Evolent Clinical Guideline 2040 for Neck Computed Tomography Angiography (CTA)

Guideline Number: Evolent_CG_2040	**Applicable Codes**	
"Evolent" refers to Evolent Health LLC and Evolent Specialty Services, Inc. 		
Original Date: September 1997	**Last Revised Date:** November 2025	**Implementation Date:** January 2026

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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 vessels that can be evaluated for evidence of stenosis, occlusion, or aneurysms. CTA uses ionizing radiation and requires the administration of iodinated contrast agent, which is a potential hazard in patients with impaired renal function. MRA and CTA are generally comparable noninvasive imaging alternatives, each with their own advantages and disadvantages. These studies examine blood vessels in the neck.

Note: Authorizations for CT Angiography cover both arterial and venous imaging. The term *angiography* refers to both arteriography and venography.

INDICATIONS FOR NECK CT ANGIOGRAPHY

Cerebrovascular Disease

- Recent ischemic stroke or transient ischemic attack [1–3]
  - **Note:** For remote strokes with no prior vascular imaging, imaging can be considered based on location/type of stroke and documented potential to change management
- Known or suspected vertebrobasilar insufficiency (VBI) in patients with symptoms such as dizziness, vertigo, headaches, diplopia, blindness, vomiting, ataxia, weakness in both sides of the body, or abnormal speech [4,5]
- Asymptomatic patients with an abnormal ultrasound of the neck or carotid duplex imaging (e.g., carotid stenosis ≥ 70%, technically limited study, aberrant direction of flow in the carotid or vertebral arteries) [1,2]
- Symptomatic patients with an abnormal ultrasound of the neck or carotid duplex imaging

(e.g., carotid stenosis ≥ 50%, technically limited study, aberrant direction of flow in the carotid or vertebral arteries) [1,2]

Tumor/Pulsatile Mass

- Pulsatile mass on exam [6]
- Known or suspected carotid body tumors, or other masses such as a paraganglioma, arteriovenous fistula pseudoaneurysm, atypical lymphovascular malformation [4,6–8]

Note: Ultrasound (US) may be used to identify a mass overlying or next to an artery in initial work up of a pulsatile mass.

Vasculitis and Other Extracranial Vascular Disease

- Large vessel vasculitis [9]
  - Giant cell with suspected extracranial involvement [10]
  - Takayasu's Arteritis [11]
    - At initial diagnosis
    - Every 6 months for the first 2 years while on therapy
    - Annually after the first 2 years
- For patients with Fibromuscular dysplasia (FMD) [12,13]:
  - One-time vascular study from brain to pelvis
- Spontaneous coronary arteries dissection (SCAD) [14]
  - One-time vascular study from brain to pelvis
- Subclavian steal syndrome when ultrasound is positive or indeterminate **OR** for planning interventions [15,16]
- Suspected carotid or vertebral artery dissection (secondary to trauma or spontaneous) [1,4,17,18]
- Follow-up of known carotid or vertebral artery dissection with any **ONE** of the following [19,20]:
  - At 3-6 months post dissection (for evaluation of recanalization or to guide anticoagulation treatment)
  - When documentation is provided that the results will be used to guide anticoagulation treatment
  - When there is recurrent pain, headache or new neurologic deficits that suggest progression
- To identify an arterial source of bleeding in patients with hemorrhage of the head and neck [4,21]
- Non-Central Horner's Syndrome (Secondary/preganglionic or tertiary/post-ganglionic) to evaluate for a vascular source (Such as dissection, aneurysm, arteritis) with any **ONE** of

the following [22,23]:

- For evaluation of a possible underlying vascular issue
- Associated ipsilateral orbital, face, and/or neck pain that could indicate a possible contributing carotid artery dissection

NOTE: Vascular imaging of the brain and chest may also be indicated

- Pulsatile tinnitus to identify a suspected arterial vascular etiology [4,24]
- For further evaluation of a congenital vascular malformation of the head and neck [4]
- Known extracranial vascular disease that needs follow-up or further evaluation [4]

PREOPERATIVE POSTOPERATIVE ASSESSMENT

When not otherwise specified in the guideline:

Preoperative Evaluation:

- Imaging of the area requested is needed to develop a surgical plan

Postoperative Evaluation:

- 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

FURTHER EVALUATION OF INDETERMINANT 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.)

IMAGING IN KNOWN GENETIC CONDITIONS

- Loeys-Dietz [25]:
  - Every two years (including at diagnosis) **OR**
  - More frequently if abnormalities are found
- Vascular Ehlers-Danlos syndrome (vEDS) [26]:

- Every 18 months (including at diagnosis) **OR**
- As clinically indicated to follow known vascular abnormalities

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)

Brain/Neck/Chest/Abdomen/Pelvis CTA

- Loeys-Dietz [25]:
  - Every two years (including at diagnosis) **OR**
  - More frequently if abnormalities are found
- Vascular Ehlers-Danlos syndrome (vEDS) [26]:
  - Every 18 months (including at diagnosis) **OR**
  - As clinically indicated to follow known vascular abnormalities

OTHER COMBINATION STUDIES WITH NECK 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)

Brain and Neck CTA (with or without Brain CT or Chest CTA)

When medical necessity has been met for both Brain CTA and Neck CTA the indicated study is Brain and Neck CTA (CPT code: 70471) see Evolent Clinical Guideline 2068 for Brain and Neck CTA.

Brain/Neck/Chest/Abdomen/Pelvis CTA

- For patients with fibromuscular dysplasia (FMD), a one-time vascular study from brain to pelvis is indicated [12,13]
- For assessment in patients with spontaneous coronary artery dissection (SCAD), (SCAD is a common initial diagnostic event for underlying fibromuscular dysplasia (FMD) [27]
  - **Note**: Body vascular imaging for SCAD can be done at time of coronary angiography
- Takayasu's Arteritis [11]
  - At initial diagnosis
  - Every 6 months for the first 2 years while on therapy
  - Annually after the first 2 years

CODING AND STANDARDS

Codes

70498, +70472

Applicable Lines of Business

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

BACKGROUND

CTA and Dissection

Craniocervical dissections can be spontaneous or traumatic. Spontaneous dissection presents with headache, neck pain with neurological signs or symptoms. There is often minor trauma or precipitating factor (e.g., exercise, neck manipulation). Dissection of the extracranial vessels can extend intracranially and/or lead to thrombus, which can migrate into the intracranial circulation causing ischemia. Therefore, MRA of the head and neck is warranted. [18,28]

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

Society for Vascular Surgery clinical practice guidelines for management of extracranial cerebrovascular disease [2]

Study Design: This document presents clinical practice guidelines for the management of extracranial cerebrovascular disease, specifically carotid bifurcation stenosis in stroke prevention. The guidelines are based on extensive investigations, including multiple randomized controlled trials (RCTs) and systematic reviews.

Target Population: The guidelines focus on patients with carotid bifurcation disease, including both symptomatic and asymptomatic patients with varying degrees of carotid artery stenosis.

Key Factors:

- **Carotid Endarterectomy (CEA) vs. Medical Therapy**: CEA is recommended over maximal medical therapy for low-risk patients with asymptomatic carotid bifurcation atherosclerosis and stenosis of >70%.
- **CEA vs. Transfemoral Carotid Artery Stenting (TF-CAS)**: CEA is recommended over TF-CAS for low surgical risk patients with symptomatic carotid artery stenosis of >50%.
- **Timing of Carotid Intervention**: Carotid revascularization is recommended for symptomatic patients with >50% stenosis to be performed as soon as the patient is neurologically stable after 48 hours but definitely before 14 days after symptom onset.
- **Screening for Carotid Artery Stenosis**: Routine screening for asymptomatic carotid artery stenosis in individuals without cerebrovascular symptoms or significant risk factors is not recommended.
- **Optimal Sequence for Intervention**: For patients with symptomatic carotid stenosis of 50% to 99% who require both CEA and coronary artery bypass grafting (CABG), CEA before or concomitant with CABG is suggested.

ACR–ASNR–SPR Practice Parameter for the Performance and Interpretation of Cervicocerebral Computed Tomography Angiography (CTA) [4]

Study Design: This document outlines the practice parameters for the performance and interpretation of cervicocerebral computed tomography angiography (CTA). It is a consensus-based guideline developed collaboratively by the American College of Radiology (ACR), the American Society of Neuroradiology (ASNR), and the Society for Pediatric Radiology (SPR).

Target Population: The guidelines are intended for practitioners performing and interpreting CTA for patients with various vascular diseases and conditions affecting the head and neck.

Key Factors:

- **Indications**: CTA is indicated for diagnosing and characterizing arterial aneurysms, ischemic stroke, atherosclerotic steno-occlusive disease, traumatic vascular injuries, venous and dural sinus thrombosis, vascular malformations, and other vascular conditions.
- **Qualifications**: The guidelines specify the qualifications and responsibilities of personnel involved in performing and interpreting CTA, including physicians, technologists, and medical physicists.
- **Specifications**: Detailed specifications for the examination technique, including patient preparation, CT equipment, and contrast administration, are provided to ensure optimal image quality and patient safety.

- **Radiation Safety**: Emphasis is placed on radiation safety principles to minimize exposure while achieving diagnostic quality.

ACR Appropriateness Criteria Cerebrovascular Diseases-Stroke and Stroke-Related Condition [1]

Study Design: This document provides the ACR Appropriateness Criteria for cerebrovascular diseases, stroke, and stroke-related conditions. The guidelines are evidence-based and reviewed annually by a multidisciplinary expert panel.

Target Population: The criteria focus on patients with stroke-related conditions, including carotid stenosis, carotid dissection, intracranial large vessel occlusion, cerebral venous sinus thrombosis, intraparenchymal hemorrhage, and completed ischemic strokes.

Key Factors:

- **Imaging Recommendations**: The document outlines imaging recommendations for various clinical scenarios, including initial imaging for transient ischemic attack (TIA), acute ischemic stroke, recent ischemic infarct, and surveillance imaging for prior ischemic infarct.
- **Variants**: The criteria include specific variants for different clinical presentations, such as TIA, acute ischemic stroke, recent ischemic infarct, and known intraparenchymal hemorrhage.
- **Relative Radiation Levels**: The document provides relative radiation levels for different imaging procedures to help guide the selection of appropriate imaging techniques.
- **Summary of Literature Review**: The guidelines are based on a systematic analysis of the medical literature from peer-reviewed journals and expert opinions

ANALYSIS OF EVIDENCE

Shared Findings [1,2,4]:

- **Use of CTA for Stroke and Vascular Conditions**: All three articles agree on the importance of CTA in diagnosing and managing various cerebrovascular conditions, including stroke, carotid stenosis, and vascular malformations.
- **Preference for Non-Invasive Imaging**: Both AbuRahma et al 2022 and Pannell et al 2024 highlight the preference for non-invasive imaging modalities, such as duplex ultrasound, for initial screening of carotid artery stenosis in asymptomatic patients.
- **Importance of Timing**: The timing of carotid intervention is emphasized in both AbuRahma et al 2022 and Pannell et al 2024, with a focus on performing revascularization as soon as the patient is stable.

Conclusion [1,2,4]

In summary, while all three articles recognize the value of CTA in managing cerebrovascular conditions, they differ in their specific recommendations and focus areas. AbuRahma et al 2022 emphasizes the preference for CEA over TF-CAS and the use of duplex ultrasound for

screening, Pannell et al 2024 provides a comprehensive overview of imaging recommendations for various cerebrovascular conditions, and ACR–ASNR–SPR CTA focuses on the technical aspects and safety considerations of performing CTA.

POLICY HISTORY

Date	Summary
November 2025	• Removed content that included the combination study of Brain and Neck CTA to align with the new CPT code (70471) for the new Brain and Neck CTA Guideline
July 2025	• Fixed a spelling typo in the Vasculitis and Other Extracranial Vascular Disease ○ Changed “identity” to “identify” • Edited the policy history for June 2025 to better reflect the changes that were presented at committee. No clinical changes
June 2025	• Guideline name changed from Neck CTA to Neck Computed Tomography Angiography (CTA) • Guideline number changed from 012-1 to 2040 • Added new bullet-point to the General Statement section • Updated references • Updated background section • Updated and rearranged the genetic section • Added Vasculitis and Other Extracranial Vascular Diseases Section • Added intervals for imaging of Takayasu arteritis • Clarified central Horner’s Syndrome to evaluate for a vascular source • Clarified follow-up of known carotid or vertebral artery dissection • Added a Summary of Evidence and Analysis of Evidence
June 2024	• Updated references • Updated background section • Updated combination section • Clarified

Date	Summary
	○ Frequency of screening in genetic syndromes ● Added ○ Follow-up of known carotid or vertebral artery dissection within 3-6 months for evaluation of recanalization and/or to guide anticoagulation treatment (already in combo) ○ Horner's syndrome, non-central (miosis, ptosis, and anhidrosis) - also in combo section ○ Giant cell arteritis with suspected intracranial and extracranial involvement - also in combo section ○ Genetic syndromes and rare disease section ● Deleted ○ Aneurysm screening section ○ Pulsatile tinnitus combo 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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