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

Clinical Policy for Medical Necessity Review

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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.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice. This policy may be superseded by existing and applicable Centers for Medicare & Medicaid Services (CMS) statutes.

Other Notices:

Policy Information:

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

Table of Contents

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Upper Extremity

Related CMS Documents

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

- National Coverage Determination (NCD). Magnetic resonance imaging (MRI)(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 an advanced imaging modality used when further anatomic detail is required for diagnosis or treatment. It is segmented into joint and non-joint examinations and may be performed without or with contrast (IV or intra-articular). Metal hardware can limit certain exams and is generally inappropriate for imaging by 3 Tesla scanners. Alternate modalities may sometimes be more clinically appropriate based on clinician and supervising radiologist discussion.[4]

Medical Necessity Criteria

Indications

Magnetic resonance imaging (MRI), upper extremity is considered appropriate if **ALL** of the following are **TRUE**[4-8]:

- Plain radiographs or ultrasound of the area of concern are non-diagnostic or inconclusive, and have been completed during the current episode of symptoms and/or change in symptoms; **AND**
- **ANY** of the following:
  - Fracture with **ANY** of the following[9-12]:
    - Suspected fracture after indeterminate or normal radiographs[13]; **OR**
    - Suspected stress/insufficiency fracture with negative radiographs[13,14]; **OR**
    - Known stress/insufficiency fracture with new or worsening symptoms, and radiographs are inconclusive[14]; **OR**
    - Suspected pathologic fracture on imaging; **OR**
  - Preoperative imaging for **ANY** of the following:
    - Prior to shoulder arthroplasty, when requested by an orthopedic surgeon (CT may also be approved)[15]; **OR**
    - Prior to non-arthroplasty surgical management of glenohumeral osteoarthritis (e.g., arthroscopy, distal clavicle resection/excision) only when there is evidence of rotator cuff tear[16]; **OR**
    - For purposes of preoperative evaluation and surgical planning, when requested by an orthopedic surgeon, and conventional imaging is inconclusive (e.g., complex fracture/dislocations, delayed union or non-union of fractures, osteotomy or joint fusions, complete tendon ruptures, bone lesions, soft tissue tumors, joint replacement); **OR**
  - Postoperative evaluation for **ANY** of the following[17]:
    - Joint prosthesis loosening or complication (i.e., pseudotumor) after initial radiograph; **OR**
    - Postoperative complications such as hardware failure/migration, tendon re-rupture, or failure to heal after initial non-diagnostic radiograph; **OR**
  - Dislocation with **ANY** of the following:
    - Recurrent anterior shoulder dislocation or subluxation[11,18]; **OR**
    - First-time shoulder dislocation with **ANY** of the following:
      - Patient is less than 40 years of age; **OR**

        - Patient is greater than 40 years of age with exam findings concerning for rotator cuff tear; **OR**
        - Abnormal radiographs (i.e., Bankart, Hill-Sachs lesion); **OR**
    - Dislocation of other upper extremity joint and concern for internal derangement or occult fracture; **OR**
- Neoplastic conditions for **ANY** of the following[2]:
    - Initial staging; **OR**
    - Treatment planning; **OR**
    - Response assessment; **OR**
    - Surveillance, and **ANY** of the following is **TRUE**[19-21]:
        - 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**
- Infectious disorder is suspected (e.g., osteomyelitis, soft tissue abscess, or septic arthritis) with **ANY** of the following:
    - Abnormal radiograph or ultrasound[22]; **OR**
    - Radiographs and/or ultrasound are normal or inconclusive with **ANY** of the following[23,24]:
        - Initial laboratory testing (CBC, ESR, C-reactive protein) suggests infection; **OR**
        - **ANY** of the following positive physical exam findings concerning infection:
            - Hot and swollen joint; **OR**
            - Decreased range of motion due to pain; **OR**
            - Fever; **OR**
            - History of puncture wound with possible retained foreign body; **OR**
            - High clinical suspicion of necrotizing fasciitis; **OR**
- Vascular conditions, known or suspected; **OR**
- Vascular or lymphatic malformation (with or without pain) with **ANY** of the following findings of suspected physical deformity[25]:
    - Diffuse or focal enlargement; **OR**
    - Discoloration; **OR**

        - Soft-tissue mass; **OR**
        - Ulceration; **OR**
    - Concern for rupture or tear of tendon, ligament, or other soft tissue injury (including labrum tear) based on **ANY** of the following[26]:
        - Symptoms were the direct result of a preceding acute injury, and surgery is being considered; **OR**
        - Joint-specific orthopedic evaluation and maneuvers suggest a tear; **OR**
        - Symptoms were not the direct result of a preceding acute injury (i.e., new symptoms, but they are not the result of a traumatic injury), surgery is being considered, and **ANY** of the following:
            - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following:
                - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
                - **ANY** of the following:
                    - Physical therapy or a physician-prescribed home exercise program; **OR**
                    - Worsening of symptoms during the trial of conservative treatment; **OR**
    - For chronic degenerative conditions with **ALL** of the following:
        - **ANY** of the following:
            - Rheumatoid arthritis (RA) for **ANY** of the following[10,27,28]:
                - To evaluate treatment response; **OR**
                - To monitor advanced RA when radiography is inconclusive; **OR**
            - Osteochondritis dissecans (OCD) for **ANY** of the following[27,29]:
                - Preoperative planning; **OR**
                - To define the extent of damage; **OR**
            - Osteonecrosis or avascular necrosis, known or suspected (e.g., suspected Kienböck's disease) with **ANY** of the following[27,30-33]:
                - Negative radiographs; **OR**
                - Abnormal imaging (radiograph/CT) needing further characterization; **OR**
                - Symptomatic with normal initial radiograph and considered high-risk (e.g., glucocorticosteroid use, renal transplant recipient, glycogen storage disease, alcohol abuse, sickle cell anemia); **OR**

        - Evaluation of contralateral joint following initial radiograph; **OR**
    - Chronic labral tear/rotator cuff suspected with **ALL** of the following[27]:
        - Diagnosis is suggested based on abnormal physical exam findings; **AND**
        - Radiographs are non-diagnostic; **AND**
        - Surgery is being considered; **AND**
    - **ANY** of the following:
        - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following:
            - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
            - **ANY** of the following:
                - Physical therapy or a provider-directed home exercise program (HEP)[A]; **OR**
                - Worsening of symptoms during the trial of conservative treatment; **OR**
        - Inability to complete conservative treatment for 6 weeks due to worsening symptoms; **OR**
- For evaluation of **ANY** of the following uncategorized/miscellaneous symptoms:
    - Marrow abnormalities[4,34]; **OR**
    - Joint-specific orthopedic evaluation and maneuvers suggest a tear; **OR**
    - **ALL** of the following:
        - Persistent joint/muscle pain or weakness unresponsive to conservative treatment; **AND**
        - **ANY** of the following:
            - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following:
                - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
                - **ANY** of the following:
                    - Physical therapy or a provider-directed home exercise program (HEP)[A]; **OR**

- Worsening of symptoms during the trial of conservative treatment; **OR**
- Inability to complete conservative treatment for 6 weeks due to worsening symptoms; **OR**

- Neurological symptoms or deficits with **ANY** of the following[7]:
  - Peripheral nerve sheath tumor suspected with **ANY** of the following:
    - Enlarging mass; **OR**
    - New or worsening localized pain; **OR**
    - Recurrence after prior resection; **OR**
  - Localized EMG abnormality; **OR**
  - Persistent symptoms or suspected nerve entrapment as confirmed by abnormal EMG; **OR**
  - Trauma or injury with suspected nerve injury or laceration; **OR**
  - Initial diagnosis or follow-up of autoimmune, collagen vascular diseases, or inflammatory conditions (e.g., inflammatory arthritis)[24]; **OR**
  - Synovial-related disorders (e.g., synovitis, bursitis, metaplasia, and neoplasia) for **ANY** of the following[7,35,36]:
    - When diagnosis is uncertain with concern for malignancy or infection; **OR**
    - Symptoms are severe and persistent; **OR**

- Repeat imaging (defined as 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 a need for a one-time clarifying follow-up of a prior indeterminate finding; **OR**
    - In the absence of a change in symptoms, there is an established need for monitoring, which would influence management.

Non-Indications

Magnetic resonance imaging (MRI), upper extremity is not considered appropriate if **ANY** of the following is **TRUE**:

- Imaging of cortical bone and calcifications; **OR**
- Procedures involving the spatial resolution of bone and calcifications[1]; **OR**
- A diagnosis of carpal tunnel syndrome[35,37]; **OR**
- A diagnosis of osteoid osteoma; **OR**
- 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.

Definitions

[A] **Provider-directed home exercise programs (HEP)** should include[38]:

- Patient education of prescribed exercises with written instructions
- Documentation of patient compliance with the HEP

Disclaimer on Radiation Exposure in Pediatric Populations

Due to the heightened sensitivity of pediatric patients to ionizing radiation, minimizing exposure is paramount. At Cohere, we are dedicated to ensuring that every patient, including the pediatric population, has access to appropriate imaging following accepted guidelines. Radiation risk is dependent mainly on the patient's age at exposure, the organs exposed, and the patient's sex, though there are other variables. The following technical guidelines are provided to ensure safe and effective imaging practices:

Radiation Dose Optimization: Adhere to the lowest effective dose principle for pediatric imaging. Ensure that imaging protocols are specifically tailored for pediatric patients to limit radiation exposure.[39,40]

Alternative Modalities: Prioritize non-ionizing imaging options such as ultrasound or MRI when clinically feasible, as they are less likely to expose the patient to ionizing radiation. For instance, MRI or ultrasound should be considered if they are more likely to provide an accurate diagnosis than CT, fluoroscopy, or radiography.[39,40]

Cumulative Dose Monitoring: Implement systems to track cumulative radiation exposure in pediatric patients, particularly for those requiring multiple imaging studies. Regularly reassess the necessity of repeat imaging based on clinical evaluation.[39,40]

CT Imaging Considerations: When CT is deemed the best method for achieving a correct diagnosis, use the lowest possible radiation dose that still yields reliable diagnostic images.[39,40]

Cohere Imaging Gently Guideline

The purpose of this guideline is to act as a potential override when clinically indicated to adhere to Imaging Gently and Imaging Wisely guidelines and As Low As Reasonably Possible (ALARA) principles.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
73218	Magnetic resonance imaging (MRI) (e.g., proton), upper extremity, other than joint; without contrast material(s)
73219	Magnetic resonance imaging (MRI) (e.g., proton), upper extremity, other than joint; with contrast material(s)
73220	Magnetic resonance imaging (MRI) (e.g., proton), upper extremity, other than joint; without contrast material(s), followed by contrast material(s) and further sequences
73221	Magnetic resonance imaging (MRI) (e.g., proton), any joint of upper extremity; without contrast material(s)
73222	Magnetic resonance imaging (MRI) (e.g., proton), any joint of upper extremity; with contrast material(s)
73223	Magnetic resonance imaging (MRI) (e.g., proton), any joint of upper extremity; 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 imaging (MRI) of an upper extremity may include:

- Adverse effects from delayed or denied treatment, including malfunction of implanted medical devices (e.g., implanted pacemakers, cochlear implants) and a potential 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.)[4,41]
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.[4,41]
- 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 a risk of uncertain significance 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.[42]
- There is a risk of increased healthcare costs and complications from the inappropriate use of additional interventions.[43]
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria for MRI of an upper extremity include:

- Detailed soft tissue visualization: MRI is valuable for assessing conditions related to the shoulder joint and for surgical planning.[44,45]
- Multiplanar imaging: This approach enables the visualization of the shoulder joint from multiple angles, improving diagnostic accuracy and identifying abnormalities that may not be visible in a single-plane image.[45]
- Detection of conditions: Contrast agents allow for the identification of labral tears, various shoulder pathologies, tumors, lesions, and abnormalities.[44] MRI is also beneficial for locating the origin of cervical spine pain (e.g., inflammatory arthritis).[45]
- Evaluation of thoracic outlet anatomy.[46]
- Enhanced overall patient satisfaction and healthcare experience.
- Appropriate allocation of healthcare resources at the individual beneficiary and population levels.

Medical Evidence

DeFrance et al. (2021) performed a study using magnetic resonance imaging (MRI) for diagnosing upper extremity conditions and assessed how MRI findings influenced patient management. Findings from 187 patients who had an MRI were analyzed on the usefulness of imaging and how they influenced treatment decisions. Imaging was ordered to assess for suspected occult scaphoid fractures, ulnar wrist pain, collateral ligament injuries of the metacarpophalangeal joint, and masses. Surgeons concurred with radiologists' interpretations in 88% of cases. Overall, surgeons noted MRI findings as helpful in 92% of cases.[47]

Cortes et al. (2019) conducted a small prospective study on patients with suspected cuff tendinopathy. Fifty-one patients were included and underwent magnetic resonance imaging (MRI). Ninety percent (n=46) did not require surgical intervention; individuals who underwent surgery (10%) within an average of 68.3 days post-imaging. A significant proportion (over 90%) underwent premature MRI, which illustrates early MRI utilization in patients with atraumatic shoulder pain whose condition may have improved with conservative treatment first.[48]

Rubin (2019) analyzed MRI and ultrasound findings of patients with rheumatoid arthritis in the hands and wrists. Advanced imaging modalities allow for visualization of synovitis and active soft-tissue inflammation, which are early indicators of potential structural damage. MRI can also identify osteitis, a crucial prognostic marker for disease aggressiveness. Findings include the distinct definitions (specifically synovitis, osteitis, and erosions) that enhance clinical assessment and imaging interpretation.[49]

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Original Date: October 3, 2024		
Review History		
Version 2	10/02/2025	Annual review. Rearranged bullets for improved organization. Removed indication that ultrasound and CT/CTA are contraindicated or inconclusive. Updated the indication for plain radiographs to include ultrasound when the area of concern is non-diagnostic or inconclusive, and has been completed during the current episode of symptoms and/or change in symptoms." Clarified the indication for fracture to include fracture: after "indeterminate or normal radiographs"; suspected stress/insufficiency fracture with negative radiographs; known stress/insufficiency fracture with new or worsening symptoms, and radiographs are inconclusive; and suspected pathologic fracture on imaging. Removed indications for joint dislocation or instability, stress/insufficiency fracture (known) and follow-up imaging needed, and stress/insufficiency fracture (suspected) with negative radiographs. Added indications for preoperative imaging and imaging for post-operative evaluation. Added indication for dislocation, including sub-indications for recurrent and first-time dislocation. Included an indication for concern for internal derangement or occult fracture.

		Added indications for diagnosis and surveillance of soft tissue masses/neoplasms, including when tumor is suspected, to monitor response of baseline and periodic imaging, as well as recurrence and in cases of benign findings when imaging is needed for preoperative planning or when the diagnosis is uncertain. Updated indication for detection, screening, and surveillance of bone tumors to include: suspected malignant or metastatic tumor; monitoring response to treatment for Ewing sarcoma, giant cell tumor of the bone, and osteosarcoma; and when findings are benign on exam or imaging, and imaging is needed for preoperative planning or when the diagnosis is uncertain. Updated the indication for infectious disorder - merged sub-bullets into main bullet ("e.g., osteomyelitis, soft tissue abscess, or septic arthritis") and added imaging requirements. Updated the indication for vascular conditions to include imaging requirements and updated the criteria for rupture or tear of tendon, ligament, or other soft tissue injury. Added indications for degenerative conditions and updated the evaluation requirements to include conservative management. Added indications for synovial-related conditions. Clarified the indication for repeat imaging to improve usability and organization. Removed relative contraindications (contrast allergy, metallic clips, incompatible implantable devices, metallic foreign body).