



**Cohere Medicare Advantage Policy –  
Computed Tomography Angiography (CTA), Neck**  
*Clinical Policy for Medical Necessity Review*

**Version: 2**

**Cohere Health UMC Approval Date: September 11, 2025**

Last Annual Review: September 11, 2025

Revision: Not Applicable

Next Annual Review: September 11, 2026

# 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. This policy may be superseded by existing and applicable Centers for Medicare & Medicaid Services (CMS) statutes.

© 2025 Cohere Health, Inc. All Rights Reserved.

---

## Other Notices:

HCPCS® and CPT® copyright 2025 American Medical Association. All rights reserved.

Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

HCPCS and CPT are registered trademarks of the American Medical Association.

---

## Policy Information:

**Specialty Area:** Diagnostic Imaging

**Policy Name:** Cohere Medicare Advantage Policy - Computed Tomography Angiography (CTA), Neck

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

## **Table of Contents**

<b>Important Notices</b>	<b>2</b>
<b>Medical Necessity Criteria</b>	<b>4</b>
<b>Service: Computed Tomography Angiography (CTA), Neck</b>	<b>4</b>
Related CMS Documents	4
Description	4
Medical Necessity Criteria	4
Indications	4
Non-Indications	7
Disclaimer on Radiation Exposure in Pediatric Populations	7
Level of Care Criteria	8
Procedure Codes (CPT/HCPCS)	8
Evaluation of Clinical Harms and Benefits	9
<b>Medical Evidence</b>	<b>10</b>
<b>References</b>	<b>11</b>
<b>Policy Revision History/Information</b>	<b>15</b>

# Medical Necessity Criteria

**Service: Computed Tomography Angiography (CTA), Neck**

## Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.

- There are no NCDs and/or LCDs for computed tomography angiography (CTA), neck.

## Description

Cervicocerebral CTA is a clinically established and valuable procedure for identifying and characterizing vascular diseases, and evaluating vascular anatomy relevant to managing extravascular disorders. Typically, CTA focuses on evaluating the heart, arteries, or veins and necessitates a thin-section CT scan combined with intravenous injection of iodinated contrast medium. Incorporating three-dimensional rendering and multiplanar reformations is integral to CTA examinations. CTA can serve as the primary imaging modality for disease detection or as a supplementary tool for characterizing known conditions or monitoring changes over time. Magnetic resonance angiography (MRA) should be considered an alternative to CTA to minimize radiation exposure, particularly in pediatric and vulnerable populations. CTA involves exposure to ionizing radiation and should be performed solely for medically necessary reasons and with the lowest radiation dose required to achieve diagnostically adequate image quality.<sup>1</sup>

## Medical Necessity Criteria

### Indications

**Computed tomography angiography (CTA), neck** is considered appropriate for **ANY** of the following:

- Detection, screening, surveillance, and follow-up of vascular neck mass (e.g., paraganglioma, pulsatile neck mass [not parotid region or thyroid])<sup>2</sup>;  
**OR**

- Tumor of vascular origin, with rich vascular supply or involving vascular structures<sup>3</sup>; **OR**
- Trauma-related conditions as indicated by **ANY** of the following:
  - Trauma of the head with a suspected intracranial arterial injury based on clinical findings or prior imaging<sup>4</sup>; **OR**
  - Traumatic and non-traumatic orbital pathology with clinical or imaging findings that indicate vascular involvement<sup>5</sup>; **OR**
  - Suspected traumatic injury to cervicocerebral vessels<sup>6</sup>; **OR**
  - Trauma-related spine injuries (cervical and upper thoracic)<sup>7</sup>; **OR**
  - Blunt cerebrovascular injury (BCVI) is suspected based on the mechanism and location of trauma (CTA head is also indicated with CTA neck)<sup>7</sup>; **OR**
  - Suspected carotid or vertebral artery dissection secondary to trauma or spontaneous due to weakness of the vessel wall (CTA head is also indicated with CTA neck)<sup>8</sup>; **OR**
  - Traumatic vascular injury<sup>9,10</sup>; **OR**
- Vascular conditions, known or suspected, including **ANY** of the following:
  - Arterial aneurysm; **OR**
  - Pseudoaneurysm<sup>11</sup>; **OR**
  - Atherosclerotic stenosis or occlusive disease (e.g., atherosclerotic plaque localization and characterization)<sup>1</sup>; **OR**
  - Cerebrovascular disease, including **ANY** of the following<sup>12</sup>:
    - Carotid stenosis, asymptomatic; **OR**
    - Cervical bruit, asymptomatic; **OR**
    - Cervical vascular dissection or injury, known or suspected; **OR**
  - Acute hemorrhage, including **ANY** of the following<sup>13,14</sup>:
    - Cervical spine; **OR**
    - Head and neck; **OR**
  - Ischemic stroke or transient ischemic attack (TIA) when the patient is a candidate for revascularization<sup>14,15</sup>; **OR**
  - Non-atherosclerotic, non-inflammatory vasculopathy (e.g., radiation vasculopathy)<sup>16</sup>; **OR**
  - Pulsatile tinnitus for the evaluation of vascular etiology<sup>17</sup>; **OR**
  - Subclavian steal syndrome for treatment planning<sup>16</sup>; **OR**
  - Thromboembolism; **OR**
  - Giant cell and Takayasu arteritis (large vessel vasculitis)<sup>13</sup>; **OR**
  - Vasospasm<sup>19</sup>; **OR**
  - Vascular anatomic variant; **OR**

- Vascular fistula; **OR**
- Vascular malformation<sup>20</sup>; **OR**
- Venous varix; **OR**
- Loeys–Dietz syndrome with repeat imaging at least every two years<sup>20</sup>; **OR**
- Fibromuscular dysplasia<sup>21</sup>; **OR**
- Spontaneous coronary artery dissection (SCAD)<sup>22</sup>; **OR**
- Horner syndrome<sup>23</sup>; **OR**
- For evaluation of **ANY** of the following uncategorized/miscellaneous symptoms when applicable:
  - Cranial neuropathy as indicated by **ANY** of the following<sup>21</sup>:
    - Combined lower cranial nerve syndromes (cranial nerve [CN] IX–XII); **OR**
    - Multiple different lower cranial nerve palsies; **OR**
    - Unilateral isolated weakness or paralysis of the tongue (hypoglossal nerve, CN XII); **OR**
  - Penetrating neck injury<sup>22</sup>; **OR**
  - Chronic recurrent vertigo associated with other brainstem neurologic deficits<sup>23</sup>; **OR**
- Preoperative, postoperative, or pre-treatment evaluation for **ANY** of the following:
  - Surgical and radiation therapy localization, planning, and neuronavigation; **OR**
  - Vascular compression or vertebrobasilar insufficiency; **OR**
  - Vascular intervention and follow-up (percutaneous and surgical); **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), neck** is not considered appropriate if **ALL** of the following are **TRUE**:

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

\*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 patients with claustrophobia should be requested at the discretion of the ordering provider.

\*\*\*NOTE: CT in pregnant patients should be requested at the discretion of the ordering provider and obstetric care 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.<sup>24,25</sup>

**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.<sup>24,25</sup>

**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.<sup>24,25</sup>

**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.<sup>24,25</sup>

### **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 or Outpatient

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

<b>CPT/HCPCS Code</b>	<b>Code Description</b>
70498	Computed tomographic angiography (CTA), of neck; with contrast material(s), including non-contrast images, if performed, and image post-processing

**Disclaimer:** S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

## Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

The potential clinical harms of using these criteria for computed tomography angiography (CTA), neck may include:

- Adverse effects from delayed or denied treatment, such as inherent risks of imaging, including cumulative radiation exposure, contrast, allergy, nephrotoxicity, and contrast extravasation into surrounding tissues.<sup>24</sup> CT imaging completed during pregnancy confers a dose of ionizing radiation to the fetus and is generally only utilized when the potential benefits of this specific imaging modality outweigh the risks to the pregnancy. Fetal risk includes fetal demise, intrauterine growth restriction, microcephaly, delayed intellectual development, risk of childhood cancer, and fetal thyroid injury.<sup>26</sup>
- Increased healthcare costs and complications from the inappropriate use of additional interventions.<sup>27</sup>

The clinical benefits of using these criteria for computed tomography angiography (CTA), neck may include:

- Improved patient selection may result in better long-term outcomes. A retrospective review of 4923 patients with blunt trauma demonstrated that performing CTA of the neck with CT or CTA of the spine identified more injuries compared to spine imaging alone.<sup>28</sup> CTA is also effective in diagnosing acute ischemic stroke compared to non-contrast CT.<sup>29</sup>
- CTA provides excellent detail to identify and classify a lesion and offers fast evaluation of the vasculature of the head and neck when there is concern of acute onset of neurologic symptoms (including stroke) and blunt trauma.<sup>30</sup>
- Enhanced overall patient satisfaction and healthcare experience.

## Medical Evidence

Tu et al. (2022) conducted a retrospective review on the utilization of head and neck computed tomography angiography (CTA) in the emergency department (ED). Head and neck CTA in the ED has shown a disproportionate increase compared to other neuroimaging examinations. The study contrasted utilization and the frequency of communicating non-routine results across different patient chief concerns. The study identified the top 50 primary concerns that led to the most CTA examinations. A total of 17903 CTAs for 833 distinct chief concerns were included, which accounts for 2.5% of 708,145 ED visits. The rates of ordering and communication of non-standard results exhibit significant variability across different chief concerns. Approximately half of the non-standard communications made by radiologists pertain to acute indications. Understanding the trends in ordering head and neck CTA and the communication of non-standard results can aid in refining patient selection and enhancing interactions in the ED setting.<sup>31</sup>

Paladino et al. (2021) performed a systematic review to determine the efficacy of CTA Neck in determining vascular or aerodigestive injuries (ADI). CTA covering the entire neck region is now an integral component of the standard diagnostic approach for patients with penetrating neck trauma (PNT) who do not necessitate immediate surgical intervention for ADI. While many studies have highlighted the usefulness of CTA to rule out arterial injuries, consensus is lacking regarding the capability of CTA Neck to detect ADI.<sup>32</sup>

Schenk et al. (2021) report on a retrospective review of stroke in young adults and the use of CTA Head and Neck diagnostic yield for anterior circulation ischemic stroke evaluation. The review included adults aged 18-50 who presented to the Mayo Clinic Rochester ED. Carotid dissection is a predominant cause of anterior circulation ischemic stroke, as evidenced by findings on CTA. Carotid webs were found to be infrequent in the patients studied, while carotid atherosclerosis was relatively rare. The presence of carotid webs, understanding their potential to trigger recurrent strokes. No significant disparity in the prevalence of carotid atherosclerosis between the symptomatic and asymptomatic sides was identified. Additionally, clinicians can recognize high-risk morphological attributes of carotid plaque observed on CT angiography, even in cases with no discernible stenosis.<sup>33</sup>

## References

1. American College of Radiology (ACR), American Society of Neuroradiology (ASNR), Society for Pediatric Radiology (SPR). ACR–ASNR–SPR practice parameter for the performance and interpretation of cervicocerebral computed tomography angiography (CTA) (resolution 42). Updated 2020. <http://www.acr.org>
2. Aulino JM, Kirsch CFE, Burns J, et al. Neck mass/adenopathy. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2018. <http://www.acr.org>
3. Krol E, Brandt CT, Blakeslee–Carter J, et al. Vascular interventions in head and neck cancer patients as a marker of poor survival. *J Vasc Surg*. 2019 Jan;69(1):181–189. doi:10.1016/j.jvs.2018.04.058
4. Shih RY, Burns J, Ajam AA, et al. Head trauma. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2020. <http://www.acr.org>
5. Patel J, Huynh TJ, Rao D, et al. Vascular trauma in the head and neck and endovascular neurointerventional management. *J Clin Imaging Sci*. 2020 Jul 30;10:44. doi:10.25259/JCIS\_96\_2020
6. Rutman AM, Vranic JE, Mossa–Basha M. Imaging and management of blunt cerebrovascular injury. *Radiographics*. 2018 Mar–Apr;38(2):542–563. doi:10.1148/rg.2018170140
7. Hassankhani A, Freeman CW, Banks J, et al. Acute spinal trauma. ACR appropriateness criteria [Internet] American College of Radiology (ACR). New 2024. <http://www.acr.org>
8. Shakir HJ, Davies JM, Shallwani H, et al. Carotid and vertebral dissection imaging. *Curr Pain Headache Rep*. 2016 Dec;20(12):68. doi:10.1007/s11916-016-0593-5
9. Ugalde IT, Claiborne MK, Cardenas–Turanzas M, et al. Risk factors in pediatric blunt cervical vascular injury and significance of seatbelt sign. *West J Emerg Med*. 2018 Nov;19(6):961–969. doi:10.5811/westjem.2018.9.39429
10. Chatterjee AR, Malhotra A, Curl P, et al. Traumatic cervical cerebrovascular injury and the role of CTA: AJR Expert Panel narrative

review. *AJR Am J Roentgenol*. 2024 Jul;223(1):e2329783.  
doi:10.2214/AJR.23.29783

11. Saad NE, Saad WE, Davies MG, et al. Pseudoaneurysms and the role of minimally invasive techniques in their management. *Radiographics*. 2005 Oct;25 Suppl 1:S173-89. doi:10.1148/rg.25si055503
12. Pannell JS, Corey AS, Shih RY, et al. Cerebrovascular diseases—stroke and stroke-related conditions. ACR appropriateness criteria [Internet] American College of Radiology (ACR). New 2023. <http://www.acr.org>
13. Rodriguez-Luna D, Dowlatshahi D, Aviv RI, et al. Venous phase of computed tomography angiography increases spot sign detection, but intracerebral hemorrhage expansion is greater in spot signs detected in arterial phase. *Stroke*. 2014 Mar;45(3):734-9. doi:10.1161/STROKEAHA.113.003007
14. Caton MT, Miskin N, Guenette JP. The role of computed tomography angiography as initial imaging tool for acute hemorrhage in the head and neck. *Emerg Radiol*. 2021 Apr;28(2):215-221. doi:10.1007/s10140-020-01835-9
15. Wintermark M, Sanelli PC, Albers GW, et al. Imaging recommendations for acute stroke and transient ischemic attack patients: A joint statement by the American Society of Neuroradiology, the American College of Radiology, and the Society of NeuroInterventional Surgery. *AJNR Am J Neuroradiol*. 2013 Nov-Dec;34(11):E117-27. doi:10.3174/ajnr.A3690
16. Agarwal A, Bathla G, Kanekar S. Imaging of non-atherosclerotic vasculopathies. *J Clin Imaging Sci*. 2020 Oct 13;10:62. doi:10.25259/JCIS\_91\_2020
17. Jain V, Policeni B, Juliano AF, et al. Tinnitus. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2023. <http://www.acr.org>
18. Popescu I, Pintican R, Cocarla L, et al. Imaging in large vessel vasculitis - a narrative review. *J Clin Med*. 2024 Oct 24;13(21):6364. doi:10.3390/jcm13216364
19. Allen JW, Prater A, Kallas O, et al. Diagnostic performance of computed tomography angiography and computed tomography perfusion tissue time-to-maximum in vasospasm following aneurysmal subarachnoid

hemorrhage. *J Am Heart Assoc.* 2022 Jan 4;11(1):e023828.  
doi:10.1161/JAHA.121.023828

20. Singh R, Gupta V, Ahuja C, et al. Role of time-resolved-CTA in intracranial arteriovenous malformation evaluation at 128-slice CT in comparison with digital subtraction angiography. *Neuroradiol J.* 2018 Jun;31(3):235-243. doi:10.1177/1971400917744403
21. Rath TJ, Policeni B, Juliano AF, et al. Cranial neuropathy. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2022. <http://www.acr.org>
22. Schroeder JW, Ptak T, Corey AS, et al. Penetrating neck injury. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2017. <http://www.acr.org>
23. Wang LL, Thompson TA, Shih RY, et al. Dizziness and ataxia. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2023. <http://www.acr.org>
24. The Image Gently Alliance. Procedures - Image Gently and CT scans. Updated 2025. <https://www.imagegently.org/Procedures/Computed-Tomography>
25. National Cancer Institute. Radiation risks and pediatric computed tomography (CT): A guide for health care. Updated September 4, 2018. <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/pediatric-ct-scans>
26. Nguyen T, Bhosale PR, Cassia L, et al. Malignancy in pregnancy: Multimodality imaging and treatment. *Cancer.* 2023 May 15;129(10):1479-1491. doi:10.1002/cncr.34688
27. Kjelle E, Brandsæter IØ, Andersen ER, et al. Cost of low-value imaging worldwide: a systematic review. *Appl Health Econ Health Policy.* 2024 Jul;22(4):485-501. doi:10.1007/s40258-024-00876-2
28. Harper PR, Jacobson LE, Sheff Z, et al. Routine CTA screening identifies blunt cerebrovascular injuries missed by clinical risk factors. *Trauma Surg Acute Care Open.* 2022 Aug 26;7(1):e000924. doi:10.1136/tsaco-2022-000924

29. Douglas V, Shamy M, Bhattacharya P. Should CT angiography be a routine component of acute stroke imaging? *Neurohospitalist*. 2015 Jul;5(3):97-8. doi:10.1177/1941874415588393
30. Madhuripan N, Atar OD, Zheng R, et al. Computed tomography angiography in head and neck emergencies. *Semin Ultrasound CT MR*. 2017 Aug;38(4):345-356. doi:10.1053/j.sult.2017.02.003
31. Tu LH, Malhotra A, Venkatesh AK, et al. Head and neck CTA utilization: Analysis of ordering frequency and nonroutine results communication, with focus on the 50 most common emergency department clinical presentations. *AJR Am J Roentgenol*. 2022 Mar;218(3):544-551. doi:10.2214/AJR.21.26543
32. Paladino L, Baron BJ, Shan G, et al. Computed tomography angiography for aerodigestive injuries in penetrating neck trauma: A systematic review. *Acad Emerg Med*. 2021 Oct;28(10):1160-1172. doi:10.1111/acem.14298
33. Schenk WB, Brinjikji W, Larson AS, et al. Diagnostic yield of neck CT angiography in young adults with anterior circulation ischemic stroke: A community based study. *Neurohospitalist*. 2021 Apr;11(2):119-124. doi:10.1177/1941874420974542

# Policy Revision History/Information

Original Date: September 19, 2024

## Review History

Version 2	09/11/2025	<p>Annual review.</p> <p>Updated references for indications.</p> <p>Removed indications under cerebrovascular disease for acute ischemic stroke with focal neurologic deficit, recent ischemic infarct, and collagen vascular disease.</p> <p>Updated ischemic stroke to include “or transient ischemic attack (TIA) when the patient is a candidate for revascularization.”</p> <p>Revised indication for subclavian steal syndrome to include “for treatment planning.”</p> <p>Removed indications under vascular conditions for: acute ischemic stroke with focal neurologic deficit, recent ischemic infarct, collagen vascular disease, and vasculitis.</p> <p>Expanded the indication for ischemic stroke to include “or transient ischemic attack (TIA) when the patient is a candidate for revascularization.”</p>
-----------	------------	--

		<p>Revised the indication for subclavian artery stenosis to “subclavian steal syndrome for treatment planning.”</p> <p>Added indications under vascular conditions for: giant cell and Takayasu arteritis (large vessel vasculitis), Loeys-Dietz syndrome with repeat imaging at least every two years, fibromuscular dysplasia, spontaneous coronary artery dissection (SCAD), and Horner syndrome.</p> <p>Clarified the indication for repeat imaging to improve usability and organization.</p> <p>Removed non-indication for contrast anaphylaxis allergy.</p> <p>Added non-indication: “The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms.”</p>
--	--	--