



**Cohere Medicare Advantage Policy –
Magnetic Resonance Angiography (MRA), Head**
Clinical Policy for Medical Necessity Review

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Important Notices

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Policy Information:

Specialty Area: Diagnostic Imaging

Policy Name: Cohere Medicare Advantage Policy - Magnetic Resonance Angiography (MRA), Head

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

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Medical Necessity Criteria

Service: Magnetic Resonance Angiography (MRA), Head

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻⁹

- [National Coverage Determination \(NCD\). Magnetic resonance imaging \(MRI\) \(220.2\)](#)
- [Local Coverage Determination \(LCD\). Magnetic resonance angiography \(MRA\) \(L33633\)](#)
 - [Billing and Coding: Magnetic resonance angiography \(MRA\) \(A56747\)](#)
- [Local Coverage Determination \(LCD\). Magnetic resonance angiography \(MRA\) \(L34865\)](#)
 - [Billing and Coding: Magnetic resonance angiography \(MRA\) \(A56805\)](#)
- [Local Coverage Determination \(LCD\). Magnetic resonance angiography \(MRA\) \(L34372\)](#)
 - [Billing and Coding: Magnetic resonance angiography \(MRA\) \(A57779\)](#)
- [Local Coverage Determination \(LCD\). Magnetic resonance angiography \(MRA\) \(L34424\)](#)
 - [Billing and Coding: Magnetic resonance angiography \(MRA\) \(A56775\)](#)

Description

Imaging analysis utilizing magnetic resonance angiography (MRA) of the head can be performed alone or in conjunction with MRA of the neck. MRA plays a crucial role in the routine assessment of patients experiencing stroke syndrome, specifically for the evaluation of both cervical and intracranial vessels, enabling the identification and diagnosis of vascular anomalies. In conjunction with MRI, MRA enhances the examination by providing a comprehensive analysis of the cerebral parenchyma. MRA also serves as a viable alternative to CT angiography when using iodinated contrast material is not feasible.

Medical Necessity Criteria

Indications

Magnetic resonance angiography (MRA), head is considered appropriate if **ANY** of the following is **TRUE**:

- **ALL** of the following:
 - **ANY** of the following¹:
 - Catheter angiography (CA) has not been performed; **OR**
 - CA has been performed, and there is documentation that demonstrates medical need to perform both tests (e.g., inconclusive, requires further evaluation, etc.); **AND**
 - **ALL** of the following^{1,2}:
 - The patient requires post-procedure or post-treatment follow-up; **AND**
 - Documentation that the patient is anticipated to be a candidate for surgery, which may be found to be appropriate based upon MRA results for conditions; **AND**
 - Documentation that the patient is being evaluated for **ANY** of the following vascular conditions:
 - Stenosis; **OR**
 - Tumors; **OR**
 - Aneurysms; **OR**
 - Vascular malformations; **OR**
 - Vascular occlusion; **OR**
 - Thrombosis; **OR**
 - Other vascular conditions; **AND**
 - Evaluation of **ANY** of the following^{1,2}:
 - Carotid arteries; **OR**
 - Vertebral arteries; **OR**
 - Circle of Willis; **OR**
 - Anterior, middle, or posterior cerebral arteries; **OR**
 - Basilar arteries; **OR**
 - Venous sinuses; **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

Magnetic resonance angiography (MRA), neck is not considered appropriate if **ANY** of the following is **TRUE**.¹⁰

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

*NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.

**NOTE: MRI in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/ HCPCS Code	Code Description
70544	Magnetic resonance angiography (MRA), head; without contrast material(s)
70545	Magnetic resonance angiography (MRA), head; with contrast material(s)
70546	Magnetic resonance angiography (MRA), head; without contrast material(s), followed by contrast material(s) and further sequences

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 magnetic resonance angiography (MRA), head may include:

- There is a risk of malfunction of implanted medical devices (e.g., implanted pacemakers, cochlear implants).
- A potential exists for allergic reactions to contrast material, if used in the study. The MRI department staff will monitor the patient for an allergic reaction and treat as recommended by a physician.¹¹⁻¹³
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.¹¹⁻¹³
- If sedation is used for the study (for anxiety or claustrophobia), there is a risk of over-sedation. The patient will be monitored during the procedure to reduce this risk.
- There is an uncertain risk for MR imaging in pregnant patients. The decision to image in a pregnant patient should be made on an individual basis in consultation with the patient's obstetric provider.¹⁴
- There is a risk of increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.¹⁵

The clinical benefits of using these criteria for magnetic resonance angiography (MRA), head may include:

- Improved patient outcomes through timely and appropriate access to the procedure. The non-invasive nature of MRA of the head and neck,

particularly in the Medicare population, has increased accessibility and appropriate usage compared to conventional invasive angiography.¹⁶

- Reduction in complications and adverse effects from unnecessary procedures. According to the 2020 ACR-NASCI-SPR practice parameter for the performance of body magnetic resonance angiography (MRA), the procedure is stated to be much less invasive than standard catheter-based invasive angiography, reducing the risk of vascular injury. For patients who are unable to receive gadolinium-based contrast agents, non-contrast study techniques are available. There is no associated ionizing radiation exposure as with computed tomography studies. MRA is stated to be useful in the diagnosis of vascular disease in pediatric patients, although sedation or general anesthesia may be required.¹¹
- Enhanced diagnostic accuracy for complex medical conditions. Contrast-enhanced MRA of the head is accurate for detecting aneurysms and dissections as well as disease within the vertebrobasilar circulation, and can evaluate the head and neck in a single study.¹⁷
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Amin et al. (2023) presented a scientific statement from the American Heart Association regarding the diagnosis, workup, and risk reduction of transient ischemic attack in the emergency department. Computed tomography angiography (CTA) demonstrated superior sensitivity and positive predictive value compared to magnetic resonance angiography (MRA) in detecting intracranial stenosis and occlusion. As a result, CTA is the recommended imaging modality over time-of-flight (without contrast) MRA. If there is a concern regarding administering iodinated contrast, expedited magnetic resonance imaging (MRI) with MRA is a viable alternative. Time-of-flight MRA may result in images of lower quality, as there is a tendency to overestimate cervical carotid stenosis compared to gadolinium-enhanced MRA. However, this type of MRA may be suitable for screening purposes. Gadolinium-enhanced MRA of the neck is the preferred choice for patients who can safely receive gadolinium contrast.¹⁸

AbuRahma et al. (2022) reviewed clinical guidelines for managing extracranial cerebrovascular disease published by the Society for Vascular Surgery. Contrast-enhanced MRA can produce three-dimensional images that rival those from a formal arteriography. A key advantage of MRA is less radiation exposure to the individual, and the use of iodinated-based contrast materials is not needed. Furthermore, MRA allows for the integration of MRI of the brain, enabling the identification of clinically silent cerebral infarction. It also facilitates the assessment of plaque morphology, focusing on detecting intraplaque hemorrhage. The severity of carotid stenosis is more identifiable with MRA than CTA. While MRA excels in various aspects, it is unsuitable for screening carotid artery disease due to its substantial cost.¹⁹

Cummins et al. (2022) discussed the role of TOF MRA for pulsatile tinnitus (PT) and the identification of vascular causes of PT, including dural arteriovenous fistulas (DAVFs). The annual intracranial hemorrhage risk of DAVFs is over 24%. TOF-MRA is considered one of the most sensitive and specific noninvasive methods for diagnosing DAVF. The diagnosis of arterial aneurysms is aided by the use of TOF MRA, with a sensitivity greater than 90% and specificity over 80%. Stenoses are also detected by MRA (a sensitivity of 95.5% and specificity

of 87.2%). When severe carotid artery stenosis is a cause of PT, the sensitivity and specificity of TOF MRA is nearly 100%. Advantages of MRA include a greater pooled sensitivity for diagnosis than CT as well as excellent spatial resolution and is the most powerful sequence for DAVF diagnosis. In addition, MRA can diagnose intracranial and high cervical arterial etiologies (e.g., fibromuscular dysplasia, carotid stenosis, variant anatomy). Disadvantages include high cost, scanning time, and the dephasing of tortuous vessels.²⁰

References

1. Centers for Medicare & Medicaid Services (CMS). National Coverage Determination (NCD). Magnetic resonance imaging (220.2). Effective Date April 10, 2018.
<https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?ncdid=177>
2. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD). Magnetic resonance angiography (MRA) (L33633). Effective date October 1, 2019.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=33633&ver=49&bc=0>
3. Centers for Medicare & Medicaid Services (CMS). Billing and Coding: Magnetic resonance angiography (MRA)(A56747). Revision Effective Date July 10, 2025.
<https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=56747&ver=28&bc=0>
4. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD). Magnetic resonance angiography (MRA)(L34865). Effective Date July 1, 2020.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=34865&ver=72&bc=0>
5. Centers for Medicare & Medicaid Services (CMS). Billing and Coding: Magnetic resonance angiography (MRA)(A56805). Revision Effective Date October 1, 2025.
<https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=56805&ver=41&bc=0>
6. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD): Magnetic resonance angiography (MRA)(L34372). Effective Date July 1, 2020.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=34372&ver=22&bc=0>
7. Centers for Medicare & Medicaid Services (CMS). Billing and Coding: Magnetic resonance angiography (MRA) (A57779). Effective Date July 1, 2020.

<https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=57779&ver=8&bc=0>

8. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD). Magnetic resonance angiography (MRA)(L34424). Revision Effective Date March 27, 2025.
<https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=34424&ver=47&=>
9. Centers for Medicare & Medicaid Services (CMS). Billing and Coding: Magnetic resonance angiography (MRA)(A56775). Revision Effective Date October 1, 2025.
<https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=56775&ver=24&=>
10. Beheshtian E, Emamzadehfard S, Sahraian S, et al.. Redundant neurovascular imaging: Who is to blame and what is the value? *AJNR Am J Neuroradiol*. 2020;41(1):35-39. doi:10.3174/ajnr.A6329
11. American College of Radiology (ACR), North American Society for Cardiovascular Imaging (NASCI), Society for Pediatric Radiology (SPR). ACR-NASCI-SPR practice parameter for the performance of body magnetic resonance angiography (MRA). Published 2020.
<https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Body-MRA.pdf>
12. American College of Radiology (ACR). ACR manual on contrast media. 2024. https://www.acr.org/-/media/ACR/Files/Clinical-Resources/Contrast_Media.pdf
13. American College of Radiology (ACR). ACR practice parameter for performing and interpreting magnetic resonance imaging (MRI). 2022. <https://www.acr.org/-/media/ACR/Files/Practice-Parameters/MR-Perf-Interpret.pdf?la=en>
14. American College of Obstetricians and Gynecologists (ACOG). Guidelines for diagnostic imaging during pregnancy and lactation: Committee opinion. *Obstet Gynecol*. 2017;130(4):e210-e216. doi:10.1097/AOG.0000000000002355
15. Kjelle E, Brandsæter IØ, Andersen ER, et al. Cost of low-value imaging worldwide: A systematic review. *Appl Health Econ Health Pol*. 2024;22(4):485-501. doi:10.1007/s40258-024-00876-2

16. Friedman DP, Levin DC, Rao VM. Trends in the utilization of CT angiography and MR angiography of the head and neck in the Medicare population. *J Am Coll Rad.* 2010;(7)11:854–858. doi 10.1016/j.jacr.2010.05.007
17. Yang CW, Carr JC, Futterer SF, et al. Contrast-enhanced MR angiography of the carotid and vertebrobasilar circulations. *Am J Neuroradiol.* 2005;(26):2095–2101. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8148843/pdf/0891.pdf>
18. Amin HP, Madsen TE, Bravata DM, et al. Diagnosis, workup, risk reduction of transient ischemic attack in the emergency department setting: A scientific statement from the American Heart Association. *Stroke.* 2023 Mar;54(3):e109–e121. doi: 10.1161/STR.0000000000000418
19. AbuRahma AF, Avgerinos ED, Chang RW, et al. Society for Vascular Surgery clinical practice guidelines for management of extracranial cerebrovascular disease. *J Vasc Surg.* 2022 Jan;75(1S):4S–22S. doi: 10.1016/j.jvs.2021.04.073
20. Cummins DD, Caton MT, Shah V, etc. MRI and MR angiography evaluation of pulsatile tinnitus: A focused, physiology-based protocol. *J Neuroimaging.* 2022 Mar;32(2):253–263. doi: 10.1111/jon.12955

Policy Revision History/Information

Original Date: October 24, 2024		
Review History		
Version 1.1	05/01/2025	<p>Revised per CMS update for 03/27/2025</p> <p>Updated Revision Date</p> <p>Updated Links and References for L34424, A56775</p>
Version 2	10/16/2025	<p>Annual review.</p> <p>Reworded indications to better align with NCD/LCD language.</p> <p>Updated repeat imaging section to include new standard language.</p> <p>Removed relative contraindications (contrast allergy, metallic clips, incompatible implantable devices, metallic foreign body).</p> <p>Updated CMS links and references.</p>