

Evolut Clinical Guideline 2002 for Abdomen Computed Tomography Angiography (CTA)

Guideline Number: Evolut_CG_2002	<u>Applicable Codes</u>	
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STATEMENT

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.*
- *The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.*

Purpose

Computed tomography angiography (CTA) generates images of the arteries that can be evaluated for evidence of stenosis, occlusion, or aneurysms. It is used to evaluate the arteries of the abdominal aorta and the renal arteries. CTA uses ionizing radiation and requires the administration of iodinated contrast agent, which is a potential hazard in patients with impaired renal function. Abdominal CTA is not used as a screening tool, e.g., evaluation of asymptomatic patients without a previous diagnosis.

NOTE: Authorization for CT Angiography covers both arterial and venous imaging. The term *angiography* refers to both arteriography and venography.

Special Note

- For conditions where both abdomen and pelvis imaging are needed and/or the disease process is reasonably expected to involve **BOTH** the abdomen and pelvis (such as for Abdominal Aortic Aneurysm), requests should be resubmitted as Abdomen and Pelvis CTA (CPT 74174). See Evolent Clinical Guideline 2005 for Abdomen/Pelvis CTA for coverage indications.
- When vascular imaging of the aorta and both legs with Runoff is desired (sometimes incorrectly requested as Abd/Pelvis CTA & Lower Extremity CTA), only one authorization request is required, using CPT Code 75635 (CT Angiography, Abdominal Aorta with Lower Extremity Runoff). This study provides for imaging of the abdomen, pelvis, and both legs. See Evolent Clinical Guideline 2006 for Abdominal Aorta CT Angiography with Lower Extremity Runoff for coverage indications.

INDICATIONS FOR ABDOMEN CTA

Renal Artery Stenosis

In a patient with hypertension **AND** prior abnormal or inconclusive ultrasound with any **ONE** of the following ^(1,2):

- Onset of hypertension prior to the age of 30 without a family history of hypertension and when there is suspicion of fibromuscular dysplasia or a vasculitis
- Failure to obtain adequate blood pressure control on 3 antihypertensive medications, including one diuretic
- Recurrent episodes of sudden onset of congestive heart failure (also known as cardiac disturbance syndrome; may have normal left ventricular function)
- Renal failure of uncertain cause with normal urinary sediment and < 1g of urinary protein per day
- Coexisting diffuse atherosclerotic vascular disease, especially in heavy smokers
- Acute elevation of creatinine after initiation of an angiotensin converting enzyme inhibitor (ACE inhibitor) or angiotensin receptor blocker (ARB)
- Malignant or difficult to control hypertension and unilateral small kidney size (noted on prior imaging)
- New onset of difficult to control or labile hypertension after age 55
- Abdominal bruit lateralizing to one side of the abdomen
- Diagnosis of a syndrome with a higher risk of vascular disease, such as neurofibromatosis ⁽³⁾ and Williams' syndrome ⁽⁴⁾

Other Vascular Abnormalities of the Abdomen

- Initial evaluation of inconclusive vascular findings on prior imaging of the abdomen
- For evaluation or monitoring of non-aortic large vessel or visceral vascular disease of the abdomen (e.g., aneurysm, dissection, arteriovenous malformations (AVM), vascular fistula, intramural hematoma, compression syndromes and vasculitis involving any of the following: inferior vena cava, superior/inferior mesenteric, celiac, hepatic, splenic or renal arteries/veins), and the findings are reasonably expected to be limited to the abdomen ⁽⁵⁾
- Suspected complications of known aneurysm of the abdomen as evidenced by clinical findings such as new onset of abdominal pain (prior ultrasound is **NOT** required)
- Takayasu's Arteritis ⁽⁶⁾
 - At initial diagnosis
 - Every 6 months for the first 2 years while on therapy
 - Annually after the first 2 years

Venous Disease

- Suspected venous thrombosis (including renal vein thrombosis and/or portal venous thrombosis) if previous studies (such as ultrasound) have not resulted in a clear diagnosis and the disease is confined to the abdomen ^(7,8)

Evaluation of Tumor

- When needed for clarification of vascular involvement from tumor (including suspected renal vein thrombosis) ⁽⁹⁾
- Prior to Y90 treatment ⁽¹⁰⁾

PREOPERATIVE OR POSTOPERATIVE ASSESSMENT

When not otherwise specified in the guideline:

Preoperative Evaluation:

- Prior to the following procedures:
 - Solid organ transplantation
 - UPJ (ureteropelvic junction) obstruction surgery prior to Y90 treatment ⁽¹⁰⁾
 - Trans jugular intrahepatic portosystemic shunt (TIPS) when ultrasound indicates suspected complications ⁽¹¹⁾
- Imaging of the area requested is needed to develop a surgical plan

Postoperative Evaluation:

- Evaluation of post-operative complications, (e.g., pseudoaneurysms) following interventional vascular procedures (e.g., surgical bypass grafts, vascular stents, trans jugular intrahepatic portosystemic shunt (TIPS), and IVC filters)
- Known or suspected complications
- A clinical reason is provided how imaging may change management

Note: This section applies only within the first few months following surgery

IMAGING IN KNOWN GENETIC CONDITIONS

- Marfan syndrome ⁽¹²⁾:
 - Every 3 years (including at diagnosis)
 - More frequently (annually) if **EITHER**: history of dissection, dilation of aorta beyond aortic root **OR** aortic root/ascending aorta are not adequately visualized on

Transthoracic Echocardiogram (TTE) (i.e. advanced imaging is needed to monitor the thoracic aorta)

- Williams Syndrome ⁽⁴⁾:
 - Abnormal vascular exam or imaging findings (such as concern for renal artery stenosis, diminished pulses, bruits or signs of diffuse thoracic aortic stenosis)
- Neurofibromatosis Type 1 (NF-1) ⁽³⁾:
 - Development of hypertension (including concern for renal artery stenosis)
- For other syndromes and rare diseases not otherwise addressed in the guideline, coverage is based on a case-by-case basis using societal guidance

Combination Studies for Known Genetic Conditions

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

Chest/Abdomen/Pelvis CTA

- Marfan syndrome ⁽¹²⁾:
 - Every 3 years (including at diagnosis)
 - More frequently (annually) if **EITHER**: history of dissection, dilation of aorta beyond aortic root **OR** aortic root/ascending aorta are not adequately visualized on TTE (i.e. advanced imaging is needed to monitor the thoracic aorta)^(2,20)
- Williams Syndrome ⁽⁴⁾:
 - Abnormal vascular exam or imaging findings (such as concern for renal artery stenosis, diminished pulses, bruits or signs of diffuse thoracic aortic stenosis)

OTHER COMBINATION STUDIES WITH ABDOMEN CTA

NOTE: When medical necessity is met for an individual study **AND** conscious sedation is required (such as for young pediatric patients or patients with significant developmental delay), the entire combination is indicated)

Abdomen CT/Abdomen CTA

- When needed for clarification of vascular involvement from tumor (including renal vein thrombosis)

Abdomen CT (or MRI)/Abdomen CTA/PET

- Prior to Y90 treatment ⁽¹⁰⁾

Chest/Abdomen CTA

- Evaluation of extensive vascular disease involving the chest and abdominal cavities when pelvic imaging is not needed
- Significant post-traumatic or post-procedural vascular complications when pelvic imaging is not needed

Chest/Abdomen/Pelvis CTA

- Evaluation prior to endovascular aneurysm repair (EVAR) when thoracic involvement is present
- Evaluation prior to Transcatheter Aortic Valve Replacement (TAVR) ⁽¹³⁾
- Acute aortic dissection ⁽¹⁴⁾
- Significant post-traumatic or post-procedural vascular complications reasonably expected to involve the chest, abdomen and pelvis

Brain/Neck/Chest/Abdomen/Pelvis CTA

- Takayasu's Arteritis ⁽⁶⁾:
 - At initial diagnosis
 - Every 6 months for the first 2 years while on therapy
 - Annually after the first 2 years

FURTHER EVALUATION OF INDETERMINATE FINDINGS

Unless follow-up is otherwise specified within the guideline

- For initial evaluation of an inconclusive finding on a prior imaging report 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)

CODING AND STANDARDS

Codes

74175

Applicable Lines of Business

☒	CHIP (Children’s Health Insurance Program)
☒	Commercial
☒	Exchange/Marketplace
☒	Medicaid
☒	Medicare Advantage

BACKGROUND

Contraindications and Preferred Studies

- Contraindications and reasons why a CT/CTA cannot be performed may include: impaired renal function, significant allergy to IV contrast, pregnancy (depending on trimester).
- Contraindications and reasons why an MRI/MRA cannot be performed may include: impaired renal function, claustrophobia, non-MRI compatible devices (such as non-compatible defibrillator or pacemaker), metallic fragments in a high-risk location, patient exceeds weight limit/dimensions of MRI machine.

SUMMARY OF EVIDENCE

ACR–SIR Practice Parameter for the Performance of Angiography, Angioplasty, and Stenting for the Diagnosis and Treatment of Renal Artery Stenosis in Adults ⁽¹⁾

Study Design: The document outlines the practice parameters for the performance of angiography, angioplasty, and stenting for the diagnosis and treatment of renal artery stenosis (RAS) in adults. It is a comprehensive guideline developed collaboratively by the American College of Radiology (ACR) and the Society of Interventional Radiology (SIR).

Target Population: The target population includes adults with hypertension, particularly those with renovascular hypertension (RVH) due to renal artery stenosis. The document highlights that hypertension is a common problem, affecting up to 45% of adults in the United States. It also mentions that the incidence of RVH varies in the literature from 0% to 29%, with a weighted mean of about 4% in an analysis of 12 studies and 8,899 patients.

Key Factors: RAS can be caused by different etiologies, including atherosclerotic RAS (ARAS), which increases with age and the presence of associated cardiovascular risk factors. Certain clinical scenarios significantly increase the likelihood that ARAS is contributing to hypertension and/or chronic renal insufficiency (CRI), such as abrupt onset of labile or poorly controlled hypertension in a patient older than 55 years of age, sudden worsening of stable hypertension

or CRI, and episodes of acute onset of congestive heart failure despite normal left ventricular heart function. The document reviews the literature and circumstances that should prompt further evaluation of a patient with RAS as a potential cause for RVH or contributing factor to CRI. It discusses both noninvasive imaging and catheter-based angiographic evaluation of such patients and the criteria for determining whether an endovascular intervention has been successful.

ACR Appropriateness Criteria® Renovascular Hypertension ⁽²⁾

Study Design: The document provides the ACR Appropriateness Criteria for renovascular hypertension, developed by expert panels on urologic imaging and vascular imaging. It includes evidence-based guidelines for specific clinical conditions, reviewed annually by a multidisciplinary expert panel.

Target Population: The target population includes patients with renovascular hypertension, which is the most common type of secondary hypertension. The prevalence of renovascular hypertension is estimated to be between 0.5% and 5% of the general hypertensive population, with an even higher prevalence among patients with severe hypertension and end-stage renal disease, approaching 25% in elderly dialysis patients.

Key Factors: Investigation for renal artery stenosis (RAS) is appropriate when the clinical presentation suggests secondary hypertension rather than primary hypertension, and when intervention would be carried out if a significant RAS were identified. The primary imaging modalities used to screen for RAS are CT, MRI, and ultrasound, with the selection of imaging dependent in part on renal function. The document discusses the appropriateness of various imaging techniques, including duplex Doppler ultrasound, captopril renal scintigraphy, MR angiography, and CT angiography. The document provides detailed information on the sensitivity and specificity of different imaging modalities for diagnosing RAS. For example, duplex Doppler ultrasound has a sensitivity of 91% and a specificity of 75% for a peak systolic velocity (PSV) cutoff value of 200 cm/s. The document discusses the predictive value of imaging techniques in identifying patients who will respond to revascularization. For instance, captopril renal scintigraphy has a reported sensitivity of 81% and a positive predictive value of 51% in some studies.

ANALYSIS OF EVIDENCE

Analysis ^(1,2):

Both articles agree on the effectiveness and advantages of CTA for diagnosing RAS, as well as the observation of secondary signs. However, they differ in their conclusions regarding the risk of nephrotoxicity, the accuracy of CTA in diagnosing stenosis, and its use in patients with impaired renal function.

Shared Findings:

- **Effectiveness of CTA:** Both articles agree that CTA is an effective modality for diagnosing RAS. CTA provides accurate anatomic images of the renal arteries with isotropic data sets that enable high-resolution reconstructions in any plane.

- **Advantages of CTA:** Both articles highlight the advantages of CTA, such as less invasiveness, faster acquisitions, and multiplanar imaging, CTA is less invasive compared to arteriography, and the ability to assess patency of renal stents.
- **Secondary Signs:** Both articles discuss secondary signs that can be observed with CTA (poststenotic dilatation, renal atrophy, and decreased cortical enhancement as secondary signs and cortical area and mean cortical thickness as morphologic markers of atherosclerotic renal disease).

POLICY HISTORY

Date	Summary
July 2025	<ul style="list-style-type: none"> ● Added a Summary of Evidence and Analysis of Evidence
June 2025	<ul style="list-style-type: none"> ● This guideline replaces Evolent Clinical Guideline 034-1 for Abdomen CTA (Angiography) ● Added in general information statement regarding guideline criteria development by reputable sources, standard of care, and best practices ● Removed Abdominal Aortic Disease section ● Updated language in the preoperative/postoperative section ● Added Combinations Studies for Known Genetic Diseases section ● Genetics section surveillance language adjusted in Marfan and Williams section ● Added Combination Studies for Known Genetic Conditions section ● Segment added to combinations studies about if the required use of conscious sedation is needed the entire combination is indicated ● Brain added to the Neck/Chest/Abdomen/Pelvis CTA combo with surveillance added to Takayasu's arteritis ● Background reduced
June 2024	<ul style="list-style-type: none"> ● Separated out aortic syndromes to be more clear ● EVAR studies clarified order of which studies would be ordered ● Renal artery stenosis: updated per new clinical guidance ● Added Genetic Syndromes and Tumors Section

Date	Summary
	<ul style="list-style-type: none"> ● Statement put in all Guidelines for contraindications put in indications and background sections ● Combo section adjusted and made uniform ● Updated references and background section

LEGAL AND COMPLIANCE

Guideline Approval

Committee

Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee

Disclaimer

Evolent Clinical Guidelines do not constitute medical advice. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Evolent uses Clinical Guidelines in accordance with its contractual obligations to provide utilization management. Coverage for services varies for individual members according to the terms of their health care coverage or government program. Individual members' health care coverage may not utilize some Evolent Clinical Guidelines. Evolent clinical guidelines contain guidance that requires prior authorization and service limitations. A list of procedure codes, services or drugs may not be all inclusive and does not imply that a service or drug is a covered or non-covered service or drug. Evolent reserves the right to review and update this Clinical Guideline in its sole discretion. Notice of any changes shall be provided as required by applicable provider agreements and laws or regulations. Members should contact their Plan customer service representative for specific coverage information.

Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.

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