

## American College of Radiology ACR Appropriateness Criteria®

### Sinonasal Disease

**Variant 1: Acute (less than 4 weeks) uncomplicated rhinosinusitis. Initial Imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT cone beam paranasal sinuses without IV contrast	Usually not appropriate	Limited	☼☼ 0.1-1mSv		3	3	5	3	4	4	1	0	1	0	0
		References	Study Quality												
		19 (26700263)	3												
		18 (8259141)	3												
		17 (26253983)	4												
		1 (25833927)	4												
CT head with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	9	4	1	1	1	2	0	0	0
		References	Study Quality												
		1 (25833927)	4												
CT head without IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	9	3	2	2	0	1	1	0	0
		References	Study Quality												
		1 (25833927)	4												
CT maxillofacial without IV contrast	Usually not appropriate	Limited	☼☼ 0.1-1mSv		2	2	7	5	1	2	2	0	0	0	0
		References	Study Quality												
		18 (8259141)	3												
		17 (26253983)	4												



MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	1	0	0	0	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	1	0	0	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	10	1	4	2	0	1	0	0	0
		References		Study Quality											
		1 (25833927)		4											
MRI head without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	10	2	3	2	0	1	0	0	0
		References		Study Quality											
		1 (25833927)		4											
SPECT or SPECT/CT paranasal sinuses	Usually not appropriate	Expert Consensus	⊗⊗⊗ 1-10 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	16	0	2	0	0	0	0	0	0
FDG-PET/CT skull base to mid-high	Usually not appropriate	Expert Consensus	⊗⊗⊗⊗ 10-30 mSv	⊗⊗⊗⊗ 3-10 mSv [ped]	1	1	16	1	1	0	0	0	0	0	0
MRI orbits face neck without and with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	1	0	0	0	0	0	0
		References		Study Quality											
		1 (25833927)		4											
MRI orbits face neck without IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	2	0	0	0	0	0	0
		References		Study Quality											
		1 (25833927)		4											
MRA head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	1	0	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	10	2	3	1	0	1	0	1	0
		References		Study Quality											



CT maxillofacial without IV contrast	May be appropriate (Disagreement)	Expert Opinion	☼☼ 0.1-1mSv		5	5	0	3	1	2	8	3	0	0	0
		References	Study Quality												
		17 (26253983)	4												
		23 (11889374)	3												
MRI head without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	1	0	0	5	6	5	0	0	0
		References	Study Quality												
		17 (26253983)	4												
		23 (11889374)	3												
MRI orbits face neck without IV contrast	May be appropriate (Disagreement)	Expert Opinion	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	0	3	5	4	3	2	0
		References	Study Quality												
		17 (26253983)	4												
		23 (11889374)	3												
CT cone beam paranasal sinuses without IV contrast	Usually not appropriate	Limited	☼☼ 0.1-1mSv		3	3	7	2	6	1	1	1	0	0	0
		References	Study Quality												
		25 (24449524)	3												
		19 (26700263)	3												
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	2	2	9	1	2	4	0	2	0	0	0
CT head without IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	8	4	2	2	1	0	0	0	0
		References	Study Quality												
		6 (28341385)	4												
		17 (26253983)	4												
		23 (11889374)	3												
CT head without and with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	11	1	2	2	1	0	0	0	0

References	Study Quality
6 (28341385)	4
17 (26253983)	4
23 (11889374)	3

CT maxillofacial without and with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv		1	1	12	1	1	2	1	0	0	0	0
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References	Study Quality
17 (26253983)	4
23 (11889374)	3

Arteriography craniofacial	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	15	0	0	2	0	1	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	1	3	2	1	1	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	2	4	1	0	1	0	0	0
SPECT or SPECT/CT paranasal sinuses	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	15	0	3	0	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	14	1	2	0	0	1	0	0	0
Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☹ <0.1 mSv	☹ <0.03 mSv [ped]	1	1	13	1	2	0	1	1	0	0	0
MRA head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	1	5	0	0	2	0	0	0
MRI head with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	11	1	2	2	1	0	0	0	0

References	Study Quality
17 (26253983)	4
23 (11889374)	3

MRI orbits face neck with IV contrast	Usually not appropriate	Limited	0 mSv	0 mSv [ped]	1	1	12	0	2	2	0	1	0	0	0
		References		Study Quality											
		17 (26253983)		4											

**Variant 3: Acute recurrent sinusitis or chronic rhinosinusitis or noninvasive fungal sinusitis or sinonasal polyposis. Possible surgical candidate for these indications or other non-neoplastic indications, including suspected silent sinus syndrome or suspected mucocele, or deviated nasal septum. Initial Imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT maxillofacial without IV contrast	Usually appropriate	Strong	☼☼ 0.1-1mSv		9	9	1	0	0	1	0	0	2	0	13
		References		Study Quality											
		2 (26476379)		4											
		26 (25832968)		4											
		32 (27643765)		4											
		31 (26001236)		4											
		38 (25412986)		2											
		37 (27193478)		2											
		36 (28072563)		4											
		35 (27554662)		1											
CT maxillofacial with IV contrast	May be appropriate	Strong	☼☼ 0.1-1mSv		5	5	0	0	0	3	8	2	4	0	0
		References		Study Quality											
		2 (26476379)		4											
		26 (25832968)		4											
		32 (27643765)		4											
		31 (26001236)		4											
		38 (25412986)		2											
		37 (27193478)		2											
		36 (28072563)		4											





CT maxillofacial without and with IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv		1	1	12	2	2	0	1	0	0	0	0
		References	Study Quality												
		2 (26476379)	4												
		26 (25832968)	4												
		32 (27643765)	4												
		31 (26001236)	4												
		38 (25412986)	2												
		37 (27193478)	2												
		36 (28072563)	4												
		35 (27554662)	1												
Arteriography craniofacial	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	17	0	1	0	0	0	0	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	1	0	0	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	1	0	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	0	0	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	0	0	0	0	0	0
SPECT or SPECT/CT paranasal sinuses	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	14	1	0	0	1	1	0	0	0
		References	Study Quality												
		42 (19401044)	3												
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 3-10 mSv [ped]	1	1	14	2	1	0	0	0	0	0	0
Radiography paranasal sinuses	Usually not appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	9	3	2	1	1	0	1	0	0

		References	Study Quality												
		2 (26476379)	4												
		41 (8327669)	4												
MRA head with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	14	2	0	1	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
MRI orbits face neck with IV contrast	Usually not appropriate	Limited	0 0 mSv	0 0 mSv [ped]	1	1	13	0	1	3	0	0	0	0	0
		References	Study Quality												
		24 (29685531)	4												
		39 (2294574)	4												
		40 (19379610)	2												

**Variant 4: Acute sinusitis with rapid progression or suspected invasive fungal sinusitis. Initial Imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI orbits face neck without and with IV contrast	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	2	3	12
		References	Study Quality												
		4 (26476380)	4												
		5 (28438285)	4												
		46 (29774383)	4												
		45 (22006778)	2												
CT maxillofacial with IV contrast	Usually appropriate	Limited	☢☢ 0.1-1mSv		8	8	0	0	0	0	2	0	6	3	6
		References	Study Quality												
		6 (28341385)	4												
		5 (28438285)	4												





44 (25882281)	1
43 (18029900)	4
23 (11889374)	3
6 (28341385)	4
5 (28438285)	4
4 (26476380)	4

Arteriography craniofacial	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	12	1	1	1	0	0	2	0	0
MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	11	0	2	2	1	0	1	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	11	2	2	1	0	0	1	0	0
SPECT or SPECT/CT paranasal sinuses	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	16	0	0	1	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
Radiography paranasal sinuses	Usually not appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	11	3	1	1	0	1	0	0	0

References	Study Quality
47 (28599686)	2

MRA head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	11	0	4	1	0	0	1	0	0
MRI head with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	11	3	0	1	2	0	0	0	0

References	Study Quality
5 (28438285)	4
6 (28341385)	4
43 (18029900)	4









SPECT or SPECT/CT paranasal sinuses	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	12	1	3	1	0	0	0	0	0
		References		Study Quality											
		7 (26830408)		4											
Radiography paranasal sinuses	Usually not appropriate	Limited	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	14	2	0	0	1	0	0	0	0
		References		Study Quality											
		51 (28391267)		2											
CT cone beam paranasal sinuses without IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	9	1	2	2	2	0	1	0	0
MRA head with IV contrast	Usually not appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	1	1	11	0	2	2	1	1	0	0	0
		References		Study Quality											
		50 (12487677)		4											
		49 (15794546)		4											
		48 (17213441)		4											
		43 (18029900)		4											
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	12	2	0	2	0	0	0	1	0
MRI orbits face neck with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	13	0	1	0	1	1	0	1	0
		References		Study Quality											
		53 (26359585)		2											
		52 (31939885)		1											
		24 (29685531)		4											
		9 (29217745)		1											
		8 (29696477)		4											



MRI head without IV contrast	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	5	5	0	0	1	4	5	6	0	1	0
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References	Study Quality
14 (27738899)	2
13 (26370330)	4
12 (27890184)	4
11 (18710972)	4
55 (16145599)	2
58 (12087336)	3
61 (9576647)	2
63 (19723768)	3

MRI head without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	4	0	1	4	5	3	0	0	0
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References	Study Quality
14 (27738899)	2
13 (26370330)	4
12 (27890184)	4
58 (12087336)	3
55 (16145599)	2
63 (19723768)	3
61 (9576647)	2
11 (18710972)	4
64 (31685104)	4

CT head cisternography	May be appropriate	Strong	☼☼☼ 1-10 mSv		5	5	0	0	1	1	9	3	2	0	1
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References	Study Quality
60 (17970620)	2
59 (9369519)	2
58 (12087336)	3
57 (10319986)	3
56 (2287375)	4

			55 (16145599)		2														
			13 (26370330)		4														
			12 (27890184)		4														
DTPA cisternography	May be appropriate	Limited	☼☼☼ 1-10 mSv		5	5	1	0	1	3	8	4	0	0	0				
			References		Study Quality														
			12 (27890184)		4														
			13 (26370330)		4														
			58 (12087336)		3														
MRI orbits face neck without and with IV contrast	May be appropriate (Disagreement)	Expert Opinion	○ ○ mSv	○ ○ mSv [ped]	5	5	2	0	1	2	5	3	2	2	0				
			References		Study Quality														
			65 (19762462)		4														
			63 (19723768)		3														
			61 (9576647)		2														
			60 (17970620)		2														
			58 (12087336)		3														
			55 (16145599)		2														
			14 (27738899)		2														
			13 (26370330)		4														
			12 (27890184)		4														
			11 (18710972)		4														
SPECT or SPECT/CT paranasal sinuses	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	4	4	5	1	0	4	6	1	0	0	0				
			References		Study Quality														
			13 (26370330)		4														
			66 (23871275)		4														
CTA head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	12	3	0	0	2	0	0	0	0				

CT head with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	14	1	1	1	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	12	3	2	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	2	0	0	0	0	0	0
CT maxillofacial with IV contrast	Usually not appropriate	Strong	☹☹ 0.1-1mSv		1	1	11	2	4	0	0	0	0	0	0

References	Study Quality
62 (18079188)	4
61 (9576647)	2
58 (12087336)	3
57 (10319986)	3
55 (16145599)	2
13 (26370330)	4
12 (27890184)	4

CT maxillofacial without and with IV contrast	Usually not appropriate	Strong	☹☹☹ 1-10 mSv		1	1	12	1	4	0	0	0	0	0	0
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References	Study Quality
62 (18079188)	4
61 (9576647)	2
58 (12087336)	3
57 (10319986)	3
55 (16145599)	2
13 (26370330)	4
12 (27890184)	4

Arteriography craniofacial	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	15	1	0	1	0	0	0	0	0
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MRA head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	1	0	0	0	0	0
MRA head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	1	0	0	0	0	0
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	0	0
Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	15	1	0	0	0	1	0	0	0
CT cone beam paranasal sinuses without IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	11	1	0	1	2	1	1	0	0
MRA head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	1	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	13	1	0	1	2	0	0	0	0

References	Study Quality
12 (27890184)	4
55 (16145599)	2
61 (9576647)	2
58 (12087336)	3
63 (19723768)	3
14 (27738899)	2
13 (26370330)	4

MRI orbits face neck with IV contrast	Usually not appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	1	1	12	1	2	1	1	0	0	0	0
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References	Study Quality
65 (19762462)	4
63 (19723768)	3
61 (9576647)	2
60 (17970620)	2
58 (12087336)	3

55 (16145599)	2
14 (27738899)	2
13 (26370330)	4
12 (27890184)	4
11 (18710972)	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](http://www.acr.org/ac).