

Orbital Imaging and Vision Loss-Child

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT orbits without IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	0	3	13
		References		Study Quality											
		13 (21607931)		4											
		12 (18936032)		4											
CT head without IV contrast	May be appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	5	5	0	0	2	3	9	1	1	0	0
MRI orbits without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	1	0	1	2	5	6	0	0	1
		References		Study Quality											
		12 (18936032)		4											
MRI head without IV contrast	May be appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	4	4	1	2	2	5	5	1	0	0	0
CT orbits with IV contrast	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	3	3	6	2	4	0	4	0	0	0	0
		References		Study Quality											
		13 (21607931)		4											
		12 (18936032)		4											

Radiography orbit	Usually not appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	3	3	6	2	2	3	2	1	0	0	0
		References		Study Quality											
		13 (21607931)		4											
		12 (18936032)		4											
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	8	5	1	2	0	0	0	0	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	2	2	2	0	1	1	0	0
MRI orbits without and with IV contrast	Usually not appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	2	2	7	2	4	1	0	0	1	1	0
		References		Study Quality											
		12 (18936032)		4											
CT orbits without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	7	0	0	0	0	0	0	0
		References		Study Quality											
		13 (21607931)		4											
		12 (18936032)		4											
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	12	4	0	0	0	0	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	9	4	1	1	0	0	1	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	9	4	0	2	1	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	11	5	0	0	0	0	0	0	0

Variant 2: Child. Nontraumatic acute vision loss without papilledema. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI head and orbits without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	2	0	1	1	1	11
		References		Study Quality											
		19 (31896804)		4											
MRI head without and with IV contrast	May be appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	5	8	2	0	0
		References		Study Quality											
		17 (26822746)		4											
		18 (8505818)		2											
MRI complete spine without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	5	7	3	0	0
		References		Study Quality											
		20 (25695963)		4											
		21 (12601106)		3											
		22 (23858328)		4											
MRI orbits without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	3	3	9	1	0	0
		References		Study Quality											
		19 (31896804)		4											
MRI head and orbits without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	2	12	2	0	0	0
		References		Study Quality											
		19 (31896804)		4											
MRI head without IV contrast	May be appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	4	6	4	1	0	0
		References		Study Quality											
		17 (26822746)		4											

		18 (8505818)			2											
CT head without IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	4	4	2	3	1	2	6	0	2	0	0	
MRI orbits without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	3	3	3	4	3	4	2	0	0	0	0	
		References		Study Quality												
		19 (31896804)		4												
CT orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	5	0	1	1	0	0	0	1	
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	8	4	2	0	0	1	0	0	1	
MRI complete spine without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	2	2	3	9	3	0	1	0	0	0	0	
		References		Study Quality												
		20 (25695963)		4												
		21 (12601106)		3												
		22 (23858328)		4												
CT head and orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	4	1	2	0	0	0	0	1	
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	7	4	2	2	0	0	1	0	0	
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	5	0	1	0	0	0	1	0	
CT orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	3	1	0	1	0	0	1	0	
CT orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	1	2	0	3	0	0	0	0	

MRI head and orbits without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	3	12	1	0	0	0
		References		Study Quality											
		27 (-3195267)		4											
MRI orbits without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	0	1	4	3	7	1	0	0	0
		References		Study Quality											
		29 (27518079)		3											
MRI orbits without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	4	2	2	3	3	1	1	0	0
		References		Study Quality											
		29 (27518079)		3											
MRA head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	7	3	1	1	3	1	0	0	0
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	11	3	0	0	0	1	1	0	0
CT orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	4	0	1	1	0	0	0	0
CT orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	3	1	1	1	0	0	0	0
CT orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	3	1	0	0	0	0	0	1
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	5	0	2	0	0	0	0	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	4	2	0	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	10	4	1	0	0	0	0	0	1

MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	0.0 mSv	0.0 mSv [ped]	1	1	9	7	0	0	0	0	0	0	0
CT head and orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	4	0	1	1	0	0	0	0
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	4	1	0	1	0	0	0	0
CT head and orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	10	3	1	1	0	0	0	0	1

Variant 4: Child. Congenital or developmental abnormality leading to decreased visual acuity or vision loss. No leukocoria. Unilateral or bilateral. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI head and orbits without IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	2	1	9	4
		References		Study Quality											
		34 (25128595)		2											
		33 (23972277)		2											
		32 (28982953)		4											
		2 (26208421)		4											
MRI head without IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	2	4	8	1	1	0
MRI head and orbits without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	3	4	3	1	0	4	1	0	0
		References		Study Quality											
		34 (25128595)		2											
		33 (23972277)		2											
		32 (28982953)		4											
		2 (26208421)		4											

MRI head without IV contrast	May be appropriate	Expert Consensus	0.0 mSv	0.0 mSv [ped]	6	6	0	0	0	2	4	8	1	1	0
MRI head and orbits without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	0.0 mSv	0.0 mSv [ped]	5	5	3	4	3	1	0	4	1	0	0

References	Study Quality
34 (25128595)	2
33 (23972277)	2
32 (28982953)	4
2 (26208421)	4

MRI orbits without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	1	1	0	10	3	1	0	0
		References		Study Quality											
		34 (25128595)		2											
		33 (23972277)		2											
		32 (28982953)		4											
		2 (26208421)		4											
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	5	3	7	0	1	0	0	0	0
MRI orbits without and with IV contrast	Usually not appropriate	Strong	O 0 mSv	O 0 mSv [ped]	3	3	3	5	6	2	0	0	0	0	0
		References		Study Quality											
		34 (25128595)		2											
		33 (23972277)		2											
		32 (28982953)		4											
		2 (26208421)		4											
CT orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	5	1	0	1	1	0	0	0
CT orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	4	2	0	1	1	0	0	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	3	2	2	0	1	0	0	0
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	8	4	2	1	0	0	0	0	1
MRA head without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	8	4	0	1	1	1	1	0	0
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	3	1	0	4	0	0	0	0

CTA head with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	10	4	0	0	0	1	1	0	0
CT orbits without and with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗ 0.3-3 mSv [ped]	1	1	9	4	1	0	1	0	0	0	1
CT head with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗ 0.3-3 mSv [ped]	1	1	9	4	1	0	1	1	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ 0 mSv	○ ○ 0 mSv [ped]	1	1	9	3	1	1	0	0	1	0	1
CT head and orbits with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗ 0.3-3 mSv [ped]	1	1	9	3	2	0	1	1	0	0	0
CT head and orbits without and with IV contrast	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	9	4	1	1	0	0	0	0	1

Variant 5: Child. Vision loss and suspected optic pathway tumor, with or without a history of neurofibromatosis type 1. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI head and orbits without and with IV contrast	Usually appropriate	Limited	○ ○ 0 mSv	○ ○ 0 mSv [ped]	9	9	1	0	0	0	0	1	1	3	10
		References		Study Quality											
		36 (28257299)		4											
		37 (31739524)		4											
		38 (29789890)		3											
		39 (30904949)		2											
MRI head without and with IV contrast	May be appropriate	Expert Consensus	○ ○ 0 mSv	○ ○ 0 mSv [ped]	5	5	0	0	0	0	10	6	0	0	0
MRI orbits without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	○ ○ 0 mSv	○ ○ 0 mSv [ped]	5	5	2	0	1	0	8	4	1	0	0

MRI head and orbits without IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	3	3	3	4	6	0	3	0	0	0	0
		References		Study Quality											
		36 (28257299)		4											
		37 (31739524)		4											
		38 (29789890)		3											
		39 (30904949)		2											
CT orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	4	1	1	0	2	0	0	0
CT orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	5	0	2	0	1	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	7	3	3	2	0	0	1	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	8	2	3	2	0	0	0	1	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	5	4	5	0	2	0	0	0	0
CT head and orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	3	2	0	1	1	1	0	0
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	4	1	1	2	0	0	0	0
MRI orbits without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	8	3	4	0	1	0	0	0	0
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	4	2	0	0	0	1	0	0
CT orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	4	0	1	1	0	0	0	1

			42 (23966248)	4											
			43 (27585209)	4											
MRI head without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	0	4	10	1	0	1
		References	Study Quality												
		42 (23966248)	4												
		43 (27585209)	4												
MRV head without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	0	5	7	3	0	1
		References	Study Quality												
		42 (23966248)	4												
		43 (27585209)	4												
MRV head without and with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	1	5	9	0	1	0
		References	Study Quality												
		42 (23966248)	4												
		43 (27585209)	4												
MRV head with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	2	5	8	0	1	0
		References	Study Quality												
		42 (23966248)	4												
		43 (27585209)	4												
CT head without IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	5	5	1	0	0	0	9	3	2	1	0
CTV head with IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	2	6	8	0	0	0
		References	Study Quality												
		42 (23966248)	4												

CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	3	3	7	1	1	3	4	0	0	0	0
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	3	3	7	1	3	2	1	1	1	0	0
MRI orbits without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	5	1	5	3	1	0	0	1	0
MRI orbits without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	5	1	6	3	0	0	1	0	0
CT orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	3	2	0	1	1	1	0	0
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	8	5	3	0	0	0	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	7	4	0	2	1	1	1	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	8	3	0	2	1	1	1	0	0
CT head and orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	7	9	0	0	0	0	0	0	0
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	3	2	0	0	2	0	0	0
CT orbits with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	7	0	0	0	0	0	0	0
CT orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	1	3	1	1	0	0	0	1
CT head and orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	9	7	0	0	0	0	0	0	0

Variant 7: Child. Suspected orbital or periorbital infection. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT orbits with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	0	5	11
		References		Study Quality											
		46 (24288398)		4											
MRI orbits without and with IV contrast	May be appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	6	6	0	0	0	1	3	9	3	0	0
		References		Study Quality											
		46 (24288398)		4											
CT head with IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	5	5	0	0	1	1	11	3	0	0	0
		References		Study Quality											
		46 (24288398)		4											
MRI head without and with IV contrast	May be appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	5	5	0	0	1	1	10	3	1	0	0
		References		Study Quality											
		46 (24288398)		4											
CTV head with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	3	3	5	3	3	1	3	1	0	0	0
CTA head with IV contrast	Usually not appropriate	Expert Consensus	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	2	2	8	3	2	1	0	1	0	0	1
CT orbits without IV contrast	Usually not appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	2	2	4	6	5	1	0	0	0	0	0
		References		Study Quality											

		46 (24288398)			4											
CT orbits without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	2	2	5	3	4	1	2	0	0	1	0	
		References			Study Quality											
		46 (24288398)			4											
CT head without IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	2	2	7	3	3	0	1	1	1	0	0	
		References			Study Quality											
		46 (24288398)			4											
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	2	2	8	5	1	1	0	0	1	0	0	
MRI head without IV contrast	Usually not appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	2	2	7	9	0	0	0	0	0	0	0	
		References			Study Quality											
		46 (24288398)			4											
MRV head without IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	2	2	8	4	4	0	0	0	0	0	0	
MRI orbits without IV contrast	Usually not appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	2	2	7	2	6	1	0	0	0	0	0	
		References			Study Quality											
		46 (24288398)			4											
CT head without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	9	7	0	0	0	0	0	0	0	
		References			Study Quality											
		46 (24288398)			4											
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	9	4	0	2	0	1	0	0	0	
MRV head without and with IV contrast	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	1	1	9	7	0	0	0	0	0	0	0	

MRV head with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	9	4	3	0	0	0	0	0	0
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Variant 8: Child. Leukocoria or suspected intraocular mass. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI head and orbits without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	1	0	0	0	1	1	0	13

	References		Study Quality												
	47 (22218144)		3												
	50 (23117972)		3												
	49 (25195185)		4												
	48 (25924174)		2												
	2 (26208421)		4												

MRI orbits without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	0	0	0	9	6	1
	References		Study Quality												
	48 (25924174)		2												
	2 (26208421)		4												

CT orbits without IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	5	5	0	1	1	1	12	1	0	0	0
	References		Study Quality												
	2 (26208421)		4												

CT head with IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	5	5	5	1	0	2	8	0	0	0	0
MRI orbits without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	6	1	6	3	0	0	0

References	Study Quality
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		48 (25924174)		2											
		2 (26208421)		4											
CT orbits with IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	4	4	5	1	0	3	7	0	0	0	0
		References		Study Quality											
		2 (26208421)		4											
MRI head without and with IV contrast	May be appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	4	4	2	1	3	4	5	1	0	0	0
		References		Study Quality											
		48 (25924174)		2											
CT head and orbits with IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	4	4	2	4	0	5	5	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	3	3	6	0	4	2	2	1	1	0	0
		References		Study Quality											
		48 (25924174)		2											
CT orbits without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	7	2	2	0	3	1	0	1	0
		References		Study Quality											
		2 (26208421)		4											
MRI head and orbits without IV contrast	Usually not appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	2	2	5	4	4	1	1	0	0	0	1
		References		Study Quality											
		47 (22218144)		3											
		50 (23117972)		3											
		49 (25195185)		4											
		48 (25924174)		2											
		2 (26208421)		4											

CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	10	3	0	2	0	0	0	1	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	1	1	1	0	1	0	1	0
CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	0	0	0	0	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	3	2	0	1	0	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	9	3	2	0	0	1	0	1	0
CT head and orbits without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	9	2	1	2	0	0	1	1	0
CT head and orbits without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	0	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.