



**Cohere Medicare Advantage Policy –
Magnetic Resonance Imaging (MRI), Chest**
Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Diagnostic Imaging

Guideline Name: Magnetic Resonance Imaging (MRI), Chest

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

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Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Chest

Benefit Category

Diagnostic Services in Outpatient Hospital
Diagnostic Tests (other)

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.¹

Related CMS Documents

Please refer to the [CMS Medicare Coverage Database](#) for the most current applicable CMS National Coverage.¹⁻³

- [National Coverage Determination \(NCD\) 220.2. Magnetic Resonance Imaging](#)
- [Local Coverage Determination \(LCD\) L35391. Multiple Imaging in Oncology](#)
- [Local Coverage Determination \(LCD\) Reference Article: Billing and Coding: Multiple Imaging in Oncology \(A56848\)](#)

Recommended Clinical Approach

Imaging analysis utilizing magnetic resonance imaging (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.⁴

Evaluation of Clinical Harms and Benefits

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of MRI of the chest. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks

associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

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.⁴⁻⁵
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.⁴⁻⁵
- 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 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.⁶
- There is a risk of increased healthcare costs and complications from the inappropriate use of additional interventions.⁷

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.⁸⁻⁹
- Treatment response: MRI of the chest may be performed to predict treatment response, especially for early-stage lung cancer.¹⁰
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous

clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

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

- ◆ 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 EMG results, symptoms related to scalene muscles, symptoms that worsen with arms overhead) – this includes but is not limited to, trauma, neurogenic thoracic outlet syndrome, neuropathies affecting brachial plexus (e.g. chronic inflammatory demyelinating polyneuropathy [CIDP]), or suspected or known mass; **OR**
 - Evaluation of non-bony musculoskeletal abnormalities, congenital or acquired (e.g., muscle tear, tendon or cartilage injury)⁵; **OR**
 - Inflammatory myopathies (e.g., polymyositis); **OR**
 - Fetal lung or chest wall anomaly is needed to determine further management; **OR**
- ◆ CT is contraindicated or inconclusive, chest radiographs were inadequate for diagnosis or determination of management, and **ANY** of the following is **TRUE**:
 - Chest wall abnormalities, including **ANY** of the following:
 - Anatomic abnormalities, congenital or acquired (e.g., 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 (e.g., pulmonary sequestration) when MRA/CTA is contraindicated or cannot be done; **OR**
- Persistent lymphadenopathy for initial evaluation; **OR**
- Neoplastic conditions for **ANY** of the following:
 - Initial staging; **OR**
 - Treatment planning; **OR**
 - Response assessment; **OR**
 - Surveillance, and **ANY** of the following is **TRUE**^{2-3,11-13}:
 - ◆ The patient is assumed to have either no known disease or 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; **OR**
- Herniation into thorax of abdominal contents, including diaphragmatic hernias, and hiatal hernias; **OR**
- Hoarseness, dysphonia, and vocal cord weakness/paralysis after laryngoscopy completed with **ANY** of the following:
 - Findings suggest recurrent laryngeal nerve dysfunction; **OR**
 - Suspicious lesion identified and needs 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; **OR**
- ◆ Repeat imaging (defined as repeat request following recent imaging of the same anatomic region with the same modality), in the absence of established guidelines, will be considered reasonable and necessary if **ANY** of the following is **TRUE**:

- New or worsening symptoms, such that repeat imaging would influence treatment; **OR**
- 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** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ If contrast is used, history of anaphylactic allergic reaction to gadolinium contrast media with detailed guidelines for use in patients with renal insufficiency; **OR**
- ◆ The patient has metallic clips on vascular aneurysms; **OR**
- ◆ Incompatible implantable devices (e.g., pacemakers, defibrillators, cardiac valves); **OR**
- ◆ Metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern.

*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
71550	Magnetic resonance imaging (MRI) (e.g., proton), chest; without contrast material(s)
71551	Magnetic resonance imaging (MRI) (e.g., proton), chest; with contrast material(s)
71552	Magnetic resonance imaging (MRI) (e.g., proton), 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

Medical Evidence

Archer et al. (2023) reviewed the utilization of cross-sectional imaging techniques such as computed tomography (CT) or magnetic resonance imaging (MRI) is 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.⁸

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.¹⁴

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 vs 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).¹⁵

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Clinical Guideline Revision History/Information

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Review History

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