

**American College of Radiology  
ACR Appropriateness Criteria®**

**Staging and Post-Therapy Assessment of Head and Neck Cancer**

**Variant 1: Suspected or diagnosed cancer of the oral cavity or oropharynx or hypopharynx or larynx or cancer of unknown primary of the head and neck. Initial staging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT neck with IV contrast	Usually appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 0.3-3 mSv [ped]	9	9	0	0	0	0	0	0	2	2	15

References	Study Quality
26 (33370639)	2
22 (32388410)	2
33 (32152744)	Good
29 (32445627)	2
32 (30633558)	4
28 (30369373)	2
39 (26013025)	2
36 (28608737)	1
23 (26573595)	2
30 (26307809)	4
38 (25643834)	2
34 (27480073)	2
31 (27373806)	2
27 (22155255)	2
24 (34087615)	1
25 (32554422)	1
35 (31606761)	2

			37 (30473166)		Good													
			40 (22996710)		4													
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	8	8	0	0	0	1	1	2	4	3	8			

References	Study Quality
49 (30768363)	2
35 (31606761)	2
42 (31635765)	4
37 (30473166)	Good
50 (28600822)	2
39 (26013025)	2
36 (28608737)	1
10 (28572489)	2
47 (25131685)	2
48 (26490394)	2
38 (25643834)	2
17 (25405771)	2
44 (21637051)	2
45 (21470899)	2
46 (23538049)	Good
43 (21861286)	2
51 (32129894)	2

MRI orbits face neck without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	0	1	9	4	4			
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References	Study Quality
26 (33370639)	2
59 (32949282)	Good
33 (32152744)	Good
29 (32445627)	2
34 (27480073)	2
31 (27373806)	2



72 (21958435)	2
25 (32554422)	1
65 (25150165)	2
64 (21674359)	2
63 (19688854)	2
62 (21604319)	4

FDG-PET/MRI skull base to mid-thigh	May be appropriate	Strong	☼☼☼ 1-10 mSv		5	5	1	0	2	1	10	3	0	1	0
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References	Study Quality
52 (24649835)	4
54 (26243264)	2
57 (33247166)	2
42 (31635765)	4
55 (26498514)	4
56 (28129606)	2
58 (27922861)	2
53 (24924545)	2
44 (21637051)	2

MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	3	3	9	0	2	3	5	0	0	0	0
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CT neck without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	9	2	1	3	3	1	0	0	0
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CTA neck with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	2	4	2	0	0	0	0	0
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References	Study Quality
41 (32113152)	4

CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	16	2	0	0	0	0	0	0	1
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CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	14	2	0	3	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	16	2	0	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	15	2	0	1	1	0	0	0	0
CT maxillofacial with IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	13	1	2	2	1	0	0	0	0
CT maxillofacial without IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	13	3	2	1	0	0	0	0	0
CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	15	3	1	0	0	0	0	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	13	3	1	0	0	0	1	0	1
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	2	0	1	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	17	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	16	1	1	1	0	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	12	2	3	1	1	0	0	0	0
Radiography chest	Usually not appropriate	Strong	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	13	4	0	0	1	0	0	0	0

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	1	1	19	0	0	0	0	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	0	2	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	1	1	0	0	0	0	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	1	0	0	0	1	0	0

**Variant 2: Suspected or diagnosed nasopharynx cancer or EBV-associated unknown primary of the head and neck. Initial staging.**

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	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	1	0	0	0	0	1	3	2	11
			References	Study Quality											
			92 (26316564)	2											
			91 (24212004)	2											
			90 (23769923)	4											
			82 (18704401)	2											
			81 (30912815)	2											
			74 (33416977)	2											
CT neck with IV contrast	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	8	8	0	0	0	0	0	3	4	3	8
			References	Study Quality											
			85 (31635767)	4											
			84 (11130825)	2											
			83 (25348201)	Good											
			82 (18704401)	2											

			81 (30912815)		2													
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Strong	⊕⊕⊕⊕ 10-30 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	8	8	0	0	0	0	1	0	6	4	7			
			References		Study Quality													
			83 (25348201)		Good													
			88 (24283555)		Not Assessed													
			17 (25405771)		2													
			74 (33416977)		2													
			87 (17873135)		2													
			85 (31635767)		4													
			84 (11130825)		2													
			82 (18704401)		2													
FDG-PET/MRI skull base to mid-thigh	Usually appropriate	Strong	⊕⊕⊕ 1-10 mSv		7	7	1	0	0	0	2	1	9	4	1			
			References		Study Quality													
			86 (31746412)		2													
			53 (24924545)		2													
			89 (29502310)		2													
CT chest with IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	6	6	0	0	0	0	7	4	5	1	1			
			References		Study Quality													
			15 (25239083)		4													
CT chest without IV contrast	May be appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	5	5	0	0	0	4	7	3	3	1	0			
			References		Study Quality													
			15 (25239083)		4													
CT maxillofacial with IV contrast	May be appropriate (Disagreement)	Expert Opinion	⊕⊕ 0.1-1mSv		5	5	0	2	0	4	8	2	0	2	0			

CT maxillofacial without IV contrast	May be appropriate (Disagreement)	Expert Opinion	☼☼ 0.1-1mSv		5	5	3	0	0	4	8	3	0	0	0
MRI head without and with IV contrast	May be appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	5	5	1	0	1	2	11	2	0	0	1
US neck	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	2	10	3	2	0	0

References	Study Quality
93 (24764338)	2
47 (25131685)	2
65 (25150165)	2
64 (21674359)	2
63 (19688854)	2
62 (21604319)	4

CT neck without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	2	2	9	3	2	0	2	2	0	0	0
CTA neck with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	1	4	2	0	0	0	0	0

References	Study Quality
41 (32113152)	4

CT chest 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	1
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	12	2	2	0	0	1	1	0	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	15	1	1	0	0	1	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	1	0	1	0



CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	14	2	2	0	0	0	0	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	13	2	1	0	0	0	1	0	1
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	1	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	1	0	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	1	0	1	0	0	0
Radiography chest	Usually not appropriate	Strong	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	11	1	2	1	1	1	1	0	0

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	18	0	0	0	0	0	0	0	0
MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	4	3	1	0	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	3	1	1	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	2	0	1	1	0	0	1	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	0	0	0	0	0	1

**Variant 3: Suspected or diagnosed cancer of the paranasal sinuses or nasal cavity. Initial staging.**



20 (31005338)	4
19 (26350882)	2
11 (10718426)	2

CT maxillofacial with IV contrast	May be appropriate	Expert Consensus	☼☼ 0.1-1mSv		6	6	0	0	0	1	8	6	0	2	1
CT chest without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	1	2	9	4	1	1	0

References	Study Quality
15 (25239083)	4
11 (10718426)	2
21 (21232904)	2
20 (31005338)	4
19 (26350882)	2

CT maxillofacial without IV contrast	May be appropriate (Disagreement)	Expert Opinion	☼☼ 0.1-1mSv		5	5	1	1	1	2	7	4	1	1	0
MRI head without and with IV contrast	May be appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	5	5	0	2	1	2	9	3	0	1	0
US neck	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	12	3	1	0	0

References	Study Quality
65 (25150165)	2
64 (21674359)	2
63 (19688854)	2
62 (21604319)	4
47 (25131685)	2

FDG-PET/MRI skull base to mid-thigh	May be appropriate	Strong	☼☼☼ 1-10 mSv		5	5	1	0	1	1	9	5	0	1	0
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References	Study Quality
52 (24649835)	4
54 (26243264)	2

42 (31635765)	4
53 (24924545)	2
57 (33247166)	2
56 (28129606)	2

CT neck without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	2	2	9	1	3	2	2	1	1	0	0
CTA neck with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	14	1	3	1	0	0	0	0	0

References	Study Quality
41 (32113152)	4

CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	15	1	2	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	12	1	1	2	2	0	1	0	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	16	1	1	0	0	1	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	1	0	2	0	0	0	1	0
CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	13	2	0	1	2	0	1	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	14	1	2	0	0	0	1	0	1
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	17	1	1	0	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	2	1	0	0	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	0	1	1	0	1	0



CT neck with IV contrast	Usually appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	8	8	0	0	0	0	0	3	4	3	9	
		References	Study Quality													
		113 (25577417)	Good													
		112 (18337041)	4													
		111 (22842859)	4													
		108 (27236737)	4													
		107 (33866123)	4													
		106 (31327623)	Good													
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	7	7	1	0	1	0	3	2	4	2	6	
		References	Study Quality													
		110 (31635766)	4													
		42 (31635765)	4													
		114 (31102059)	2													
		115 (27890182)	4													
		108 (27236737)	4													
CT chest with IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	6	6	0	0	0	0	8	5	3	1	1	
		References	Study Quality													
		15 (25239083)	4													
		108 (27236737)	4													
CT chest without IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	1	3	8	4	1	1	0	
		References	Study Quality													
		15 (25239083)	4													
		108 (27236737)	4													
US neck	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	0	11	5	1	0	0	

References	Study Quality
116 (26224227)	3
112 (18337041)	4
108 (27236737)	4
107 (33866123)	4

FDG-PET/MRI skull base to mid-thigh	May be appropriate	Limited	☹☹☹ 1-10 mSv		5	5	1	0	1	1	9	5	0	1	0
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References	Study Quality
110 (31635766)	4

MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	8	0	2	2	5	1	0	1	0
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CTA neck with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	13	1	3	2	0	0	0	0	0
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References	Study Quality
41 (32113152)	4

CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	15	1	2	0	0	0	0	0	1
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CT head with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	17	1	0	1	0	0	0	0	0
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CT head without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	19	0	0	0	0	0	0	0	0
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CT head without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	17	0	2	0	0	0	0	0	0
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CT maxillofacial with IV contrast	Usually not appropriate	Expert Consensus	☹☹ 0.1-1mSv		1	1	10	1	3	2	2	1	0	0	0
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CT maxillofacial without IV contrast	Usually not appropriate	Expert Consensus	☹☹ 0.1-1mSv		1	1	15	1	1	1	1	0	0	0	0
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CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	17	1	1	0	0	0	0	0	0
CT neck without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	1	3	1	3	0	0	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	13	2	2	0	0	0	1	0	1
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	17	1	0	1	0	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	2	0	1	0	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	2	0	1	0	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	2	1	1	2	0	0	0	0
Radiography chest	Usually not appropriate	Strong	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	11	1	2	2	2	0	1	0	0

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	19	0	0	0	0	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	1	1	0	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	1	1	0	0	0	0	1
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	0	0	0	0	0	0	1





130 (23639557)	2
132 (23817791)	4
19 (26350882)	2
128 (29754496)	2

MRI orbits face neck without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	1	0	4	5	8
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References	Study Quality
43 (21861286)	2
128 (29754496)	2
139 (20862388)	2

CT chest with IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	6	6	0	0	0	0	7	5	3	2	1
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References	Study Quality
121 (30409312)	2
15 (25239083)	4
120 (26976351)	2
21 (21232904)	2
20 (31005338)	4

FDG-PET/MRI skull base to mid-thigh	May be appropriate	Limited	☼☼☼ 1-10 mSv		6	6	1	0	1	0	3	5	5	2	1
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References	Study Quality
138 (29922943)	4
137 (25958189)	2

CT chest without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	3	8	4	2	1	0
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References	Study Quality
121 (30409312)	2
15 (25239083)	4
120 (26976351)	2
20 (31005338)	4

			21 (21232904)		2													
			122 (22520870)		2													
US neck	May be appropriate	Strong	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	3	9	5	1	0	0			
			References		Study Quality													
			140 (28638103)		2													
			47 (25131685)		2													
			65 (25150165)		2													
			64 (21674359)		2													
			63 (19688854)		2													
			141 (22201409)		4													
MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	3	3	7	1	2	2	4	2	0	0	0			
CTA neck with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	11	1	3	1	0	1	1	0	0			
			References		Study Quality													
			41 (32113152)		4													
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	13	2	0	1	0	0	1	1	0			
CT head with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	15	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	17	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	13	3	1	0	1	0	0	0	0			
CT maxillofacial with IV contrast	Usually not appropriate	Expert Consensus	☹☹ 0.1-1mSv		1	1	11	3	2	0	2	0	0	0	0			
CT maxillofacial without IV contrast	Usually not appropriate	Expert Consensus	☹☹ 0.1-1mSv		1	1	14	2	0	2	0	0	0	0	0			

CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	15	2	1	0	0	0	0	0	0
CT neck without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	1	1	1	3	0	2	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	13	1	2	0	0	0	1	1	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	1	1	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	1	0	0	1	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	0	0	0	1	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	2	1	0	1	0	0	1	0
Radiography chest	Usually not appropriate	Strong	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	13	4	0	0	1	0	0	0	0

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	17	1	0	0	0	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	1	1	0	0	1	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	3	0	1	0	0	0	1	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	0	0	0	0	0	0	1

**Variant 6: Treated nasopharynx cancer or EBV-associated unknown primary of the head and neck. Surveillance imaging or follow-up imaging for suspected or known recurrence.**

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	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	2	4	12
		References		Study Quality											
		148 (30578604)		4											
		146 (16954552)		2											
		145 (16622711)		2											
		143 (26547126)		Good											
		142 (23937825)		4											
CT neck with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	8	8	2	0	0	0	0	3	3	5	5
		References		Study Quality											
		144 (2177548)		2											
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	8	8	0	0	0	0	0	1	4	5	8
		References		Study Quality											
		143 (26547126)		Good											
		136 (25917499)		2											
		75 (25055290)		4											
		90 (23769923)		4											
		88 (24283555)		Not Assessed											
		149 (23715831)		2											
		145 (16622711)		2											
		146 (16954552)		2											
		147 (21501441)		4											



		63 (19688854)			2											
CTA neck with IV contrast	Usually not appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	10	1	4	1	1	1	0	0	0	
		References			Study Quality											
		41 (32113152)			4											
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	14	1	2	0	0	0	0	1	0	
CT head with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	13	3	0	1	0	0	1	0	0	
CT head without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	15	3	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	14	1	1	0	1	0	1	0	0	
CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	14	3	1	0	0	0	0	0	0	
CT neck without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	10	2	1	1	2	1	1	0	0	
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	13	1	3	0	0	0	1	0	0	
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	0	0	1	0	0	0	0	
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	2	0	0	0	0	
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	2	0	0	1	0	0	0	
Radiography chest	Usually not appropriate	Strong	☹ <0.1 mSv	☹ <0.03 mSv [ped]	1	1	13	3	1	0	1	0	0	0	0	

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	⊕ <0.1 mSv	⊕ <0.03 mSv [ped]	1	1	18	0	0	0	0	0	0	0	0
MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	4	3	0	0	0	0	0	1
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	1	0	2	0	0	0	
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	1	1	1	0	0	1	1	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	16	1	0	0	0	0	0	0	1

**Variant 7: Treated cancer of the paranasal sinuses or nasal cavity. Surveillance imaging or follow-up imaging for suspected or known recurrence.**

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	Strong	○ 0 mSv	○ 0 mSv [ped]	9	9	0	0	1	0	1	0	2	3	11

References	Study Quality
105 (25698188)	2
96 (26476381)	4
103 (32608548)	2
104 (31529977)	4

CT neck with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕ 0.3-3 mSv [ped]	8	8	0	0	0	0	2	2	3	3	8
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References	Study Quality
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			96 (26476381)		4														
FDG-PET/CT skull base to mid-thigh	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	8	8	0	0	0	0	0	1	5	4	8				
			References		Study Quality														
			118 (26715675)		4														
			136 (25917499)		2														
			117 (24149172)		2														
			151 (18486742)		4														
			150 (21925763)		4														
			134 (21665394)		2														
			102 (16343913)		2														
CT chest with IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	6	6	0	0	0	0	9	4	3	1	1				
			References		Study Quality														
			15 (25239083)		4														
			21 (21232904)		2														
			120 (26976351)		2														
			121 (30409312)		2														
			122 (22520870)		2														
CT chest without IV contrast	May be appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	3	9	4	1	1	0				
			References		Study Quality														
			15 (25239083)		4														
			21 (21232904)		2														
			122 (22520870)		2														
			121 (30409312)		2														
			120 (26976351)		2														
CT maxillofacial with IV contrast	May be appropriate	Expert Consensus	☼☼ 0.1-1mSv		5	5	0	0	0	3	7	6	0	2	0				

CT maxillofacial without IV contrast	May be appropriate	Expert Consensus	☼☼ 0.1-1mSv		5	5	2	0	2	1	7	5	0	1	0
MRI head without and with IV contrast	May be appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	5	5	1	1	1	2	9	3	0	0	1
US neck	May be appropriate	Strong	○ 0 mSv	○ 0 mSv [ped]	5	5	2	0	0	2	9	4	1	0	0
		References	Study Quality												
		140 (28638103)	2												
		47 (25131685)	2												
		65 (25150165)	2												
		64 (21674359)	2												
		63 (19688854)	2												
FDG-PET/MRI skull base to mid-thigh	May be appropriate	Limited	☼☼☼ 1-10 mSv		5	5	1	0	1	0	8	7	0	1	0
		References	Study Quality												
		137 (25958189)	2												
		138 (29922943)	4												
MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	9	4	3	0	0	0	0	1	1
CTA neck with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	11	2	2	1	2	0	0	0	0
		References	Study Quality												
		41 (32113152)	4												
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	14	2	1	0	0	0	0	1	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	12	2	1	2	0	0	1	0	0
CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	15	2	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	14	1	1	0	0	1	1	0	0
CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv		1	1	14	2	0	0	1	0	1	0	0
CT neck without IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹ 0.3-3 mSv [ped]	1	1	10	1	2	2	1	0	2	0	0
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	1	1	13	2	1	0	1	0	1	0	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	0	0	1	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	2	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	1	0	1	0	1	0	0	0
Radiography chest	Usually not appropriate	Strong	☹ <0.1 mSv	☹ <0.03 mSv [ped]	1	1	15	2	0	0	1	0	0	0	0

References	Study Quality
11 (10718426)	2
15 (25239083)	4
18 (10870751)	2

Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☹ <0.1 mSv	☹ <0.03 mSv [ped]	1	1	17	0	0	0	1	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	2	0	0	0	0
MRI head with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	1	0	2	0	0	0	1	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	0	0	0	0	0	1



CT chest without IV contrast	May be appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	0	3	9	4	2	0	0
		References	Study Quality												
		15 (25239083)	4												
US neck	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	0	2	11	4	1	0	0
		References	Study Quality												
		108 (27236737)	4												
		112 (18337041)	4												
FDG-PET/MRI skull base to mid-thigh	May be appropriate	Strong	☼☼☼ 1-10 mSv		5	5	1	0	0	0	10	6	0	1	0
		References	Study Quality												
		152 (30548894)	2												
		154 (25841279)	4												
		137 (25958189)	2												
Radiography chest	Usually not appropriate	Strong	☼ <0.1 mSv	☼ <0.03 mSv [ped]	2	2	8	4	2	0	2	1	1	0	0
		References	Study Quality												
		11 (10718426)	2												
		15 (25239083)	4												
		18 (10870751)	2												
CTA neck with IV contrast	Usually not appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	10	2	2	2	2	0	0	0	0
		References	Study Quality												
		41 (32113152)	4												
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	15	1	1	0	0	0	0	1	0
CT head with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	14	1	0	1	2	0	0	0	0

CT head without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	16	1	0	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	14	2	0	0	2	0	0	0	0
CT maxillofacial with IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	10	2	2	1	1	2	0	0	0
CT maxillofacial without IV contrast	Usually not appropriate	Expert Consensus	☼☼ 0.1-1mSv		1	1	14	1	2	1	0	0	0	0	0
CT maxillofacial without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		1	1	14	3	0	0	1	0	0	0	0
CT neck without IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼ 0.3-3 mSv [ped]	1	1	12	4	1	0	0	0	0	0	1
CT neck without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	1	1	13	1	2	0	0	0	1	1	0
MRA neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	3	0	0	1	0	0	0	0
MRA neck without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	14	2	0	0	2	0	0	0	0
MRI head without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	15	2	0	0	1	0	0	0	0
MRI head without and with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	10	2	2	0	3	1	0	0	0
Radiography paranasal sinuses	Usually not appropriate	Expert Consensus	☼ <0.1 mSv	☼ <0.03 mSv [ped]	1	1	17	1	0	0	0	0	0	0	0
MRI orbits face neck without IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	11	3	3	0	1	0	0	0	0
MRA neck with IV contrast	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	1	1	13	2	1	0	2	0	0	0	0

MRI head with IV contrast	Usually not appropriate	Expert Consensus	0.0 mSv	0.0 mSv [ped]	1	1	13	2	0	2	0	1	0	0	0
MRI orbits face neck with IV contrast	Usually not appropriate	Expert Consensus	0.0 mSv	0.0 mSv [ped]	1	1	16	1	0	0	0	0	0	0	1

## **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).