American College of Radiology ACR Appropriateness Criteria®

Chronic Liver Disease

Variant 1: Chronic liver disease. Diagnosis and staging of liver fibrosis. Initial imaging.

D 1	Appropriateness	COE	A L LA DEST	D I DDI	D 41	3.6.11			F	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MR elastography abdomen	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	0	2	9	3
		References		Study	Quality										
		25 (25305349)		Inac	dequate										
		24 (19022517)			4										
		26 (28965721)			3										
US shear wave elastography abdomen	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	0	1	9	4
		References		Study Quality 2											
		37 (18095306)		2											
		38 (18836992)													
		26 (28965721)			3										
MRI abdomen without and with IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	0	1	0	6	6	0	0	1
		References		Study	Quality									•	
		28 (22566123)		Study Quality 2											
		29 (22278368)		Good											
		30 (21879400)			2										
MRI abdomen without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	2	1	10	1	0	0	0

		References		Study	/ Quality										
		28 (22566123)			2										
		29 (22278368)			Good										
		30 (21879400)			2										
US abdomen	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	1	10	1	1	1	1
		References		Study	Quality										
		33 (16437635)			2										
		24 (19022517)			4										
		34 (12216750)			4						_				
MRI abdomen without and with hepatobiliary contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	2	0	9	4	1	0	0
		References		Study	Quality										
		31 (23538889)			2										
		32 (21248234)			2										
CT abdomen with IV contrast multiphase	May be appropriate	Limited	���� 10-30 mSv		5	5	0	0	1	4	9	0	0	0	0
		References		Study	Quality										
		23 (23192205)			3										
		21 (24261358)			4										
		22 (23169796)			3										
US duplex Doppler abdomen	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	2	8	1	2	0	0
		References		Study	Quality										
		40 (17924952)			2										
		41 (15837406)		3											
US abdomen with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	1	0	4	5	4	0	0	0	0
		References		Study	/ Quality										
		35 (27538445)		(Good										
		36 (27161854)		3											

CT abdomen without IV contrast	Usuall approp		Limited	��� 1-1 mSv	0	���� 3- 10 mSv [ped]	3	3	6	1	4	2	1	0	0	0	0
			References			Study	Quality										
			21 (24261358)				4										
			22 (23169796)				3										
CT abdomen without and with IV contrast	Usuall approp	y not oriate	Limited	���� 10- mSv	\$ \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		3	4	2	8	0	0	0	0	0	0	
			References			Study	Quality										
			23 (23192205)				3										
			21 (24261358)				4										
			22 (23169796)				3										
FDG-PET/CT skull base to mid-thigh	Usuall approp	y not oriate	Expert Consensus	���� 10- mSv	30	���� 3- 10 mSv [ped]	1	1	12	2	0	0	0	0	0	0	0

Variant 2: Chronic liver disease. No prior diagnosis of hepatocellular carcinoma (HCC). Screening and surveillance for HCC.

ъ .	Appropriateness	COF	A L L DDY	n i nni	D (1	3.6.31			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	1	0	0	0	1	2	3	5	4

References	Study Quality
51 (18069697)	2
55 (20616602)	4
46 (20732773)	1
47 (22526270)	2
52 (15719410)	3
53 (23218794)	2
54 (22553295)	2

US abdomen	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	2	3	3	3	5
		References		Study	y Quality										
		55 (20616602))		4										
		13 (28620797))		4										
		10 (29624699))		4										
MRI abdomen without and with hepatobiliary contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	1	0	0	0	2	2	5	3	3
		References		Study	y Quality										
		57 (24475864))		3										
		58 (29629800))		4										
		56 (28886231))		4										
CT abdomen with IV contrast multiphase	May be appropriate (Disagreemen	Expert Opinion	���� 10-3 mSv	30	5	5	0	1	2	1	1	3	4	2	0
		References		Study	y Quality										
		46 (20732773))		1										
		47 (22526270))		2										
		45 (19802612))		3										
US duplex Doppler abdomen	May be appropriate (Disagreemen	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	1	0	1	6	0	2	1	2	1
MRI abdomen without IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	4	4	1	0	3	5	5	1	1	0	0
CT abdomen without IV contrast	Usually not appropriate	Limited	��� 1-10 mSv	0	3	3	5	3	5	2	1	0	0	0	0
		References		Study	y Quality										
,		45 (19802612))		3										
CT abdomen without and with IV contrast	Usually not appropriate	Expert Consensus	���� 10-0 mSv	30 10-30 mSv [ped]	3	3	3	2	9	0	0	0	0	0	0

MR elastography abdomen	Usually approp	Limited	O 0 mSv		0 mSv ped]	3	3	4	2	7	0	2	1	0	0	0
		References			Study	Quality										
		50 (24636468)				4										
US shear wave elastography abdomen	Usually approp	Limited	O 0 mSv		0 mSv ped]	3	3	1	4	7	1	2	0	1	0	0
		References			Study	Quality										
		71 (23345944)				4										
		70 (21330078)				3										
US abdomen with IV contrast	Usually approp	Limited	O 0 mSv		0 mSv ped]	3	3	0	2	9	1	1	1	0	0	0
		References			Study	Quality										
		69 (23137926)				4										
		14 (18834687)				3										
		67 (18779929)				3										
		68 (16953832)				3										
FDG-PET/CT skull base to mid-thigh	Usually approp	Limited	���� 10-3 mSv	³⁰ 10	999 3- 0 mSv [ped]	1	1	9	3	4	0	0	0	0	0	0
		References			Study	Quality										
		49 (10845666)				3										

Variant 3: Chronic liver disease. Previous diagnosis of HCC. Post-treatment monitoring for HCC.

Day on Laws	Appropriateness	SOE	A 414 DDI	D. J. DDI	D - 41	M. 32			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	Expert Consensus	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	0	6	10
CT abdomen without and with IV contrast	Usually appropriate	Strong	ଡେଡେଡ 10-30 mSv	≎≎≎≎≎ 10-30 mSv [ped]	8	8	0	0	0	0	0	1	2	10	1

		References		Study	Quality										
		72 (17259838)			2										
		73 (15671002)			2						1	1			
MRI abdomen without and with hepatobiliary contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	2	2	3	7	1
		References		Study	Quality										
		57 (24475864)			3										
		78 (28859233)			4										
CT abdomen with IV contrast multiphase	Usually appropriate	Strong	���� 10-30 mSv)	8	8	0	0	0	0	0	2	5	9	0
		References		Study	Quality		•								
		72 (17259838)		-	2										
		73 (15671002)			2										
MRI abdomen without IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	1	1	5	6	1	0	0	0
US abdomen with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	0	2	2	9	0	0	1	0
US abdomen	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	4	4	0	0	8	6	0	2	0	0	0
CT abdomen without IV contrast	Usually not appropriate	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	3	3	4	4	4	4	0	0	0	0	0
		References		Study	Quality		•				•	•			
		74 (25153274)			4										
MR elastography abdomen	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	4	2	9	1	0	0	0	0	0
		References		Study	Quality										
		50 (24636468)			4										
US shear wave elastography abdomen	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	3	5	8	0	0	0	0	0	0
		References		Study	Quality										

		82 (23558071)				4	
		71 (23345944)				4	
		70 (21330078)				3	
Usuall	y not	Expert	O 0 mSv	,	O 0 mSv	3	3

US duplex Doppler abdomen	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	2	1	6	4	1	1	1	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Limited	���⊕ 10-30 mSv	���� 3- 10 mSv [ped]	2	2	5	5	2	2	2	0	0	0	0

approp	riate	Emmed	mSv	[ped]	2		
		References		Study	Quality		
		76 (23615075)			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.