

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

## Management of Iliac Artery Occlusive Disease

**Variant 1: Adult. Nonsmoker, sedentary lifestyle. Left lower-extremity claudication on walking, asymmetrically diminished left femoral pulse. No symptoms at rest. Initial management.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Best medical management including supervised exercise program only	Usually appropriate	Strong	N/A	N/A	9	9	0	0	0	0	0	0	1	2	8
		References		Study Quality											
		6 (22172470)		4											
		8 (22090168)		1											
		9 (31937137)		1											
		7 (32888779)		2											
		1 (28886620)		4											
		5 (27840332)		4											
Risk factor analysis and lipid profile and ABIs	Usually appropriate	Limited	N/A	N/A	9	9	0	0	0	0	0	0	2	3	6
		References		Study Quality											
		12 (17140820)		4											
US duplex Doppler lower extremity	Usually appropriate	Strong	O 0 mSv	O 0 mSv [ped]	7	7	0	1	0	0	2	1	4	3	0
		References		Study Quality											
		14 (33249132)		1											
		13 (29571625)		2											

Antiplatelet adjunctive therapy	Usually appropriate	Limited	N/A	N/A	7	7	0	0	0	0	2	2	3	1	3
		References	Study Quality												
		4 (24196266)	4												
		3 (24740523)	4												
		5 (27840332)	4												
CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	May be appropriate	Limited	☼☼☼☼ 10-30 mSv		5	5	0	0	0	0	6	1	4	0	0
		References	Study Quality												
		2 (16990459)	4												
MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	May be appropriate	Limited	0 0 mSv	0 0 mSv [ped]	5	5	0	0	0	2	5	2	2	0	0
		References	Study Quality												
		10 (20820041)	M												
		5 (27840332)	4												
Plethysmography and pulse volume recording	May be appropriate	Moderate	N/A	N/A	5	5	0	0	0	4	5	1	1	0	0
		References	Study Quality												
		11 (26547465)	1												
Catheter-directed angiography	Usually not appropriate	Limited	N/A	N/A	3	3	2	3	3	1	2	0	0	0	0
		References	Study Quality												
		2 (16990459)	4												
Anticoagulation adjunctive therapy	Usually not appropriate	Expert Consensus	N/A	N/A	2	2	2	5	1	0	2	0	1	0	0

**Variant 2: Adult. Long history of claudication. Acute-onset left lower-extremity pain. Absent left femoral pulse by palpation, faint audible DP and PT Doppler signals. Initial management.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Anticoagulation adjunctive therapy	Usually appropriate	Expert Consensus	N/A	N/A	8	8	0	0	1	0	1	1	1	4	3
CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually appropriate	Expert Consensus	☼☼☼☼ 10-30 mSv		8	8	0	0	0	0	0	0	4	3	4
Catheter-directed angiography	Usually appropriate	Moderate	N/A	N/A	7	7	0	0	0	1	2	2	3	3	0

References	Study Quality
2 (16990459)	4
14 (33249132)	1
3 (24740523)	4
1 (28886620)	4
15 (30095170)	Good

MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	Usually appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	7	7	0	0	0	2	1	2	6	0	0
US duplex Doppler lower extremity	May be appropriate	Expert Consensus	O 0 mSv	O 0 mSv [ped]	6	6	0	0	1	1	2	2	4	0	1
Ankle brachial index	May be appropriate	Expert Consensus	N/A	N/A	5	5	0	0	0	2	5	3	0	1	0
Risk factor analysis and lipid profile	May be appropriate	Expert Consensus	N/A	N/A	5	5	0	0	0	4	3	2	1	1	0
Plethysmography and pulse volume recording	Usually not appropriate	Moderate	N/A	N/A	3	3	0	5	4	0	2	0	0	0	0

References	Study Quality
11 (26547465)	1

**Variant 3: Adult. Known atrial fibrillation and spine surgery performed within the past month. Sudden-onset right lower-extremity pain. Diminished pulses in right lower-extremity. CTA demonstrates isolated filling defect in right common iliac artery. Initial therapy.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Anticoagulation adjunctive therapy	Usually appropriate	Expert Consensus	N/A	N/A	9	9	0	0	1	0	0	0	2	2	6
Catheter-directed mechanical thrombectomy	Usually appropriate	Limited	N/A	N/A	7	7	0	0	0	0	2	1	5	2	1
		References			Study Quality										
		5 (27840332)			4										
		16 (25080883)			2										
Surgical revascularization	Usually appropriate	Limited	N/A	N/A	7	7	0	0	0	0	1	1	4	3	2
		References			Study Quality										
		1 (28886620)			4										
		5 (27840332)			4										
		15 (30095170)			Good										
		17 (28567352)			Inadequate										
Antiplatelet adjunctive therapy	May be appropriate	Limited	N/A	N/A	6	6	0	0	1	1	3	2	3	1	0
		References			Study Quality										
		4 (24196266)			4										
		3 (24740523)			4										
		5 (27840332)			4										
Catheter-directed thrombolytic therapy	May be appropriate (Disagreement)	Expert Opinion	N/A	N/A	5	5	0	3	4	1	0	1	2	0	0
		References			Study Quality										
		15 (30095170)			Good										
		17 (28567352)			Inadequate										
Percutaneous transluminal angioplasty iliac artery	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	2	3	6	0	0	0	0	0	0



Bilateral primary stent placement iliac artery	May be appropriate	Strong	N/A	N/A	6	6	0	1	0	0	1	4	1	4	0
		References		Study Quality											
		4 (24196266)		4											
		34 (25733220)		2											
		35 (21215582)		2											
		31 (25331010)		2											
		33 (26980775)		2											
		3 (24740523)		4											
		32 (32889158)		2											
		1 (28886620)		4											
		5 (27840332)		4											
Anticoagulation adjunctive therapy	May be appropriate	Moderate	N/A	N/A	5	5	0	0	0	1	5	3	2	0	0
		References		Study Quality											
		18 (28844192)		1											
Surgical revascularization	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	2	2	4	1	1	1	0	0	0
Bilateral percutaneous transluminal angioplasty iliac artery	Usually not appropriate	Strong	N/A	N/A	3	3	0	3	5	1	1	1	0	0	0
		References		Study Quality											
		12 (17140820)		4											
		29 (21609804)		M											
		26 (33253869)		2											
		28 (33258499)		4											
		27 (26023746)		4											
		30 (23842828)		1											

**Variant 5: Adult. Past medical history significant for diabetes mellitus, hypertension, and smoking. Increasing claudication of right lower-extremity involving right buttock for the last 3 months. CTA pelvis with runoff reveals short-segment occlusion of the right common iliac artery (TASC B). Initial therapy.**



		31 (25331010)		2												
		33 (26980775)		2												
		37 (27131926)		1												
		3 (24740523)		4												
		36 (32360678)		4												
		32 (32889158)		2												
		1 (28886620)		4												
		5 (27840332)		4												
Anticoagulation adjunctive therapy	May be appropriate	Moderate	N/A	N/A	5	5	0	0	0	1	6	2	2	0	0	
		References		Study Quality												
		18 (28844192)		1												
Surgical revascularization	Usually not appropriate	Expert Consensus	N/A	N/A	3	3	2	2	3	4	0	0	0	0	0	
Percutaneous transluminal angioplasty aortoiliac arterial segment	Usually not appropriate	Moderate	N/A	N/A	3	3	0	3	6	0	1	1	0	0	0	
		References		Study Quality												
		28 (33258499)		4												
		27 (26023746)		4												
		30 (23842828)		1												

**Variant 6:** Adult. Past medical history significant for diabetes mellitus, hypertension, and heavy smoking. Gradually increasing claudication of bilateral lower extremities for at least 2 months. CTA pelvis with runoff reveals bilateral common iliac artery occlusion without any involvement of the external or internal iliac artery (TASC C). Initial therapy.





			3 (24740523)	4													
			36 (32360678)	4													
			32 (32889158)	2													
			1 (28886620)	4													
			5 (27840332)	4													
Surgical revascularization	Usually not appropriate	Strong	N/A	N/A	3	3	0	2	6	1	2	0	0	0	0		
			References	Study Quality													
			4 (24196266)	4													
			43 (31394230)	2													
			45 (26362632)	2													
			44 (31746273)	2													
			42 (25529189)	2													
			39 (30850298)	2													
			3 (24740523)	4													
			41 (31120778)	2													
			46 (34279686)	Inadequate													
			40 (27633164)	2													
			38 (32763459)	2													
			1 (28886620)	4													
			5 (27840332)	4													
Bilateral percutaneous transluminal angioplasty aortoiliac arterial segment	Usually not appropriate	Moderate	N/A	N/A	3	3	0	5	5	1	0	0	0	0	0		
			References	Study Quality													
			28 (33258499)	4													
			27 (26023746)	4													
			30 (23842828)	1													

**Variant 7: Adult. Worsening claudication and small ischemic ulcers on digits of both feet. CTA demonstrates diffuse atherosclerosis involving distal aorta and both common and external iliac arteries with multiple stenoses at or greater than 50%, bilateral mid-superficial femoral artery stenoses at or greater than 70% with 2-vessel tibial runoff bilaterally (TASC D). Initial therapy.**

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Hybrid revascularization with endovascular stenting of aortoiliac disease and infrainguinal bypass	Usually appropriate	Strong	N/A	N/A	8	8	0	0	0	0	1	0	4	4	2
		References		Study Quality											
		50 (27693029)		2											
		47 (27594393)		2											
		48 (28189354)		2											
		49 (30837177)		3											
		51 (28822655)		2											
		1 (28886620)		4											
		5 (27840332)		4											
Percutaneous stent placement aortoiliac arterial segment plus superficial femoral	Usually appropriate	Moderate	N/A	N/A	8	8	0	0	1	0	0	0	3	5	2
		References		Study Quality											
		4 (24196266)		4											
		29 (21609804)		M											
		37 (27131926)		1											
		3 (24740523)		4											
		36 (32360678)		4											
		1 (28886620)		4											
		5 (27840332)		4											
Antiplatelet adjunctive therapy	Usually appropriate	Moderate	N/A	N/A	7	7	0	0	1	0	1	1	3	2	3
		References		Study Quality											
		4 (24196266)		4											
		3 (24740523)		4											
		1 (28886620)		4											
		5 (27840332)		4											

		20 (-3196023)			1											
Surgical revascularization	Usually appropriate	Strong	N/A	N/A	7	7	0	0	0	0	0	2	6	3	0	

References	Study Quality
4 (24196266)	4
52 (26115920)	2
43 (31394230)	2
45 (26362632)	2
44 (31746273)	2
42 (25529189)	2
39 (30850298)	2
3 (24740523)	4
41 (31120778)	2
40 (27633164)	2
38 (32763459)	2
1 (28886620)	4
5 (27840332)	4

Percutaneous stent placement aortoiliac arterial segment	May be appropriate	Strong	N/A	N/A	6	6	0	0	0	0	2	5	2	2	0
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References	Study Quality
4 (24196266)	4
29 (21609804)	M
34 (25733220)	2
35 (21215582)	2
50 (27693029)	2
47 (27594393)	2
48 (28189354)	2
49 (30837177)	3
37 (27131926)	1
3 (24740523)	4
36 (32360678)	4

			51 (28822655)		2										
			1 (28886620)		4										
			5 (27840332)		4										
Anticoagulation adjunctive therapy	May be appropriate	Moderate	N/A	N/A	5	5	0	0	0	1	5	4	0	1	0
		References		Study Quality											
		18 (28844192)		1											
Best medical management including supervised exercise program only	Usually not appropriate	Strong	N/A	N/A	3	3	0	2	8	0	0	0	0	0	1
		References		Study Quality											
		6 (22172470)		4											
		8 (22090168)		1											
		21 (28711864)		2											
		23 (29327569)		Inadequate											
		24 (28385410)		Good											
		25 (31103674)		2											
		9 (31937137)		1											
		7 (32888779)		2											
		1 (28886620)		4											
		5 (27840332)		4											
Percutaneous transluminal angioplasty aortoiliac arterial segment	Usually not appropriate	Moderate	N/A	N/A	3	3	0	4	4	2	1	0	0	0	0
		References		Study Quality											
		28 (33258499)		4											
		27 (26023746)		4											
		30 (23842828)		1											

## 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).