American College of Radiology ACR Appropriateness Criteria®

Altered Mental Status, Coma, Delirium, and Psychosis

Variant 1: Adult. Altered mental status. Suspected intracranial pathology or focal neurologic deficit. Initial imaging.

	Appropri	iateness	207		_						F	inal	Tabu	latio	ns		
Procedure	Categ	gory	SOE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT head without IV contrast	Usua approp		Strong	��� 1-10 mSv	0	��� 0.3- 3 mSv [ped]	9	9	0	0	0	0	1	0	4	4	10
			References			Study	Quality										
			2 (19773662)				2										
			34 (18336626)				2										
			33 (22186148)				4										
			32 (22978732)				4										
			31 (19787177)				2										
			30 (24927985)	31 (19787177) 30 (24927985)			2										
			29 (25763568)				1										
			10 (17324689)				4										
			8 (24733711)				4		_						_		
MRI head without IV contrast	May approp	be oriate	Strong	O 0 mSv	,	O 0 mSv [ped]	6	6	0	0	0	1	5	4	6	0	3
			References			Study	Quality										
			38 (25260346)				4										
			37 (34973968)				2										
			36 (22633790)				2										
			35 (27220652)				2										
			34 (18336626)			·	2										

			29 (25763568)			1										
			33 (22186148)			4			_	_				_	_	
MRI head without and with IV contrast	May approp	be briate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	2	10	4	1	0	0
			References		Study	Quality										
			10 (17324689)			4										
CT head with IV contrast	Usuall approp	y not oriate	Limited	Limited		2	2	9	9	0	0	0	0	0	0	0
	•		References		Study	Quality										
			28 (25173368)			4										
CT head without and with IV contrast	Usuall approp	y not oriate	Expert Consensus	��� 1-10 mSv	0	1	1	10	3	3	1	0	1	0	0	1
MRI head with IV contrast	Usuall approp		Expert Consensus	O 0 mSv	0.0 mSv	1	1	16	1	0	0	0	0	0	1	0

Variant 2: Adult. Altered mental status with known history of intracranial pathology. Initial imaging.

D 1	Appropriateness	COF	A L L DDI	D I DDI	D 4	37.11			F	inal '	Fabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT head without IV contrast	Usually appropriate	Expert Consensus	≎≎ ≎ 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	1	0	1	1	1	7	4	3
MRI head without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	1	0	0	3	4	6	2	2
		References		Study	Quality										
		2 (19773662)			2										
MRI head without and with IV contrast	Usually appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	5	2	5	4	3

CT head with IV contrast	May approp	_	Limited	��� 1-10 mSv	0	4	4	2	2	0	10	4	0	0	0	0
			References		Stud	y Quality										
			30 (24927985)			2										
CT head without and with IV contrast	Usuall approp		Expert Consensus	��� 1-10 mSv	0	2	2	2	8	2	4	1	1	0	0	0
MRI head with IV contrast	Usuall approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	9	4	5	0	0	0	0	0	0

Variant 3: Adult. Altered mental status. Suspected medical illness or toxic-metabolic cause. Initial imaging.

ъ .	Appropriateness	COE	A L L DDI	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
CT head without IV contrast	May be appropriate (Disagreement)	Expert Opinion	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	5	5	0	1	0	2	9	3	1	2	0
		References		Study	Quality										
		39 (27743625)			4										
		15 (22362650)			2										
MRI head without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	1	1	0	1	10	5	0	0	0
		References		Study	Quality										
		40 (28298967)			4				_	_					
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	9	4	2	0	3	0	1	0	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	12	4	1	1	1	0	0	0	0
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	3	2	1	0	1	1	0	0

MRI head with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	5	2	0	1	0	0	0	0	1
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Variant 4: Adult. Altered mental status despite clinical management of known medical illness or toxic-metabolic cause. Initial imaging.

D 1	Appropriateness	COF	A L L DDI	D I DDI	D 4	N. 11			F	inal '	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT head without IV contrast	Usually appropriate	Strong	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	1	1	4	5	3	5
		References		Study	Quality										
		39 (27743625)			4										
		30 (24927985)			2										
		15 (22362650)			2										
		32 (22978732)			4										
		2 (19773662)			2										
MRI head without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	0	3	7	6	0	3
		References		Study	Quality										
		35 (27220652)			2										
		29 (25763568)			1										
		38 (25260346)			4										
		36 (22633790)			2										
		41 (19017925)			4										
MRI head without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	0	0	2	9	4	1	0	2
CT head with IV contrast	Usually not appropriate	Strong	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	3	3	5	3	4	5	2	0	0	0	0
		References		Study	Quality										
		29 (25763568)			1										

		28 (25173368)				4										
		33 (22186148)				4										
		32 (22978732)				4										
		2 (19773662)				2										
		 31 (19787177)				2		_								
CT head without and with IV contrast	Usually i appropria	Expert Consensus	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	2	2	9	4	5	0	0	0	1	0	0
MRI head with IV contrast	Usually i	Expert Consensus	O 0 mSv	,	O 0 mSv	2	2	9	5	1	0	4	0	0	0	0

Variant 5: Adult. New onset psychosis. Initial imaging.

D l	Appropri	iateness	COE	A J14- DD1	.	n. J. nnt	D - 43	N / - 12				Final	Tab	ulatio	ns		
Procedure	Categ	gory	SOE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT head without IV contrast	May approp	be oriate	Limited	��� 1-10 mSv	0	��� 0.3- 3 mSv [ped]	5	5	0	1	. 1	1	10	5	0	0	0
			References			Study	Quality										
			45 (22959259)				2										
			49 (15000267)				4										
			48 (28335913)				4										
			46 (25174841)			4											
			47 (20958941)				4										
			42 (19660172)			4											
MRI head without IV contrast	May approp	be oriate	Strong	,	O 0 mSv [ped]	5	5	0	1	. 0	2	7	8	0	0	0	
			References			Study	Quality										
			45 (22959259)				2										
			49 (15000267)				4										
			48 (28335913)				4										
			46 (25174841)				4										

			50 (22416264)				2										
			42 (19660172)				4										
MRI head without and with IV contrast	May t appropr	be riate	Limited	O 0 mSv	,	O 0 mSv [ped]	5	5	0	1	1	2	11	3	0	0	0
			References			Study	Quality										
			46 (25174841) 44 (29103181)				4										
			44 (29103181)				2		_								
MRI head with IV contrast	Usually appropr	not riate	` ′		,	O 0 mSv [ped]	2	2	9	6	1	1	0	1	1	0	0
CT head with IV contrast	Usually appropr		Expert Consensus	��� 1-10 mSv	0	��� 0.3- 3 mSv [ped]	1	1	11	5	0	1	2	0	0	0	0
CT head without and with IV contrast	Usually appropr	not	Expert Consensus	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	1	1	11	4	1	0	1	1	0	1	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.