



## **Catheter-Based Angiogram, Lower Extremity Arteries – Single Service**

*Clinical Guidelines for Medical Necessity Review*

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## Guideline Information:

**Specialty Area:** Cardiovascular Disease

**Guideline Name:** Catheter-Based Angiogram, Lower Extremity Arteries (Single Service)

**Literature review current through:** 5/20/2024

**Document last updated:** 5/24/2024

**Type:** ☒ Adult (18+ yo) | ☒ Pediatric (0-17yo)

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# Medical Necessity Criteria

## ***Service: Catheter-Based Angiogram, Lower Extremity Arteries***

### General Guidelines

- **Units, Frequency, & Duration:** Once.
- **Criteria for Subsequent Requests:** Repeat imaging may be appropriate if there is a significant clinical change since the initial imaging study/intervention.
- **Recommended Clinical Approach:**
  - Catheter-based angiography may be appropriate as the initial advanced imaging modality when the clinician determines that there is a high likelihood that the patient is a candidate for a minimally invasive intervention (e.g., angioplasty, atherectomy, or stent placement).<sup>1</sup>
  - The ordering clinician must provide appropriate documentation of clinical indication. This should include a pertinent history to justify the request.
  - Multi-view fluoroscopy usually provides adequate imaging of the arterial anatomy to plan and perform arterial interventions.
  - IVUS can provide additional anatomic information (i.e., vessel diameter and plaque anatomy), which can improve the effectiveness of arterial interventions.
- **Exclusions:** None.

### Medical Necessity Criteria

#### Indications

- **Catheter-based angiogram, lower extremities** is considered appropriate if **ANY** of the following are **TRUE**<sup>1,2</sup>:
- ◆ The patient is experiencing **chronic limb-threatening ischemia** and **ANY** of the following is **TRUE**<sup>3</sup>:
    - Gangrene is present; **OR**
    - The patient is experiencing pain at rest\*; **OR**
    - The patient has a wound that has not healed (50% or greater healing achieved from appropriate medical therapy of at least four weeks' duration) related to ischemia; **OR**
  - ◆ The patient is experiencing **non-limb-threatening** peripheral artery disease (PAD); **AND**

- The patient fails to show significant clinical improvement despite documented compliance with optimal medical care, including **ALL** of the following<sup>4,5</sup>:
  - Smoking cessation (attempted or achieved); **AND**
  - Weight management; **AND**
  - Glycemic control; **AND**
  - Statin therapy; **AND**
  - Blood pressure management; **AND**
  - Supervised exercise program; **AND**
  - Pharmacotherapy (anti-platelet, cilostazol); **AND**
- The patient reports their symptoms to be lifestyle-limiting; **AND**
- Revascularization is being considered; **AND**
- **ANY** of the following is **TRUE**:
  - MRA, CTA, Doppler testing is abnormal (suggesting greater than 75% stenosis) or has not achieved diagnostic results; **OR**
  - Noninvasive testing is unavailable; **OR**
  - Invasive angiogram has been considered an appropriate initial test; **OR**
  - Noninvasive studies for anatomic assessment (e.g., CTA and/or MRA) are perceived to be a greater risk to the patient than invasive angiography.<sup>2</sup>

\*Ischemic rest pain is typically described as affecting the forefoot and is often made worse with recumbency while being relieved by dependency. It should be present for greater than 2 weeks and be associated with one or more abnormal hemodynamic parameters. These parameters include an ankle-brachial index (ABI) less than 0.4 (using higher of the dorsalis pedis [DP] and posterior tibial [PT] arteries), absolute highest AP less than 50 mm Hg, absolute TP less than 30 mm Hg, transcutaneous partial pressure of oxygen (TcPO<sub>2</sub>) less than 30 mm Hg, and flat or minimally pulsatile pulse volume recording (PVR) waveforms (equivalent to Wiffl ischemia grade 3).<sup>3</sup>

## Non-Indications

- **Catheter-based angiogram, lower extremities** is not considered appropriate if **ANY** of the following is **TRUE**<sup>1-6</sup>:
- ◆ The patient is unwilling to undergo interventional therapy if angiography discovers disease; **OR**
  - ◆ The risk of the procedure is judged to be high because of concurrent medical problems.

**NOTE: Catheter-based angiogram, lower extremities** may not be considered appropriate if **ANY** of the following is **TRUE**<sup>1,7</sup>:

- ◆ Severe allergy to contrast media; **OR**

- ◆ Severe renal insufficiency; **OR**
- ◆ The patient is pregnant; **OR**
- ◆ The patient uses metformin; **OR**
- ◆ There was prior vascular surgery at the proposed access site (e.g., femoral access at the site of a prior femoral reconstruction); **OR**
- ◆ There is a known or suspected arterial aneurysm or significant vascular anomaly (e.g., AV fistula) at the proposed access site.

### **Level of Care Criteria**

Outpatient

### **Procedure Codes (CPT/HCPCS)**

<b>CPT/HCPCS Code</b>	<b>Code Description/Definition</b>
36245	Insertion of catheter into first order abdominal branch of artery, within a vascular family
36246	Insertion of catheter into initial second order abdominal branch of artery, within a vascular family
36247	Insertion of catheter into initial third order abdominal branch of artery, within a vascular family
37252	Radiologic supervision and interpretation with the IVUS procedure and are used for procedures involving both arteries and/or veins. Reported once per procedure for the first vessel studied with IVUS.
37253	Radiologic supervision and interpretation with the IVUS procedure and are used for procedures involving both arteries and/or veins. Each initial vessel.
75716	Angiography, extremity, bilateral, radiological
75710	Angiography, extremity, unilateral, radiological

# Medical Evidence

Gerhard-Herman et al. (2017) developed the 2016 AHA/ACC guideline for the management of patients with lower extremity peripheral artery disease. Invasive angiography is recommended in a patient with critical limb ischemia in whom revascularization is considered. This was a Class I (Strong) recommendation with Level of Evidence as Expert Opinion. Use of noninvasive imaging can create a delay in crucial treatment for the patient. A Class IIa (Moderate Strength of Recommendation) Level of Evidence Expert Opinion rating was given to invasive angiography in patients with lifestyle-limiting claudication with an inadequate response to guideline-directed medical treatment (GDMT) when revascularization is being considered. The risk of invasive angiography can be less than noninvasive studies, particularly in the setting of advanced chronic kidney disease, as the contrast dose is lower in the invasive scenario. The committee concluded that invasive and noninvasive angiography is not recommended in asymptomatic peripheral arterial disease (Class of Recommendation: Harm; Level of Evidence B-R (Randomized)).<sup>2</sup>

Woo and colleagues (2022) published the Society of Vascular Surgery appropriate use criteria for management of intermittent claudication. 2280 unique intermittent claudication treatment scenarios were rated. Invasive treatment recommendations were made for patients who have completed exercise therapy, are nonsmokers, and are on optimal medical therapy with severe lifestyle limitations. The group stated that there is unclear benefit and possible harm related to invasive intervention in the infrapopliteal segment for intermittent claudication.<sup>3</sup>

Conte et al. (2019) developed global vascular guidelines for the management of chronic limb-threatening ischemia. The group proposed a new anatomic scheme for threatened limbs, the Global Limb Anatomic Staging System (GLASS). This integrated, limb-based approach is based on a set of clinical assumptions and simplified approaches to stratification. They make a strong recommendation for revascularization to all average-risk patients with advanced limb-threatening conditions and significant perfusion deficits. There was a weak recommendation for revascularization in average-risk patients with intermediate limb threat (based on a scoring tool such as Wlfi).

It is stated that more in-depth study is required regarding the relationship between regional ischemia and patterns of infrapopliteal and pedal disease.<sup>3</sup>



## References

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4. Klein AJ, Jaff MR, Gray BH, et al. SCAI appropriate use criteria for peripheral arterial interventions: an update. *Catheter Cardiovasc Interv*. 2017;90(4): E90–E110.
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# Clinical Guideline Revision History/Information

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