American College of Radiology
ACR Appropriateness Criteria®

Post-Treatment Follow-up of Prostate Cancer

Variant 1: Prostate cancer follow-up. Status post radical prostatectomy. Clinical concern for residual or recurrent disease.

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	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	1	0	2	3	5	5

References	Study Quality
8 (24434294)	3
10 (24978358)	3
28 (19948393)	4
29 (19921202)	4
30 (18430830)	2
31 (18226441)	1
32 (15064390)	3
33 (23377546)	2
38 (23521479)	2
34 (11418435)	2
35 (20106624)	3
36 (20205350)	2
37 (8501793)	3
39 (23313568)	M
6 (18825386)	3
40 (28216327)	3

Choline PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢ 1-10 mSv		7	7	0	1	0	1	2	0	5	7	0

References	Study Quality
8 (24434294)	3
50 (19690023)	3
46 (23123372)	3
45 (23628493)	M
44 (23486334)	M
54 (22549847)	3
48 (22621862)	4
49 (23069923)	3
51 (19756592)	3
52 (20306038)	3
53 (17891394)	3
57 (25319322)	3
47 (30205893)	3
56 (29425221)	3
55 (30521498)	3

Fluciclovine PET/CT skull base to mid-thigh	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		7	7	0	0	0	0	3	2	6	3	2

References	Study Quality
62 (26960562)	3
59 (27091135)	2
63 (25907118)	M
64 (27746282)	3
61 (26053708)	2
60 (23591953)	3
66 (31216198)	3
67 (30179618)	3
65 (30589673)	3
69 (33427655)	1

		68 (33517323)		1												
Fluciclovine PET/MRI skull base to mid-thigh	Usually appropriate	Strong	☢☢☢ 1-10 mSv		7	7	0	0	1	0	2	4	5	3	1	
		References		Study Quality												
		70 (16832632)		3												
		71 (12679398)		1												
		72 (16865395)		3												
		73 (16315004)		3												
		74 (17926036)		3												
		78 (17204699)		2												
		84 (27557844)		3												
		76 (27694178)		4												
		77 (27694179)		4												
		75 (29970541)		3												
PSMA PET/CT skull base to mid-thigh	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		7	7	1	0	0	1	3	1	4	5	1	
		References		Study Quality												
		84 (27557844)		3												
		83 (30920593)		2												
		86 (31283605)		2												
		85 (31375469)		2												
		87 (28408526)		4												
		82 (-3194111)		4												
DCFPyL PET/CT skull base to mid-thigh	Usually appropriate	Moderate	☢☢☢☢ 10-30 mSv		7	7	0	0	0	0	1	1	10	1	1	
		References		Study Quality												
		90 (31201249)		4												
		91 (33981607)		Good												
		89 (27908968)		3												
		92 (31676732)		3												

MRI-targeted biopsy prostatectomy bed	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	1	0	0	2	4	4	3	2	0

References	Study Quality
10 (24978358)	3

CT abdomen and pelvis with IV contrast	May be appropriate	Moderate	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	3	9	3	0	1	0

References	Study Quality
27 (14571410)	4
26 (22417806)	2

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	4	12	0	0	0	0
Bone scan whole body	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	1	12	2	1	0	0

References	Study Quality
20 (12639656)	3
22 (-3098847)	4
23 (23707439)	4
21 (9751361)	3
24 (20483148)	4
25 (23903557)	M

Fluoride PET/CT skull base to mid-thigh	May be appropriate (Disagreement)	Expert Opinion	☢☢☢☢ 10-30 mSv		5	5	1	1	7	1	1	0	4	1	0
Choline PET/MRI skull base to mid-thigh	May be appropriate (Disagreement)	Expert Opinion	☢☢☢ 1-10 mSv		5	5	0	1	1	1	2	0	4	7	0

References	Study Quality
58 (28803358)	2

TRUS-guided biopsy prostatectomy bed	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	3	11	1	1	0	0

References	Study Quality

		41 (17440730)		2												
MRI pelvis without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	4	4	0	0	6	6	2	0	1	1	0	
		References		Study Quality												
		8 (24434294)		3												
		10 (24978358)		3												
		28 (19948393)		4												
		29 (19921202)		4												
		30 (18430830)		2												
		31 (18226441)		1												
		32 (15064390)		3												
		33 (23377546)		2												
		38 (23521479)		2												
		34 (11418435)		2												
		35 (20106624)		3												
		36 (20205350)		2												
		37 (8501793)		3												
		39 (23313568)		M												
		6 (18825386)		3												
		40 (28216327)		3												
CT abdomen and pelvis without IV contrast	Usually not appropriate	Moderate	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	5	2	3	0	4	2	0	0	0	
		References		Study Quality												
		27 (14571410)		4												
		26 (22417806)		2												
CT chest abdomen pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	3	3	10	0	0	0	0	0	0	
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	1	3	6	2	2	2	0	0	0	

FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	2	5	6	1	1	0	1	0	0

References	Study Quality
79 (16000572)	3
80 (8638000)	3
81 (15950100)	4

TRUS prostatectomy bed	Usually not appropriate	Strong	O 0 mSv	O 0 mSv [ped]	3	3	4	4	4	0	2	2	0	0	0

References	Study Quality
19 (16602039)	2
42 (8819374)	3
43 (16546462)	2

CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Moderate	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	5	4	5	0	1	0	0	1	0

References	Study Quality
27 (14571410)	4
26 (22417806)	2

CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	2	2	7	2	3	1	2	1	0	0	0
Radiography skeletal survey	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	2	2	8	5	3	0	0	0	0	0	0
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	1	1	9	2	3	0	1	0	0	1	0

Variant 2: Prostate cancer follow-up. Clinical concern for residual or recurrent disease after nonsurgical local and pelvic treatments.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Choline PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢ 1-10 mSv		8	8	0	1	0	1	3	0	3	8	0

References	Study Quality
45 (23628493)	M
44 (23486334)	M
124 (27597240)	3
125 (28126302)	3

MRI pelvis without and with IV contrast	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	1	1	1	6	3	4

References	Study Quality
38 (23521479)	2
39 (23313568)	M
107 (21785087)	3
108 (15375223)	2
109 (15972335)	3
110 (20551184)	2
112 (19130116)	3
113 (15134982)	2
114 (19161194)	3
111 (17881141)	2
115 (17707266)	3
118 (27663393)	3
116 (27527896)	2
117 (29317377)	3
120 (31361529)	2
119 (30730409)	3

Fluciclovine PET/CT skull base to mid-thigh	Usually appropriate	Strong	☢☢☢☢ 10-30 mSv		7	7	0	0	0	0	4	2	5	4	1

References	Study Quality

63 (25907118)	M
64 (27746282)	3
126 (24991547)	3
127 (29685521)	1
128 (30954940)	1

Fluciclovine PET/MRI skull base to mid-thigh	Usually appropriate	Expert Consensus	☢☢☢ 1-10 mSv		7	7	0	0	0	1	5	0	6	3	1
PSMA PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	1	0	0	0	3	2	4	5	1

References	Study Quality
82 (-3194111)	4
129 (32531840)	3

DCFPyL PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	0	0	0	1	0	1	10	1	1

References	Study Quality
89 (27908968)	3
92 (31676732)	3

TRUS-guided biopsy prostate	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	1	7	4	1	0

References	Study Quality
123 (10974448)	1
122 (-3098926)	4

MRI-targeted biopsy prostate	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	1	2	5	6	0	0
CT abdomen and pelvis with IV contrast	May be appropriate	Moderate	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	1	12	1	2	0	0

References	Study Quality
27 (14571410)	4
26 (22417806)	2

MRI abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	0	11	4	1	0	0
Bone scan whole body	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	0	0	13	3	0	0	0

References	Study Quality
3 (23806388)	3
20 (12639656)	3
5 (-3102557)	4
23 (23707439)	4

Fluoride PET/CT skull base to mid-thigh	May be appropriate (Disagreement)	Expert Opinion	☢☢☢☢ 10-30 mSv		5	5	0	0	9	1	1	0	3	2	0
Choline PET/MRI skull base to mid-thigh	May be appropriate (Disagreement)	Expert Opinion	☢☢☢ 1-10 mSv		5	5	0	0	3	1	2	1	3	6	0
MRI pelvis without IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	4	4	0	0	6	5	3	0	1	1	0

References	Study Quality
38 (23521479)	2
39 (23313568)	M
107 (21785087)	3
108 (15375223)	2
109 (15972335)	3
110 (20551184)	2
112 (19130116)	3
113 (15134982)	2
114 (19161194)	3
111 (17881141)	2
115 (17707266)	3
118 (27663393)	3
116 (27527896)	2
117 (29317377)	3

		120 (31361529)		2												
		119 (30730409)		3												
CT abdomen and pelvis without IV contrast	Usually not appropriate	Moderate	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	4	2	4	1	3	2	0	0	0	
		References		Study Quality												
		27 (14571410)		4												
		26 (22417806)		2												
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Moderate	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	4	3	6	0	1	1	0	1	0	
		References		Study Quality												
		27 (14571410)		4												
		26 (22417806)		2												
CT chest abdomen pelvis with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	2	3	10	0	0	0	1	0	0	
MRI abdomen and pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	2	4	2	4	1	0	0	0	
FDG-PET/CT skull base to mid-thigh	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	1	6	4	2	2	0	1	0	0	
TRUS prostate	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	3	4	6	1	0	0	0	0	0	
		References		Study Quality												
		93 (10664674)		4												
		121 (7690016)		3												
CT chest abdomen pelvis without IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	2	2	5	4	2	1	4	0	0	0	0	
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Expert Consensus	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	2	2	6	4	4	1	1	0	0	0	0	

Radiography skeletal survey	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	2	2	8	4	4	0	0	0	0	0	0

Variant 3: Metastatic prostate cancer treated by systemic therapy (androgen deprivation therapy [ADT], chemotherapy, immunotherapy). Follow-up.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Bone scan whole body	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	8	8	0	0	0	0	0	3	5	5	3
References			Study Quality												
134 (26956538)			4												
CT abdomen and pelvis with IV contrast	Usually appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	7	7	0	0	1	1	0	3	4	5	2
References			Study Quality												
27 (14571410)			4												
135 (28473088)			4												
CT chest abdomen pelvis with IV contrast	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	7	7	0	0	0	2	3	3	5	2	1
References			Study Quality												
27 (14571410)			4												
135 (28473088)			4												
Choline PET/CT skull base to mid-thigh	Usually appropriate	Strong	☢☢☢ 1-10 mSv		7	7	0	0	0	1	2	5	3	5	0
References			Study Quality												
45 (23628493)			M												
44 (23486334)			M												
137 (25504434)			1												
136 (26323576)			3												
138 (25808631)			3												

		139 (26768648)			2											
Fluciclovine PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	0	0	0	0	1	4	7	4	0
		References			Study Quality											
		143 (26278491)			4											
		142 (24943499)			4											
		145 (31343613)			3											
		144 (33237350)			4											
Choline PET/MRI skull base to mid-thigh	Usually appropriate	Expert Consensus	☢☢☢ 1-10 mSv		7	7	0	0	1	1	2	3	4	5	0
Fluciclovine PET/MRI skull base to mid-thigh	Usually appropriate	Strong	☢☢☢ 1-10 mSv		7	7	0	0	0	0	4	2	5	5	0
		References			Study Quality											
		70 (16832632)			3											
		71 (12679398)			1											
		72 (16865395)			3											
		73 (16315004)			3											
		74 (17926036)			3											
		78 (17204699)			2											
		76 (27694178)			4											
		77 (27694179)			4											
		140 (31127357)			Good											
		146 (33052718)			2											
PSMA PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	1	0	0	0	1	3	5	6	0
		References			Study Quality											
		154 (32481743)			3											
		153 (28758969)			3											
DCFPyL PET/CT skull base to mid-thigh	Usually appropriate	Limited	☢☢☢☢ 10-30 mSv		7	7	1	0	0	1	4	1	3	6	0
		References			Study Quality											

		155 (31451492)		3												
		156 (33452039)		4												
MRI abdomen and pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	6	6	0	0	1	1	3	6	4	1	0
FDG-PET/CT skull base to mid-thigh	May be appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	6	6	0	0	1	1	5	6	1	1	1
		References		Study Quality												
		79 (16000572)		3												
		80 (8638000)		3												
		149 (10492189)		3												
		148 (27383216)		M												
		147 (27694167)		4												
		150 (20975102)		3												
		151 (15867215)		3												
		152 (12031380)		3												
MRI abdomen and pelvis without IV contrast	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	0	1	1	5	5	2	1	0	1
Fluoride PET/CT whole body	May be appropriate (Disagreement)	Expert Opinion	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	5	5	0	0	3	2	3	2	2	4	0
		References		Study Quality												
		140 (31127357)		Good												
		141 (30877561)		Good												
CT abdomen and pelvis without IV contrast	May be appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	4	4	1	1	6	1	5	2	0	0	0
		References		Study Quality												
		27 (14571410)		4												
		135 (28473088)		4												
CT chest abdomen pelvis without IV contrast	May be appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢ 3-10 mSv [ped]	4	4	0	3	5	3	3	2	0	0	0

		References		Study Quality												
		27 (14571410)		4												
		135 (28473088)		4												
MRI pelvis without and with IV contrast	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	4	4	0	2	3	4	5	2	0	0	0
CT abdomen and pelvis without and with IV contrast	Usually not appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	3	3	9	0	0	1	0	0	0
		References		Study Quality												
		27 (14571410)		4												
		135 (28473088)		4												
CT chest abdomen pelvis without and with IV contrast	Usually not appropriate	Limited	☢☢☢☢ 10-30 mSv	☢☢☢☢☢ 10-30 mSv [ped]	3	3	3	2	10	0	0	1	0	0	0
		References		Study Quality												
		27 (14571410)		4												
		135 (28473088)		4												
MRI pelvis without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	2	3	5	1	4	1	0	0	0
TRUS-guided biopsy prostatectomy bed	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	4	7	0	2	0	0	0	0
MRI-targeted biopsy prostatectomy bed	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	3	6	2	2	0	0	0	0
Radiography skeletal survey	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢ 0.3-3 mSv [ped]	2	2	5	5	5	1	0	0	0	0	0
TRUS prostatectomy bed	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	4	5	0	1	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.**