue sarcomas. The goal is to ensure timely, evidence-based imaging that supports accurate staging, treatment planning, response assessment, and post-treatment surveillance.

Guiding Principles

- Follow evidence-based practices from major guidelines (e.g., NCCN, ESMO, ACR Appropriateness Criteria)
- Ensure imaging aligns with the clinical context and stage of disease
- Minimization of unnecessary radiation exposure
- Promote timely and cost-effective imaging utilization
- Incorporate multidisciplinary collaboration in imaging decisions

Imaging Guidelines

This guideline applies to the following patients:

1. At least 18 years of age with confirmed or suspected diagnoses of soft tissue sarcomas;
AND
2. All phases of oncologic care, including one of the following:
 - a) Initial staging
 - b) Treatment response evaluation
 - c) Post-treatment surveillance
 - d) Detection of recurrence or progression; AND
3. All imaging modalities used in oncology care, including but not limited to the following:
 - a) Computed tomography (CT) (neck, chest, abdomen, pelvis, neck, or site-specific)
 - b) Magnetic resonance imaging (MRI) (including site-specific protocols such as pelvis MRI, brain MRI, liver MRI)
 - c) Fluorodeoxyglucose positron emission tomography/CT (FDG-PET/CT)
 - d) PET/MRI
 - e) Somatostatin receptor PET/CT (SSTR-PET/CT)
 - f) Nuclear medicine (e.g., bone scan, PSMA PET)
 - g) Single photon emission computed tomography/CT (SPECT/CT) (e.g., octreotide SPECT/CT for neuroendocrine tumors)

Notes:

1. The concurrent utilization of multiple advanced imaging modalities—such as PET/CT and MRI—is not routinely warranted and should be considered only when each modality is expected to provide distinct and clinically relevant information that will directly impact patient management. The selection of the most appropriate imaging study should be individualized, taking into account tumor type, clinical presentation, prior imaging, and other patient-specific factors. Imaging requests will be evaluated on a case-by-case basis to

ensure clinical necessity, appropriateness, and the potential to influence therapeutic decision-making.

- When PET imaging is clinically indicated, the appropriate radiotracer should be selected based on tumor type and clinical scenario.

Soft Tissue Sarcomas Imaging

Soft tissue sarcomas (STS) are a heterogeneous group of malignant mesenchymal tumors that can arise in any anatomic location. Despite histologic diversity, the imaging approach is largely standardized and dictated by tumor site, grade, and extent of disease rather than histologic subtype.

MRI is the modality of choice for extremity, trunk, and head/neck sarcomas, providing optimal definition of local extent, compartment involvement, and relationship to neurovascular structures. CT is preferred for retroperitoneal, visceral, or intra-abdominal sarcomas, where cross-sectional evaluation of adjacent organ involvement is key.

Baseline CT chest is mandatory for all intermediate- to high-grade sarcomas due to the strong predilection for pulmonary metastases. FDG-PET/CT may aid in detecting distant disease, assessing metabolic activity, or guiding biopsy, but is not required in all cases.

Post-treatment imaging is used to assess response, detect recurrence, and monitor for distant metastases, with frequency tailored to grade and site.

Soft tissue Sarcoma Recommendations			
Clinical Scenario	Recommended Modality	Frequency/Timing	Purpose/Notes
Initial Staging – Extremity, Trunk, Head & Neck	MRI of entire compartment	Once at diagnosis	Preferred for local staging. Defines tumor size, compartmental extension, fascial plane involvement, and relationship to neurovascular bundle.
	CT chest	Once at diagnosis	Required for all intermediate/high-grade STS to evaluate lung metastases.
	CT or MRI abdomen/pelvis	As clinically indicated	Consider if high-grade, large (>5 cm), or lower trunk lesions where intra-abdominal extension possible.

	FDG-PET/CT	As clinically indicated	Optional May assist in evaluating multifocal disease or biopsy target; not routine for low/intermediate grade lesions. See Appendix A for additional detail
Initial Staging – Retroperitoneal/Intra-Abdominal STS	CT abdomen/pelvis	Once at diagnosis	Preferred modality. Defines tumor origin, relationship to organs/vessels, and resectability.
	MRI abdomen/pelvis	Once at diagnosis or as adjunct	Superior for distinguishing tumor from adjacent soft tissue or vessels; used when surgical resection planned or CT is indeterminate.
	CT chest	Once at diagnosis	Evaluate for pulmonary metastases.
	FDG-PET/CT	As clinically indicated	Optional May clarify indeterminate lesions or metastatic disease. See Appendix A for additional detail.
See Appendix A for Additional Imaging Recommendations for Histology Specific Recommendations			
Treatment Monitoring	MRI (extremity/trunk) or CT (retroperitoneum) CT scan chest/abdomen/pelvis PET scan (when clinically indicated)	May obtain baseline imaging after definitive local therapy Every 3-6 months	NCCN does not specify exact interval for treatment response assessment. The same imaging modality used at baseline should

	due to inconclusive or inadequate findings on conventional imaging)		generally be maintained for follow-up to ensure consistency in anatomic and functional comparison.
Surveillance - Extremity, Trunk, Head & Neck Stage I	CT chest	Every 6-12 months alone can be considered	Or plain radiographs
Surveillance- Extremity, Trunk, Head & Neck Stage II-IV	MRI (local site)	Every 3–6 months for 2–3 years, then every 6 months to complete 5 years followed by annually	Imaging modality and frequency depend on site, grade, and resection status. MRI preferred for extremity/trunk; CT for retroperitoneum.
	CT chest CT abdomen/pelvis (if known site of metastases)	As clinically indicated	Lungs are the most common site of recurrence. CT chest preferred for high-grade or recurrent disease.
	FDG-PET/CT (when clinically indicated due to inconclusive or inadequate findings on conventional imaging)	As clinically indicated	Not routine; use for equivocal findings or to guide biopsy.
Surveillance - Retroperitoneal/Intra-Abdominal STS	CT chest/abdomen/pelvis or MRI	Every 3–6 months for 3 years, then every 6 months to complete a total of 5 years, and then annually	CT preferred
Suspected Recurrence	MRI (extremity/trunk)	As indicated	See initial work-up for details.

	CT chest/abdomen/pelvis ± PET/CT		
Appendix A			
Histologic Subtype(s)	Locations to Image	Imaging Modality	Purpose/Notes
All	Primary site	MRI (preferred for extremity/body wall, head and neck) and/or CT (preferred for retroperitoneum)	As part of initial workup and follow-up
All (Except Well-Differentiated Liposarcoma)	Lungs	CT chest	As part of initial workup and follow-up for given propensity for lung metastases- CT chest (preferred) or chest X-ray
Alveolar Soft Part Sarcoma (ASPS)	Central nervous system (CNS)	MRI brain (preferred) or CT brain	As part of initial workup and follow-up given propensity for CNS metastases
	Bone	Consider FDG-PET/CT or bone scan	As part of initial workup and follow-up given propensity for bone metastases
Angiosarcoma	Abdomen/pelvis	CT abdomen/pelvis or MRI abdomen/pelvis	As part of initial workup and follow-up given propensity for abdomen/pelvis metastases
	Central nervous system (CNS)	Consider MRI brain or CT brain	As part of initial workup and follow-up given propensity for CNS metastases. MRI brain (preferred)

	Regional lymph node basin	Consider CT or FDG-PET/CT	As part of initial workup and follow-up given propensity for nodal metastatic disease
Cardiac Sarcoma (Left-Sided)	Central nervous system (CNS)	Consider MRI brain or CT brain	As part of initial workup and follow-up given propensity for CNS metastases. MRI preferred.
Clear Cell Sarcoma	Regional lymph node basin	Consider CT or FDG-PET/CT	As part of initial workup and follow-up given propensity for nodal metastatic disease
	Bone	Consider FDG-PET/CT or bone scan	As part of initial workup and follow-up given propensity for bone metastases
Epithelioid Sarcoma	Abdomen/pelvis	CT abdomen/pelvis or MRI abdomen/pelvis	As part of initial workup and follow-up given propensity for abdominal/pelvic metastases
	Regional lymph node basin	Consider CT or FDG-PET/CT	As part of initial workup and follow-up given propensity for nodal metastatic disease
Leiomyosarcoma	Liver	CT abdomen/pelvis or MRI abdomen/pelvis	As part of initial workup and follow-up given propensity for liver metastases
	Bone	Consider FDG-PET/CT or bone scan	As part of initial workup and follow-up given propensity for bone metastases
Myxoid/Round Cell Liposarcoma	Abdomen/Pelvis	CT abdomen/pelvis or MRI abdomen/pelvis	As part of initial workup and follow-up given

			propensity for abdominal/pelvic metastases
	Total spine	MRI total spine	As part of initial workup and follow-up given propensity for spine metastases
	Soft tissues	Consider whole-body (WB) MRI; if unavailable, consider PET/CT	As part of initial workup and follow-up given propensity for soft tissue metastases
Rhabdomyosarcoma	Regional lymph node basin	CT or FDG-PET/CT	As part of initial workup and follow-up given propensity for nodal metastatic disease
	Bone	Consider PET/CT or bone scan	As part of initial workup and follow-up given propensity for bone metastases
Well-Differentiated Liposarcoma/ Dedifferentiated Liposarcoma	Retroperitoneal/ intra-abdominal	Consider FDG-PET/CT	Help differentiate between well-differentiated liposarcoma (WDLPS) and dedifferentiated liposarcoma and to help determine site of biopsy
Select Histologies in Which Neoadjuvant Therapy is Being Used	Any site	Consider FDG-PET/CT	FDG-PET/CT scan may be useful in staging, prognostication, grading, and determining response to neoadjuvant therapy

Notes:

1. MRI remains the gold standard for local assessment in extremity/trunk/head & neck STS.
2. CT abdomen/pelvis is the modality of choice for retroperitoneal sarcoma.

3. CT chest is essential at baseline and during follow-up for intermediate/high-grade sarcomas.
4. PET/CT is optional, primarily for staging uncertain cases, evaluating response, or clarifying recurrence.¹

Revision and Review History

No.	Description	Date
1	Original Effective Date:	1/1/2026
2	Policy Annual Review Dates:	
3	Department Owner:	Medical Affairs
4	NH Advisory Committee Approval Dates:	
5	Revision Changes:	

References

¹ National Comprehensive Cancer Network Guidelines: Soft Tissue Saroma.
https://www.nccn.org/professionals/physician_gls/pdf/sarcoma.pdf. Accessed December 17, 2025.