

## AmeriHealth Caritas Louisiana

<b>*National Imaging Associates, Inc.*</b>	
<b>Clinical guidelines</b> <b>LOWER EXTREMITY CTA/CTV</b>	<b>Original Date: July <del>01</del>, 2008</b>
<b>CPT Codes: 73706</b>	<b>Last Revised Date: <del>March 2022</del> April 2023</b>
<b>Guideline Number: NIA_CG_061-1</b>	<b>Implementation Date: January 2023<del>4</del></b>

### GENERAL INFORMATION

- It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.
- Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.

### INDICATIONS FOR LOWER EXTREMITY CTA/CTV (COMPUTED TOMOGRAPHY ANGIOGRAM / COMPUTED TOMOGRAPHY VENOGRAM)

Abdominal Arteries CTA (CT Angiography) (CPT Code 75635) includes run-off, so this is ~~never approved~~ not approvable when done in conjunction with that ~~procedure has been exam~~.

When a separate CTA and CT exam is requested, documentation requires a medical reason that clearly indicates why additional CT imaging of the upper extremity is needed.

Peripheral Vascular Disease ~~and when~~ Abdominal Arteries CTA (CT Angiography) (CPT Code 75635) has not been recently approved or when aortoiliac disease is not a concern or the state of the aorta and iliac arteries is already known.

- Critical Limb ischemia **ANY** of the below with clinical signs of peripheral artery disease. Ultrasound imaging is not needed. If done and negative, it should still be approved due to high false negative rate<sup>1, 2</sup>
  - Ischemic rest pain
  - Tissue loss

~~\*National Imaging Associates, Inc. (NIA) is a subsidiary of Magellan Healthcare, Inc.~~

- Gangrene
- Claudication with abnormal ~~(or indeterminate~~ ankle/brachial index, pulse volume recording or arterial Doppler)<sup>3-53-5</sup>
- Clinical concern for vascular cause of ulcers with abnormal or indeterminate ultrasound (ankle/brachial index, arterial Doppler)<sup>66</sup>
- After stenting or surgery with signs of recurrent symptoms OR abnormal ankle/brachial index; abnormal or indeterminate arterial Doppler, OR pulse volume recording)<sup>5</sup>

#### ~~Popliteal Artery Entrapment Syndrome with abnormal arterial ultrasound<sup>7</sup>~~

#### Popliteal Artery Entrapment Syndrome with abnormal arterial ultrasound<sup>7</sup>

**Deep Venous Thrombosis** with clinical suspicion of lower extremity DVT after abnormal or non-diagnostic ultrasound where a positive study would change management<sup>8-108-10</sup>

**Clinical suspicion of vascular disease** with abnormal or indeterminate ultrasound or other imaging

- ~~Tumor invasion<sup>11</sup>~~
- ~~Trauma<sup>12</sup>~~
- ~~Vasculitis<sup>13</sup>~~
- ~~Aneurysm<sup>14</sup>~~
- ~~Stenosis/occlusions<sup>15</sup>~~

#### ~~Hemodialysis Graft Dysfunction after Doppler ultrasound not adequate for treatment decisions<sup>16</sup>~~

- Tumor invasion<sup>11</sup>
- Trauma<sup>12</sup>
- Vasculitis<sup>13</sup>
- Aneurysm<sup>14</sup>
- Stenosis/occlusions<sup>15</sup>

#### Hemodialysis Graft Dysfunction after Doppler ultrasound not adequate for treatment decisions<sup>16</sup>

#### **Vascular Malformation<sup>17, 18</sup>**

- After initial evaluation with ultrasound and results will change management OR
- Inconclusive ultrasound OR
- If MRA a known or suspected high flow lesion
- For preoperative planning (CT is also approvable for initial evaluation if MRI contraindicated)

- ~~Non diagnostic doppler ultrasound~~

**Note:** MRA preferred however CTA useful in delineating some high flow lesions such as an arteriovenous malformation-.)

~~Traumatic injuries with clinical findings suggestive of arterial injury<sup>12</sup>~~

~~Assessment/evaluation of known vascular disease/condition~~

Traumatic injuries with clinical findings suggestive of arterial injury<sup>12</sup>

Assessment/evaluation of known vascular disease/condition

Further evaluation of indeterminate findings on prior imaging (unless follow up is otherwise specified within the guideline):

- For initial evaluation of an inconclusive finding on a prior imaging report (i.e., x-ray, ultrasound or CT) that requires further clarification.
- One follow-up exam of a prior indeterminate MR/CT finding to ensure no suspicious interval change has occurred. (No further surveillance unless specified as highly suspicious or change was found on last follow-up exam.)

### Pre-operative/procedural evaluation

- Pre-operative evaluation for a planned surgery or procedure<sup>3</sup>

### Post- operative/procedural evaluation

- A follow-up study may be needed to help evaluate a patient's progress after treatment, procedure, intervention, or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested<sup>19, 20</sup>

### Special Circumstances<sup>2</sup>

- High suspicion of an acute arterial obstruction - Arteriography preferred (the gold standard).
- Renal impairment
  - Not on dialysis
    - Mild to moderate, GFR 30-89 ml/min MRA can be done
    - Severe, GFR < 30 ml/min MRA without contrast
  - On dialysis
    - CTA with contrast can be done
- Doppler ultrasound can be useful in evaluating bypass grafts

---

## BACKGROUND

Lower extremity computed tomography angiography (CTA) is an effective, noninvasive and robust imaging modality that is used in the assessment of symptomatic lower extremity vascular disease. It has excellent spatial resolution and shows accurate details of peripheral vasculature. CTA is an effective alternative to catheter-based angiography and allows accurate planning of open surgical and endovascular interventions.

## OVERVIEW

~~**Abdominal Arteries CTA**—For imaging of the abdomen, pelvis **AND** both legs (CTA aorto-iliiofemoral runoff; abdominal aorta and bilateral iliofemoral lower extremity runoff) use CPT code 75635.~~

~~**Peripheral Arterial Disease**—CTA is used in the evaluation of patients with peripheral arterial disease. It can be used to evaluate the patency after revascularization procedures. It is the modality of choice in patients with intermittent claudication. A drawback is its hampered vessel assessment caused by the depiction of arterial wall calcifications, resulting in a decreased accuracy in severely calcified arteries.~~

~~**Chronic Limb Threatening Ischemia**—Assessment and promotion of blood flow through the calf arteries is very important in patients with chronic limb threatening ischemia. CT Angiography allows for visualization of pedal vessels.~~

~~**Surgical or Percutaneous Revascularization**—CTA is accurate in the detection of graft-related complications, including stenosis and aneurysmal changes. It can reveal both vascular and extravascular complications.~~

The ankle-brachial index (ABI) is the ratio of systolic blood pressure at the ankle divided by the systolic pressure of the upper arm. The normal range lies between 0.9-1.4. An ABI<sup>21, 22</sup> of less than 0.9 is a reliable indicator of the presence of lower extremity PAD, indicating athero-occlusive arterial disease. The upper limit of normal ABI should not exceed 1.40. An ABI >1.40 is suggestive of arterial stiffening (i.e., medial arterial calcification) and is also associated with a higher risk of cardiovascular events and is seen in elderly patients, typically in those with diabetes or chronic kidney disease (CKD).

**CTA and screening for peripheral vascular disease:** The USPSTF (U.S. Preventive Services Task Force) does not recommend routine screening for peripheral vascular disease in asymptomatic patients.<sup>24,23</sup> High risk patients (e.g., diabetics) may be screened with ABI (ankle brachial index) and duplex ultrasound.

## REFERENCES

1. Shishehbor MH, White CJ, Gray BH, et al. Critical Limb Ischemia: An Expert Statement. *J Am Coll Cardiol*. Nov 1 2016;68(18):2002-2015. doi:10.1016/j.jacc.2016.04.071
2. Weiss CR, Azene EM, Majdalany BS, et al. ACR Appropriateness Criteria(®) Sudden Onset of Cold, Painful Leg. *J Am Coll Radiol*. May 2017;14(5s):S307-s313. doi:10.1016/j.jacr.2017.02.015
3. Ahmed O, Hanley M, Bennett SJ, et al. ACR Appropriateness Criteria(®) Vascular Claudication-Assessment for Revascularization. *J Am Coll Radiol*. May 2017;14(5s):S372-s379. doi:10.1016/j.jacr.2017.02.037
4. Pollak AW, Kramer CM. MRI in Lower Extremity Peripheral Arterial Disease: Recent Advancements. *Curr Cardiovasc Imaging Rep*. Feb 1 2013;6(1):55-60. doi:10.1007/s12410-012-9175-z
5. Pollak AW, Norton PT, Kramer CM. Multimodality imaging of lower extremity peripheral arterial disease: current role and future directions. *Circ Cardiovasc Imaging*. Nov 2012;5(6):797-807. doi:10.1161/circimaging.111.970814
6. Rosyid FN. Etiology, pathophysiology, diagnosis and management of diabetics' foot ulcer. *Int J Res Med Sci*. 2017;5(10):4206-13. doi:http://dx.doi.org/10.18203/2320-6012.ijrms20174548
7. Williams C, Kennedy D, Bastian-Jordan M, Hislop M, Cramp B, Dhupelia S. A new diagnostic approach to popliteal artery entrapment syndrome. *J Med Radiat Sci*. Sep 2015;62(3):226-9. doi:10.1002/jmrs.121
8. American College of Radiology. ACR Appropriateness Criteria® Suspected Lower Extremity Deep Vein Thrombosis. American College of Radiology. Updated 2017~~8~~. Accessed January 4, ~~2022~~23, 2023. <https://acsearch.acr.org/docs/69416/Narrative/>
9. Karande GY, Hedgire SS, Sanchez Y, et al. Advanced imaging in acute and chronic deep vein thrombosis. *Cardiovasc Diagn Ther*. Dec 2016;6(6):493-507. doi:10.21037/cdt.2016.12.06
10. Katz DS, Fruauff K, Kranz A-O, Hon M. Imaging of deep venous thrombosis: A multimodality overview. Applied Radiology, Anderson Publishing. Updated March 5, 2014. Accessed January 4, ~~2022~~23, 2023. <https://www.appliedradiology.com/articles/imaging-of-deep-venous-thrombosis-a-multimodality-overview>
11. American College of Radiology. ACR Appropriateness Criteria® Soft -Tissue Masses. American College of Radiology. Updated 2017~~22~~. Accessed ~~November 2, 2021~~January 23, 2023. <https://acsearch.acr.org/docs/69434/Narrative/>
12. Wani ML, Ahangar AG, Ganie FA, Wani SN, Wani NU. Vascular injuries: trends in management. *Trauma Mon*. Summer 2012;17(2):266-9. doi:10.5812/traumamon.6238
13. Fonseka CL, Galappaththi SR, Abeyaratne D, Tissera N, Wijayaratne L. A Case of Polyarteritis Nodosa Presenting as Rapidly Progressing Intermittent Claudication of Right Leg. *Case Rep Med*. 2017;2017:4219718. doi:10.1155/2017/4219718
14. Verikokos C, Karaolanis G, Doulaftsis M, et al. Giant popliteal artery aneurysm: case report and review of the literature. *Case Rep Vasc Med*. 2014;2014:780561. doi:10.1155/2014/780561

15. Menke J, Larsen J. Meta-analysis: Accuracy of contrast-enhanced magnetic resonance angiography for assessing steno-occlusions in peripheral arterial disease. *Ann Intern Med.* Sep 7 2010;153(5):325-34. doi:10.7326/0003-4819-153-5-201009070-00007
16. Murphy EA, Ross RA, Jones RG, et al. Imaging in Vascular Access. *Cardiovasc Eng Technol.* Sep 2017;8(3):255-272. doi:10.1007/s13239-017-0317-y
17. Madani H, Farrant J, Chhaya N, et al. Peripheral limb vascular malformations: an update of appropriate imaging and treatment options of a challenging condition. *Br J Radiol.* Mar 2015;88(1047):20140406. doi:10.1259/bjr.20140406
18. Obara P, McCool J, Kalva SP, et al. ACR Appropriateness Criteria® Clinically Suspected Vascular Malformation of the Extremities. *J Am Coll Radiol.* Nov 2019;16(11s):S340-s347. doi:10.1016/j.jacr.2019.05.013
19. Conte MS, Bradbury AW, Kolh P, et al. Global vascular guidelines on the management of chronic limb-threatening ischemia. *J Vasc Surg.* Jun 2019;69(6s):3S-12S.e40. doi:10.1016/j.jvs.2019.02.016
20. Cooper K, Majdalany BS, Kalva SP, et al. ACR Appropriateness Criteria(®) Lower Extremity Arterial Revascularization-Post-Therapy Imaging. *J Am Coll Radiol.* May 2018;15(5s):S104-s115. doi:10.1016/j.jacr.2018.03.011
21. Resnick HE, Lindsay RS, McDermott MM, et al. Relationship of High and Low Ankle Brachial Index to All-Cause and Cardiovascular Disease Mortality. *Circulation.* 2004;109(6):733-739. doi:doi:10.1161/01.CIR.0000112642.63927.54
22. Dasgupta A, Mazumdar A. Peripheral artery disease in the lower extremities - prevalence and epidemiology. online e-Journal *European Society of Cardiology.* March 14, 2018 2018;16(4)
23. US Preventive Services Task Force. Screening for Peripheral Artery Disease and Cardiovascular Disease Risk Assessment With the Ankle-Brachial Index: US Preventive Services Task Force Recommendation Statement. *JAMA.* 2018;320(2):177-183. doi:10.1001/jama.2018.8357

## ADDITIONAL RESOURCES

1. ~~Aboyans V, Ricco JB, Bartelink MEL, et al. 2017 ESC Guidelines on the Diagnosis and Treatment of Peripheral Arterial Diseases, in collaboration with the European Society for Vascular Surgery (ESVS): Document covering atherosclerotic disease of extracranial carotid and vertebral, mesenteric, renal, upper and lower extremity arteries Endorsed by: the European Stroke Organization (ESO) The Task Force for the Diagnosis and Treatment of Peripheral Arterial Diseases of the European Society of Cardiology (ESC) and of the European Society for Vascular Surgery (ESVS). *Eur Heart J.* Mar 1 2018;39(9):763-816. doi:10.1093/eurheartj/ehx095~~
2. ~~American College of Radiology. ACR Appropriateness Criteria® Acute Trauma to the Knee. American College of Radiology (ACR). Updated 2019. Accessed November 22, 2021. <https://acsearch.acr.org/docs/69419/Narrative/>~~

3. Farber A. Chronic Limb-Threatening Ischemia. *N Engl J Med*. Jul 12 2018;379(2):171-180. doi:10.1056/NEJMcp1709326
4. Gerhard-Herman MD, Gornik HL, Barrett C, et al. 2016 AHA/ACC Guideline on the Management of Patients With Lower Extremity Peripheral Artery Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. Mar 21 2017;69(11):e71-e126. doi:10.1016/j.jacc.2016.11.007
5. Jin T, Wu G, Li X, Feng X. Evaluation of vascular invasion in patients with musculoskeletal tumors of lower extremities: use of time-resolved 3D MR angiography at 3 T. *Acta Radiol*. May 2018;59(5):586-592. doi:10.1177/0284185117729185
6. Lopera JE, Trimmer CK, Josephs SG, et al. Multidetector CT angiography of infrainguinal arterial bypass. *Radiographics*. Mar-Apr 2008;28(2):529-48; discussion 549. doi:10.1148/rg.282075032
7. Met R, Bipat S, Legemate DA, Reekers JA, Koelemay MJ. Diagnostic performance of computed tomography angiography in peripheral arterial disease: a systematic review and meta-analysis. *JAMA*. Jan 28 2009;301(4):415-24. doi:10.1001/jama.301.4.415

## POLICY HISTORY

Date	Summary
<u>April 2023</u>	<ul style="list-style-type: none"> <li>• <u>Updated references</u></li> <li>• <u>Modified background section</u></li> <li>• <u>Added vascular malformations</u></li> <li>• <u>Added indeterminate prior imaging findings</u></li> </ul> <u>General Information moved to beginning of guideline with added statement on clinical indications not addressed in this guideline</u>
March 2022	No changes
<del>March 2022</del>	<del>No changes</del>
<del>May 2021</del>	<del>No changes</del>
<del>May 2020</del>	<ul style="list-style-type: none"> <li>• <del>Clarified that CTA does not include a baseline CT exam</del></li> <li>• <del>Expanded section about vascular malformation to include initial testing.</del></li> <li>• <del>Added information about renal function and contrast agents</del></li> <li>• <del>Added acute arterial obstruction and renal impairment</del></li> <li>• <del>Simplified language</del></li> <li>• <del>Updated references</del></li> </ul>
<del>May 2019</del>	<ul style="list-style-type: none"> <li>• <del>Added indication for deep venous thrombosis</del></li> <li>• <del>Reformatting and new references.</del></li> </ul>



**Disclaimer: National Imaging Associates, Inc. (NIA) authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. These policies are not meant to supplant your normal procedures, evaluation, diagnosis, treatment and/or care plans for your patients. Your professional judgement must be exercised and followed in all respects with regard to the treatment and care of your patients. These policies apply to all Evolent Health LLC subsidiaries including, but not limited to, National Imaging Associates (“NIA”). The policies constitute only the reimbursement and coverage guidelines of NIA. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies. NIA reserves the right to review and update the guidelines at its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.**

#### **~~GENERAL INFORMATION~~**

~~It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.~~

**Disclaimer:** Magellan Healthcare service authorization policies do not constitute medical advice and are not intended to govern or otherwise influence the practice of medicine. These policies are not meant to supplant your normal procedures, evaluation, diagnosis, treatment and/or care plans for your patients. Your professional judgement must be exercised and followed in all respects with regard to the treatment and care of your patients. These policies apply to all Magellan Healthcare subsidiaries including, but not limited to, National Imaging Associates (“Magellan”). The policies constitute only the reimbursement and coverage guidelines of Magellan. Coverage for services varies for individual members in accordance with the terms and conditions of applicable Certificates of Coverage, Summary Plan Descriptions, or contracts with governing regulatory agencies. Magellan reserves the right to review and update the guidelines at its sole discretion. Notice of such changes, if necessary, shall be provided in accordance with the terms and conditions of provider agreements and any applicable laws or regulations.