Cohere Medical Policy - Magnetic Resonance Angiography (MRA), Upper Extremity

Clinical Policy for Medical Necessity Review

Version: 4
Cohere Health UMC Approval Date: August 21, 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.

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Policy Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medical Policy - Magnetic Resonance Angiography (MRA), Upper Extremity
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Magnetic Resonance Angiography (MRA), Upper Extremity

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

Magnetic resonance angiography (MRA) of the upper extremity is typically performed without and with gadolinium contrast. Although contrast-enhanced MRA (CE-MRA) is generally preferred, non-contrast-enhanced techniques are increasingly available. These may be a good option for patients with impaired renal function or who cannot tolerate gadolinium-based contrast agents. A broad spectrum of upper extremity vascular disorders can be assessed accurately using MRA of the upper extremity.[1]

Medical Necessity Criteria

Indications

Magnetic resonance angiography (MRA), upper extremity is considered appropriate if **ANY** of the following is **TRUE**[1]:

- **ANY** of the following:
    - Arterial entrapment syndrome, when ultrasound is indeterminate or for pretreatment planning; **OR**
    - Adventitial cystic disease; **OR**
- Ultrasound is incomplete, inconclusive, or abnormal with **ANY** of the following:
    - Neoplastic conditions (including masses or mass-like conditions) when the arterial blood supply needs to be evaluated (e.g., for treatment planning, treatment response, or prognostication); **OR**
    - Neoplastic invasion of arteries or veins; **OR**
- Vascular conditions, known or suspected, including **ANY** of the following:
    - Aneurysm, seen on ultrasound or when ultrasound is nondiagnostic; **OR**

- Intramural hematoma; **OR**
- Dissection; **OR**
- Clinical suspicion of acute or chronic limb ischemia, when ultrasound is inconclusive or nondiagnostic, with **ANY** of the following:
  - Acute absence of radial or ulnar pulses; **OR**
  - Acute changes in motor or sensory function; **OR**
  - Nonhealing upper extremity ulcers with abnormal or inconclusive ultrasound results (e.g., arterial Doppler); **OR**
  - Symptoms with exercise attributable to vascular etiologies such as muscle pain that resolves with rest, coolness, pallor, or fatigue; **OR**
- Localization and characterization of vascular malformation (e.g., assessing treatment response, treatment planning) with **ANY** of the following:
  - Duplex ultrasound indeterminate or nondiagnostic; **OR**
  - High flow lesion suspected clinically or by imaging; **OR**
  - Preoperative planning; **OR**
- Vasculitis, initial evaluation, when **ANY** of the following are **TRUE**[6]:
  - Biopsy proven; **OR**
  - Rheumatologic panel work-up including but not limited to erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) is suggestive of vasculitis; **OR**
  - The requesting clinician specializes in rheumatology and the outcome of the imaging is expected to change management and/or treatment plan; **OR**
- Noninflammatory vasculopathies that are symptomatic such as Buerger's disease, fibromuscular dysplasia, or scleroderma; **OR**
- Vascular (subclavian) steal syndrome of the upper extremity, is suspected, and initial imaging is needed to guide therapy[6]; **OR**
- Hemodialysis access evaluation, if **ALL** of the following are **TRUE**:
  - Duplex ultrasound is inconclusive; **AND**
  - Fistulogram cannot be performed; **AND**
  - **ANY** of the following conditions:
    - Arteriovenous fistula (AVF) stenosis; **OR**
    - Occlusion; **OR**
    - Pseudoaneurysm; **OR**
    - Steal syndrome; **OR**

- Pre- and postintervention evaluation when **ANY** of the following is **TRUE**:

- Postoperative evaluation of the effectiveness of arterial or venous reconstruction or bypass; **OR**
- Characterization of normal and variant vascular anatomy; **OR**
- Determination of the patency, location, or integrity of grafts and other vascular devices (e.g., stents); **OR**
- Planning autografts for musculoskeletal reconstruction.

Magnetic resonance venography (MRV), upper extremity is considered appropriate if **ALL** of the following are **TRUE**[1]:

- Ultrasound is incomplete, inconclusive, or abnormal with **ANY** of the following:
  - Suspected venous entrapment syndrome; **OR**
  - Neoplastic conditions (including masses or mass-like conditions) when the blood supply needs to be evaluated (e.g., for treatment planning, treatment-response, or prognostication); **OR**
  - Neoplastic invasion of arteries or veins; **OR**
  - Initial evaluation for known venous upper extremity ulcer, when ultrasound is indeterminate or nondiagnostic; **OR**
  - Known or suspected acute or chronic deep venous thrombosis, when results would change, or management and ultrasound have been completed[6]; **OR**
  - Known severe postthrombotic changes incompletely evaluated by ultrasound[7]; **OR**
  - Subclavian or central venous obstruction such as subclavian vein thrombosis, Paget-Schroetter syndrome, thoracic outlet syndrome, either known or suspected clinically (e.g., edema aggravated by exercise/arm position)[7]; **OR**
  - Pre- and postintervention evaluation when **ANY** of the following is **TRUE**:
    - Postoperative evaluation of the effectiveness of arterial or venous reconstruction or bypass; **OR**
    - Characterization of normal and variant vascular anatomy; **OR**
    - Determination of the patency, location, or integrity of grafts and other vascular devices (e.g., stents); **OR**
    - Planning autografts for musculoskeletal reconstruction.

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), upper extremity is not considered appropriate 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.[8]

*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
73225	Magnetic resonance angiography (MRA), upper extremity, with or without contrast material(s)
C8934	Magnetic resonance angiography (MRA), with contrast, upper extremity
C8935	Magnetic resonance angiography (MRA), without contrast, upper extremity
C8936	Magnetic resonance angiography (MRA), without contrast followed by with contrast, upper extremity

Medical Evidence

Nassar et al. (2022) reviewed imaging modalities for preoperative planning. CTA and MRA can generate detailed 3D images of vascular structures and surrounding anatomy, with applications in preoperative planning for breast, head, neck, and extremity reconstructions. While MRA eliminates the need for radiation exposure, it is less precise than CTA in detecting perforators smaller than 1 mm. For assessing venous anatomy, the most effective modalities include duplex ultrasound, MRV, and the outflow phase of conventional angiography. While MR scanners and software continue to advance, the general preference is for 1.5-T scanners in reconstructive applications. Lower-strength scanners allow enhanced fat suppression, contributing to clearer imaging of vascular structures.[9]

Ghouri et al. (2019) review the successes and failures of CTA and MRA of the upper extremities. These modalities are preferred over Doppler or digital subtraction angiography (DSA), especially in patients without contraindications to MRI. Soft tissue characterization is improved with MRA and does not expose the patient to radiation. Venous and neurological compression is also successfully evaluated with MRA. As imaging modalities, particularly CTA and MRA, continue to advance, the authors stress the importance of identifying the strengths and weaknesses of different techniques to obtain the most effective imaging test.[6]

The American College of Radiology, the North American Society for Cardiovascular Imaging (NASCI), and the Society for Pediatric Radiology (SPR) developed a 2020 updated practice parameter for the performance of body magnetic resonance angiography (MRA). They state that contrast-enhanced MRA is as effective as standard angiography in the evaluation of diseases related to the vascular system as well as the planning of treatment. MRA is less invasive than catheter-based angiography, reducing the risk of injury to the vascular system being examined. Noncontrast MRA is available to patients in whom contrast media is contraindicated. Specific extremity MRA evaluations include arterial occlusions, congenital anomalies, and aneurysms, as well as venous malformations, causes of peripheral edema, and varicose veins. MRA is effective in planning for dialysis access placement.[1]

References

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Policy Revision History/Information

Original Date: March 7, 2022		
Review History		
Version 2	08/13/2024	Annual review and policy restructure.
Version 3	10/30/2024	Edited repeat imaging criteria language.
Version 4	08/21/2025	Annual review. Clarified prior imaging requirements and updated layout to align with updated template.