Cohere Medical Policy - Computed Tomography Angiography (CTA), Chest

Clinical Policy for Medical Necessity Review

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Cohere Health UMC Approval Date: September 11, 2025
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Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice.

Other Notices:

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Guideline Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medical Policy - Computed Tomography Angiography (CTA), Chest
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Computed Tomography Angiography (CTA), Chest

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include a referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- Repeat diagnostic testing due to technical issues—such as patient motion, incomplete exams, or incorrect imaging sequences—may not be considered medically necessary, as it is the responsibility of the imaging center to deliver appropriate, high-quality studies as originally authorized. Similarly, repeat imaging requested at a different facility based solely on provider preference may not be approved for medical necessity.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
    - The medical necessity of each individual request

    - Why prior imaging or procedures were inconclusive or why additional/follow-up studies are needed
    - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.
- Cohere Health evaluates imaging exams based on medical necessity, regardless of contrast use. If an initial non-contrast study is completed and the radiologist later determines that contrast is needed to clarify a finding, the original authorization number may be used—provided the contrast-enhanced exam is performed at the same imaging center and within the original request's validity period, unless otherwise directed by the health plan.

Description

The referring clinician is responsible for indicating the appropriate clinical indication (e.g., Wells criteria for intermediate and high probability for pulmonary embolism) for computed tomography angiogram (CTA), CTA of the aorta, and computed tomography venography (CTV). The patient's pertinent history should justify the exam and select phase(s) of post-contrast imaging. The radiologist should protocol the examination before the patient arrives at the CT scanner.

Medical Necessity Criteria

Indications

Computed tomography angiography (CTA) or venography (CTV), chest is considered appropriate if **ANY** of the following is **TRUE**[1]:

- Trauma to the chest with suspected thoracic vascular injury[2]; **OR**
- Non-traumatic thoracic arterial disease and **ALL** of the following[3,4]:
  - The patient requires **ANY** of the following:
    - Further imaging evaluation of suspected disease (based on history and physical exam or prior imaging); **OR**
    - Assessment of treatment response in known disease; **OR**
    - Evaluation of suspected complications in known disease; **AND**
  - **ANY** of the following[5,6]:
    - Congenital conditions (e.g., vascular anomaly); **OR**
    - Rupture; **OR**
    - Dissection; **OR**
    - Mediastinal hematoma; **OR**
    - Intramural hematoma; **OR**
    - Penetrating atherosclerotic ulcer; **OR**
    - Pseudoaneurysm; **OR**
    - Non-aortic aneurysm; **OR**
    - Infectious vasculitis (syphilis, mycotic aneurysm)[7]; **OR**
    - Inflammatory vasculitis[7]; **OR**
    - Large-vessel vasculitis (giant-cell arteritis and Takayasu arteritis) suspected[7]; **OR**
    - Medium-vessel vasculitis (Polyarteritis nodosa (PAN) and Kawasaki disease) suspected[7]; **OR**
    - Neoplastic condition; **OR**
- Suspected arterial embolism involving **ANY** of the following[8]:
  - Upper or lower extremity; **OR**
  - Mesenteric system; **OR**
  - Renal arterial system; **OR**
  - Multiorgan distribution; **OR**
- Suspected pulmonary arteriovenous malformation (PAVM) based on prior imaging or risk factors (e.g., hereditary hemorrhagic telangiectasia, genetic mutations, post-surgical, hepatopulmonary syndrome); **OR**
- Pulmonary embolism (PE), including **ANY** of the following[9-12]:

    - Evaluation of suspected PE in a pregnant patient; **OR**
    - High pretest probability of PE by Wells criteria (D-dimer not needed); **OR**
    - **ALL** of the following[9]:
        - Low or intermediate pretest probability of PE by Wells criteria; **AND**
        - Positive D-dimer; **OR**
- Suspected pulmonary hypertension, including chronic thromboembolic pulmonary hypertension (CTEPH)[13-15]; **OR**
- Evaluation of known CTEPH in a patient being considered for surgery[13-15]; **OR**
- Subclavian steal syndrome or suspected subclavian artery stenosis based on history, examination, or Doppler ultrasound[3,16]; **OR**
- Central thoracic venous thrombosis or occlusion (includes superior vena cava [SVC] syndrome) based on clinical features or prior imaging; **OR**
- Clinical concern for subclavian venous thrombosis or occlusion with indeterminate findings on Doppler and further evaluation necessary; **OR**
- Vascular thoracic outlet syndrome suspected based on clinical features or prior imaging; **OR**
- Evaluation of massive, non-massive, or recurrent hemoptysis[17]; **OR**
- Initial diagnosis of a suspected thoracic aortic aneurysm based on an abnormality on **ANY** of the following[18]:
    - Chest radiograph; **OR**
    - Echocardiogram; **OR**
- Evaluation of known or suspected thoracic aortic disease progression/complication based on signs, symptoms, or other imaging studies (e.g., chest pain, suspicion for rupture)[18]; **OR**
- Surveillance of known thoracic aortic aneurysm in a patient with non-syndromic/non-hereditary cause for **ANY** of the following[18]:
    - At baseline, if the ascending aorta is not adequately imaged on transthoracic echocardiogram (TTE); **OR**
    - 6 months after the initial diagnosis; **OR**
    - Annual surveillance for thoracic aortic aneurysms less than 5 cm; **OR**
    - Surveillance every 6 months for thoracic aortic aneurysm greater than or equal to 5 cm; **OR**
    - Surveillance every 6 months for aneurysms that are growing by more than 0.5 cm/year; **OR**
- Surveillance of known syndromic/hereditary/genetic aortic disease for **ANY** of the following:
    - Marfan syndrome with **ANY** of the following[18]:

        - At baseline, if the ascending aorta is not adequately imaged on TTE; **OR**
        - 6 months after baseline imaging; **OR**
        - Surveillance every 2 years if the patient does not have a thoracic aortic aneurysm; **OR**
        - Annual surveillance if aneurysm is growing by less than 0.3 cm/year; **OR**
        - Annual surveillance if aneurysm is less than 4.5 cm in size; **OR**
        - Surveillance every 6 months if aneurysm is growing by more than 0.3 cm/year; **OR**
        - Surveillance every 6 months if aneurysm is greater than 4.5 cm; **OR**
    - Bicuspid aortic valve (BAV) with **ANY** of the following[18]:
        - At baseline, if the ascending aorta is not adequately imaged on TTE; **OR**
        - 6 months after baseline imaging; **OR**
        - Surveillance every 2 years if the patient does not have a thoracic aortic aneurysm; **OR**
        - Annual surveillance if the aneurysm is growing by less than 0.3 cm/year; **OR**
        - Annual surveillance if the aneurysm is less than 4.5 cm in size; **OR**
        - Surveillance every 6 months if the aneurysm is growing by more than 0.3 cm/year; **OR**
        - Surveillance every 6 months if the aneurysm is greater than 4.5 cm; **OR**
    - Turner syndrome with **ANY** of the following[18]:
        - At baseline, if the ascending aorta is not adequately imaged on TTE; **OR**
        - 6 months after baseline imaging; **OR**
        - Surveillance every 2 years if the patient does not have a thoracic aortic aneurysm; **OR**
        - Annual surveillance if the thoracic aortic aneurysm has an indexed diameter (aortic size index - ASI) greater than 2 cm/m^2; **OR**
    - Loeys-Dietz syndrome with **ANY** of the following[18]; **OR**
        - At baseline, if the ascending aorta is not adequately imaged on TTE; **OR**
        - 6 months after baseline imaging; **OR**
        - Annual surveillance if the aneurysm is less than 4.0 cm; **OR**

        - Annual surveillance if the aneurysm is growing less than 0.3 cm growth/year; **OR**
        - Surveillance every 6 months if the aneurysm is greater than 4 cm; **OR**
        - Surveillance every 6 months if the aneurysm is growing by more than 0.3 cm/year; **OR**
    - Vascular Ehlers-Danlos syndrome (VEDS) with **ANY** of the following[18]:
        - At baseline, if the ascending aorta is not adequately imaged on TTE; **OR**
        - At 6 months after baseline imaging; **OR**
        - Annual surveillance if the aneurysm is less than 5.0 cm; **OR**
        - Annual surveillance if the aneurysm is growing less than 0.5 cm growth/year; **OR**
        - Surveillance every 6 months if the aneurysm is greater than 5 cm; **OR**
        - Surveillance every 6 months if the aneurysm is growing by more than 0.5 cm/year; **OR**
- Initial screening CTA for a first-degree relative (parent, sibling, or child) of a patient with confirmed aortic disease attributable to a heritable or genetic cause[18]; **OR**
- Surveillance of known thoracic aortic dissection[18]; **OR**
- Preoperative imaging for surgical planning when cardiothoracic/vascular surgery or endovascular intervention is already planned; **OR**
- Post-procedure evaluation following endovascular or open repair of thoracic aortic aneurysm, at **ANY** of the following intervals[18,19]:
    - For surveillance 1 month after repair; **OR**
    - 12 months after repair; **OR**
    - If stable, annual surveillance starting 12 months after repair; **OR**
- Post-treatment (surgical or medical) of acute aortic dissection at **ANY** of the following intervals[18,19]:
    - 1 month post-treatment; **OR**
    - 6 months post-treatment; **OR**
    - If stable, annual surveillance starting 6 months after repair; **OR**
- Congenital or acquired conditions as indicated by **ANY** of the following[20,21]:
    - Pulmonary sequestration[22]; **OR**
    - **ALL** of the following:
        - Inadequate TTE for assessment of cardiovascular morphology and function[20]; **AND**
        - **ANY** of the following:

        - Known single ventricle physiology[20]; **OR**
        - Known or suspected anomalous pulmonary venous return; **OR**
        - Repaired tetralogy of Fallot or pulmonary valve stenosis with concern for pulmonary valve dysfunction or branch pulmonary artery stenosis[23]; **OR**
        - Aortic coarctation[24]; **OR**
        - Transposition of the great arteries after arterial switch; **OR**
        - Transposition of the great arteries after atrial switch; **OR**
- Non-invasive clinical staging of a tumor to define vascular invasion[25,26]; **OR**
- Repeat imaging (defined as a repeat request following recent imaging of the same anatomic region with the same or similar modality) will be considered reasonable and necessary if **ALL** of the following are **TRUE**:
    - There are no established guidelines; **AND**
    - **ANY** of the following:
        - There are new or worsening symptoms not addressed in the guidelines, such that repeat imaging would influence treatment; **OR**
        - There is need for a one-time clarifying follow-up of a prior indeterminate finding; **OR**
        - In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

Computed tomography angiography (CTA), chest with contrast is not considered if **ANY** of the following is **TRUE**:

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms.[27]

*NOTE: The referring professional and radiologist should discuss the risks and benefits of contrast media administration, including possible prophylaxis, in patients with chronic or worsening kidney disease or severe renal failure.
**NOTE: CT in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.
***NOTE: CT in patients with claustrophobia should be requested at the discretion of the ordering provider.

Disclaimer on Radiation Exposure in Pediatric Populations

Due to the heightened sensitivity of pediatric patients to ionizing radiation, minimizing exposure is paramount. At Cohere, we are dedicated to ensuring that every patient, including the pediatric population, has access to appropriate imaging following accepted guidelines. Radiation risk is dependent mainly on the patient's age at exposure, the organs exposed, and the patient's sex, though there are other variables. The following technical guidelines are provided to ensure safe and effective imaging practices:

Radiation Dose Optimization: Adhere to the lowest effective dose principle for pediatric imaging. Ensure that imaging protocols are specifically tailored for pediatric patients to limit radiation exposure.[28,29]

Alternative Modalities: Prioritize non-ionizing imaging options such as ultrasound or MRI when clinically feasible, as they are less likely to expose the patient to ionizing radiation. For instance, MRI or ultrasound should be considered if they are more likely to provide an accurate diagnosis than CT, fluoroscopy, or radiography.[28,29]

Cumulative Dose Monitoring: Implement systems to track cumulative radiation exposure in pediatric patients, particularly for those requiring multiple imaging studies. Regularly reassess the necessity of repeat imaging based on clinical evaluation.[28,29]

CT Imaging Considerations: When CT is deemed the best method for achieving a correct diagnosis, use the lowest possible radiation dose that still yields reliable diagnostic images.[28,29]

Cohere Imaging Gently Guideline: The purpose of this guideline is to act as a potential override when clinically indicated to adhere to Imaging Gently and Imaging Wisely guidelines and As Low As Reasonably Possible (ALARA) principles.

Level of Care Criteria

Inpatient and Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
71275	Computed tomographic angiography (CTA), chest; with contrast material(s), including non-contrast images, if performed, and image postprocessing

Medical Evidence

Ko et al. (2021) reviewed the utilization of chest CT angiography (CTA) to diagnose acute aortic syndromes. To ensure optimal quality of images, the authors address technical parameters of chest CTA, including non-contrast imaging, timing of contrast-enhanced imaging, volume and type of contrast material used, kilovolt potential, tube-current modulation, and decisions regarding electrocardiographic-gating and ultra-fast imaging. Acute aortic syndromes, especially those involving the ascending aorta, carry high morbidity and mortality rates and encompass conditions such as Type A aortic dissection, penetrating atherosclerotic ulcer, and acute intramural hematoma. CTA-guided recognition of related entities like ulcerated plaque, ulcer-like projections, intramural blood pools, and mimics such as vasculitis and aortic thrombus is crucial to appropriately treat the patient.[30]

Carrabba et al. (2019) presented the results of a clinical trial that evaluated the efficacy of CTA for diagnosing coronary artery disease (CAD) in patients with new-onset chest pain. The 208 patients included had an unknown CAD diagnosis. Approximately half of the participants received standard testing care with CTA as a secondary investigation (group A), while the other half underwent CTA as their initial investigation (group B). Patients with obstructive CAD (O-CAD) demonstrated greater than 50% stenosis in the principal branch. According to the CTA results, the rates of CAD in group A compared to group B were as follows (P=0.001): 31.1% versus 27.4% for normal or minimal CAD; 42.5% versus 63.7% for no O-CAD; and 26.4% versus 8.8% for O-CAD.[31]

Baliyan et al. (2018) reported on acute aortic syndromes in an emergency setting. CTA is the preferred imaging modality in emergent situations as it can be performed quickly and identify variations in anatomy, including aortic coarctation. Incidental findings are often identified (89%) when performing chest CTA. An alternative modality is MRA if CTA cannot be performed due to allergy to iodinated contrast or renal dysfunction.[32]

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Policy Revision History/Information

Original Date: April 15, 2022		
Review History		
Version 2	08/15/2024	Annual review and policy restructure.
Version 3	10/30/2024	Edited repeat imaging criteria language.
Version 4	09/11/2025	Annual review. Minor revisions to indications for detail and clarity. Minor addition to existing indication for arterial embolism: “multiorgan distribution.” Modified existing pulmonary embolism indication to reflect current medical society guidelines. Simplified existing indication for hemoptysis. Augmented existing indication for thoracic aortic disease, providing more specific surveillance timeframes and disease-specific aortic size cutoffs per medical society guidelines. Streamlined existing indication for screening of first-degree relatives for patients with heritable aortic disease. Expanded existing indications for preprocedure and postprocedure imaging to better capture appropriate patients. Slight modification to existing congenital heart disease to ensure lower-risk imaging is completed prior to higher-risk CTA. Removed relative non-indication for contrast anaphylaxis allergy.