04-70540-20

Original Effective Date: 12/15/13

Reviewed: 09/26/24

Revised: 10/15/24

Subject: Magnetic Resonance Angiography (MRA) Chest

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

DESCRIPTION:

Magnetic resonance angiography (MRA) is a noninvasive imaging technology used to provide cross-sectional and projection images of the thoracic vascular, including large and medium size vessels (e.g., thoracic aorta). MRA provides images of normal as well as diseased blood vessels and quantifies blood flow through these blood vessels. A contrast agent (gadolinium) may be used to enable visualization of a body system or body structure and may be used in individuals who have a history of contrast allergy and who are at high risk of kidney failure.

Summary and Analysis of Evidence: Magnetic resonance angiography (MRA) has important attributes that make it valuable in assessing vascular disease. Compared with radiographic catheter-based invasive angiography, it is considerably less invasive with no significant risk of vascular injury. MRA has also shown promising results for atherosclerotic plaque characterization, notably for detection of high-risk features (e.g., intraplaque hemorrhage, lipid-rich necrotic core, or fibrous cap thinning/rupture) of carotid atherosclerotic plaque. MRA is also useful in diagnosing vascular disease in children and is more advantageous for this patient population given the lack of radiation exposure and ability to include time-resolved scans. Indications for MRA include, but not limited to the following: vascular stenosis or occlusion due to atherosclerosis, vasculitis, or thromboembolism, thoracic, abdominal, or pelvic hemorrhage, mapping vascular anatomy for preprocedural planning and postprocedural surveillance of treatment, aneurysms and vascular malformations, venous malformations, presence, nature, and extent of injury to vessels, including dissection, venous disease, including occlusion, thrombosis, and tumor invasion, and congenital abnormalities (ACR–NASCI–SPR, 2020).

POSITION STATEMENT:

Documentation Requirements

Documentation containing the medical necessity of the magnetic resonance angiography (MRA) of the chest and imaging results (e.g., images, clinical reports) should be maintained in the member's medical record. Documentation may be requested as part of the review process.

Magnetic resonance angiography (MRA) of the chest **meets the definition of medical necessity** for the following indications:

Vascular disease

- Superior vena cava syndrome (SVCS)
- Subclavian Steal Syndrome after positive or inconclusive ultrasound
- Thoracic Outlet Syndrome
- Takayasu's arteritis
- Clinical concern for acute aortic dissection
- For magnetic resonance pulmonary angiography (MRPA, MR pulmonary angiography) in members with intermediate pretest probability with a positive D-dimer or high pretest probability (only at centers that routinely perform it well and only for members for whom standard tests are contraindicated).

Initial/screening for thoracic aortic disease

- Echocardiogram or chest x-ray show aneurysm
- Screening of first-degree relatives of individuals with a thoracic aortic aneurysm
    - Known connective tissue disease or genetic conditions that predispose to aortic aneurysm or dissection (e.g., Marfan syndrome, Ehlers Danlos or Loeys-Dietz syndromes).
- Screening of the thoracic aorta after a diagnosis of a bicuspid aortic valve
    - If normal, reimage every three to five years.
- Screening of first-degree relatives of members with a bicuspid aortic valve
- Turner's syndrome – Screen for coarctation or aneurysm of the thoracic aorta
    - If normal results, screen every 5-10 years
    - If abnormal, screen annually.
- Suspected vascular cause of dysphagia or expiratory wheezing when other imaging is suggestive or inconclusive.

Follow-up after established thoracic aneurysm

- Six months follow-up after initial finding of a dilated thoracic aorta, for assessment of rate of change

    - Aortic Root or Ascending Aorta
        - 3.5 to 4.4 annual
        - 4.5 to 5.5 or growth rate > 0.5 cm/year - every 6 months.
    - Genetically mediated (Marfans syndrome, Aortic Root or Ascending Aorta)
        - 3.5 to 4.4 annual
        - 4.5 to 5.0 or growth rate > 0.5 cm/year every 6 months
        - Surgery generally recommended over 5.0 cm.
    - Descending Aorta
        - 4.0 to 5.0 annual
        - 5.0 to 6.0 every 6 months.
- Follow-up post medical treatment of aortic dissection
    - Acute dissection: 1 month, 6 months, then annually
    - Chronic dissection: annually.
- Follow-up post either root repair or AVR plus ascending aortic root/arch repair: baseline post-op, then annually
- Re-evaluation of known ascending aortic dilation or history of aortic dissection with a change in clinical status or cardiac exam or when findings may alter management.

Congenital malformations

- Thoracic malformation on other imaging
- Congenital heart disease with pulmonary hypertension
- Pulmonary sequestration.

Pulmonary hypertension

- Echocardiogram
- Right heart catherization.

Atrial fibrillation with ablation planned

Pre-operative evaluation

Post-operative/post-procedural evaluation

- Post operative complications
- Routine post operative
    - Thoracic endovascular or open surgical aneurysm repair

- 1 month
- More frequent follow-up/possible intervention if complication detected
- If stable, annual for 5 years.

BILLING/CODING INFORMATION:

CPT Coding:

71555	Magnetic resonance angiography, chest (excluding myocardium), with or without contrast material(s)

REIMBURSEMENT INFORMATION:

Refer to section entitled **POSITION STATEMENT**.

Re-imaging or additional imaging due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for magnetic resonance angiography (MRA) of the chest.

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products

The following Local Coverage Determination (LCD) was reviewed: Magnetic Resonance Angiography (MRA), (L34372) located at fcso.com.

The following National Coverage Determination (NCD) was reviewed: Magnetic Resonance Imaging (MRI), (220.2) located at cms.gov.

DEFINITIONS:

No guideline specific definitions apply.

RELATED GUIDELINES:

Magnetic Resonance Angiography (MRA) Abdomen and Pelvis, 04-70540-21

Magnetic Resonance Angiography (MRA) Brain (Head), 04-70540-18

Magnetic Resonance Angiography (MRA) Extremity (Upper and Lower, 04-70540-22

Magnetic Resonance Angiography (MRA) Neck, 04-70540-19

Magnetic Resonance Angiography (MRA) Spinal Canal, 04-70540-23

OTHER:

None applicable.

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3. American College of Radiology ACR Appropriateness Criteria®: Acute Chest Pain-Suspected Aortic Dissection, 2014.
4. ACR-NASCI-SPR Practice Guideline for the Performance of Body Magnetic Resonance Angiography (MRA), 2020.
5. American College of Radiology ACR Appropriateness Criteria®: Known or Suspected Congenital Heart Disease in the Adult, Revised 2016.
6. Ascha M, Renapurkar RD, Tonelli AR. A review of imaging modalities in pulmonary hypertension. Ann Thorac Med 2017 Apr-Jun;12(2):61-73.
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10. Expert Panel on Cardiac Imaging: Woodard PK, Ho VB, Akers SR et al. ACR Appropriateness Criteria® Known or Suspected Congenital Heart Disease in the Adult. J Am Coll Radiol 2017 May;14(5S): S166-S176.
11. Goo HW, Park IS, Ko JK et al. CT of congenital heart disease: normal anatomy and typical pathologic conditions. Radiographics 2003 Oct;23 Spec No: S147-S165.
12. Hiratzka LF, Bakris GL, Beckman JA et al. 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM Guidelines for the diagnosis and management of patients with thoracic aortic disease. A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, American College of Radiology, American Stroke Association, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society of Interventional Radiology, Society of Thoracic Surgeons, and Society for Vascular Medicine. J Am Coll Cardiol 2010 Apr 6;55(14): e27-e129.
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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 09/26/24.

GUIDELINE UPDATE INFORMATION:

12/15/13	New Medical Coverage Guideline.
04/15/15	Annual review. Revised description and position statement. Updated references.
08/15/18	Revision; revised position statement. Updated references.
03/15/20	Review/revision. Revised indications and criteria. Added indication and criteria for: vascular and thoracic aortic disease, congenital malformations, pulmonary hypertension, post-operative/post-procedural evaluation. Added indication atrial fibrillation with ablation planned and pre-operative evaluation. Updated references.
05/15/22	Review: Position statements and references updated.
07/01/22	Revision to Program Exceptions section.
09/30/23	Review: position statements and references updated.
10/15/24	Review; update position statement. Updated references.