

**American College of Radiology
ACR Appropriateness Criteria®**

Soft-Tissue Masses

Variant 1: Soft-tissue mass. Superficial or palpable. Initial imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography area of interest	Usually appropriate	Limited	Varies	Varies	9	9	1	0	0	0	0	0	2	0	9
		References	Study Quality												
		3 (27726739)	4												
		9 (18566812)	4												
		8 (4652058)	3												
US area of interest	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	1	0	1	6	3	1
		References	Study Quality												
		11 (19414084)	3												
		10 (23674777)	4												
		12 (25444107)	4												
		13 (24848846)	3												
		14 (25615787)	4												
		15 (24848826)	4												
MRI area of interest without IV contrast	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	7	0	2	0	1	0	1	1	0
MRI area of interest without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	7	1	1	1	1	0	0	1	0

FDG-PET/CT area of interest	Usually not appropriate	Expert Consensus	⊕⊕⊕⊕ 10-30 mSv		1	1	10	0	1	0	0	0	0	0	1
CT area of interest without IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	7	1	2	1	0	0	1	0	0
CT area of interest without and with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	10	0	0	0	2	0	0	0	0
CT area of interest with IV contrast	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	8	2	0	1	0	1	0	0	0

Variant 2: Soft-tissue mass. Nonsuperficial (deep) or nonspecific clinical assessment or located in an area difficult to adequately evaluate with radiographs (flank, paraspinal region, groin, or deep soft tissues of the hands and feet.). Initial imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography area of interest	Usually appropriate	Limited	Varies	Varies	9	9	0	0	0	0	0	0	1	1	10
		References		Study Quality											
		3 (27726739)		4											
US area of interest	May be appropriate	Moderate	0 0 mSv	0 0 mSv [ped]	5	5	1	0	0	2	4	3	2	0	0
		References		Study Quality											
		11 (19414084)		3											
		16 (15486212)		2											
CT area of interest without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	5	2	1	2	0	4	0	3	0	0
		References		Study Quality											
		3 (27726739)		4											
		17 (20489097)		4											

23 (8396848)	4
24 (20566782)	3
25 (15290067)	3
26 (7282321)	4
27 (6581679)	4
28 (7839977)	4
29 (7998525)	4
31 (1899738)	4
32 (2717749)	2
30 (1617181)	2

MRI area of interest without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	2	0	2	2	6
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References	Study Quality
1 (23971442)	4
19 (3258709)	4
20 (1410377)	3
21 (10663750)	4
22 (8421750)	4
23 (8396848)	4
24 (20566782)	3
25 (15290067)	3
26 (7282321)	4
27 (6581679)	4
28 (7839977)	4
29 (7998525)	4
31 (1899738)	4
32 (2717749)	2
30 (1617181)	2

CT area of interest with IV contrast	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	5	2	1	0	0	5	1	2	1	0
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References	Study Quality
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		18 (8988217)			2													
CT area of interest without IV contrast	May be appropriate	Moderate	Varies	Varies	4	4	3	1	2	3	2	1	0	0	0			
		References			Study Quality													
		18 (8988217)			2													
CT area of interest without and with IV contrast	Usually not appropriate	Moderate	Varies	Varies	1	1	7	1	1	1	2	0	0	0	0			
		References			Study Quality													
		18 (8988217)			2													
FDG-PET/CT area of interest	Usually not appropriate	Limited	⊗⊗⊗⊗ 10-30 mSv		1	1	7	1	2	0	1	0	1	0	0			
		References			Study Quality													
		35 (20660389)			3													
		33 (19636577)			3													
		36 (26053718)			3													
		34 (18756363)			3													

Variant 4: Soft-tissue mass. Nondiagnostic initial evaluation. Presenting with spontaneous hemorrhage or suspicion of vascular mass. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations											
							1	2	3	4	5	6	7	8	9			
MRI area of interest without and with IV contrast	Usually appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	9	9	1	0	0	1	0	1	0	2	7			
CT area of interest without and with IV contrast	Usually appropriate	Expert Consensus	Varies	Varies	7	7	0	0	0	0	3	3	3	1	2			
CTA area of interest with IV contrast	May be appropriate	Limited	Varies	Varies	6	6	0	0	0	1	5	0	4	2	0			
		References			Study Quality													
		38 (16389981)			3													

MRA area of interest with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	1	0	3	4	4	0	0
		References	Study Quality												
		3 (27726739)	4												
MRI area of interest without IV contrast	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	2	0	0	3	5	2	0	0	0
		References	Study Quality												
		3 (27726739)	4												
CT area of interest without IV contrast	May be appropriate	Expert Consensus	Varies	Varies	4	4	3	0	3	4	2	0	0	0	0
CT area of interest with IV contrast	May be appropriate	Expert Consensus	Varies	Varies	4	4	4	0	0	3	4	0	1	0	0
FDG-PET/CT area of interest	May be appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv		4	4	2	1	2	3	4	0	0	0	0
US area of interest	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	1	1	7	0	2	0	2	1	0	0	0
		References	Study Quality												
		37 (17828027)	4												

Variant 5: Soft-tissue mass. Nondiagnostic initial evaluation. Patient non-MRI compatible or with metal limiting MR evaluation. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT area of interest with IV contrast	Usually appropriate	Limited	Varies	Varies	9	9	0	1	0	0	1	1	2	1	6
		References	Study Quality												
		39 (21249370)	3												
		41 (24834889)	4												
		40 (26025120)	3												

Appendix Key

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

Appropriateness Category: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

SOE: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality:** The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.