American College of Radiology ACR Appropriateness Criteria®

Soft Tissue Masses

Variant 1: Superficial soft tissue mass. Initial imaging.

ъ .	Appropriate	eness	4.1.1/ DF	Adults RRL Peds RRL Rating Media					I	inal	Tabu	latio	ns		
Procedure	Category	y SOE	Adults RF	KL Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
US area of interest	Usually appropriat	te	O 0 mSv	O 0 mSv [ped]	9	9	1	0	0	0	0	2	2	2	7
		Reference	ces	Stu	dy Quality		•				•				
		17 (24848	846)		3										
		19 (24848	826)		4										
		18 (33058	264)		2										
		16 (31900	511)		2										
		15 (35412	355)		4										
		14 (28987	(653)		3										
		13 (30928	084)		4										
		12 (32438	440)		4										
		9 (298464	198)		4										
Radiography area of interest	Usually appropriat		Varies	Varies	9	9	1	0	1	0	0	0	0	1	11
		Reference	ces	Stu	dy Quality										
		11 (27726	739)		4										
		10 (18566812)			4										
		9 (298464	498)		4										
CT area of interest with IV contrast	Usually no appropriate		Varies	Varies	2	2	7	4	2	0	0	1	0	0	0

CT area of interest without IV contrast	Usuall approp		Expert Consensus	Varies	Varies	2	2	6	4	2	0	0	0	1	0	0
CT area of interest without and with IV contrast	Usuall approp		Expert Consensus	Varies	Varies	2	2	7	2	2	0	1	1	1	0	0
MRI area of interest without and with IV contrast	Usuall approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	2	1	3	1	1	0	0	0
Image-guided biopsy area of interest	Usuall approp		Limited Varie		Varies	1	1	10	1	1	1	0	0	1	0	0
			References		Study	Quality										
			23 (23971442)			4										
			24 (29752328)	`		4										
MRI area of interest without IV contrast	Usuall approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	8	2	0	2	1	1	0	0	0
FDG-PET/CT area of interest	Usuall approp		Expert Consensus	���� 10-3 mSv	30	1	1	11	1	1	0	0	0	0	1	0
US area of interest with IV contrast	Usuall approp		Strong	O 0 mSv	O 0 mSv [ped]	1	1	10	2	0	0	0	0	1	0	0
	•		References		Study	Quality										
			22 (22411306)			4										
			21 (27959625)			2										
			20 (25454097)			2				•	•					
Image-guided fine needle aspiration area of interest	Usuall approp		Limited Varies		Varies	1	1	10	1	1	0	1	0	1	0	0
		References			Study	Quality										
			23 (23971442)		4											
			24 (29752328)			4										

Variant 2: Nonsuperficial (deep) soft tissue mass. Initial imaging.

P J	Appropriateness	SOE	A 414 DDI	D. J. DDI	D - 42	M - 1!			I	inal	Tabu	latio	ns		
Procedure	Category	SUE	Adults RRL	Peds RRL	Rating	Median	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	1	10
		References		Study	y Quality										
		11 (27726739)			4										
		25 (23673552)			4										
		26 (35236592)			4										
		9 (29846498)			4				,	,		ı		_	
CT area of interest with IV contrast	May be appropriate	Limited	Varies	Varies	5	5	0	1	2	1	6	3	0	0	0
		References		Study	y Quality										
		11 (27726739)			4										
		29 (25344599)			4										
		30 (20489097)			4										
		31 (33299004)			4										
CT area of interest without IV contrast	May be appropriate	Limited	Varies	Varies	5	5	0	2	0	0	8	3	0	0	0
		References		Study	y Quality										
		11 (27726739)			4										
		29 (25344599)			4										
		30 (20489097)			4										
		31 (33299004)			4			1							
CT area of interest without and with IV contrast	May be appropriate	Limited	Varies	Varies	5	5	0	1	0	1	8	3	0	0	0
		References			y Quality										
		11 (27726739)			4										
		29 (25344599)			4										
		30 (20489097)			4										
		31 (33299004)			4										

US area of interest	May approp	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	10	2	0	0	0
		References		Study	y Quality										
		13 (30928084)			4										
		27 (19414084)			3										
		28 (32591891)			2										
MRI area of interest without and with IV contrast	Usuall approp			O 0 mSv [ped]	2	2	6	3	1	2	1	0	0	0	1
US area of interest with IV contrast	Usuall approp	Limited O		O 0 mSv [ped]	2	2	7	0	3	1	2	0	1	0	0
		References	References		y Quality										
		27 (19414084)			3										
Image-guided biopsy area of interest	Usuall approp	Limited Varies		Varies	1	1	12	1	0	0	0	0	1	0	0
		References		Study	y Quality										
		23 (23971442)			4										
		24 (29752328)			4										
MRI area of interest without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	8	3	0	0	3	0	0	0	0
FDG-PET/CT area of interest	Usuall approp	Expert Consensus	���� 10-30 mSv)	1	1	11	2	0	0	0	0	1	0	0
Image-guided fine needle aspiration area of interest	Usuall: approp	Limited	Varies	Varies	1	1	12	0	0	1	0	0	1	0	0
		References		Study	y Quality		•	•		•			•		
		 23 (23971442)			4										
		24 (29752328)			4										

Variant 3: Soft tissue mass. Nondiagnostic radiograph and noncontrast enhanced ultrasound. Next imaging study.

D	Appropriateness	eness SOE Adults RRL Peds RRL Rating Median]	Final	Tabı	ulatio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Kating	Median	1	2	3	4	5	6	7	8	9
MRI area of interest without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	1	0	0	0	0	0	2	0	11
		References		Study	Quality										
		42 (33814107)			4										
		41 (28655433)	I		4										
		40 (31834812)			2										
		39 (32885297)	l .		2										
		38 (30949892)	l.		4										
		37 (32649224)			2										
		36 (32379793)			2										
		35 (30663160)			2										
		34 (33542870)			2										
		33 (15459325)			1										
		11 (27726739)			4										
		3 (33852362)		_	4										
MRI area of interest without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	4	4	3	1	0
		References		Study	Quality										
		42 (33814107)			4										
		41 (28655433)			4										
		40 (31834812)	l .		2										
		39 (32885297)			2										
		38 (30949892)			4										
		37 (32649224)			2										
		36 (32379793)			2										
		35 (30663160)			2										
		34 (33542870)			2										
		33 (15459325)			1										
		11 (27726739)			4										

		3 (33852362)			4			_	_						
CT area of interest with IV contrast	May be appropriate	Moderate	Varies	Varies	5	5	0	0	0	0	7	1	2	1	2
		References		Stud	y Quality										
		32 (8988217)			2										
		29 (25344599)			4										
		30 (20489097)	1		4										
		31 (33299004)		_	4	ı			1						
CT area of interest without and with IV contrast	May be appropriate	Moderate	Varies	Varies	5	5	0	0	0	0	8	5	0	0	0
		References		Stud	y Quality										
		32 (8988217)			2										
		31 (33299004)			4			1							
CT area of interest without IV contrast	Usually not appropriate	Moderate	Varies	Varies	2	2	6	1	4	1	1	0	0	0	0
		References		Stud	y Quality										
		32 (8988217)			2					_					
FDG-PET/CT area of interest	Usually not appropriate	Strong	≎≎≎≎ 10-30 mSv		2	2	5	5	1	0	1	0	1	0	0
		References		Stud	y Quality										
		47 (26990930)	ı		2										
		45 (32711449)	1		2										
		46 (20660389)	(3										
		43 (19636577)	1		3										
		48 (26053718)			3										
		44 (18756363)	<u> </u>		3	ı		ı		_	1	I			
US area of interest with IV contrast	Usually not appropriate	Strong	O 0 mSv	O 0 mSv [ped]	2	2	6	2	3	1	0	1	1	0	0
		References			y Quality										
		16 (31900511)			2										
		28 (32591891)		2											

Image-guided biopsy area of interest	Usually approp		Limited	Varies	Var	ries	1	1	10	1	1	0	0	0	1	0	0
			References			Study	Quality		_								
			23 (23971442)				4										
			24 (29752328)			4											
Image-guided fine needle aspiration area of interest	Usually approp		Limited	Varies	Var	ries	1	1	10	1	1	0	0	0	1	0	0
			References			Study	Quality		_								
			23 (23971442)				4										
		24 (29752328)					4										

Variant 4: Soft tissue mass. Nondiagnostic radiograph and noncontrast enhanced ultrasound. MRI contraindicated. Next imaging study.

	Appropri	ateness	GOT	411. 77	_	D 1 DD1		3.5 3.			F	inal	Tabu	latio	ns		
Procedure	Categ	ory	SOE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT area of interest with IV contrast	Usua approp		ate			Varies	9	9	0	1	0	0	0	1	0	2	9
			References			Study	Quality										
		49 (21249370) 52 (24834889)					3										
			52 (24834889)				4										
			51 (26025120)				3										
			53 (25340586)				3										
			29 (25344599)				4										
			54 (25819070)				2										
			50 (30919651)				4										
CT area of interest without and with IV contrast	May approp	be riate	Limited	Varies		Varies	5	5	0	0	0	1	11	0	1	0	0
			References			Study	Quality										
		31 (33299004)				4											

CT area of interest without IV contrast	Usually		Limited	Varies	V	aries	3	3	5	1	2	2	2	1	1	0	0
			References			Study	Quality		•								
			29 (25344599)				4										
US area of interest with IV contrast	Usually approp	y not riate	Expert O 0 mSv			0 mSv ped]	3	3	6	0	5	2	0	0	1	0	0
FDG-PET/CT area of interest	Usually approp	y not riate	Strong 💝��� 10-30 mSv		30		2	2	5	5	1	1	0	0	1	0	0
			References			Study	Quality				•						
			47 (26990930)			2											
			45 (32711449)			2											
			46 (20660389)			3											
			43 (19636577)			3											
			48 (26053718)				3										
			44 (18756363)				3										
Image-guided biopsy area of interest	Usually approp		Limited	Varies	V	'aries	1	1	8	0	3	0	1	2	0	0	0
			References			Study	Quality										
			29 (25344599)				4										
			24 (29752328)				4										
Image-guided fine needle aspiration area of interest	Usually approp		Limited	Varies	V	'aries	1	1	7	3	2	0	0	0	1	0	0
		References		•	Study	Quality		•									
		29 (25344599)					4										
		24 (29752328)					4										

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.