American College of Radiology ACR Appropriateness Criteria[®]

Dementia

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

	Appropria	ateness	300			D (1	16.11			F	'inal '	Гаbu	latio	ns	m Final Tabulations					
Procedure	Catego	ory	SOE	Adults RRI	L Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9				
MRI head without IV contrast	Usual appropr	lly riate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	2	3	1	8				
			References		Study	v Quality														
			11 (16880360)			4														
			22 (19460794)			3														
			25 (23954175)			3														
			24 (21969707)			3														
			23 (20139996)			4														
			13 (18631949)			4														
CT head without IV contrast	Usual appropr	lly riate	Expert Consensus	ତତତ 1-10 mSv	& & & 0.3- 3 mSv [ped]	7	7	0	0	0	0	1	2	8	3	2				
FDG-PET/CT brain	Usual appropr		Strong	ତତତ 1-10 mSv	0000 2	7	7	0	0	0	1	3	0	10	0	2				
			References		Study	Quality														
			11 (16880360)			4														
			12 (18287270)			3														
			13 (18631949)			4														
			14 (32734458)		1															
			15 (34252877)		1															
			9 (31628215)			1														

Amyloid PET/CT brain	Usually appropriate	Strong	ତତତ 1-10 mSv		7	7	0	0	0	0	5	2	6	1	2
		References		Study	Quality										
		4 (19587325)			3										
		3 (21764791)			2										
		7 (29889941)			2										
		5 (38306055)			2										
		6 (29018162)			2										
		8 (30915522)			2										
		9 (31628215)			1										
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	ତେତେ 1-10 mSv		5	5	1	1	1	1	4	6	2	0	0
		References		Study	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	Quality										
		19 (21807094)			4										
		21 (22189566)			3										
		20 (31357150)			2					_					
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	Quality										
		18 (24035276)		2											
		16 (16443495)		4											
		17 (18445744)		4											

CT head with IV contrast	Usually not appropriate	Expert Consensus	ତତତ 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	ଝଝଝ 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	ତତତ 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	ତତତ 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.

	Appropria	teness				D (1		Final Tabulations								
Procedure	Catego		SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usuall appropri		Strong	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	3	0	9
			References		Study	v Quality										
			46 (24331205)			1										
			24 (21969707)			3										
			23 (20139996)			4										
			13 (18631949)			4										
			47 (29762090)			2										
			28 (31917652)			4										
Amyloid PET/CT brain	Usuall appropri		Strong	ଝେଝ 1-10 mSv		8	8	0	0	0	0	3	2	1	6	4
			References		Study	v Quality										
			38 (25988463)		C	Good										
			34 (14991808)			3										
			33 (21245183)			2										
			37 (20501908)			3										

		3 (21764791)			2										
		25 (23954175)			3										
		7 (29889941)			2										
		35 (32385166)			2										
		36 (32808011)			3										
		42 (33219525)			1										
		6 (29018162)			2										
		31 (35649652)			4										
		8 (30915522)			2										
		40 (37561943)			2										
		41 (29962497)			2										
		39 (30094462)			1										
		28 (31917652)			4										
FDG-PET/CT brain	Usually appropriate	Limited	ଷଷଷ 1-10 mSv	ତତତତ 3- 10 mSv [ped]	7	7	0	0	0	1	3	1	8	1	2
		References		Study	Quality										
		11 (16880360)			4										
		45 (11342678)			4										
		12 (18287270)			3										
		44 (11801698)			3										
		14 (32734458)			1										
		28 (31917652)			4										
CT head without IV contrast	May be appropriate	Limited	ଝିଝିଝି 1-10 mSv	ତତତ 0.3- 3 mSv [ped]	6	6	0	0	0	1	2	7	4	1	1
		References		Study	Quality										
		43 (2105589)			4										
Tau PET/CT brain	May be	Strong	≎≎≎ 1-10 mSv		6	6	0	0	2	0	4	4	5	1	0
	appropriate												۰.		
		References		Study	Quality									· · ·	

		54 (30639421)			2										
		52 (32391858)			1										
		51 (31784374)			2										
		28 (31917652)			4										
SPECT or SPECT/CT brain perfusion	May be appropriate	Limited	֎֎֎ 1-10 mSv	≎≎≎≎≎ 3- 10 mSv [ped]	5	5	1	2	3	1	7	2	0	0	0
		References		Study	v Quality										
		45 (11342678)			4										
		49 (18855165)			3										
		48 (9527139)			2										
MR spectroscopy head without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	3	0	2	7	2	2	0	0	0
		References		Study	v Quality										
		16 (16443495)			4										
		17 (18445744)			4										
MRI functional (fMRI) head without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	4	2	4	1	2	0	0	0	0
		References		Study	v Quality										
		19 (21807094)			4										
		21 (22189566)			3					- <u>-</u>					
SPECT or SPECT/CT brain striatal	Usually not appropriate	Limited	֎֎֎ 1-10 mSv	\$\$\$\$\$\$ 3- 10 mSv [ped]	3	3	6	0	3	2	1	1	0	0	0
		References		Study	v Quality										
		50 (20075101)			3										
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	3	7	0	0	0	0	0	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	ତତତ 1-10 mSv	& the two sets to the two set	1	1	14	1	1	0	0	0	0	0	0
				· · · · · · · · · · · · · · · · · · ·									لــــــــــــــــــــــــــــــــــــــ		

CT head without and with IV contrast	Usually not appropriate	Expert Consensus	ତତତ 1-10 mSv	≎≎≎≎ 3- 10 mSv [ped]	1	1	8	2	0	0	0	2	0	1	0	
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Variant 3: Adult. Cognitive impairment with memory deficits. Suspect Alzheimer disease with atypical clinical presentation. Initial imaging.

	Appropriateness		D 1 DE-]	Final	Tab	ulatio	ns			
Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6		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										
		46 (24331205)			1										
		24 (21969707)			3										
		23 (20139996)			4										
		13 (18631949)			4										
		47 (29762090)			2										
		28 (31917652)			4										
		59 (31672482)			3										
Amyloid PET/CT brain	Usually appropriate	Strong	≎≎≎≎ 1-10 mSv		9	9	0	0	0	1	0	1	2	2	7
		References		Study	Quality							-			-
		34 (14991808)			3										
		33 (21245183)			2										
		37 (20501908)			3										
		3 (21764791)			2										
		25 (23954175)			3										
		7 (29889941)			2										
		5 (38306055)			2										
		35 (32385166)			2										
		42 (33219525)			1										
		6 (29018162)			2										

		31 (35649652)			4										
		8 (30915522)			2										
		40 (37561943)			2										
		56 (29107051)			2										
		41 (29962497)			2										
		39 (30094462)			1										
		27 (37690109)			2										
		28 (31917652)			4						-				
FDG-PET/CT brain	Usually appropriate	Strong	ତତତ 1-10 mSv) 🕸 🏵 🏵 🛠 3- 10 mSv [ped]	8	8	0	0	0	1	0	0	1	6	5
		References		Stud	ly Quality										
		11 (16880360)			4										
		45 (11342678)			4										
		12 (18287270)			3										
		44 (11801698)			3										
		14 (32734458)			1										
		57 (29756163)			4										
		58 (31633646)			2										
		28 (31917652)			4										·1
Tau PET/CT brain	Usually appropriate	Strong	ତେତ 1-10 mSv)	8	8	0	0	1	1	2	3	1	6	2
		References		Stud	ly Quality										
		60 (29105977)			1										
		61 (30615804)			2					-					
CT head without IV contrast	Usually appropriate	Limited	ତତତ 1-10 mSv)	7	7	0	0	0	0	1	1	9	4	1
		References			ly Quality										
		43 (2105589)			4										
SPECT or SPECT/CT brain perfusion	May be appropriate (Disagreement)	Expert Opinion	ତତତ 1-10 mSv)	5	5	2	1	1	1	4	7	0	0	0

		References		Study	/ Quality										
		45 (11342678)		Study	4										
		49 (18855165)			3										
		48 (9527139)			2										
SPECT or SPECT/CT brain striatal	May be appropriate	Limited	ତତତ 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 not appropriate	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 not appropriate	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 not appropriate	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 not appropriate	Expert Consensus	ଝେଝ 1-10 mSv	ତତତ 0.3- 3 mSv [ped]	1	1	8	1	0	0	2	1	1	0	0
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	ଝେଝ 1-10 mSv	≎≎≎≎≎ 3- 10 mSv [ped]	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.

Procedure	Appropriateness	SOE	Adults RRL	Peds RRL	Rating	Median	Final	Tabulations 5 6 7 8 0
	Category				_		1 2 3 4	5 6 7 8 9

	Appropri	ateness	005							F	inal	Tabu	latio	ns		
Procedure	Categ		SOE	Adults RRL	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	0	2	0	11
			References		Study	/ Quality										
			62 (37357276)			4										
Amyloid PET/CT brain	Usua approp		Limited	ତତତ 1-10 mSv		9	9	0	0	1	0	3	0	1	1	7
			References		Study	/ Quality										
			62 (37357276)		4 4											
	_		10 (-3198414)			4										
Tau PET/CT brain	May approp		Limited	ତତତ 1-10 mSv		4	4	0	1	5	3	4	3	0	0	0
			References		Study	Quality										
			62 (37357276)			4										
			10 (-3198414)		1	4		_				-				
MRI head without and with IV contrast	Usually approp		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	Usuall ₂ approp		Expert Consensus	ତେତେ 1-10 mSv	≎≎≎ 0.3- 3 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
CT head without IV contrast	Usually approp		Limited	ଡେଡ େ 1-10 mSv	≎≎≎ 0.3- 3 mSv [ped]	1	1	7	0	1	2	2	1	0	0	0
			References		Study	/ Quality										
			62 (37357276)		1	4		_								
CT head without and with IV contrast	Usually approp		Expert Consensus	େଟେତ 1-10 mSv	େତେତେତେ 3- 10 mSv [ped]	1	1	11	0	1	0	0	0	1	0	0
MRI functional (fMRI) head without IV contrast	Usually approp		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	ଝଝଝ 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	ଝିଝିଝି 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	ଝଝଝ 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.

	Appropriat	teness	SOF			D (1				F	'inal '	Tabu	latio	ıs		
Procedure	Categor		SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usually appropris		Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	1	0	1	11
			References		Study	v Quality										
			63 (37651273)			4										
Amyloid PET/CT brain	May be appropria (Disagreen	ate	Expert Opinion	ଡେଡ େ 1-10 mSv		5	5	8	2	1	0	2	1	1	0	1
			References		Study	Quality										
			67 (37639461)			4										
			66 (37459141)			1										
			10 (-3198414)			4										
CT head with IV contrast	Usually appropria		Expert Consensus	ଡେଡ େ 1-10 mSv	≎≎≎ 0.3- 3 mSv [ped]	1	1	11	0	1	1	0	0	0	0	0
CT head without IV contrast	Usually appropria	not ate	Limited	ଝଝଝ 1-10 mSv		1	1	9	0	2	1	1	0	0	0	0
			References		Study	v Quality										

		62 (37357276)			4										
CT head without and with IV contrast	Usuall approp	Expert Consensus	ଝେଝ 1-10 mSv	ତତତତ 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	ଷଷଷ 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	ଷଷଷ 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	ତତତ 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	v Quality										
		10 (-3198414)			4										

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

Deve e deve	Appropri	iateness	SOF		D. J. DDI	Detter	Mallan			F	inal '	Tabu	latio	ns		
Procedure	Categ		SOE	Adults RRI	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	1	0	3	0	9
			References		Study	v Quality										
			70 (25171901)			4										

		75 (22976075)			3										
		74 (37500561)			2										
		28 (31917652)			4										
		73 (38012398)			3										
FDG-PET/CT brain	Usually appropriate	Limited	ଷଷଷ 1-10 mSv	ତତତତ 3- 10 mSv [ped]	8	8	0	0	0	0	2	3	1	2	5
		References		Study	Quality										
		11 (16880360)			4										
		68 (33402272)			4										
		28 (31917652)			4										
CT head without IV contrast	Usually appropriate	Expert Consensus	ଝେଡେଡ 1-10 mSv	ତେତ 0.3- 3 mSv [ped]	7	7	0	0	0	1	0	0	9	3	3
Amyloid PET/CT brain	May be appropriate	Limited	ତତତ 1-10 mSv		5	5	0	0	1	1	13	0	1	0	0
		References		Study	Quality										
		3 (21764791)			2										
		70 (25171901)			4				_	-	-			-	
SPECT or SPECT/CT brain perfusion	May be appropriate	Limited	େତେତ 1-10 mSv	ତତତତ 3- 10 mSv [ped]	4	4	1	1	1	6	6	1	0	0	0
		References		Study	Quality										
		48 (9527139)			2					-	-				
MRI head without and with IV contrast	Usually not appropriate	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 not appropriate	Strong	ଷଷଷ 1-10 mSv		3	3	7	1	6	1	1	0	0	0	0
		References		Study	Quality						-				
		53 (30326496)			2										
		76 (30704514)			2										
		77 (30594046)			2										
		28 (31917652)			4										

		78 (33824991)			3										
MRI functional (fMRI) head without IV contrast	Usuall approp	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										
		72 (25002573)			2										
		71 (12821731)			2										
MR spectroscopy head without IV contrast	Usuall approp	Limited	O 0 mSv	O 0 mSv [ped]	2	2	6	3	7	0	0	0	0	0	0
		References		Study	V Quality										
		17 (18445744)			4			-	-		-				
CT head with IV contrast	Usuall approp	Expert Consensus	ଝେଝେ 1-1(mSv	0	1	1	8	1	0	1	1	1	1	0	0
CT head without and with IV contrast	Usuall approp	Expert Consensus	ଡଡଡ 1-1(mSv	0	1	1	8	1	0	2	0	1	1	0	0
SPECT or SPECT/CT brain striatal	Usuall approp	Expert Consensus	ତତତ 1-1(mSv	0	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.

	Appropri	ateness	COF				D. (*				F	'inal '	Tabu	latio	ns		
Procedure	Categ	gory	SOE	Adults RR	L Ped	ds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI head without IV contrast	Usua approp		Strong	O 0 mSv		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										
			68 (33402272)				4										

		28 (31917652)			4										
		84 (36123123)			2										
CT head without IV contrast	Usually appropriate	Expert Consensus	ତତତ 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	ତତତ 1-10 mSv	≎≎≎≎≎ 3- 10 mSv [ped]	7	7	0	0	0	0	0	0	9	5	2
		References		Study	v Quality										
		50 (20075101)			3										
		89 (32198310)			2										
		88 (36920494)			4										
		68 (33402272)			4										
FDG-PET/CT brain	Usually appropriate	Limited	ତତତ 1-10 mSv	֎֎֎֎ 3- 10 mSv [ped]	7	7	1	0	0	0	2	1	3	3	3
		References		Study	V Quality										
		11 (16880360)			4										
		79 (33926896)			4										
		81 (37421880)			1										
		68 (33402272)		_	4			1	1			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	ଷଷଷ 1-10 mSv	ତେତେତ 3- 10 mSv [ped]	5	5	4	0	0	2	8	2	0	0	0
		References		Study	v Quality										
		50 (20075101)			3										
		86 (19142710)			3										
		87 (38315966)			2										
MRI functional (fMRI) head				O 0 mSv											0
without IV contrast	Usually not appropriate	Limited	O 0 mSv	[ped]	2	2	7	3	6	0	0	0	0	0	0

		10 (2100500.0)													
		19 (21807094)			4										
		21 (22189566)			3										
MR spectroscopy head without IV contrast	Usuall approp	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										
		38 (25988463)		C	Good										
		80 (23831180)			4										
		3 (21764791)			2									-	
CT head with IV contrast	Usuall approp	Expert Consensus	ଡେଡ େ 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	ଝେଝ 1-10 mSv	≎≎≎≎≎ 3- 10 mSv [ped]	1	1	14	1	1	0	0	0	0	0	0
Tau PET/CT brain	Usuall approp	Strong	≎≎≎≎ 1-10 mSv		1	1	11	4	0	1	0	0	0	0	0
		References		Study	/ Quality						-				
		61 (30615804)			2										
		90 (27654968)			1										
		91 (33631469)			2										

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

Den er berer	Appropriateness	SOF			Detter	M		-	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

	Appropriat	eness	GOT							F	'inal '	Tabu	latio	ns		
Procedure	Categor		SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4				8	9
			References		Study	Quality										
			97 (22135130)			4										
			101 (24557016))		1										
			100 (18436880))		2										
			102 (35614521))		2										
			92 (35678401)			4										
			28 (31917652)			4										
			94 (15729521)			4		_		1				1		
CT head without IV contrast	May be appropria (Disagreem	ate	Expert Opinion	ଝଝଝ 1-10 mSv	≎≎≎ 0.3- 3 mSv [ped]	5	5	3	0	1	2	1	1	5	1	2
			References		Study	v Quality										
			95 (8094895)			4										
			92 (35678401)		_ .	4										
CTA head and neck with IV contrast	May be appropria		Expert Consensus	֎֎֎ 1-10 mSv	େହେତେ 3- 10 mSv [ped]	5	5	0	0	0	2	8	3	2	1	0
MRA head without IV contrast	May be appropria		Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	1	11	1	2	0	0
MRA neck without IV contrast	May be appropria		Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	5	8	1	1	0	0
MRA neck without and with IV contrast	May be appropria		Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	1	0	5	8	1	1	0	0
MRI head without and with IV contrast	Usually r appropria		Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	1	3	2	1	0	0	0	1
Amyloid PET/CT brain	Usually n appropria		Limited	ଷଷ≎ 1-10 mSv		2	2	7	1	1	1	3	0	0	1	0

		References		Study	y Quality										
		3 (21764791)			2										
		96 (31929166)			4										
CT head with IV contrast	Usuall ₂ approp	Expert Consensus	ଢଢଢ 1-10 mSv	≎≎≎ 0.3- 3 mSv [ped]	1	1	14	0	2	0	0	0	0	0	0
CT head without and with IV contrast	Usuall ₂ approp	Expert Consensus	ଡେଡେ 1-10 mSv	≎≎≎≎ 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	Usuall ₂ approp	Limited	O 0 mSv	O 0 mSv [ped]	1	1	11	1	4	0	0	0	0	0	0
		References		Study	y Quality		-	-							
		17 (18445744)			4										
		99 (1513253)			3										
SPECT or SPECT/CT brain striatal	Usually approp	Expert Consensus	ବଟତ 1-10 mSv	€€€€ 3- 10 mSv [ped]	1	1	10	0	2	1	0	1	0	0	0
SPECT or SPECT/CT brain perfusion	Usuall ₂ approp	Limited	ତେତେ 1-10 mSv	ତତତତ 3- 10 mSv [ped]	1	1	10	1	4	1	0	0	0	0	0
		References		Study	y Quality										
		48 (9527139)			2										
FDG-PET/CT brain	Usually approp	Limited	֎֎֎ 1-10 mSv	≎≎≎≎ 3- 10 mSv [ped]	1	1	9	1	4	1	0	1	0	0	0
		References		Study	y Quality										
		97 (22135130)			4										
		98 (29932266)			4										
		28 (31917652)			4										

Tau PET/CT brain	Usually not appropriate	Expert Consensus	ତତତ 1-10 mSv		1	1	10	0	2	1	0	1	0	0	0	
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Variant 9: Adult. Cognitive impairment with gait disturbance or urinary incontinence. Suspect normal pressure hydrocephalus. Initial imaging.

	Appropri	iateness	700							F	'inal '	Tabu	latio	ns		
Procedure	Categ		SOE	Adults RRL	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	3	10
			References		Study											
			103 (26644048)		4											
			104 (37898265)													
CT head without IV contrast	Usua approp		Limited	ଝଝଝ 1-10 mSv	ତତତ 0.3- 3 mSv [ped]	7	7	1	0	0	0	2	1	5	2	3
			References	Study												
			104 (37898265)			4										
DTPA cisternography	ternography May be appropriate Limited		Limited	ତେତେ 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	Usuall approp		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	Usuall approp		Expert Consensus	ଝେଝ 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	Usuall approp		Expert Consensus	ଷଷଷ 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	Usuall approp		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 approp		Limited	O 0 mSv	O 0 mSv [ped]	1	1	10	0	2	2	0	0	0	0	0
			References		Study	V Quality										
			108 (20647518))		2										
SPECT or SPECT/CT brain striatal	Usually approp		Expert Consensus	ଡଡଡ 1-10 mSv	ଡେଡେଡ 3- 10 mSv [ped]	1	1	10	0	2	1	0	0	1	0	0
SPECT or SPECT/CT brain perfusion			Limited	֎֎֎ 1-10 mSv	֎֎֎֎ 3- 10 mSv [ped]	1	1	8	0	1	4	0	1	0	0	0
			References	References		Study Quality										
			103 (26644048)			4										
FDG-PET/CT brain	Usually approp		Limited	֎֎֎ 1-10 mSv	ହତତତ 3- 10 mSv [ped]	1	1	8	1	3	1	1	0	0	0	0
			References		Study Quality											
			107 (29876274))		2										
			105 (32906629))		4										
Amyloid PET/CT brain	Usually approp		Limited	ତ୍ତେତ 1-10 mSv		1	1	8	3	1	1	0	1	0	0	0
			References		Study	Quality										
			105 (32906629))		4										
Tau PET/CT brain	Usually approp		Expert Consensus	ଝେ≎େ 1-10 mSv		1	1	10	0	1	1	1	1	0	0	0

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

Procedure	Appropriateness	COF	SOE Adults RRL		Rating	Median	Final Tabulations										
	Category	SOE		L Peds RRL		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	y Quality													

		111 (23413251))		4										
		112 (37698615))		2										
		113 (36304377))	_	4										
MRI head without IV contrast	Usually appropriate			O 0 mSv [ped]	8	8	0	0	0	1	0	1	2	4	6
		References		Study	Quality			-							
		111 (23413251))		4										
		112 (37698615))		2										
		113 (36304377))		4										
CT head without IV contrast	Usually appropriate	Expert Consensus	֎֎֎ 1-10 mSv	ତତତ 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	ତତତ 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	ବ୍ୟତ୍ତ 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	ତେତେ 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	ଷଷଷ 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	ତତତ 1-10 mSv	ଡଡଡଡଡ 3- 10 mSv [ped]	1	1	10	2	1	0	3	0	0	0	0
Amyloid PET/CT brain	Usually not appropriate	Expert Consensus	ଷଷଷ 1-10 mSv		1	1	14	2	0	0	0	0	0	0	0

Tau PET/CT brain	Usually not appropriate	Expert Consensus	ତ୍ତତତ 1-10 mSv		1	1	9	1	1	2	0	0	1	0	0	
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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.