

American College of Radiology
ACR Appropriateness Criteria®

Nonatherosclerotic Peripheral Arterial Disease

Variant 1: Suspected popliteal entrapment syndrome. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
MRA lower extremity without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	3	3	2	5
		References		Study Quality											
		6 (18553287)		4											
		7 (19084742)		4											
		15 (20585781)		4											
		16 (23352364)		4											
		8 (18971035)		2											
US duplex Doppler lower extremity	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	2	1	3	3	4
		References		Study Quality											
		5 (16176228)		4											
		7 (19084742)		4											
		16 (23352364)		4											
		8 (18971035)		2											
		17 (21944915)		2											
		18 (22123206)		2											
CTA lower extremity with IV contrast	Usually appropriate	Limited	☹☹☹ 1-10 mSv	☹☹☹☹ 3-10 mSv [ped]	7	7	0	0	0	0	0	1	6	5	1
		References		Study Quality											

[illegible]

Variant 2: Suspected external iliac artery endofibrosis. Initial imaging.

		References		Study Quality											
		21 (23988540)		4											
		22 (23541546)		4											
		20 (27209899)		4											
MRA lower extremity without and with IV contrast	Usually appropriate	Limited	0 0 mSv	0 0 mSv [ped]	8	8	0	0	0	0	0	2	0	8	3
		References		Study Quality											
		21 (23988540)		4											
CTA lower extremity with IV contrast	Usually appropriate	Limited	☼☼☼ 1-10 mSv	☼☼☼☼ 3-10 mSv [ped]	7	7	0	0	1	0	1	4	2	3	2
		References		Study Quality											
		21 (23988540)		4											
MRA lower extremity without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	2	5	2	3	1	0
		References		Study Quality											
		21 (23988540)		4											
Arteriography lower extremity	May be appropriate	Limited	☼☼ 0.1-1mSv	☼☼☼ 0.3-3 mSv [ped]	4	4	0	0	0	8	2	5	0	0	0
		References		Study Quality											
		1 (24758669)		4											
		33 (22186674)		4											
		32 (24955926)		4											
US intravascular lower extremity	Usually not appropriate	Expert Consensus	0 0 mSv	0 0 mSv [ped]	2	2	4	5	1	0	2	0	1	0	0

Variant 3: Suspected or known lower-extremity inflammatory vasculitides. Initial imaging.

[illegible]

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Arteriography lower extremity	Usually appropriate	Limited	⊕⊕ 0.1-1mSv	⊕⊕⊕ 0.3-3 mSv [ped]	8	8	0	1	0	0	1	0	4	1	6
		References		Study Quality											
		2 (22784658)		4											
CTA lower extremity with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	7	7	0	0	0	0	1	1	6	3	2
		References		Study Quality											
		2 (22784658)		4											
		34 (21724101)		4											
MRA lower extremity without and with IV contrast	Usually appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	7	7	0	0	0	0	0	6	3	4	0
		References		Study Quality											
		2 (22784658)		4											
MRA lower extremity without IV contrast	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	10	3	0	0	0
		References		Study Quality											
		2 (22784658)		4											
US duplex Doppler lower extremity	May be appropriate	Limited	○ 0 mSv	○ 0 mSv [ped]	5	5	0	0	1	1	7	3	0	3	0
		References		Study Quality											
		35 (27013404)		4											
US intravascular lower extremity	Usually not appropriate	Expert Consensus	○ 0 mSv	○ 0 mSv [ped]	2	2	4	6	1	1	1	0	0	0	0

Variant 4: Suspected or known dissection or connective tissue lower-extremity vascular diseases. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA lower extremity with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	9	9	0	0	0	0	0	0	0	2	11
		References		Study Quality											
		1 (24758669)		4											
		3 (21785848)		4											
		4 (17715121)		4											
MRA lower extremity without and with IV contrast	Usually appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	8	8	0	0	0	0	1	0	4	7	1
		References		Study Quality											
		1 (24758669)		4											
		2 (22784658)		4											
		3 (21785848)		4											
		6 (18553287)		4											
MRA lower extremity without IV contrast	May be appropriate	Limited	○ ○ mSv	○ ○ mSv [ped]	6	6	0	0	1	0	4	5	3	0	0
		References		Study Quality											
		1 (24758669)		4											
		2 (22784658)		4											
		3 (21785848)		4											
		6 (18553287)		4											
Arteriography lower extremity	May be appropriate	Limited	⊕⊕ 0.1-1mSv	⊕⊕⊕ 0.3-3 mSv [ped]	4	4	1	3	2	2	4	1	0	0	0
		References		Study Quality											
		1 (24758669)		4											
		4 (17715121)		4											
US duplex Doppler lower extremity	Usually not appropriate	Expert Consensus	○ ○ mSv	○ ○ mSv [ped]	3	3	0	0	9	1	4	1	0	0	0

US intravascular lower extremity	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	4	4	4	1	0	0	0	0	0
----------------------------------	-------------------------	------------------	---------	---------------	---	---	---	---	---	---	---	---	---	---	---

Variant 5: Suspected or known other noninflammatory lower-extremity vascular diseases (such as fibromuscular dysplasia, segmental arterial mediolysis). Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
CTA lower extremity with IV contrast	Usually appropriate	Limited	⊕⊕⊕ 1-10 mSv	⊕⊕⊕⊕ 3-10 mSv [ped]	8	8	0	0	0	0	0	0	1	7	5

References	Study Quality
31 (22169114)	4
25 (24768236)	3
27 (21840227)	4
29 (23988553)	4
4 (17715121)	4
28 (17114538)	4
36 (19359118)	4
37 (27665159)	4

MRA lower extremity without and with IV contrast	Usually appropriate	Limited	O 0 mSv	O 0 mSv [ped]	8	8	0	0	0	0	0	1	1	8	3
--	---------------------	---------	---------	---------------	---	---	---	---	---	---	---	---	---	---	---

References	Study Quality
31 (22169114)	4
27 (21840227)	4

Arteriography lower extremity	Usually appropriate	Strong	⊕⊕ 0.1-1mSv	⊕⊕⊕ 0.3-3 mSv [ped]	7	7	0	0	0	0	3	1	4	3	2
-------------------------------	---------------------	--------	-------------	---------------------	---	---	---	---	---	---	---	---	---	---	---

References	Study Quality
15 (20585781)	4
26 (17555581)	4
38 (20540921)	4
39 (22112553)	2

		25 (24768236)	3												
		28 (17114538)	4												
		36 (19359118)	4												
		40 (17097843)	2												
MRA lower extremity without IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	2	2	5	4	0	0
		References	Study Quality												
		31 (22169114)	4												
		27 (21840227)	4												
US duplex Doppler lower extremity	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	6	6	0	0	0	2	2	4	2	2	1
		References	Study Quality												
		31 (22169114)	4												
US intravascular lower extremity	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	2	5	8	0	0	0	0
		References	Study Quality												
		31 (22169114)	4												
		39 (22112553)	2												
		41 (25220329)	4												

Variant 6: Lower-extremity vascular trauma. Initial imaging.

	References	Study Quality
	43 (22190106)	4
	34 (21724101)	4
	42 (22824572)	4

Arteriography lower extremity	May be appropriate	Limited	☼☼ 0.1-1mSv	☼☼☼ 0.3-3 mSv [ped]	6	6	0	0	0	1	1	9	3	1	0
		References		Study Quality											
		43 (22190106)		4											
		34 (21724101)		4											
		44 (21817992)		4											
		45 (-3145647)		4											
US duplex Doppler lower extremity	May be appropriate	Limited	O 0 mSv	O 0 mSv [ped]	6	6	0	0	0	3	3	6	3	0	0
		References		Study Quality											
		43 (22190106)		4											
		46 (28493614)		Good											
MRA lower extremity without and with IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	3	3	1	5	2	2	1	1	1	0	0
		References		Study Quality											
		43 (22190106)		4											
MRA lower extremity without IV contrast	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	3	5	3	2	0	0	0	0	0
		References		Study Quality											
		43 (22190106)		4											
US intravascular lower extremity	Usually not appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	2	2	6	4	1	1	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.