# American College of Radiology ACR Appropriateness Criteria®

#### **Liver Lesion-Initial Characterization**

Variant 1: Indeterminate, greater than 1 cm liver lesion on initial imaging with US. Normal liver. No suspicion or evidence of extrahepatic malignancy or underlying liver disease.

	Appropriateness	go-							I	Final	Tabı	ılatio	ns		
Procedure	Category	SOE	Adults RRI	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	0	3	7	7
		References		Stud	y Quality										
		11 (24270109)			4										
		12 (18580333)			1										
		15 (21597893)			2										
		16 (22194486)			3										
		19 (20578020)			2										
		14 (19673015)			3										
		18 (25971695)			4										
		10 (23776623)			4										
CT abdomen with IV contrast multiphase	Usually appropriate	Strong	���� 10-3 mSv	0	8	8	0	0	0	0	0	0	8	8	1
		References		Stud	y Quality										
		11 (24270109)			4										
		9 (19542399)			2										
		13 (19688670)			3										
		12 (18580333)			1										
		10 (23776623)			4										

US abdomen with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	1	3	4	6	2	1
		References		Study	y Quality									•	
		9 (19542399)			2										
		35 (20652854)			3										
		13 (19688670)			3										
		34 (21655534)			4										
		31 (21390342)			3										
		32 (21188330)			4										
		29 (19666405)			3										
		37 (17206071)			2										
		14 (19673015)			3										
		36 (26649337)			4										
		18 (25971695)			4										
		33 (25666723)			4										
		30 (24689098)			4										
MRI abdomen without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	1	2	2	4	7	1	0	0
		References		Study	y Quality										
		11 (24270109)			4										
		12 (18580333)			1										
		15 (21597893)			2										
		16 (22194486)			3										
		14 (19673015)			3										
		18 (25971695)			4										
		10 (23776623)			4			1		1	1				
CT abdomen without IV contrast	Usually not appropriate	Strong	��� 1-10 mSv	���⊕ 3- 10 mSv [ped]	3	3	2	3	9	2	0	1	0	0	0
		References		Study	y Quality										
		11 (24270109)			4										
		11 (24270109) 9 (19542399)			2										

		13 (19688670)			3										
		12 (18580333)			1										
		10 (23776623)		_	4		_			ı					
CT abdomen without and with IV contrast	Usually not appropriate	Strong	���� 10-30 mSv	����� 10-30 mSv [ped]	3	3	1	7	6	2	2	0	0	0	0
		References		Study	y Quality										
		11 (24270109)			4										
		9 (19542399)			2										
		13 (19688670)			3										
		12 (18580333)			1										
		10 (23776623)			4										
Image-guided biopsy liver	Usually not appropriate	Limited	Varies	Varies	2	2	3	7	8	0	0	0	0	0	0
		References		Study	y Quality										
		21 (27623001)			4										
		20 (28119260)			4										
		28 (27080009)			4										
		23 (27017289)			3										
		22 (26649339)			3										
		26 (24531352)			3										
		25 (23980215)			3										
		4 (28927870)			4										
		24 (29299367)			3										
		27 (26847020)		1	4					1					
Liver spleen scan	Usually not appropriate	Expert Consensus	��� 1-10 mSv		2	2	8	5	3	0	1	0	0	0	0
RBC scan abdomen and pelvis	Usually not appropriate	Expert Consensus	��� 1-10 mSv		2	2	8	4	3	1	1	0	0	0	0
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usually not appropriate	Expert Consensus	���� 10-30 mSv		1	1	12	2	2	0	1	0	0	0	0

FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	���� 10-30 mSv	���� 3- 10 mSv [ped]	1	1	9	4	3	1	0	0	0	0	0
DOTATATE PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	��� 1-10 mSv		1	1	10	4	2	0	1	0	0	0	0

Variant 2: Indeterminate, greater than 1 cm liver lesion on initial imaging with CT (noncontrast or single-phase) or noncontrast MRI. Normal liver. No suspicion or evidence of extrahepatic malignancy or underlying liver disease.

	Appropriateness	GOT		D 1 DD1	<b>.</b>				F	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	1	0	0	0	2	7	7
		References		Study	y Quality										
		38 (19459531)			2										
		12 (18580333)			1										
		15 (21597893)			2										
		19 (20578020)			2										
		10 (23776623)			4										
CT abdomen with IV contrast multiphase	Usually appropriate	Strong	<b>≎≎≎≎</b> 10-30 mSv		8	8	0	0	0	0	1	0	6	9	1
		References		Study	y Quality										
		9 (19542399)			2										
		12 (18580333)			1										
		10 (23776623)			4										
US abdomen with IV contrast	May be appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	3	5	6	1	1
		References		Study	y Quality										
		9 (19542399)			2										
		37 (17206071)			2										
		39 (24387826)			3										

US abdomen	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	0	0	3	6	6	1	1	0	1
		References		Study	y Quality		•					•			
		9 (19542399)			2										
		29 (19666405)			3										
CT abdomen without and with IV contrast	Usually not appropriate	Strong	���� 10-30 mSv	⊕⊕⊕⊕⊕ 0 10-30 mSv [ped]	3	3	0	8	8	2	0	0	0	0	0
		References		Study	y Quality										
		9 (19542399)			2										
		12 (18580333)	ı		1										
		10 (23776623)			4										
Image-guided biopsy liver	Usually not appropriate	Limited	Varies	Varies	3	3	4	4	5	3	2	0	0	0	0
		References		Study	y Quality										
		21 (27623001)	ı		4										
		20 (28119260)	ı		4										
		28 (27080009)	ı		4										
		23 (27017289)	ı		3										
		22 (26649339)	ı		3										
		26 (24531352)	ı		3										
		25 (23980215)	1		3										
		24 (29299367)			3										
		27 (26847020)			4										
Liver spleen scan	Usually not appropriate	Expert Consensus	��� 1-10 mSv		1	1	10	2	2	1	1	0	1	0	0
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usually not appropriate	Expert Consensus	���� 10-30 mSv	0	1	1	11	3	2	0	0	1	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	≎≎≎≎ 10-30 mSv	0	1	1	10	4	2	0	1	0	0	0	0

DOTATATE PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	��� 1-10 mSv	1	1	10	4	2	0	0	1	0	0	0
RBC scan abdomen and pelvis	Usually not appropriate	Expert Consensus	��� 1-10 mSv	1	1	10	2	2	1	1	0	1	0	0

### Variant 3: Indeterminate, greater than 1 cm liver lesion on initial imaging with US. Known history of an extrahepatic malignancy.

D 1	Appropriater	ness	A L L DDI	D I DDI	D 41	37.1			F	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	1	0	0	0	3	3	10
		References		Study	Quality										
		49 (21702068)			2										
		41 (21293130)			3										
		48 (28449169)			3										
		50 (25025151)			4										
		47 (24289722)			4		_					1			
CT abdomen with IV contrast multiphase	Usually appropriate	Limited	���� 10-30 mSv		8	8	0	0	0	0	1	0	7	7	2
		References		Study	Quality										
		45 (19077417)			4										
		42 (19057427)			2										
		41 (21293130)			3										
		43 (27397022)			4										
		44 (24331274)			4										
		40 (24089057)			4										
Image-guided biopsy liver	May be appropriate	Limited	Varies	Varies	6	6	0	0	1	1	6	4	3	2	0
		References		Study	Quality										
		21 (27623001)			4										

		20 (28119260)			4										
		28 (27080009)			4										
		23 (27017289)			3										
		22 (26649339)			3										
		26 (24531352)			3										
		25 (23980215)			3										
		24 (29299367)			3										
		27 (26847020)			4										
FDG-PET/CT skull base to midthigh	May be appropriate	Limited	���� 10-30 mSv	0	6	6	0	0	0	0	5	4	5	2	1
		References		Study	y Quality										
		42 (19057427)			2										
		40 (24089057)			4										
CT abdomen without and with IV contrast	May be appropriate	Limited	୫୫୫୫ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	5	5	0	2	2	1	11	2	0	0	0
		References		Study	y Quality										
		45 (19077417)			4										
		42 (19057427)			2										
		41 (21293130)			3										
		43 (27397022)			4										
		44 (24331274)			4										
		40 (24089057)			4										
MRI abdomen without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	1	0	1	3	7	5	0	0	0
		References		Study	y Quality										
		49 (21702068)			2										
		41 (21293130)			3										
		48 (28449169)			3										
		50 (25025151)			4										
		47 (24289722)			4										

US abdomen with IV contrast	May l appropr	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	0	10	6	1	0	1
		References		Study	y Quality										
		35 (20652854)			3										
		37 (17206071)			2										
		48 (28449169)			3										
DOTATATE PET/CT skull base to mid-thigh	May l appropr	Limited	��� 1-10 mSv		5	5	0	1	0	5	7	2	2	0	0
		References		Study	y Quality										
		8 (25143861)			4										
Octreotide scan with SPECT or SPECT/CT chest and abdomen	May l appropr	Limited	���� 10-3 mSv	0	4	4	2	1	1	6	5	1	1	0	0
		References		Study	y Quality	•			•	•	•			•	
		46 (19713709)			4										
CT abdomen without IV contrast	Usually appropr	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	3	3	2	3	6	5	0	0	1	0	0
		References		Study	y Quality		-								
		45 (19077417)			4										
		42 (19057427)			2										
		41 (21293130)			3										
		43 (27397022)			4										
		44 (24331274)			4										
		40 (24089057)			4	_									
Liver spleen scan	Usually appropr	Expert Consensus	<b>≎≎≎</b> 1-10 mSv		1	1	9	3	2	2	0	0	1	0	0
RBC scan abdomen and pelvis	Usually appropr	Expert Consensus	��� 1-10 mSv		1	1	10	3	2	2	0	0	0	0	0

Variant 4: Indeterminate, greater than 1 cm liver lesion on initial imaging with CT (noncontrast or single-phase) or noncontrast MRI. Known history of an extrahepatic malignancy.

<b>D</b> 1	Appropriateness	go <del>r</del>	A L L DDI	D 1 DD1	<b>D</b> (1	3.7.11			F	inal '	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	1	0	0	0	0	2	7	7
		References		Study	Quality										
		49 (21702068)			2										
		41 (21293130)			3										
		48 (28449169)			3										
		50 (25025151)			4										
		47 (24289722)			4						1				
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Limited	<b>≎≎≎≎</b> 10-30 mSv	���� 3- 10 mSv [ped]	7	7	0	0	0	0	1	6	6	3	1
		References		Study	Quality										
		42 (19057427)			2										
		40 (24089057)			4										
CT abdomen with IV contrast multiphase	Usually appropriate	Limited	❤❤❤ 10-30 mSv		7	7	0	0	0	0	1	0	8	7	1
		References		Study	Quality										
		45 (19077417)			4										
		41 (21293130)			3										
		43 (27397022)			4										
		44 (24331274)			4										
		40 (24089057)			4			1	1	1	ı	1	1		
US abdomen with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	5	10	1	1	0
		References		Study	Quality										
		35 (20652854)			3										
		37 (17206071)			2										
		2 (26427339)			4										

CT abdomen without and with IV contrast	May approp	be riate	Limited	���� 10-3 mSv	30	����� 10-30 mSv [ped]	5	5	0	1	0	6	10	0	1	0	0
			References			Study	Quality										
			45 (19077417)				4										
			41 (21293130)				3										
			43 (27397022)				4										
			44 (24331274)				4										
			40 (24089057)				4										
Image-guided biopsy liver	May approp		Strong	Varies		Varies	5	5	0	0	0	1	9	7	0	1	0
			References			Study	Quality										
			21 (27623001)				4										
			20 (28119260)				4										
			28 (27080009)				4										
			23 (27017289)				3										
			22 (26649339)				3										
			54 (25170868)				4										
			26 (24531352)				3										
			25 (23980215)				3										
			53 (21757981)				2										
			51 (21387263)				3										
			24 (29299367)				3										
			27 (26847020)				4										
			52 (29404497)				3		_								
Octreotide scan with SPECT or SPECT/CT chest and abdomen	May approp	be riate	Limited	���� 10-3 mSv	30		5	5	1	1	2	3	9	0	1	0	0
			References			Study	Quality		•								
			46 (19713709)				4										
DOTATATE PET/CT skull base to mid-thigh	May approp		Limited	��� 1-10 mSv	)		5	5	0	0	0	2	13	1	2	0	0

			References		Stud	y Quality										
			8 (25143861)			4										
US abdomen	May approp	be oriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	2	5	0	3	5	0	1	1	0
			References		Stud	y Quality										
			9 (19542399)			2										
Liver spleen scan	Usuall approp	y not oriate	Expert Consensus	��� 1-10 mSv	)	2	2	8	4	1	2	0	2	0	0	0
RBC scan abdomen and pelvis	Usuall approp		Expert Consensus	��� 1-10 mSv	)	1	1	9	3	1	3	0	1	0	0	0

Variant 5: Incidental liver lesion, greater than 1 cm on US, noncontrast or single-phase CT, or noncontrast MRI. Known chronic liver disease.

ъ 1	Appropriateness	COF	A L L DDI	D I DDI	D 41	3.6 11			F	inal '	Гаbu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	2	4	10

References	Study Quality
35 (20652854)	3
65 (20882620)	2
64 (21563246)	2
73 (20657216)	3
61 (21969663)	3
57 (20098330)	2
71 (28723741)	4
70 (28078512)	3
62 (27835984)	2
63 (25192607)	3
72 (23116806)	4
67 (23011874)	4

		56 (20806437)			3			_		_					
CT abdomen with IV contrast multiphase	Usually appropriate	Moderate Moderate	<b>≎≎≎≎</b> 10-30 mSv		8	8	0	0	0	0	0	1	5	10	1
		References		Study	y Quality										
		57 (20098330)			2										
		59 (23883211)			3										
		56 (20806437)			3										
US abdomen with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	1	0	0	1	4	2	7	1	1
		References		Study	y Quality										
		35 (20652854)			3										
		31 (21390342)			3										
		32 (21188330)			4										
		77 (18834687)			3										
		78 (25812115)			4										
		79 (25202903)			4										
		72 (23116806)			4										
		56 (20806437)			3										
		76 (25717230)		ľ	4				1			1			
Image-guided biopsy liver	May be appropriate	Limited	Varies	Varies	4	4	1	2	5	2	5	1	0	0	1
		References		Study	y Quality		•								
		54 (25170868)			4										
		6 (-3148733)			4										
		27 (26847020)			4										
		74 (29038857)			4										
		75 (18669577)			4										
		52 (29404497)			3										
CT abdomen without and with IV contrast	Usually no appropriate	ot te Moderate	୫୫୫୫ 10-30 mSv	⊕⊕⊕⊕⊕ 10-30 mSv [ped]	3	3	0	3	7	0	5	1	1	0	0

		References			Ctude	Quality										
	-				Study											
		57 (20098330)				2										
		59 (23883211)				3										
		56 (20806437)				3										
FDG-PET/CT skull base to mid-thigh	Usually n appropria	Limited	���� 10- mSv	30	���� 3- 10 mSv [ped]	2	2	1	9	3	2	1	0	1	0	0
		References			Study	Quality										
		6 (-3148733)			_	4										
		60 (19191771)				4										
Liver spleen scan	Usually n appropria	Expert Consensus	<b>≎≎≎</b> 1-1 mSv	0		1	1	9	4	2	0	2	0	0	0	0
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usually n appropria	Expert Consensus	���� 10- mSv	30		1	1	11	4	1	0	1	0	0	0	0
DOTATATE PET/CT skull base to mid-thigh	Usually n appropria	Expert Consensus	<b>⊕⊕⊕</b> 1-1 mSv	0		1	1	9	5	2	0	0	0	1	0	0
RBC scan abdomen and pelvis	Usually n appropria	Expert Consensus	<b>⊕⊕⊕</b> 1-1 mSv	0		1	1	9	4	3	1	0	0	0	0	0

## Variant 6: Indeterminate, less than 1 cm liver lesion on initial imaging with US. Known history of an extrahepatic malignancy.

	Appropriateness	COL	A L L DDI	D 1 DD1					F	inal '	Гаbu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	1	0	1	0	4	7	4
		References		Study	Quality										
		84 (19501995)			2										
		15 (21597893)			2										
CT abdomen with IV contrast multiphase	May be appropriate	Limited	���� 10-30 mSv		6	6	0	0	0	1	7	5	4	1	0

				g. 1	0 11										
		References		Study	Quality										
		82 (9885589)			4										
		83 (24674191)			4										
		81 (12439304)			4										
		80 (19842564)			4					1	1	I			
US abdomen with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	0	8	8	1	1	0
		References		Study	Quality										
		9 (19542399)			2										
		30 (24689098)			4										
MRI abdomen without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	8	8	1	1	0	0
		References		Study	Quality			•	•						
		84 (19501995)		-	2										
		15 (21597893)			2										
Image-guided biopsy liver	Usually not appropriate	Expert Consensus	Varies	Varies	3	3	4	2	3	5	3	0	0	0	0
DOTATATE PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	��� 1-10 mSv		3	3	3	4	4	1	4	1	0	0	0
CT abdomen without IV contrast	Usually not appropriate	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	2	2	5	6	4	1	1	0	0	0	0
		References		Study	Quality										
		82 (9885589)		-	4										
		83 (24674191)			4										
		81 (12439304)			4										
		80 (19842564)			4										
CT abdomen without and with IV contrast	Usually not appropriate	Limited	୫୫୫୫ 10-30 mSv	❤️❤️❤️❤ 10-30 mSv [ped]	2	2	2	8	8	0	0	0	0	0	0
		References		Study	Quality										

		82 (9885589)				4										
		83 (24674191)				4										
		81 (12439304)				4										
		80 (19842564)				4										
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usuall approp	Expert Consensus	Expert Consensus mSv			2	2	5	4	3	2	2	1	0	0	0
FDG-PET/CT skull base to mid-thigh	Usuall approp	Expert Consensus	Consensus mSv  Expert ���� 10-30		���� 3- 10 mSv [ped]	2	2	4	6	6	1	1	0	0	0	0
Liver spleen scan	Usuall approp	Expert Consensus	��� 1-10 mSv	0		1	1	10	4	2	0	0	0	1	0	0
RBC scan abdomen and pelvis	Usuall approp	Expert Consensus	��� 1-10 mSv	0		1	1	10	4	2	1	0	0	0	0	0

Variant 7: Indeterminate, less than 1 cm liver lesion on initial imaging with CT (noncontrast or single-phase) or noncontrast MRI. Known history of an extrahepatic malignancy.

D 1	Appropriateness	COE	A L L DDI	, D. I. DDI	D 4	3.6.11			F	inal [	<b>Fabu</b> l	latio	ns		
Procedure	Category	SOE	Adults RRI	L Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	1	3	4	6	3
		References		Study	Quality										
		86 (16845289)			3										
		87 (20829538)			M										
CT abdomen with IV contrast multiphase	Usually appropriate	Limited	���� 10-3 mSv	30	7	7	0	0	1	0	5	2	9	1	0
		References		Study	Quality										
		82 (9885589)			4										
		85 (15833992)			4										
US abdomen with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	1	2	4	4	5	1	0

		References			Study	Quality										
		88 (20517816)				4										
		9 (19542399)				2										
Image-guided biopsy liver	May approp	Expert Consensus	Varies	Var	ies	4	4	3	0	4	6	3	1	0	0	0
US abdomen	Usuall approp	Limited	O 0 mSv	, O 0 i		3	3	3	3	3	3	4	1	0	0	0
		References			Study	Quality										
		88 (20517816)				4										
CT abdomen without and with IV contrast	Usuall approp	Limited	88 (20517816)  Limited		<b>999</b> 30 Sv ed]	2	2	2	8	8	0	0	0	0	0	0
		References			Study	Quality										
		82 (9885589)				4										
		85 (15833992)				4										
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usuall approp	Expert Consensus	���� 10- mSv	30		2	2	6	4	2	3	1	0	1	0	0
FDG-PET/CT skull base to mid-thigh	Usuall approp	Expert Consensus	���� 10- mSv	30 💝 🌣 🕏 10 n	nSv	2	2	5	6	6	1	0	0	0	0	0
DOTATATE PET/CT skull base to mid-thigh	Usuall approp	Expert Consensus	��� 1-10 mSv	0		2	2	5	4	2	2	2	1	1	0	0
Liver spleen scan	Usuall approp	Expert Consensus	��� 1-10 mSv	0		1	1	10	4	2	0	0	0	1	0	0
RBC scan abdomen and pelvis	Usuall approp	Expert Consensus	��� 1-10 mSv	0		1	1	10	4	2	0	0	1	0	0	0

Variant 8: Incidental liver lesion, less than 1 cm on US, noncontrast or single-phase CT, or noncontrast MRI. Known chronic liver disease.

D 1	Appropriateness	COF	A L L DDI	D I DDI	D (1	37.11			F	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	1	1	1	1	3	7	3
		References		Study	Quality										
		57 (20098330)			2										
		92 (18069697)			2										
		67 (23011874)			4										
		91 (23932636)			2						1				
CT abdomen with IV contrast multiphase	Usually appropriate	Strong	≎≎≎≎ 10-30 mSv		7	7	0	0	0	1	3	0	13	1	0
		References		Study	Quality										
		57 (20098330)			2										
		91 (23932636)			2										
US abdomen with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	1	6	1	7	1	0
		References		Study	Quality										
		30 (24689098)			4										
		95 (-3128692)	_		4										
Image-guided biopsy liver	Usually not appropriate	Limited	Varies	Varies	3	3	3	5	4	2	3	0	0	0	0
		References		Study	Quality										
		94 (23271200)			4										
		54 (25170868)			4										
		93 (20616581)			4										
		27 (26847020)			4										
		75 (18669577)			4										
		52 (29404497)			3										

CT abdomen without and with IV contrast	Usually	Strong	���� 10-3 mSv	30	2	2	2	8	8	0	0	0	0	0	0
		References		Stud	ly Quality										
		57 (20098330)			2										
		91 (23932636)			2										
Liver spleen scan	Usually approp	Expert Consensus	<b>≎≎≎</b> 1-10 mSv	)	1	1	10	4	2	0	0	1	0	0	0
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usually approp	Expert Consensus	<b>����</b> 10-3 mSv	30	1	1	11	4	2	0	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually	Expert Consensus	���� 10-3 mSv	30	1	1	9	6	2	0	0	0	0	0	0
DOTATATE PET/CT skull base to mid-thigh	Usually approp	Expert Consensus	<b>≎≎≎</b> 1-10 mSv	)	1	1	10	5	2	0	0	0	0	0	0
RBC scan abdomen and pelvis	Usually approp	Expert Consensus	<b>≎≎≎</b> 1-10 mSv	)	1	1	10	4	3	0	0	0	0	0	0

#### **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.