American College of Radiology ACR Appropriateness Criteria®

Dementia

Variant 1: Adult. Mild cognitive impairment not meeting criteria for dementia. Initial imaging.

	Appropriateness	COF	4 1 14 DET	D 1 DD7		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
MRI head without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	2	3	1	8
		References		Study	y Quality		•			•			•		-
		25 (23954175)			3										
		24 (21969707)			3										
		23 (20139996)			4										
		22 (19460794)			3										
		13 (18631949)			4										
_		11 (16880360)			4										
CT head without IV contrast	Usually appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	0	1	2	8	3	2
FDG-PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv		7	7	0	0	0	1	3	0	10	0	2
		References		Study	y Quality										
		15 (34252877)			1										
		14 (32734458)			1										
		13 (18631949)			4										
		12 (18287270)			3										
		11 (16880360)			4										
		9 (31628215)			1										

Amyloid PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv		7	7	0	0	0	0	5	2	6	1	2
		References		Study	y Quality		<u>.</u>								
		9 (31628215)			1										
		8 (30915522)			2										
		7 (29889941)			2										
		6 (29018162)			2										
		5 (38306055)			2										
		4 (19587325)			3										
		3 (21764791)			2										
MRI head without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	1	1	2	3	6	3	0	0	0
Tau PET/CT brain	May be appropriate (Disagreement)	Expert Opinion	≎⊕⊕ 1-10 mSv		5	5	1	1	1	1	4	6	2	0	0
		References		Study	y Quality										
		27 (37690109)			2										
		26 (33852534)			2										
		10 (-3198414)			4										
MRI functional (fMRI) head without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	6	1	4	2	0	1	0	0	0
		References		Study	y Quality										
		21 (22189566)			3										
		20 (31357150)			2										
		19 (21807094)			4										
MR spectroscopy head without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	0	3	4	1	1	0	0	0
		References		Study	y Quality										
		18 (24035276)			2										
		17 (18445744)			4										
		16 (16443495)			4										

CT head with IV contrast	Usually not appropriate	Expert Consensus	ଫଫଫ 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	13	1	1	1	0	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	13	1	1	1	0	0	0	0	0
SPECT or SPECT/CT brain striatal	Usually not appropriate	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	2	3	0	0	0	0	0	0
SPECT or SPECT/CT brain perfusion	Usually not appropriate	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	2	3	0	0	0	0	0	0

Variant 2: Adult. Cognitive impairment with memory deficits. Suspect Alzheimer disease with typical clinical presentation. Initial imaging.

D 1	Appropriater	ness	ALL DDI	D I DDI	D 41	3.7.11			I	inal	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRI	L Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	3	0	9
		References		Study	Quality										
		47 (29762090)			2										
		46 (24331205)			1										
		28 (31917652)			4										
		24 (21969707)			3										
		23 (20139996)			4										
		13 (18631949)			4										
Amyloid PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv		8	8	0	0	0	0	3	2	1	6	4
		References		Study	Quality										
		42 (33219525)			1										
		41 (29962497)			2										
		40 (37561943)			2										
		39 (30094462)			1										

		38 (25988463)			Good										
		37 (20501908)			3										
		36 (32808011)			3										
		35 (32385166)			2										
		34 (14991808)			3										
		33 (21245183)			2										
		31 (35649652)			4										
		28 (31917652)			4										
		25 (23954175)			3										
		8 (30915522)			2										
		7 (29889941)			2										
		6 (29018162)			2										
		3 (21764791)			2										
FDG-PET/CT brain	Usually appropriate	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	7	7	0	0	0	1	3	1	8	1	2
		References		Stud	ly Quality										
		45 (11342678)			4										
		44 (11801698)			3										
		28 (31917652)			4										
		14 (32734458)			1										
		12 (18287270)			3										
		11 (16880360)			4										
CT head without IV contrast	May be appropriate	Limited	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	6	6	0	0	0	1	2	7	4	1	1
		References		Stud	ly Quality										
		43 (2105589)			4										
Tau PET/CT brain	May be appropriate	Strong	��� 1-10 mSv		6	6	0	0	2	0	4	4	5	1	0
		References		Stud	ly Quality										
		28 (31917652)			4										

	54 (30639421)			2										
	53 (30326496)			2										
	52 (32391858)			1										
	51 (31784374)			2										
May be appropriate	Limited	��⊕ 1-10 mSv	���� 3- 10 mSv [ped]	5	5	1	2	3	1	7	2	0	0	0
	References		Study	Quality										
	49 (18855165)			3										
	48 (9527139)			2										
	45 (11342678)			4										
May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	3	0	2	7	2	2	0	0	0
	References		Study	Quality										
	17 (18445744)			4										
	16 (16443495)			4										
Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	4	2	4	1	2	0	0	0	0
	References		Study	Quality										
	19 (21807094)			4										
	21 (22189566)			3										
Usually not appropriate	Limited	��⊕ 1-10 mSv	���� 3- 10 mSv [ped]	3	3	6	0	3	2	1	1	0	0	0
	References		Study	Quality										
	50 (20075101)		_	3										
Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	3	7	0	0	0	0	0	0
Usually not appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	14	1	1	0	0	0	0	0	0
	Usually not appropriate Usually not appropriate	53 (30326496) 52 (32391858) 51 (31784374) May be appropriate	53 (30326496) 52 (32391858) 51 (31784374) May be appropriate	S3 (30326496) S2 (32391858) S1 (31784374) S4 (31784374) S4 (31784374) S4 (31855165) Study S4 (31342678) Study S4 (31342678) Study S4 (31342678) Study S4 (31342678) Study Stud	S3 (30326496) 2 52 (32391858) 1 51 (31784374) 2 May be appropriate	S3 (30326496) 2								

CT head without and with IV contrast	Usually not appropriate	Expert Consensus	≎⊛≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	8	2	0	0	0	2	0	1	0
--------------------------------------	-------------------------	---------------------	------------------------	----------------------------	---	---	---	---	---	---	---	---	---	---	---

Variant 3: Adult. Cognitive impairment with memory deficits. Suspect Alzheimer disease with atypical clinical presentation. Initial imaging.

	Appropriateness	907			.	3.5.31			I	inal	Tabı	ılatio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	2	1	9
		References		Study	Quality			•	•	•				•	
		59 (31672482)			3										
		47 (29762090)			2										
		46 (24331205)			1										
		28 (31917652)			4										
		24 (21969707)			3										
		23 (20139996)			4										
		13 (18631949)			4										
Amyloid PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv		9	9	0	0	0	1	0	1	2	2	7
		References		Study	Quality										
		56 (29107051)			2										
		42 (33219525)			1										
		41 (29962497)			2										
		40 (37561943)			2										
		39 (30094462)			1										
		37 (20501908)			3										
		35 (32385166)			2										
		34 (14991808)			3										
		33 (21245183)			2										
		31 (35649652)			4										

		28 (31917652)			4										
		27 (37690109)			2										
		25 (23954175)			3										
		8 (30915522)			2										
		7 (29889941)			2										
		6 (29018162)			2										
		5 (38306055)			2										
		3 (21764791)			2										
FDG-PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv	≎≎≎≎ 3- 10 mSv [ped]	8	8	0	0	0	1	0	0	1	6	5
		References		Study	Quality			_							
		58 (31633646)		-	2										
		57 (29756163)			4										
		45 (11342678)			4										
		44 (11801698)			3										
		28 (31917652)			4										
		14 (32734458)			1										
		12 (18287270)			3										
		11 (16880360)			4										
Tau PET/CT brain	Usually appropriate	Strong	��� 1-10 mSv		8	8	0	0	1	1	2	3	1	6	2
		References		Study	Quality		•								
		60 (29105977)			1										
		61 (30615804)			2										
CT head without IV contrast	Usually appropriate	Limited	≎≎≎ 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	0	1	1	9	4	1
		References		Study	Quality		-								
		43 (2105589)			4										
SPECT or SPECT/CT brain perfusion	May be appropriate (Disagreement)	Expert Opinion	≎≎≎ 1-10 mSv	≎≎≎≎ 3- 10 mSv [ped]	5	5	2	1	1	1	4	7	0	0	0

			References		Study	Quality										
			49 (18855165)			3										
			48 (9527139)			2										
			45 (11342678)			4										
SPECT or SPECT/CT brain striatal	May approp		Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	4	4	7	0	1	1	6	1	0	0	0
			References		Study	Quality										
			50 (20075101)			3										
MRI functional (fMRI) head without IV contrast	Usually approp	y not riate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	1	4	0	2	1	0	0	0
			References		Study	Quality										
			19 (21807094)			4										
			21 (22189566)			3										
MRI head without and with IV contrast	Usually approp		Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	4	6	1	2	0	0	0	0
MR spectroscopy head without IV contrast	Usually approp		Limited	O 0 mSv	O 0 mSv [ped]	3	3	5	2	9	0	0	0	0	0	0
			References		Study	Quality										
			16 (16443495)			4										
			17 (18445744)			4										
CT head with IV contrast	Usually approp		Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	8	1	0	0	2	1	1	0	0
CT head without and with IV contrast	Usually approp		Expert Consensus	&&& 1-10 mSv	00002	1	1	8	2	0	0	0	2	0	1	0

Variant 4: Adult. Known Alzheimer disease considering therapy with anti-amyloid monoclonal antibodies. Pretreatment imaging.

D 1	Appropriateness	COF	A L L DDY	D I DDI	D (1	3.6.31		F	inal '	Tabu	latio	ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1 2	3	4	5	6	7	8	9

D	Appropria	Appropriateness SOE Ac			_	D. J. DDI	D - 43	М. З			F	inal '	Tabu	latio	ns		
Procedure	Catego		SUE	Adults RR	L	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usuall appropr		Limited	O 0 mSv	,	O 0 mSv [ped]	9	9	0	0	0	0	0	0	2	0	11
			References			Study	Quality										
			62 (37357276)				4										
Amyloid PET/CT brain	Usuall appropr		Limited	��� 1-10 mSv	0		9	9	0	0	1	0	3	0	1	1	7
			References			Study	Quality										
			62 (37357276)				4										
			10 (-3198414)				4		_								
Tau PET/CT brain	May b		Limited	��� 1-10 mSv	0		4	4	0	1	5	3	4	3	0	0	0
		•	References		•	Study	Quality			•			•				
			62 (37357276)				4										
			10 (-3198414)				4		_								
MRI head without and with IV contrast	Usually appropr		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	3	3	7	1	7	1	0	0	0	0	0
CT head with IV contrast	Usually appropr		Expert Consensus	≎≎≎ 1-10 mSv	0	��� 0.3- 3 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
CT head without IV contrast	Usually appropr		Limited	≎≎≎ 1-10 mSv	0	��� 0.3- 3 mSv [ped]	1	1	7	0	1	2	2	1	0	0	0
			References			Study	Quality										
			62 (37357276)				4		,			1					
CT head without and with IV contrast	Usually appropr		Expert Consensus	��� 1-1(mSv	0	��� 3- 10 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
MRI functional (fMRI) head without IV contrast	Usually appropr		Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	11	0	1	0	1	0	0	0	0

MR spectroscopy head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	0	1	0	1	0	0	0	0
SPECT or SPECT/CT brain striatal	Usually not appropriate	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	9	1	2	0	0	0	1	0	0
SPECT or SPECT/CT brain perfusion	Usually not appropriate	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	9	0	2	1	0	0	1	0	0
FDG-PET/CT brain	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	8	1	1	0	2	0	1	0	0

Variant 5: Adult. Known Alzheimer disease undergoing therapy with anti-amyloid monoclonal antibodies. Posttreatment imaging.

D l	Appropri	iateness	SOF	4 J14- DD	I D. J. DDI	D - 45	N# - 12			F	inal '	Tabu	latio	ns		
Procedure	Categ		SOE	Adults RR	L Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usua approp		Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	0	1	11
			References		Stud	y Quality										
,			63 (37651273)			4										
Amyloid PET/CT brain	May approp (Disagre	riate	Expert Opinion	��� 1-10 mSv)	5	5	8	2	1	0	2	1	1	0	1
			References		Stud	y Quality										
						4										
			66 (37459141)			1										
			10 (-3198414)			4										
CT head with IV contrast	Usuall approp		Expert Consensus	��� 1-10 mSv	0	1	1	11	0	1	1	0	0	0	0	0
CT head without IV contrast	Usuall approp		Limited	��� 1-10 mSv	3 mSv [ped]	1	1	9	0	2	1	1	0	0	0	0
			References		Stud	y Quality										

		62 (37357276)			4										
CT head without and with IV contrast	Usuall approp	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	0	1	1	0	0	0	0	0
MRI functional (fMRI) head without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	1	1	0	0	1	0	0	0
MRI head without and with IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	9	4	2	1	0	0	0	0	0
MR spectroscopy head without IV contrast	Usuall approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	1	1	0	0	1	0	0	0
SPECT or SPECT/CT brain striatal	Usuall approp	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
SPECT or SPECT/CT brain perfusion	Usuall approp	Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
FDG-PET/CT brain	Usuall approp	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	10	1	1	0	1	0	0	0	0
Tau PET/CT brain	Usuall approp	Limited	��� 1-10 mSv		1	1	10	0	1	0	1	0	1	0	0

 References
 Study Quality

 10 (-3198414)
 4

Variant 6: Adult. Cognitive impairment with behavioral abnormalities or progressive aphasia. Suspect frontotemporal dementia. Initial imaging.

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

References	Study Quality
28 (31917652)	4

		75 (22976075)			3										
		74 (37500561)			2										
		73 (38012398)			3										
		70 (25171901)			4										
FDG-PET/CT brain	Usua approp	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	8	8	0	0	0	0	2	3	1	2	5
		References		Study	y Quality										
		28 (31917652)			4										
		11 (16880360)			4										
		68 (33402272)			4										
CT head without IV contrast	Usua approp	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	1	0	0	9	3	3
Amyloid PET/CT brain	May approp	Limited	��� 1-10 mSv		5	5	0	0	1	1	13	0	1	0	0
		References		Study	y Quality										
		3 (21764791)			2										
		70 (25171901)			4										
SPECT or SPECT/CT brain perfusion	May approp	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	4	4	1	1	1	6	6	1	0	0	0
		References		Study	y Quality										
		48 (9527139)			2										
MRI head without and with IV contrast	Usually approp	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	6	2	8	0	0	0	0	0	0
Tau PET/CT brain	Usually approp	Strong	≎≎≎ 1-10 mSv		3	3	7	1	6	1	1	0	0	0	0
	•	References		Study	y Quality		<u> </u>								
		28 (31917652)			4										
		78 (33824991)			3										
		77 (30594046)			2										
		76 (30704514)			2										
		76 (30704514)		2											

		53 (30326496)			2										
MRI functional (fMRI) head without IV contrast	Usually r appropria	Strong	O 0 mSv	O 0 mSv [ped]	2	2	6	4	6	0	0	0	0	0	0
		References		Study	Quality										
		19 (21807094)			4										
		71 (12821731)			2										
		72 (25002573)			2										
MR spectroscopy head without IV contrast	Usually r appropria	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	3	7	0	0	0	0	0	0
		References		Study	Quality										
		 17 (18445744)			4										
CT head with IV contrast	Usually r appropria	Expert Consensus	��� 1-10 mSv	9	1	1	8	1	0	1	1	1	1	0	0
CT head without and with IV contrast	Usually r appropria	Expert Consensus	��� 1-10 mSv	●●●● 3- 10 mSv [ped]	1	1	8	1	0	2	0	1	1	0	0
SPECT or SPECT/CT brain striatal	Usually r appropria	Expert Consensus	��� 1-10 mSv	9	1	1	9	0	1	2	0	0	1	0	0

Variant 7: Adult. Cognitive impairment with visual hallucinations or parkinsonian symptoms. Suspect dementia with Lewy bodies. Initial imaging.

ъ .	Appropriateness	COE	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 head without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	1	0	1	3	8

References	Study Quality
83 (26572170)	3
46 (24331205)	1
85 (18692749)	3
84 (36123123)	2

		68 (33402272)			4										
		28 (31917652)			4										
CT head without IV contrast	Usually appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	1	0	1	8	5	1
SPECT or SPECT/CT brain striatal	Usually appropriate	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	7	7	0	0	0	0	0	0	9	5	2
		References		Study	/ Quality										
		50 (20075101)			3										
		89 (32198310)			2										
		88 (36920494)			4										
		68 (33402272)			4										
FDG-PET/CT brain	Usually appropriate	Limited	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	7	7	1	0	0	0	2	1	3	3	3
		References		Study	Quality										
		11 (16880360)			4										
		68 (33402272)			4										
		79 (33926896)			4										
		81 (37421880)			1										
MRI head without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	4	2	3	1	1	0	3	2	0
SPECT or SPECT/CT brain perfusion	May be appropriate	Limited	�� � 1-10 mSv	���� 3- 10 mSv [ped]	5	5	4	0	0	2	8	2	0	0	0
		References		Study	Quality		-								
		50 (20075101)			3										
		87 (38315966)			2										
		86 (19142710)			3										
MRI functional (fMRI) head without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	3	6	0	0	0	0	0	0
		References		Study	Quality										

			21 (22189566)			3										
			19 (21807094)			4										
MR spectroscopy head without IV contrast	Usuall approp	y not oriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	2	7	0	0	0	0	0	0
			References		Study	Quality										
			82 (24468473)			3										
			17 (18445744)			4										
Amyloid PET/CT brain	Usuall approp		Strong	��� 1-10 mSv		2	2	7	3	5	0	1	0	0	0	0
			References		Study	Quality						•				
			80 (23831180)			4										
			3 (21764791)		2											
			38 (25988463)		C	Good										
CT head with IV contrast	Usuall approp		Expert Consensus	≎≎≎ 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	15	0	1	0	0	0	0	0	0
CT head without and with IV contrast	Usuall approp		Expert Consensus	≎≎≎ 1-10 mSv	���� 3- 10 mSv [ped]	1	1	14	1	1	0	0	0	0	0	0
Tau PET/CT brain	Usuall approp	not Strong MSv			1	1	11	4	0	1	0	0	0	0	0	
			References		Study	Quality						•				
			61 (30615804)		2											
			91 (33631469)			2										
			90 (27654968)		1											

Variant 8: Adult. Cognitive impairment with recent stroke or stepwise decline. Suspect vascular dementia. Initial imaging.

D 1	Appropriateness	COF	A L L DDI	D I DDI	D 4	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
MRI head without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	0	3	11

Procedure	Appropri	ateness ory SOE Adults RRL Peds RRL Rating					Median			F	inal T	Гаbu	latio	ıs			
Procedure	Categ	gory	SUE	Adults KKI	L Pe	eus KKL	Kaung	Median	1	2	3	4	5	6	7	8	9
			References		•	Study	Quality		•								
			100 (18436880)				2										
			102 (35614521)				2										
			101 (24557016)				1										
			97 (22135130)				4										
			94 (15729521)				4										
			92 (35678401)				4										
			28 (31917652)				4						ı				
CT head without IV contrast	May approp (Disagre	riate	Expert Opinion	��� 1-10 mSv	' ;	�� 0.3- 3 mSv [ped]	5	5	3	0	1	2	1	1	5	1	2
			References			Study	Quality										
			92 (35678401)				4										
	1		95 (8094895)			-	4										
CTA head and neck with IV contrast	May approp		Expert Consensus	��� 1-10 mSv	' 1	��� 3- 0 mSv [ped]	5	5	0	0	0	2	8	3	2	1	0
MRA head without IV contrast	May approp		Expert Consensus	O 0 mSv		0 mSv [ped]	5	5	0	1	0	1	11	1	2	0	0
MRA neck without IV contrast	May approp		Expert Consensus	O 0 mSv		0 mSv [ped]	5	5	0	1	0	5	8	1	1	0	0
MRA neck without and with IV contrast	May approp		Expert Consensus	O 0 mSv		0 mSv [ped]	5	5	0	1	0	5	8	1	1	0	0
MRI head without and with IV contrast	Usually approp		Expert Consensus	O 0 mSv		0 mSv [ped]	2	2	8	1	3	2	1	0	0	0	1
Amyloid PET/CT brain	Usually approp		Limited	��� 1-10 mSv)		2	2	7	1	1	1	3	0	0	1	0

		References Study Quality														
		3 (21764791)				2										
		96 (31929166)				4										
CT head with IV contrast	Usually approp	Expert Consensus	��� 1-10 mSv	0	��� 0.3- 3 mSv [ped]	1	1	14	0	2	0	0	0	0	0	0
CT head without and with IV contrast	Usually approp	Expert Consensus	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	1	1	15	0	1	0	0	0	0	0	0
MRA head without and with IV contrast	Usually approp	Expert Consensus	O 0 mSv	′	O 0 mSv [ped]	1	1	11	2	2	0	0	0	0	1	0
MRI functional (fMRI) head without IV contrast	Usually approp	Expert Consensus	O 0 mSv	,	O 0 mSv [ped]	1	1	14	1	1	0	0	0	0	0	0
MR spectroscopy head without IV contrast	Usually approp	Limited	O 0 mSv	′	O 0 mSv [ped]	1	1	11	1	4	0	0	0	0	0	0
		References			Study	Quality		-								
		99 (1513253)				3										
		17 (18445744)				4										
SPECT or SPECT/CT brain striatal	Usually approp	Expert Consensus	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	1	1	10	0	2	1	0	1	0	0	0
SPECT or SPECT/CT brain perfusion	Usually approp	Limited	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	1	1	10	1	4	1	0	0	0	0	0
		References		·	Study	Quality										
		48 (9527139)				2										
FDG-PET/CT brain	Usually approp	Limited	��� 1-10 mSv	0	���� 3- 10 mSv [ped]	1	1	9	1	4	1	0	1	0	0	0
		 References			Study	Quality										
		28 (31917652)				4										
		 97 (22135130)				4										
		 98 (29932266)				4										

 $\overline{}$

 \neg

Tau PET/CT brain	Usually not appropriate	Expert Consensus	��� 1-10 mSv		1	1	10	0	2	1	0	1	0	0	0	
------------------	-------------------------	---------------------	-----------------	--	---	---	----	---	---	---	---	---	---	---	---	--

Variant 9: Adult. Cognitive impairment with gait disturbance or urinary incontinence. Suspect normal pressure hydrocephalus. Initial imaging.

Durandana	Appropriateness	COE	A J14- DDI	D. J. DDI	D - 43	M - 12		Final Tabulatio					ns		
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	0	3	10
		References		Study	Quality										
		103 (26644048))		4										
		104 (37898265))		4										
CT head without IV contrast	Usually appropriate	Limited	≎≎≎ 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	1	0	0	0	2	1	5	2	3
		References		Study	Quality				•						
		104 (37898265))	-	4										
DTPA cisternography	May be appropriate	Limited	��� 1-10 mSv		5	5	0	1	0	3	8	3	1	0	0
		References		Study	Quality			•	•	•	•			•	
		103 (26644048))	-	4										
		106 (33395973))		2										
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	2	6	0	0	0	0	0	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	15	1	0	0	0	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	16	0	0	0	0	0	0	0	0
MRI functional (fMRI) head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	11	1	1	0	0	0	1	0	0

MR spectroscopy head without IV contrast	Usually not appropriate		O 0 mSv	O 0 mSv [ped]	1	1	10	0	2	2	0	0	0	0	0
		References		Study	Quality		•	•				•		•	
		108 (20647518))		2										
SPECT or SPECT/CT brain striatal	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	10	0	2	1	0	0	1	0	0
SPECT or SPECT/CT brain perfusion	Usually not appropriate	Limited	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	8	0	1	4	0	1	0	0	0
		References		Study	Quality										
		103 (26644048))	4											
FDG-PET/CT brain	Usually not appropriate		��� 1-10 mSv	ଡେଡେଡେ 3- 10 mSv [ped]	1	1	8	1	3	1	1	0	0	0	0
		References			Quality		-								
		105 (32906629))		4										
		107 (29876274))		2										
Amyloid PET/CT brain	Usually not appropriate		��� 1-10 mSv		1	1	8	3	1	1	0	1	0	0	0
		References		Study	Quality		<u>.</u>							•	
		105 (32906629))		4										
Tau PET/CT brain	Usually not appropriate		��� 1-10 mSv		1	1	10	0	1	1	1	1	0	0	0

Variant 10: Adult. Rapidly progressive dementia. Initial imaging.

ъ .	Appropriateness	Appropriateness SOF Adults	Adults RRL Peds RRL Ra	Peds RRL Rating I	37.11			F	inal '	Гаbu	latio	ns			
Procedure	Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	1	0	0	0	1	1	0	1	10
		References		Study	Ouality		•								

		113 (36304377)	`		4										
		112 (37698615)			2										
		111 (23413251)			4										
MRI head without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	0	1	2	4	6
		References		Study	Quality										
		113 (36304377))		4										
		112 (37698615))		2										
		111 (23413251)			4		_								
CT head without IV contrast	Usually appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	7	7	0	0	0	0	1	0	9	3	3
CT head with IV contrast	Usually not appropriate	Expert Consensus	��� 1-10 mSv	��� 0.3- 3 mSv [ped]	1	1	14	1	1	0	0	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	15	0	1	0	0	0	0	0	0
MRI functional (fMRI) head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	0	2	1	0	0	1	0	0
MR spectroscopy head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	8	2	2	1	0	0	1	0	0
SPECT or SPECT/CT brain striatal	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	13	3	0	0	0	0	0	0	0
SPECT or SPECT/CT brain perfusion	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	11	4	0	1	0	0	0	0	0
FDG-PET/CT brain	Usually not appropriate	Expert Consensus	��� 1-10 mSv	���� 3- 10 mSv [ped]	1	1	10	2	1	0	3	0	0	0	0
Amyloid PET/CT brain	Usually not appropriate	Expert Consensus	��≎ 1-10 mSv		1	1	14	2	0	0	0	0	0	0	0

Tau PET/CT brain Usually not appropriate Expert Consensus mSv Tau PET/CT brain Usually not appropriate Usually not Consensus	1	1	9	1	1	2	0	0	1	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.