Cohere Medicare Advantage Policy - Magnetic Resonance Imaging (MRI), Chest

Clinical Policy for Medical Necessity Review

Version: 2
Cohere Health UMC Approval Date: September 18, 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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Other Notices:

Policy Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medicare Advantage Policy - Magnetic Resonance Imaging (MRI), Chest
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Chest

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.[1-3]

- National Coverage Determination (NCD). Magnetic resonance imaging (220.2)
- Local Coverage Determination (LCD). Multiple imaging in oncology (L35391)
  - Billing and Coding: Multiple imaging in oncology (A56848)

Description

Magnetic resonance imaging (MRI) is a useful diagnostic imaging modality that is capable of demonstrating a wide variety of soft-tissue lesions with contrast resolution equal to or superior to CT scanning in various parts of the body.[1] Imaging analysis utilizing MRI of the chest can be performed based on clinical suspicion of disease presence or exclusion to direct value-based care. Contrast may or may not be necessary depending upon the clinical indication at the referring physician's request and the discretion of the supervising radiologist. Staging, presurgical planning, and screening are recommendations for a clinical approach.

Medical Necessity Criteria

Indications

Magnetic resonance imaging (MRI), chest is considered appropriate if **ANY** of the following is **TRUE**:

- Magnetic resonance (MR)-preferred indications, including **ANY** of the following:
  - Brachial plexus pathology, suspected, due to anatomic (e.g. cervical rib) or clinical symptoms (e.g., positive electromyography results, symptoms related to scalene muscles, symptoms that worsen with arms overhead), including but not limited to, trauma, neurogenic thoracic outlet syndrome, neuropathies affecting brachial plexus (e.g, chronic inflammatory demyelinating polyneuropathy [CIDP]), or suspected or known mass[4,5]; **OR**
  - Evaluation of non-bony musculoskeletal abnormalities, congenital or acquired (e.g., muscle tear, tendon or cartilage injury)[6]; **OR**
  - Inflammatory myopathies (e.g., polymyositis)[7]; **OR**
  - Suspected or known pectoralis tendon tear[8,9]; **OR**
  - Fetal lung or chest wall anomaly, where MRI is needed to determine further management[10]; **OR**
- Computed tomography (CT) is contraindicated or inconclusive, chest radiographs were inadequate for diagnosis or determination of management with **ANY** of the following:
  - Chest wall abnormalities, including **ANY** of the following[11]:
    - Anatomic abnormalities, congenital or acquired, such as pectus excavatum or rib abnormalities; **OR**
    - Palpable chest wall mass with non-diagnostic or indeterminate radiograph or ultrasound; **OR**
    - Chest wall mass identified on prior imaging when further information is needed to determine the need for biopsy or surgery; **OR**
    - Suspected or known chest wall abscess, and further evaluation is needed; **OR**
  - Congenital pulmonary malformations such as pulmonary sequestration, when magnetic resonance angiography (MRA) or computed tomography angiography (CTA) is contraindicated or cannot be done[10,12]; **OR**

- Persistent mediastinal lymphadenopathy for evaluation with **ALL** of the following[13]:
  - The patient has no known malignancy; **AND**
  - Largest node is greater than or equal to 1.5cm in shortest axis; **AND**
  - CT or positron emission tomography (PET)/CT is contraindicated; **OR**
- Neoplastic conditions for **ANY** of the following[1-3,13-15]:
  - Initial staging; **OR**
  - Treatment planning; **OR**
  - Response assessment; **OR**
  - Surveillance with **ANY** of the following:
    - The patient is assumed to have either no known disease or a disease that is stable or clinically insignificant (every 6-12 months for an overall duration [e.g., 5 years]); **OR**
    - Suspected recurrence/progression; **OR**
    - Evaluation of response to treatment when a change in therapy is contemplated (no more often than after 2 cycles of chemotherapy and/or 6-8 weeks since the prior imaging evaluation); **OR**
- Screening for thymoma in myasthenia gravis[16]; **OR**
- Herniation into the thorax of abdominal contents, including diaphragmatic hernias[17]; **OR**
- Hoarseness, dysphonia, and vocal cord weakness/paralysis after laryngoscopy completed with **ANY** of the following[18-20]:
  - Findings suggestive of recurrent laryngeal nerve dysfunction; **OR**
  - Identification of suspicious lesions that need further evaluation; **OR**
  - Symptoms persisting longer than 1 month, which are unexplained by laryngoscopy; **OR**
- Preoperative, postoperative, and pre-treatment evaluation for procedure, surgery, radiation, or chemotherapy[21-23]; **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 with **ALL** of the following:
  - 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 imaging (MRI), chest 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.[24]

*NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.[1]
**NOTE: MRI in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.[1]

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
71550	Magnetic resonance (MRI) (e.g., proton) imaging, chest (e.g., for evaluation of hilar and mediastinal lymphadenopathy); without contrast material(s)
71551	Magnetic resonance (MRI) (e.g., proton) imaging, chest (e.g., for evaluation of hilar and mediastinal lymphadenopathy); with contrast material(s)
71552	Magnetic resonance (MRI) (e.g., proton) imaging, chest (e.g., for evaluation of hilar and mediastinal lymphadenopathy); with contrast material(s), followed by contrast material(s) and further sequences
C9791	Magnetic resonance imaging with inhaled hyperpolarized xenon-129 contrast agent, chest, including preparation and administration of agent

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 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.[6,25]
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.[6,25]
- 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.[26]
- There is a risk of increased healthcare costs and complications from the inappropriate use of additional interventions.[27]

The clinical benefits of using these criteria include:

- Diagnosis of a wide range of conditions: MRI is useful for multiple conditions and tumor staging.
- Soft tissue resolution: MRI can identify a mass across tissue planes, including the chest wall, diaphragm, and neurovascular structures. MRI may also be performed when characterizing mediastinal lesions.[28,29]
- Treatment response: MRI of the chest may be performed to predict treatment response, especially for early-stage lung cancer.[30]
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Archer et al. (2023) reviewed the utilization of cross-sectional imaging techniques, such as computed tomography (CT) or magnetic resonance imaging (MRI), which are essential for assessing mediastinal pathologies. Precisely localizing lesions within specific compartments and analyzing their morphology, density/intensity, enhancement patterns, and any mass effect on adjacent structures can significantly aid in narrowing down diagnostic possibilities. While CT is readily available and fast, MRI does not use radiation and can delineate soft tissue contrasts. Precise imaging allows for identifying masses across tissue planes (e.g., chest wall, diaphragm) and the involvement of neurovascular structures. MRI also provides dynamic sequences that enable the assessment of mass motion relative to neighboring structures during free-breathing or cinematic cardiac gating. Finally, MRI can distinguish between cystic and solid lesions and detect fat, which aids in differentiating thymic hyperplasia from thymic malignancy.[28]

Cavanna et al. (2022) conducted a literature review on thoracic outlet syndrome (TOS). Plain chest and cervical region radiographs often exclude anatomical anomalies and structural irregularities (e.g., cervical ribs, clavicular fracture malunion, elongated transverse processes, or thoracic cavity tumors). Conditions such as compressive effects on the brachial plexus need imaging beyond ultrasound, which may overlook regional pathologies (e.g., Pancoast tumor, cervical spondylopathy). Non-contrast MRI may help diagnose neurogenic TOS (nTOS). However, MR or CT angiography is preferred for confirming venous or arterial TOS.[31]

Bueno et al. (2018) reviewed MR imaging of primary chest wall neoplasms, representing a rare and diverse array of lesions. MR imaging allows detailed insights into tissue composition, disease extent, and the integrity of surrounding structures. Utilization of this modality has increased due to its superior contrast resolution versus CT scans, which are free of radiation. MR imaging allows clinicians to distinguish tumors, identify infectious and inflammatory conditions, and visualize internal components (e.g., fat, fluid, soft tissue, vascularity post-intravenous contrast administration).[11]

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&ncdver=6&bc=0
2. Centers for Medicare & Medicaid Services (CMS). Local Coverage Determination (LCD). Multiple imaging in oncology (L35391). Revision Effective Date November 14, 2019. https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=35391&ver=17&bc=0
3. Centers for Medicare & Medicaid Services (CMS). Billing and Coding: Multiple imaging in oncology (A56848). Revision Effective Date January 1, 2025. https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=56848&ver=16&keyword=Multiple%20imaging%20in%20oncology&keywordType=starts&areaId=all&docType=NCA,CAL,NCD,MEDCAC,TA,MCD,6,3,5,1,F,P&contractOption=all&sortBy=relevance&bc=1
4. Pacella G, Natella R, Bruno F, et al. Brachial plexopathies: A comprehensive radiologic method integrating ultrasound and MRI. *J Clin Med*. 2025 Sep 6;14(17):6311. doi:10.3390/jcm14176311
5. Szaro P, Geijer M, Ciszek B, et al. Magnetic resonance imaging of the brachial plexus. Part 2: Traumatic injuries. *Eur J Radiol Open*. 2022 Jan 22;9:100397. doi:10.1016/j.ejro.2022.100397
6. American College of Radiology (ACR). ACR practice parameter for performing and interpreting magnetic resonance imaging (MRI) (resolution 2c). Updated 2023. http://www.acr.org
7. Malartre S, Bachasson D, Mercy G, et al. MRI and muscle imaging for idiopathic inflammatory myopathies. *Brain Pathol*. 2021 May;31(3):e12954. doi:10.1111/bpa.12954
8. Giordano JR, Klein B, Hershfeld B, et al. A review of chronic pectoralis major tears: What options are available? *Clin Shoulder Elb*. 2023 Sep;26(3):330-339. doi:10.5397/cise.2023.00129

9. Long MK, Ward T, DiVella M, et al. Injuries of the pectoralis major: Diagnosis and management. *Orthop Rev (Pavia)*. 2022 Nov 30;14(4):36984. doi:10.52965/001c.36984
10. Newman B. Magnetic resonance imaging for congenital lung malformations. *Pediatr Radiol.* 2022 Feb;52(2):312-322. doi:10.1007/s00247-021-05018-7
11. Bueno J, Lichtenberger 3rd JP, Rauch G, et al. MR imaging of primary chest wall neoplasms. *Top Magn Reson Imaging*. 2018;27(2):83-93. doi:10.1097/RMR.0000000000000164
12. Masselli G, Di Bella C, Hadjidekov G, et al. Pediatric congenital lung malformation: Advanced imaging techniques in pre- and neonatal evaluation. *Diagnostics (Basel).* 2025 Apr 27;15(9):1112. doi:10.3390/diagnostics15091112
13. Ackman JB, Chung JH, Walker CM, et al. Imaging of mediastinal masses. ACR appropriateness criteria [Internet] American College of Radiology (ACR). New 2020. http://www.acr.org
14. de Groot PM, Chung JH, Ackman JB, et al. Noninvasive clinical staging of primary lung cancer. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2018. http://www.acr.org
15. Raptis CA, Goldstein A, Henry TS, et al. Staging and follow-up of esophageal cancer. ACR appropriateness criteria [Internet] American College of Radiology (ACR). Updated 2022. http://www.acr.org
16. Marom EM. Imaging thymoma. *J Thorac Oncol*. 2010 Oct;5(10 Suppl 4):S296-303. doi:10.1097/JTO.0b013e3181f209ca
17. Chaturvedi A, Rajiah P, Croake A, et al. Imaging of thoracic hernias: Types and complications. *Insights Imaging*. 2018 Dec;9(6):989-1005. doi:10.1007/s13244-018-0670-x
18. Montoya S, Portanova A, Bhatt AA. A radiologic review of hoarse voice from anatomic and neurologic perspectives. *Insights Imaging*. 2019 Nov 18;10(1):108. doi:10.1186/s13244-019-0786-7
19. Schwartz SR, Cohen SM, Dailey SH, et al. Clinical practice guideline: Hoarseness (dysphonia). *Otolaryngol Head Neck Surg*. 2009 Sep;141(3 Suppl 2):S1-S31. doi:10.1016/j.otohns.2009.06.744
20. Stachler RJ, Francis DO, Schwartz SR, et al. Clinical practice guideline: Hoarseness (dysphonia) (update). *Otolaryngol Head Neck Surg*. 2018

Mar;158(1_suppl):S1-S42. doi:10.1177/0194599817751030. Erratum in: *Otolaryngol Head Neck Surg*. 2018 Aug;159(2):403. doi:10.1177/0194599818766900

21. Chandarana H, Wang H, Tijssen RHN, et al. Emerging role of MRI in radiation therapy. *J Magn Reson Imaging*. 2018 Dec;48(6):1468-1478. doi:10.1002/jmri.26271
22. Ghaye B, Wanet M, El Hajjam M. Imaging after radiation therapy of thoracic tumors. *Diagn Interv Imaging*. 2016 Oct;97(10):1037-1052. doi:10.1016/j.diii.2016.06.019
23. Iyer R, Jhingran A. Radiation injury: Imaging findings in the chest, abdomen and pelvis after therapeutic radiation. *Cancer Imaging*. 2006 Oct 31;6(Spec No A):S131-9. doi:10.1102/1470-7330.2006.9095
24. Wasser EJ, Prevedello LM, Sodickson A, et al. Impact of a real-time computerized duplicate alert system on the utilization of computed tomography. *JAMA Intern Med*. 2013;173(11):1024-1026. doi:10.1001/jamainternmed.2013.543
25. American College of Radiology (ACR) Committee on Drugs and Contrast Media. ACR manual on contrast media [Internet] American College of Radiology (ACR). Updated 2025. http://www.acr.org
26. American College of Obstetricians and Gynecologists (ACOG). Guidelines for diagnostic imaging during pregnancy and lactation: Committee opinion (no. 723). Published October 2017. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/10/guidelines-for-diagnostic-imaging-during-pregnancy-and-lactation.
27. Kjelle E, Brandsæter IØ, Andersen ER, et al. Cost of low-value imaging worldwide: A systematic review. *Appl Health Econ Health Policy*. 2024;22(4):485-501. doi:10.1007/s40258-024-00876-2
28. Archer JM, Ahuja J, Strange CD, et al. Multimodality imaging of mediastinal masses and mimics. *Mediastinum*. 2023 May 8:7:27. doi:10.21037/med-22-53
29. United States Food and Drug Administration (FDA). MRI (magnetic resonance imaging): Benefits and risks. Updated December 9, 2017. https://www.fda.gov/radiation-emitting-products/mri-magnetic-resonance-imaging/benefits-and-risks

30. Sim AJ, Kaza E, Singer L, et al. A review of the role of MRI in diagnosis and treatment of early stage lung cancer. *Clin Transl Radiat Oncol*. 2020 Jun 6;24:16-22. doi:10.1016/j.ctro.2020.06.002
31. Cavanna AC, Giovanis A, Daley A, et al. Thoracic outlet syndrome: A review for the primary care provider. *J Osteopath Med*. 2022;122(11):587-599. doi:10.1515/jom-2021-0276

Policy Revision History/Information

Original Date: September 25, 2024		
Review History		
Version 2	09/18/2025	Annual review. Added more detail to the Description. Updated references for indications. Added "suspected or known pectoralis tendon tear" under magnetic resonance (MR)-preferred indications. Added indications for persistent mediastinal lymphadenopathy under computed tomography (CT) indications. Clarified the indication for repeat imaging to improve usability and organization. Removed non-indications for contrast anaphylaxis allergy, metallic clips on vascular aneurysms, incompatible implantable devices, and metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern. Added non-indication for when "the patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms." Added a note requiring the referring provider to discuss the risks and benefits of contrast media administration.