American College of Radiology
ACR Appropriateness Criteria®

Chronic Foot Pain

Variant 1: Adult. Chronic foot pain. Unknown etiology. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography foot	Usually appropriate	Moderate	☢ <0.1 mSv	☢ <0.03 mSv [ped]	9	9	1	0	0	0	0	0	0	0	13

References	Study Quality
14 (18894612)	4
16 (25805712)	4
17 (23811947)	4
19 (16697701)	2
18 (20439021)	4
15 (8356270)	4
12 (2358259)	4
13 (30379105)	4

US foot	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	3	3	3	2	3	0	5	0	0	1	0
CT foot with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	9	2	2	0	0	0	1	0	0
CT foot without IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	3	0	3	0	0	0	0	0
CT foot without and with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	10	1	2	0	0	1	0	0	0

MRI foot without IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	8	3	1	1	1	0	0	0	0
MRI foot without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	1	1	10	2	1	0	1	0	0	0	0
Bone scan foot	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	10	1	1	0	1	0	0	1	0
Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	13	1	0	0	0	0	0	0	0

Variant 2: Adult. Chronic foot pain. Suspect tendon or ligament or fascia or muscle or other soft tissue origin. Radiographs negative or indeterminate. Next imaging study.

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

References	Study Quality
2 (34642777)	4
30 (36773427)	4
41 (9114115)	3
40 (25809742)	Good
28 (31498747)	4
29 (30063368)	4
33 (22727342)	2
32 (20964964)	3
37 (10551246)	3
38 (9016241)	3
35 (20308514)	4
36 (12668744)	4
39 (37353000)	3

US foot	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	1	0	0	2	1	3	6	1

References	Study Quality
34 (35533558)	Good
27 (8372200)	4
25 (17420632)	3
31 (10470906)	4
26 (11706214)	4
2 (34642777)	4
52 (25466436)	4
51 (16819605)	3
49 (25027985)	2
50 (28398696)	2
48 (33135090)	4
42 (18064426)	3
47 (19664484)	4
40 (25809742)	Good
43 (16040817)	1
46 (27957702)	4
44 (-3145751)	3
45 (-3145753)	2
34 (35533558)	Good
21 (20489099)	2
28 (31498747)	4

Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	May be appropriate	Limited	Varies	Varies	5	5	0	3	0	4	6	1	0	0	0

References	Study Quality
24 (9240528)	4
23 (31068007)	4
22 (11159075)	4

CT foot with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	7	3	1	0	1	1	1	0	0
MRI foot without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	7	0	3	0	2	2	0	0	0

References	Study Quality
27 (8372200)	4
26 (11706214)	4
25 (17420632)	3

CT foot without IV contrast	Usually not appropriate	Limited	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	2	0	0	3	0	1	0	0

References	Study Quality
21 (20489099)	2

CT foot without and with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	3	0	1	0	2	0	0	0
Bone scan foot	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	8	6	0	0	0	0	0	0	0

References	Study Quality
20 (18806575)	4

Variant 3: Adult. Chronic foot pain. Suspect occult fracture or painful ossicles or pain of other osseous origin. Radiographs negative or indeterminate. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI foot without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	1	2	11

References	Study Quality
83 (30685010)	4
82 (19038613)	4
80 (27888854)	4

81 (27885856)	4
78 (9765133)	4
79 (34704114)	4
76 (22078792)	4
73 (8571860)	4
65 (11858605)	4
75 (26888876)	2
64 (29876712)	3
74 (26557590)	3
77 (29228800)	4
60 (30973781)	4
26 (11706214)	4
15 (8356270)	4

CT foot without IV contrast	Usually appropriate	Strong	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	8	8	0	0	0	1	0	1	3	5	4

References	Study Quality
73 (8571860)	4
72 (15018183)	4
69 (19038614)	4
70 (21817003)	3
68 (12627621)	4
71 (8079860)	4
66 (15333345)	3
65 (11858605)	4
67 (29679212)	Good
64 (29876712)	3
60 (30973781)	4

Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	May be appropriate	Limited	Varies	Varies	5	5	0	1	2	2	9	0	0	0	0

References	Study Quality

		60 (30973781)		4												
US foot	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	4	4	1	3	3	4	3	0	0	0	0	
		References		Study Quality												
		61 (15230772)		4												
		85 (22506252)		4												
		84 (10477883)		4												
Bone scan foot	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	3	3	0	3	5	2	2	2	0	0	0	
		References		Study Quality												
		63 (29348982)		4												
		62 (25210293)		4												
		59 (1424449)		4												
		61 (15230772)		4												
		58 (3806228)		4												
		60 (30973781)		4												
		27 (8372200)		4												
		54 (21540716)		4												
		15 (8356270)		4												
		55 (7633586)		2												
		57 (11595853)		4												
		53 (30788224)		4												
		56 (31507140)		3												
CT foot with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	7	3	0	0	3	1	0	0	0	
MRI foot without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	7	0	4	1	0	2	0	0	0	
CT foot without and with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	2	0	1	2	0	1	0	0	

Variant 4: Adult. Chronic foot pain. Suspect osteochondral lesion or cartilage abnormality or degenerative joint disease or pain of other articular origin. Radiographs negative or indeterminate. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI foot without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	2	1	11

References	Study Quality
87 (36737484)	4

CT foot without IV contrast	Usually appropriate	Limited	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	7	7	0	0	0	0	0	1	8	5	0

References	Study Quality
91 (30383405)	2
90 (32995345)	4
89 (35219362)	4
88 (33259992)	3
87 (36737484)	4

Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	May be appropriate	Limited	Varies	Varies	5	5	0	0	1	1	9	3	0	0	0

References	Study Quality
24 (9240528)	4
95 (8751679)	4
92 (19755074)	4
93 (21940584)	4
94 (15664573)	4

MR arthrography foot	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	1	2	10	0	1	0	0

References	Study Quality
87 (36737484)	4

US foot	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	4	4	1	1	2	4	4	2	0	0	0

References	Study Quality
10 (37236743)	4
98 (34378811)	2
96 (28478580)	4
97 (27999984)	1
87 (36737484)	4

CT foot with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	7	2	2	1	0	1	1	0	0
MRI foot without and with IV contrast	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	2	1	2	1	1	1	0	0
CT foot without and with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	2	1	1	1	0	1	0	0
Bone scan foot	Usually not appropriate	Limited	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	10	2	2	0	0	0	0	0	0

References	Study Quality
86 (37953864)	4

Variant 5: Adult. Chronic foot pain. Suspect foreign body. Radiographs negative or indeterminate. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
US foot	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	1	2	11

References	Study Quality
114 (14682417)	4
113 (1887037)	4
111 (9423650)	2

References	Study Quality
109 (11553831)	4
110 (7594298)	4
112 (11312171)	4
99 (11856673)	4

MRI foot without IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	1	0	0	0	1	8	2	2	0	

References	Study Quality
108 (12740473)	4
107 (9215474)	4
99 (11856673)	4
101 (24951233)	4
105 (7618565)	4
106 (21886538)	4

CT foot with IV contrast	May be appropriate	Limited	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	5	5	0	1	1	2	10	0	0	0	0	

References	Study Quality
99 (11856673)	4

CT foot without IV contrast	May be appropriate	Limited	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	5	5	0	0	1	4	9	0	0	0	0	

References	Study Quality
104 (33136481)	4
103 (23264199)	4
99 (11856673)	4
101 (24951233)	4
100 (20100917)	2
102 (21442560)	4

MRI foot without and with IV contrast	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	7	6	0	0	0	

References	Study Quality
102 (21442560)	4

		101 (24951233)		4												
CT foot without and with IV contrast	Usually not appropriate	Limited	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	7	1	2	1	2	0	1	0	0	
		References		Study Quality												
		99 (11856673)		4												
Bone scan foot	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	10	4	0	0	0	0	0	0	0	
Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	Usually not appropriate	Expert Consensus	Varies	Varies	1	1	11	1	2	0	0	0	0	0	0	

Variant 6: Adult. Chronic foot pain. Suspect Baxter neuropathy or complex regional pain syndrome or entrapment syndrome or other neurogenic origin. Radiographs negative or indeterminate. Next imaging study.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRI foot without IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	9	9	0	0	0	0	0	0	1	6	7
		References		Study Quality											
		125 (19703848)		2											
		124 (26284303)		4											
		123 (21415181)		4											
MRI foot without and with IV contrast	May be appropriate	Strong	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	1	8	2	3	0	0
		References		Study Quality											
		122 (30322495)		4											
		121 (32534352)		2											
		120 (7892471)		3											
		119 (17515744)		2											
		115 (22177715)		Inadequate											

		118 (24161450)		4												
3-phase bone scan foot	May be appropriate	Limited	☢☢☢ 1-10 mSv		5	5	0	0	1	1	8	2	1	1	0	
		References		Study Quality												
		115 (22177715)		Inadequate												
US foot	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	5	5	0	0	0	3	6	1	4	0	0	
		References		Study Quality												
		2 (34642777)		4												
		128 (9798855)		4												
		127 (23980227)		3												
		124 (26284303)		4												
		126 (29791963)		4												
Image-guided anesthetic +/- corticosteroid injection foot or surrounding structures	May be appropriate (Disagreement)	Expert Opinion	Varies	Varies	5	5	0	3	1	4	3	3	0	0	0	
		References		Study Quality												
		116 (21600446)		4												
		117 (27341442)		4												
CT foot without IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	2	2	7	2	0	1	2	2	0	0	0	
CT foot with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	10	3	1	0	0	0	0	0	0	
CT foot without and with IV contrast	Usually not appropriate	Expert Consensus	☢ <0.1 mSv	☢☢ 0.03-0.3 mSv [ped]	1	1	8	1	0	2	1	1	1	0	0	
Bone scan foot	Usually not appropriate	Expert Consensus	☢☢☢ 1-10 mSv	☢☢☢☢ 3-10 mSv [ped]	1	1	8	0	3	2	0	0	1	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.**