American College of Radiology
ACR Appropriateness Criteria®

Staging and Disease Monitoring of Colon Cancer and Appendiceal Cancer

Variant 1: Adult. Staging of colon cancer.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usually appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	9	9	0	0	0	0	0	0	1	3	11

References	Study Quality
30 (36355197)	3
29 (35133470)	2
28 (30790053)	2
27 (30422707)	2
26 (36029713)	2
25 (35709643)	3
19 (30870227)	2
17 (29116438)	3
20 (33124132)	3
22 (34145484)	3
18 (30767041)	2
21 (33904991)	3
23 (35358915)	2
24 (36377769)	3
8 (20392584)	2
15 (21263087)	2
16 (23150701)	2

10 (1914737)	3
12 (15841734)	3
11 (11152779)	2
14 (15044747)	2
13 (16484347)	2
9 (21293130)	3

CT chest with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	8	8	0	0	0	0	1	2	1	4	7

References	Study Quality
37 (22169348)	4
36 (20607759)	4
32 (10421258)	3
35 (20175945)	4
33 (20151212)	4
34 (34119380)	4
31 (27779994)	3

CT chest without IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	6	6	1	0	0	0	5	2	7	0	0

References	Study Quality
37 (22169348)	4
36 (20607759)	4
32 (10421258)	3
35 (20175945)	4
33 (20151212)	4
34 (34119380)	4
31 (27779994)	3

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	0	4	3	5	0	2

References	Study Quality
77 (35200590)	1

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	1	0	1	9	1	3	0	0

References	Study Quality
48 (32213686)	3
47 (34775402)	4
76 (33650922)	4
74 (30528892)	2
75 (31743882)	2
72 (31855148)	1
73 (30448916)	1
66 (30353920)	1
68 (32239338)	3
69 (33902498)	1
70 (34563410)	2
71 (31080095)	1
64 (25286324)	1
65 (29951340)	3
67 (30616608)	2
56 (22487067)	4
60 (17515386)	4
58 (22976920)	2
10 (1914737)	3
54 (18058107)	1
11 (11152779)	2
59 (19789256)	2
55 (22556405)	2
57 (22167501)	2
61 (20143461)	4
62 (31340755)	2
63 (28803449)	3
48 (32213686)	3

43 (17195075)	2
44 (28687025)	3
46 (32034769)	3
45 (30928334)	Good
41 (21867996)	3
38 (21431987)	2
39 (17610107)	4
42 (19486092)	2
40 (28169837)	3

CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	4	2	4	2	2	1	0	0	0
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	3	4	1	3	1	0	0	0
FDG-PET/MRI skull base to mid-thigh	Usually not appropriate	Strong	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	0	4	6	2	2	1	0	0	0

References	Study Quality
52 (29279157)	4
51 (9377498)	3
49 (35705874)	Good
50 (37143144)	Good

MRI abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	1	5	2	3	1	0	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	3	7	4	0	0	0	0	0	1
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	2	2	6	2	4	2	0	0	0	0	1

Variant 2: Adult. Colon cancer. Posttreatment evaluation.

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

References	Study Quality
78 (29800179)	3
16 (23150701)	2
15 (21263087)	2
12 (15841734)	3
14 (15044747)	2
13 (16484347)	2
8 (20392584)	2
10 (1914737)	3
11 (11152779)	2
9 (21293130)	3

CT chest with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	9	9	0	0	0	0	2	1	1	3	8

References	Study Quality
79 (14529575)	4

CT chest without IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	6	6	1	0	0	0	5	4	5	0	0

References	Study Quality
37 (22169348)	4
36 (20607759)	4
32 (10421258)	3
35 (20175945)	4
33 (20151212)	4
34 (34119380)	4
31 (27779994)	3

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	1	4	2	4	1	2

References	Study Quality
72 (31855148)	1
71 (31080095)	1
68 (32239338)	3
69 (33902498)	1
70 (34563410)	2
67 (30616608)	2
60 (17515386)	4
61 (20143461)	4
62 (31340755)	2
62 (31340755)	2
66 (30353920)	1
63 (28803449)	3
64 (25286324)	1
65 (29951340)	3
56 (22487067)	4
58 (22976920)	2
10 (1914737)	3
54 (18058107)	1
53 (22652037)	2
11 (11152779)	2
59 (19789256)	2
55 (22556405)	2
57 (22167501)	2

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	1	7	3	4	0	0

References	Study Quality
83 (34581274)	4
82 (19419820)	2

References	Study Quality
42 (19486092)	2
43 (17195075)	2
80 (20960208)	3
81 (30350468)	3
41 (21867996)	3
38 (21431987)	2
39 (17610107)	4

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	3	4	3	1	2	2	0	0	0
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	4	3	2	3	1	2	0	0	0
FDG-PET/MRI skull base to mid-thigh	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	0	3	8	1	2	1	0	0	0

References	Study Quality
84 (31359108)	3

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	1	2	3	4	5	6	7	8	9
MRI abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	2	3	4	2	2	1	1	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	3	6	4	0	1	0	0	0	1
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	2	2	5	3	5	1	0	0	0	0	1

Variant 3: Adult. Appendiceal cancer. Disease monitoring during treatment or posttreatment evaluation.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	8	8	0	0	0	0	0	0	3	5	7

References	Study Quality
93 (31385130)	4
92 (29270877)	3
88 (24059397)	3
89 (19050972)	3
90 (26162922)	4
91 (31974019)	4
6 (30017331)	4
86 (28540832)	4
87 (10511181)	4

CT chest with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	8	8	0	0	0	0	4	2	0	5	4

References	Study Quality
6 (30017331)	4

CT chest without IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	6	6	0	0	0	0	5	5	5	0	0

References	Study Quality
6 (30017331)	4

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	6	6	0	1	0	0	4	5	3	2	0

References	Study Quality
102 (23456382)	Not Assessed
101 (28376270)	3
97 (25786743)	2
100 (19620444)	2
6 (30017331)	4
91 (31974019)	4
92 (29270877)	3
93 (31385130)	4

FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	4	4	1	0	6	3	3	1	1	0	0

References	Study Quality
97 (25786743)	2
96 (28770289)	2
94 (21265346)	3
95 (17632751)	2

CT abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	5	2	5	1	1	1	0	0	0
FDG-PET/MRI skull base to mid-thigh	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	1	0	9	2	3	0	0	0	0

References	Study Quality
99 (26700358)	2
98 (26112492)	3

MRI abdomen and pelvis with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	2	4	4	0	2	0	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	3	5	3	1	2	0	0	0	1
CT chest without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	2	2	7	2	4	1	0	0	0	0	1
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	3	5	7	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.**