

# 2025 Computed Tomography Angiography (CTA) Neck

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## ***Diagnostic Imaging***

CTA-Neck-HH  
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## Pediatric Considerations for Computed Tomography

While CT is used in children, MRI or ultrasound is preferred for initial evaluation to minimize radiation exposure. CT is reserved for complex cases where detailed imaging is required. By integrating ultrasound and adhering to these guidelines, healthcare providers can optimize diagnostic accuracy while minimizing risks associated with radiation.

Recommendations for CT imaging include **ALL** of the following:

1. Ultrasound First: Utilize ultrasound as the initial modality where appropriate.
2. CT for Complex Cases: Reserve CT for when ultrasound or MRI is inadequate.
3. Adhere to Guidelines: Follow established protocols to ensure safety and efficacy.
4. Minimize Radiation Exposure: Especially important for children, young adults, and pregnant women.

## Computed Tomography Angiography (CTA) Neck



### NCD 220.1

See also, **NCD 220.1**: Computed Tomography at <https://www.cms.gov/medicare-coverage-database/search.aspx> if applicable to individual's healthplan membership.

## CTA General Contraindications

Computed tomography angiography (CTA) is contraindicated for **ANY** of the following:

- Clinical instability (eg, respiratory distress, severe hypotension, unstable arrhythmias)  
**References:** [3] [6]
- Contrast allergy  
**References:** [3] [6]
- Renal impairment (glomerular filtration rate [GFR] is less than 30 ml/min/1.73 m<sup>2</sup>.)  
**References:** [3] [6]
- **CANNOT** follow procedure directions (eg, holding breath, **NOT** moving)  
**References:** [3] [6]

## CTA Neck Guideline

Computed tomography angiography (CTA) of the neck is considered medically appropriate when extracranial vascular disease is suspected or known and the documentation demonstrates **ANY** of the following:

1. Aneurysm screening in fibromuscular dysplasia, Loeys-Dietz syndrome or spontaneous coronary arteries dissection (SCAD) (\***NOTE:** *For Loeys-Dietz imaging should be repeated at least every 2 years.*)  
**References:** [1] [2] [8]
2. Carotid or vertebral artery dissection is suspected, due to trauma or spontaneous weakness of vessel wall.  
**References:** [1] [2] [19]
3. Cerebrovascular disease is suspected or known with **ANY** of the following:
  - a. Neck ultrasound or carotid duplex imaging is abnormal, non-diagnostic or indeterminate (eg, aberrant direction of flow in the carotid or vertebral arteries, carotid stenosis 70% or more, technically limited study).
  - b. Stroke, ischemic, or transient ischemic attack (TIA) occurred within 6 months (recently).
  - c. Vertebrobasilar insufficiency (VBI) is suspected or known and is symptomatic (eg, abnormal speech, ataxia, blindness, diplopia, dizziness, headaches, vertigo).**References:** [1] [2] [19] [13] [11] [9] [14]
4. Congenital vascular malformation of the head or neck is known, for further evaluation.  
**References:** [1] [2] [19] [20]
5. Extracranial vascular disease is known, for follow-up or further evaluation.  
**References:** [1] [2] [1] [5]
6. Giant cell arteritis or Takayasu's arteritis is known **AND** extracranial involvement is suspected.  
**References:** [1] [2] [18] [17] [15]
7. Hemorrhage of the head or neck is known, to identify arterial source of bleeding.  
**References:** [1] [2] [21] [19] [10]
8. Horner's syndrome (anhidrosis, miosis or ptosis) evaluation  
**References:** [1] [2]
9. Pre-procedural evaluation, to guide treatment planning or post-surgical assessments (within 90 days of procedure) for evaluation of complications or disease recurrence  
**References:** [1] [2]

10. Pulsatile tinnitus is known **AND** vascular etiology is suspected.  
**References:** [1] [2] [12]
11. Subclavian steal syndrome and ultrasound is abnormal, non-diagnostic or indeterminate **OR** for procedure planning.  
**References:** [1] [2] [7]
12. Tumor/pulsatile mass is demonstrated on examination **OR** known carotid body tumors (or other masses) (eg, arteriovenous fistula pseudoaneurysm, atypical lymphovascular malformation, paraganglioma).  
**References:** [1] [2] [4] [16]

## CTA Neck Summary of Changes

CTA Neck guideline had the following version changes from 2024 to 2025:

- Added "Glomerular filtration rate" to "Renal impairment" under Contraindications
- Citations updated per the evidence.
- Removed combination studies as they are redundant
- Updated the CTA General Contraindications/Exclusions.

## CTA Neck Procedure Codes

**Table 1. CTA Neck Associated Procedure Codes**

CODE	DESCRIPTION
70498	Computed tomographic angiography, neck, with contrast material(s), including noncontrast images, if performed, and image postprocessing

## CTA Neck Definitions

**Aberrant** is a deviation from the normal or expected course, structure or function.

**Aneurysm** refers to weakness in an artery wall, allowing it to abnormally balloon out or widen.

**Anhidrosis** is defined as the absence or significant reduction of sweating, which can result from various central or peripheral autonomic disorders, drug side effects, or other conditions affecting sweat gland function.

**Ataxia** is a pathological abnormality of organization or modulation of movement, typically caused by cerebellar dysfunction, but can also result from lesions in the corticospinal tract or dorsal columns of the spinal cord.

**Carotid body tumor (CBT)** is a rare, typically benign, highly vascular tumor originating from the chemoreceptor cells at the bifurcation of the common carotid artery.

**Computed tomography angiography (CTA)** is a medical test that combines a computed tomography (CT) scan with an injection of a special dye to produce pictures of blood vessels and tissues in a part of the body.

**Diplopia** is a disorder of vision in which two images of a single object are seen (as from unequal action of the eye muscles).

**Dissection** refers to the separation of the layers within the wall of an artery, most commonly the aorta, due to a tear in the intimal layer, leading to the formation of a false lumen.

**Fibromuscular dysplasia** is a rare blood vessel disorder that causes arteries to narrow and grow larger. FMD occurs when the strong, flexible cells in arteries are replaced with less strong, less flexible cells. This makes the arteries stiffer and more likely to be damaged.

**Giant cell arteritis** is a systemic inflammatory vascular disease that predominantly affects adults over 50 years old, characterized by granulomatous inflammation of the blood vessel walls, particularly the branches of the carotid and vertebral arteries, and is associated with symptoms such as headache, jaw claudication, visual disturbances, and tender/thickened temporal arteries.

**Hemorrhage** is a copious or heavy discharge of blood from the blood vessels.

**Horner's syndrome** is a syndrome marked by sinking in of the eyeball, constriction of the pupil (miosis), drooping of the upper eyelid (ptosis), face vasodilation and anhidrosis (abnormal deficiency or absence of sweating) caused by paralysis of the cervical sympathetic nerve fibers on the affected side.

**Indeterminate** findings are inconclusive or insufficient for treatment planning.

**Ischemic stroke** occurs when the blood supply to part of the brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients. Brain cells begin to die in minutes.

**Loeys-Dietz syndrome** is a rare autosomal dominant connective tissue disorder characterized by aggressive aortic aneurysms, arterial tortuosity, and distinctive craniofacial and skeletal features.

**Miosis** is the excessive constriction of the pupil of the eye.

**Non-diagnostic** is a result that does not lead to a confirmed diagnosis.

**Pediatric approximate ages** are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

- Infancy, between birth and 2 years of age
- Childhood, from 2 to 12 years of age
- Adolescence, from 12 to 21 years of age, further defined by the AAP into:
  1. Early (ages 11–14 years)
  2. Middle (ages 15–17 years),
  3. Late (ages 18–21 years)
  4. Older ages may be appropriate for children with special healthcare needs.

**Pseudoaneurysm**, also called a false aneurysm, is a leakage of blood from an artery into the surrounding tissue. It occurs when there is a breach in the arterial wall.

**Ptosis** is the drooping of the upper eyelid.

**Pulsatile tinnitus** is a rhythmic pulsing noise in one or both ears that occurs in the absence of external sound and tends to be synced with the heartbeat.

**Screening** is the systematic application of a test or inquiry to identify individuals at sufficient risk of a specific disorder to warrant further investigation or direct preventive action, among persons who have not sought medical attention for symptoms of that disorder.

**Spontaneous coronary artery dissection (SCAD)** is a tear in the wall of a coronary artery. It's an emergency condition that can slow or block blood flow to the heart. This can lead to a heart attack, heart rhythm problems or sudden death.

**Stenosis** is a narrowing or constriction of the diameter of a bodily passage or orifice.

**Stroke**, sometimes called a brain attack, occurs when something blocks blood supply to part of the brain or when a blood vessel in the brain bursts. In either case, parts of the brain becomes damaged or dies. A stroke can cause lasting brain damage, long-term disability or even death.

**Subclavian steal syndrome (Vertebral artery flow reversal)** is a phenomenon causing retrograde flow in an ipsilateral vertebral artery due to stenosis or occlusion of the subclavian artery, proximal to the origin of the vertebral artery.

**Takayasu's arteritis** is a chronic inflammatory disease especially of the aorta and its major branches (the brachiocephalic artery and left common carotid artery) that result in progressive stenosis, occlusion and aneurysm formation marked by diminution or loss of the pulse (as in the arm) and ischemic symptoms.

**Transient ischemic attack (TIA)** is a brief interruption of the blood supply to the brain that causes a temporary impairment of vision, speech or movement. The episode usually lasts for just a few moments but may be a warning sign of a full scale stroke.

**Ultrasound** is the diagnostic or therapeutic use of ultrasound and especially a noninvasive technique involving the formation of images used for the examination and measurement of internal body structures and the detection of bodily abnormalities.

**Vertebrobasilar insufficiency (VBI)** is defined by inadequate blood flow through the posterior circulation of the brain, supplied by the 2 vertebral arteries that merge to form the basilar artery. VBI affects the parts of the brain that control movement and balance.

**Vertigo** is a sensation of motion or spinning that is often described as dizziness. People with vertigo feel as though they are actually spinning or moving, or that the world is spinning around them.

## CTA Neck References

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## Disclaimer section

### Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

### Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

## Payment

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## National and Local Coverage Determination (NCD and LCD)



### NOTICE

To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to <https://www.cms.gov/medicare-coverage-database/search.aspx>.

## Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.

CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.

In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional



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challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

## Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

### For Internal Use Only:

11248 11249 11253 11282 11325 11328 11333 11349 11350 11351 11352 11354 11355 11356  
11358 11359 11360 11361 11362 11365 11366 11367 11368 11369 11370 11374 11375 11394  
11395 11396 11565