

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

**Staging of Colorectal Cancer**

**Variant 1: Rectal cancer. Locoregional staging. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI pelvis without and with IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	9	9	0	0	0	0	0	0	0	1	17

References	Study Quality
36 (21802588)	1
30 (21225363)	3
31 (21135417)	2
32 (21671218)	3
33 (21674192)	2
34 (22271205)	M
35 (23049209)	2
37 (22156868)	2
38 (20464422)	3
39 (22434494)	3
40 (23571146)	1
41 (17329685)	1
42 (19388124)	2
43 (17463134)	3
44 (17504336)	M
45 (17504337)	3
46 (22426259)	2
47 (21913017)	4

48 (21876084)	2
49 (21590453)	3
50 (21509631)	2
51 (21475011)	4
53 (21926843)	3
54 (21327602)	3
52 (28691219)	3
57 (29570375)	3
55 (28900855)	4
56 (28497665)	3

MRI pelvis without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	1	2	6	3	6
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References	Study Quality
36 (21802588)	1
30 (21225363)	3
31 (21135417)	2
32 (21671218)	3
33 (21674192)	2
34 (22271205)	M
35 (23049209)	2
37 (22156868)	2
38 (20464422)	3
39 (22434494)	3
40 (23571146)	1
41 (17329685)	1
42 (19388124)	2
43 (17463134)	3
44 (17504336)	M
45 (17504337)	3
46 (22426259)	2
47 (21913017)	4

48 (21876084)	2
49 (21590453)	3
50 (21509631)	2
51 (21475011)	4
53 (21926843)	3
54 (21327602)	3
52 (28691219)	3
57 (29570375)	3
55 (28900855)	4
56 (28497665)	3

US pelvis transrectal	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	0	1	6	10	1
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References	Study Quality
58 (23280021)	3
23 (20103950)	3
59 (21176897)	3
60 (17294198)	3
36 (21802588)	1
61 (21920011)	3
63 (21795480)	3
64 (21550864)	3
22 (18697365)	4
65 (17674104)	3
66 (9276704)	4
62 (30736712)	3

CT abdomen and pelvis with IV contrast	May be appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	5	5	0	0	0	0	15	2	0	0	1
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References	Study Quality
8 (19571705)	2
23 (20103950)	3
22 (18697365)	4

16 (8646512)	3
18 (9568652)	1
17 (15376205)	3
19 (19949791)	3
20 (21110194)	2
24 (22100372)	3
25 (22281979)	2
26 (22271004)	3
21 (31305437)	4

FDG-PET/CT skull base to mid-thigh	May be appropriate	Limited	☼☼☼☼ 10-30 mSv	☼☼☼☼ 3-10 mSv [ped]	5	5	0	0	1	7	5	4	1	0	0
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References	Study Quality
28 (29378659)	4
29 (26828149)	3

CT colonography	May be appropriate	Limited	☼☼☼ 1-10 mSv		4	4	0	0	2	9	5	1	1	0	0
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References	Study Quality
27 (29137613)	3

CT abdomen and pelvis without IV contrast	Usually not appropriate	Strong	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	3	3	2	3	7	2	3	0	0	1	0
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References	Study Quality
8 (19571705)	2
23 (20103950)	3
22 (18697365)	4
16 (8646512)	3
18 (9568652)	1
17 (15376205)	3
19 (19949791)	3
20 (21110194)	2
24 (22100372)	3



47 (21913017)	4
48 (21876084)	2
49 (21590453)	3
50 (21509631)	2
51 (21475011)	4
83 (28473079)	4
84 (31939890)	Good
99 (31490825)	3
101 (30403572)	3
103 (30280248)	3
90 (30327166)	3
100 (29668301)	3
91 (29337774)	3
85 (29043428)	4
92 (28786006)	3
89 (28237642)	3
80 (28177989)	4
102 (27959622)	3
86 (27331883)	4
97 (27055660)	3
82 (26953983)	3
81 (26747329)	4
87 (27489868)	3
88 (21343320)	2
94 (31386575)	3
93 (30844347)	4
95 (25243543)	3
96 (19403848)	4
98 (19830503)	4

MRI pelvis without IV contrast	Usually appropriate	Strong	0 0 mSv	0 0 mSv [ped]	7	7	0	0	0	0	2	6	2	6	2
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References	Study Quality
8 (19571705)	2
42 (19388124)	2
46 (22426259)	2
47 (21913017)	4
48 (21876084)	2
49 (21590453)	3
50 (21509631)	2
51 (21475011)	4
83 (28473079)	4
84 (31939890)	Good
99 (31490825)	3
101 (30403572)	3
103 (30280248)	3
90 (30327166)	3
100 (29668301)	3
91 (29337774)	3
85 (29043428)	4
92 (28786006)	3
89 (28237642)	3
80 (28177989)	4
102 (27959622)	3
86 (27331883)	4
97 (27055660)	3
82 (26953983)	3
81 (26747329)	4
87 (27489868)	3
88 (21343320)	2
94 (31386575)	3
93 (30844347)	4
95 (25243543)	3





US pelvis transrectal	May be appropriate (Disagreement)	Expert Opinion	0 0 mSv	0 0 mSv [ped]	5	5	0	3	4	2	3	5	1	0	0
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References	Study Quality
63 (21795480)	3
64 (21550864)	3
22 (18697365)	4
104 (29848812)	3
108 (29857861)	3
107 (29944579)	2
106 (27858916)	Good
105 (26323642)	3
109 (10950005)	4

CT abdomen and pelvis without IV contrast	Usually not appropriate	Strong	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	3	3	2	5	6	2	1	1	0	1	0
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References	Study Quality
8 (19571705)	2
23 (20103950)	3
19 (19949791)	3
20 (21110194)	2
24 (22100372)	3
25 (22281979)	2
26 (22271004)	3
72 (26855391)	3
67 (20452636)	3
68 (22497951)	4
69 (18589355)	3
70 (26130666)	4
71 (-3192240)	4

CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	3	3	1	3	13	0	0	0	0	0	1
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References	Study Quality
8 (19571705)	2
23 (20103950)	3
19 (19949791)	3
20 (21110194)	2
24 (22100372)	3
25 (22281979)	2
26 (22271004)	3
72 (26855391)	3
67 (20452636)	3
68 (22497951)	4
69 (18589355)	3
70 (26130666)	4
71 (-3192240)	4

CT colonography	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		3	3	0	5	12	0	1	0	0	0	0
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**Variant 3: Colorectal cancer. Staging for distant metastases. Initial imaging.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CT chest abdomen pelvis with IV contrast	Usually appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 3-10 mSv [ped]	9	9	0	0	0	0	0	0	0	2	16

References	Study Quality
110 (20392584)	2
117 (21263087)	2
118 (23150701)	2

17 (15376205)	3
112 (1914737)	3
114 (15841734)	3
113 (11152779)	2
116 (15044747)	2
120 (10421258)	3
115 (16484347)	2
111 (21293130)	3
122 (20175945)	4
121 (20151212)	4
123 (20607759)	4
124 (22169348)	4
119 (27779994)	3

CT chest with IV contrast and MRI abdomen with IV contrast	Usually appropriate	Expert Consensus	☹☹☹ 1-10 mSv		8	8	1	0	0	0	2	3	2	8	2
FDG-PET/CT skull base to mid-thigh	May be appropriate	Strong	☹☹☹☹ 10-30 mSv	☹☹☹☹ 3-10 mSv [ped]	6	6	0	0	1	1	3	10	2	1	0

References	Study Quality
130 (21867996)	3
125 (21472100)	3
126 (17387540)	3
127 (17148724)	2
128 (21431987)	2
129 (17610107)	4
131 (19486092)	2
132 (17195075)	2
133 (20960208)	3
134 (19419820)	2

CT chest without IV contrast and MRI abdomen with IV contrast	May be appropriate	Expert Consensus	☹☹☹ 1-10 mSv		6	6	1	0	0	1	4	5	2	5	0
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CT chest without IV contrast and MRI abdomen without IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv		5	5	1	0	2	5	7	2	1	0	0
CT chest with IV contrast and MRI abdomen without IV contrast	May be appropriate	Expert Consensus	☼☼☼ 1-10 mSv		5	5	1	0	2	2	8	4	1	0	0
CT chest abdomen pelvis without IV contrast	May be appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 3-10 mSv [ped]	4	4	2	0	6	3	5	1	1	0	0

References	Study Quality
110 (20392584)	2
117 (21263087)	2
118 (23150701)	2
17 (15376205)	3
112 (1914737)	3
114 (15841734)	3
113 (11152779)	2
116 (15044747)	2
120 (10421258)	3
115 (16484347)	2
111 (21293130)	3
122 (20175945)	4
121 (20151212)	4
123 (20607759)	4
124 (22169348)	4
119 (27779994)	3

CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Strong	☼☼☼☼ 10-30 mSv	☼☼☼☼☼ 10-30 mSv [ped]	3	3	2	1	13	1	0	0	0	0	1
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References	Study Quality
110 (20392584)	2
117 (21263087)	2
118 (23150701)	2

17 (15376205)	3
112 (1914737)	3
114 (15841734)	3
113 (11152779)	2
116 (15044747)	2
120 (10421258)	3
115 (16484347)	2
111 (21293130)	3
122 (20175945)	4
121 (20151212)	4
123 (20607759)	4
124 (22169348)	4
119 (27779994)	3

CT chest without and with IV contrast and MRI abdomen without and with IV contrast	Usually not appropriate	Expert Consensus	☼☼☼ 1-10 mSv		3	3	2	4	8	2	2	0	0	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](http://www.acr.org/ac).