



Cohere Medical Policy – Magnetic Resonance Imaging (MRI), Upper Extremity

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Diagnostic Imaging

Guideline Name: Cohere Medical Policy - Magnetic Resonance Imaging (MRI), Upper Extremity

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

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Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Upper Extremity

Recommended Clinical Approach

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.¹⁻²

Medical Necessity Criteria

Indications

→ **Magnetic resonance imaging (MRI), upper extremity** is considered appropriate if **ALL** of the following are **TRUE**:

◆ **ANY** of the following:

- Plain radiographs are contraindicated or inconclusive; **OR**
- Ultrasound and CT/CTA are contraindicated or inconclusive (e.g., body habitus for ultrasound, anaphylactic reaction due to IV contrast reaction, pregnancy, pediatric); **AND**

◆ **ANY** of the following is **TRUE**:

- Trauma-related conditions as indicated by **ANY** of the following³⁻⁴:
 - Fracture (traumatic or stress), and **ANY** of the following is **TRUE**⁵:
 - ◆ Joint dislocation or instability; **OR**

- ◆ Stress/insufficiency fracture (known) and follow-up imaging needed; **OR**
 - ◆ Stress/insufficiency fracture (suspected) with negative radiographs; **OR**
 - Soft tissue injury or tear (e.g., tendon, ligament, muscle)^{3-4,6-7}; **OR**
- Preoperative imaging for **ANY** of the following:
 - Prior to shoulder arthroplasty; **OR**
 - Prior to non-arthroplasty surgical management of glenohumeral osteoarthritis (e.g. arthroscopy, distal clavicle resection/excision) only when there is clinical concern for rotator cuff compromise; **OR**
 - Prior to surgical management of congenital condition, injury, malignancy, mass, infectious disorder, or vascular abnormality; **OR**
- Detection, screening, and surveillance of neoplasms, masses, and cysts of an upper extremity and **ANY** of the following is **TRUE**⁸:
 - Malignant or aggressive primary tumor⁹; **OR**
 - Evaluation of metastatic lesions of the upper extremity; **OR**
 - Bone tumor is suspected with **ANY** of the following¹⁰:
 - ◆ Initial radiographs are negative or do not explain symptoms; **OR**
 - ◆ Osteoid osteoma is suspected; **OR**
 - ◆ Lesion present on plain radiographs; **OR**
 - ◆ Indeterminate or aggressive appearance concerning malignancy; **OR**
 - ◆ “Incidental” osseous lesion on other imaging for unrelated indication; **OR**
 - Presence of a mass with **ANY** of the following²:

- ◆ Absence of trauma; **OR**
- ◆ Rapid growth; **OR**
- ◆ Recurrence after prior surgery; **OR**
- ◆ Non-diagnostic ultrasound or other inconclusive imaging; **OR**
- Known malignancy and **ANY** of the following is required:
 - ◆ Monitor response to treatment; **OR**
 - ◆ Surveillance after treatment or surgery; **OR**
 - ◆ Non-diagnostic ultrasound or other inconclusive imaging; **OR**
- Palpable abnormality with a non-diagnostic radiograph or ultrasound; **OR**
- Infectious disorder including **ANY** of the following:
 - Osteomyelitis, suspected¹¹; **OR**
 - Suspected septic arthritis or soft tissue infection is with **ANY** of the following initial radiographs¹¹⁻¹²:
 - ◆ Normal; **OR**
 - ◆ Suggestive of joint effusion; **OR**
 - ◆ Suggestive of soft tissue swelling; **OR**
 - History of puncture wound with possible retained foreign body; **OR**
 - High clinical suspicion of necrotizing fasciitis; **OR**
- Vascular conditions, known or suspected, including **ANY** of the following:
 - Osteonecrosis or avascular necrosis, known or suspected, (e.g., suspected Kienböck's disease) with negative radiographs¹³; **OR**
 - Vascular compromise, suspected⁷; **OR**

- Vascular malformation (with or without pain) and **ANY** of the following findings of physical deformity are suspected¹⁴:
 - ◆ Diffuse or focal enlargement; **OR**
 - ◆ Discoloration; **OR**
 - ◆ Soft-tissue mass; **OR**
 - ◆ Ulceration; **OR**
- Vascular bruit or thrill; **OR**
- For evaluation of **ANY** of the following uncategorized/miscellaneous symptoms when applicable:
 - Marrow abnormalities^{8,13}; **OR**
 - Pain or weakness of an upper extremity, and **ALL** of the following are **TRUE**^{7,15}:
 - ◆ Documented failure of at least 6 weeks of conservative treatment, 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**
 - Physical therapy, including a self-directed home exercise program; **AND**
 - ◆ Concern for rupture or tear of tendon or ligament, or other soft tissue injury based on **ALL** of the following:
 - Clinical history; **AND**
 - Physical exam; **AND**

- Prior radiographs which are nondiagnostic, indeterminate, or discordant with symptoms; **OR**
 - Neurological symptoms or deficits with **ANY** of the following¹⁶:
 - ◆ 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)¹²; **OR**
 - Synovial-related disorders (e.g., synovitis, bursitis, metaplasia, and neoplasia)¹⁶; **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), upper extremity** may not be considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The diagnosis of carpal tunnel syndrome; **OR**
- ◆ The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms¹⁷; **OR**
- ◆ 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**
- ◆ Metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern; **OR**
- ◆ Incompatible implanted devices (e.g., pacemakers, defibrillators, cardiac valves, spinal cord stimulators).

*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
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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.

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.¹⁸

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.¹⁹

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.²⁰

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Clinical Guideline Revision History/Information

Original Date: April 4, 2022		
Review History		
Version 2	8/5/2024	Annual review and policy restructure.
Version 3	10/30/2024	Edited repeat imaging criteria language.
Version 4	2/20/2025	Replaced conservative care requirement with current standard language. Provided avenue for approval of preoperative imaging. Loosened requirement for injury evaluation - no longer requires suspicion of "high-grade" tear.