Cohere Medical Policy - Magnetic Resonance Imaging (MRI), Spine (Cervical, Thoracic, and Lumbar)

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.

Other Notices:

Policy Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medical Policy - Magnetic Resonance Imaging (MRI), Spine (Cervical, Thoracic, and Lumbar)
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Important Notices **2**

Medical Necessity Criteria **4**

Service: Magnetic Resonance Imaging (MRI), Spine (Cervical, Thoracic, and Lumbar) **4**

Description 5

Medical Necessity Criteria 6

Indications 6

Non-Indications 11

Definitions 12

Level of Care Criteria 13

Procedure Codes (CPT/HCPCS) 13

Medical Evidence **14**

References **15**

Policy Revision History/Information **19**

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Spine (Cervical, Thoracic, and Lumbar)

Cohere Health takes an evidence-based approach to reviewing imaging and procedure requests, meaning that sufficient clinical information must be provided at the time of submission to determine medical necessity. Documentation must include a recent and detailed history, physical examination related to the onset or change in symptoms, relevant lab results, prior imaging, and details of previous treatments. Advanced imaging or procedures should be requested after a clinical evaluation by the treating provider, which may include a referral to a specialist.

- When a specific clinical indication is not explicitly addressed in the Cohere Health medical policy, medical necessity will be determined based on established clinical best practices, as supported by evidence-based literature, peer-reviewed sources, professional society guidelines, and state or national recommendations, unless otherwise directed by the health plan.
- Requests submitted without clinical documentation, or those that do not align with the provided clinical information—such as mismatched laterality, body part, or CPT code—may be denied for lack of medical necessity due to insufficient or inconsistent clinical information.
- Repeat diagnostic testing due to technical issues—such as patient motion, incomplete exams, or incorrect imaging sequences—may not be considered medically necessary, as it is the responsibility of the imaging center to deliver appropriate, high-quality studies as originally authorized. Similarly, repeat imaging requested at a different facility based solely on provider preference may not be approved for medical necessity.
- When there are multiple diagnostic or therapeutic procedures requested simultaneously or within the past three months, each will be reviewed independently. Clinical documentation must clearly justify all of the following:
    - The medical necessity of each individual request

    - Why prior imaging or procedures were inconclusive or why additional/follow-up studies are needed
    - How the results will impact patient management or treatment decisions
- Requests involving adjacent or contiguous body parts may be considered not medically necessary if the documentation demonstrates that the patient's primary symptoms can be adequately assessed with a single study or procedure.
- Cohere Health evaluates imaging exams based on medical necessity, regardless of contrast use. If an initial non-contrast study is completed and the radiologist later determines that contrast is needed to clarify a finding, the original authorization number may be used—provided the contrast-enhanced exam is performed at the same imaging center and within the original request's validity period, unless otherwise directed by the health plan.

Description

Magnetic resonance imaging (MRI) is a versatile imaging technique that operates on the interaction between radiofrequency electromagnetic fields and specific nuclei in the body, typically hydrogen nuclei, following exposure to a powerful magnetic field. This method allows for the discrimination between normal and abnormal tissues, offering a highly sensitive diagnostic tool for detecting diseases. The effectiveness of MRI stems from the notable contrast inherent in various tissues, both healthy and diseased, owing to differences in their magnetic relaxation properties. MRI of the spine is the preferred imaging modality for pain, radiculopathy, or neurological symptoms.[1]

Medical Necessity Criteria

Indications

*NOTE: It is common to request multi-level spine imaging. Parts of the spine may be evaluated separately or in combination. It is necessary to justify the region to be imaged, including physical exam findings (e.g., localization of symptoms to a particular segment of the spine), patient history, prior imaging, or other information.

Magnetic resonance imaging (MRI), spine (cervical/thoracic/ lumbar) is considered appropriate if **ANY** of the following is **TRUE***:

- New onset pain or radiculopathy without trauma or significant mechanism of injury with **ALL** of the following:
  - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following[2-5]:
    - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy, chiropractic care, or a provider-directed home exercise program (HEP)[A]; **OR**
- Spondylosis/spondylolisthesis of the lumbar spine with **ANY** of the following[6-9]:
  - Pediatric patient with equivocal radiographs; **OR**
  - Adult patient with **ALL** of the following:
    - Equivocal radiographs; **AND**
    - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following[2-5]:
      - Anti-inflammatory medications, non-opioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
      - Physical therapy, chiropractic care, or a provider-directed home exercise program (HEP)[A]; **OR**
- New onset symptoms without trauma or significant mechanism of injury and **ANY** of the following[1,10]:
  - Myelopathic symptoms[B]; **OR**
  - Bladder dysfunction; **OR**
  - Bowel dysfunction; **OR**
  - Dermatomal sensory loss not related to peripheral neuropathy; **OR**

- Objective muscle weakness not related to peripheral neuropathy; **OR**
- Saddle anesthesia; **OR**
- Sexual dysfunction; **OR**
- Suspected amyloid deposition in the spine[1]; **OR**
- Cerebrospinal fluid (CSF) leak (may include spontaneous intracranial hypotension)[1]; **OR**
- Suspected gout[1]; **OR**
- Suspected atlantoaxial instability in a patient with rheumatoid arthritis (RA) with abnormal or inconclusive radiographs of the cervical spine; **OR**

- Known or suspected axial spondyloarthropathy (axSpA) (e.g., ankylosing spondylitis [AS], reactive arthritis, psoriatic spondyloarthritis, enteropathic spondyloarthritis, juvenile spondyloarthritis, undifferentiated spondyloarthritis) and **ALL** of the following[9,10]:
  - Initial imaging with radiographs; **AND**
  - axSpA of unclear disease activity while on biologic medication to assess disease activity; **OR**
- Diagnosis and surveillance of soft tissue masses/neoplasms (bone, intradural-extramedullary, intramedullary, extradural etc) and **ANY** of the following[1,10,11]:
  - Initial diagnosis of suspected tumor or malignancy as indicated by **ANY** of the following:
    - Abnormal laboratory values; **OR**
    - Inconclusive or abnormal prior imaging; **OR**
  - Suspected metastatic tumor; **OR**
  - To monitor response to treatment for **ANY** of the following[12]:
    - Baseline imaging (i.e., postoperative); **OR**
    - Periodic imaging of primary site based upon risk of locoregional recurrence; **OR**
    - Long-term follow-up; **OR**
    - End-of-treatment imaging; **OR**
    - Signs or symptoms suggesting recurrence; **OR**
- Suspected or known infection involving the spine, with **ANY** of the following[13]:
  - **ALL** of the following:
    - Signs or symptoms (e.g., new/worsening back or neck pain with or without fever); **AND**
    - **ANY** of the following:

        - Abnormal laboratory evaluation (i.e., abnormal white blood cell count, ESR, or CRP); **OR**
        - "Red flag" risk factor (diabetes mellitus, current or prior IV drug use, cancer, HIV, or dialysis); **OR**
        - Decubitus ulcer or wound overlying the spine; **OR**
    - Prior imaging findings concerning for infection; **OR**
    - History of surgical or interventional procedure to the spine with clinical suspicion for infection; **OR**
    - Follow-up imaging of infection with worsening symptoms/laboratory values (i.e., white blood cell count, ESR/CRP) or radiographic findings; **OR**
- Trauma-related conditions, including **ANY** of the following[14-16]:
    - Follow-up to initial imaging (e.g., CT) with positive findings; **OR**
    - Follow-up to inconclusive imaging, with high suspicion for **ANY** of the following injury types:
        - Fracture; **OR**
        - Ligamentous; **OR**
    - New onset post-traumatic radiculopathy with **ANY** of the following:
        - Suspected cauda equina syndrome[10]; **OR**
        - Low back pain with or without radiculopathy and **ANY** of the following risk factors[10]:
            - Low-velocity trauma; **OR**
            - Osteoporosis; **OR**
            - Elderly age; **OR**
            - Chronic steroid use; **OR**
        - Follow-up of acute cervical spine blunt trauma without unstable injury on initial imaging; **OR**
        - Acute cervical, thoracic, or lumbar spine blunt trauma with suspected or confirmed ligamentous, spinal cord, or nerve root injury on CT imaging; **OR**
        - Any suspected thoracolumbar spine trauma in a child[15]; **OR**
    - New onset post-traumatic neurological deficit (myelopathy) following significant trauma[C] with **ANY** of the following[10,17]:
        - Bladder dysfunction; **OR**
        - Bowel dysfunction; **OR**
        - Fecal incontinence; **OR**
        - Loss of anal sphincter tone; **OR**
        - Objective muscle weakness; **OR**

        - Saddle anesthesia; **OR**
        - Objective dermatomal sensory loss; **OR**
        - Urinary retention or overflow incontinence; **OR**
        - Objective weakness (bilateral or progressive) in the lower extremities that is not related to peripheral neuropathy; **OR**
    - Persistent or worsening post-traumatic pain without acute findings on initial imaging among patients who are high-risk (including patients who are elderly, osteoporotic, or have chronic steroid use); **OR**
- Vascular conditions, known or suspected, including **ANY** of the following[1]:
    - Extraspinal vascular malformations; **OR**
    - Spinal cord infarction; **OR**
    - Spinal vascular malformations and/or the cause of occult subarachnoid hemorrhage; **OR**
- Myelopathic symptoms, and **ANY** of the following[1]:
    - Connective tissue disorders (e.g., systemic lupus erythematosus)[18,19]; **OR**
    - Muscular dystrophies and myopathies; **OR**
    - **ANY** of the following demyelinating diseases:
        - Transverse myelitis; **OR**
        - Acute disseminated encephalomyelitis; **OR**
        - Acute inflammatory demyelinating polyradiculopathy (Guillain-Barre syndrome); **OR**
        - Chronic inflammatory demyelinating polyradiculopathy (including relapsing polyneuropathy); **OR**
        - Myelin oligodendrocyte glycoprotein antibody-associated disease; **OR**
        - Neuromyelitis optica spectrum disorder; **OR**
- Multiple sclerosis (MS) and its suspected variants, and **ANY** of the following[20]:
    - Diagnosis of MS with **ANY** of the following:
        - Clinically isolated syndrome (CIS)[D] with **ANY** of the following:
            - Establishing a diagnosis according to the 2017 McDonald criteria, including **ANY** of the following clinical scenarios[21]:
                - Evidence of MS on recent baseline brain MRI; **OR**
                - Suspected or known MS with new or changing symptoms compatible with spinal cord disease; **OR**
                - Evaluation of CIS in patients without an established MS diagnosis; **OR**

        - Recent brain MRI has not established another cause and is not sufficient to fulfill the McDonald criteria for diagnosis of MS; **OR**
      - Differential diagnosis in the case of inconclusive brain MRI findings; **OR**
    - Establishing the diagnosis of primary progressive multiple sclerosis; **OR**
  - Follow-up of MS with **ANY** of the following:
    - To evaluate new or recurrent signs or symptoms of myelopathy; **OR**
    - To aid in treatment switch decision-making for inconclusive clinical presentation or findings on brain MRI; **OR**
    - To determine a new baseline prior to starting or changing therapy; **OR**
    - Serial follow-up (6-12 months post-diagnosis) for CIS that is consistent with demyelination; **OR**
    - In the absence of other criteria, regular imaging (e.g., every 2-3 years) for known progressive MS; **OR**
- Preoperative, postoperative, or pre-treatment evaluation for **ANY** of the following:
  - Postradiation changes (e.g., myelopathy); **OR**
  - Epidural and subdural fluid collection[1]; **OR**
  - Pre-procedure assessment for vertebroplasty and kyphoplasty,[22] when imaging will impact management[23]; **OR**
  - Postoperative fluid collections and soft-tissue changes (extradural and intradural)[1]; **OR**
  - Postoperative with new or worsening neurological symptoms[10,11]; **OR**
- **ANY** of the following congenital conditions[1,24]:
  - Back and neck pain in a child under 16 years of age with red flags (e.g., fevers, chills, malaise, weight loss, decreased appetite, unrelenting pain, night pain that awakens one from sleep, focal neurological signs, loss of bowel or bladder control, neck stiffness, rash, photophobia, confusion)[25]; **OR**
  - Toe walking in a child under 5.5 years of age[26-28]; **OR**
  - Known high-risk disorders affecting the atlantoaxial articulation (e.g., Down syndrome, Marfan syndrome) with abnormal or inconclusive radiographs of the cervical spine; **OR**
  - Chiari malformation with **ANY** of the following[29]:

        - There is concern for clinically relevant pathology, such as hydrocephalus or spine syrinx; **OR**
        - To aid treatment planning prior to surgical decompression; **OR**
    - Scoliosis with **ANY** of the following[30]:
        - Neurological symptoms; **OR**
        - Requiring preoperative assessment; **OR**
        - Worsening pain not previously imaged; **OR**
    - Syringohydromyelia (syrinx); **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 if **ALL** of the following are **TRUE**:
    - 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), spine (cervical/thoracic/ lumbar) 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[31]; **OR**
- Stable axial spondyloarthropathy (axSpA) (i.e., ankylosing spondylitis [AS], reactive arthritis, psoriatic spondyloarthritis, enteropathic spondyloarthritis, juvenile spondyloarthritis, undifferentiated spondyloarthritis) with the intent of seeking subclinical inflammation or confirming disease inactivity.[9]

**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[31]:

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

[B]**Myelopathic symptoms**: Reduction or loss of fine motor skills, gait abnormality, increased muscular reflexes, pathological reflexes, paresthesia of limb, loss of hand dexterity.[33]

[C]**Trauma**: Blunt trauma, unintentional falls, fall from greater than or equal to 3 ft (0.9 m) or at least 5 stairs, axial load injury, vehicular trauma, high speed MVC/rollover/ejection, bicycle collision, motorized recreational vehicle accident, firearms injury, or sports-related injury.[34,35]

[D]**Clinically isolated syndrome (CIS)**: A single episode of inflammation that attacks the brain or spinal cord, developing suddenly or over a short period of time and lasting at least 24 hours, with or without recovery, and in the absence of fever or infection. This attack is similar to a typical multiple sclerosis relapse (attack and exacerbation), but it occurs in a patient not known to have multiple sclerosis. Symptoms may include vision loss in one eye, problems with eye movement, problems with balance or coordination, or weakness or numbness in part of the body. Less common symptoms may include vision loss in both eyes, total loss of movement in eyes, confusion, headache, neck stiffness, fatigue, or complete paralysis.[21]

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
72141	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, cervical; without contrast material
72142	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents; with contrast material(s)
72146	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, thoracic; without contrast material
72147	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, thoracic; with contrast material(s)
72148	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, lumbar; without contrast material
72149	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, lumbar; with contrast material(s)
72156	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, without contrast material, followed by contrast material(s) and further sequences; cervical
72157	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, without contrast material, followed by contrast material(s) and further sequences; thoracic
72158	Magnetic resonance imaging (MRI) (e.g., proton), spinal canal and contents, without contrast material, followed by contrast material(s) and further sequences; lumbar

Medical Evidence

Mathieu and Talbotts (2022) assessed the use of magnetic resonance imaging (MRI) in spinal emergencies. As an adjunct to CT, MRI has proven to be most valuable when additional imaging is necessary to assess spinal stability or compromise of neural elements. Vessel wall imaging techniques and MRA may also be utilized in cases of blunt traumatic cerebrovascular injury, mainly when findings from CTA are inconclusive. The American College of Radiology (ACR) has established guidelines outlining the appropriateness of MRI usage in various clinical scenarios related to spinal injuries and emergencies. MRI is considered 'usually appropriate' for patients with confirmed or suspected spinal cord or nerve root injuries.[16]

Suri et al. (2021) reported on a randomized control trial (RCT) that investigated the impact of inserting epidemiological benchmarks into lumbar spine imaging reports as part of the Lumbar Imaging with Reporting of Epidemiology (LIRE) trial. The trial analyzed secondary outcomes, focusing on subsequent nonsurgical and surgical procedures involving the thoracolumbosacral spine and sacroiliac joints. The study included 238,886 adult patients who underwent lumbar diagnostic imaging between 2013 and 2016. Results indicated that including epidemiological benchmarks (the 'LIRE intervention') did not significantly affect the utilization of non-surgical procedures (e.g., lumbosacral epidural steroid injections, facet joint injections, or facet joint radiofrequency ablation). In addition, the intervention did not impact surgical procedures such as decompression surgery, spinal fusion, or other spine surgeries involving the lumbar, sacral, or thoracic spine. The intervention also did not significantly affect any specific spine procedure.[22]

Ghaffari-Rafi et al. (2021) performed a systematic review and meta-analysis on the role of MRI in clinical decision-making in acute spinal cord injury. Obtaining MRI scans significantly influences the clinical management of patients experiencing acute spinal cord injury (SCI) across all presentations. Guidelines support MRI scans in adult patients with acute SCI before surgical intervention, when feasible, to enhance clinical decision-making. Additional research is needed to establish the utility and efficacy of MRI in various types of SCI further.[36]

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Policy Revision History/Information

Original Date: April 1, 2022		
Review History		
Version 2	8/29/2024	Annual review and policy restructure.
Version 3	10/30/2024	Edited repeat imaging criteria language.
Version 4	2/20/2025	Expanded conservative care requirement to better capture appropriate patient population and provided "out" from conservative care requirement for patients with progressive or severe myelopathy. Added references.
Version 5	09/11/2025	Annual review. Further refined conservative care indications. Added new indications for spondylosis/spondylolisthesis; axial spondyloarthropathy; toe walking in a child; back/neck pain with red flag symptoms in a child; atlantoaxial instability. Expanded indications for spinal infection, multiple sclerosis, and Chiari malformation. Added non-indication for axial spondyloarthropathy when the disease is stable. Removed non-indication for lumbar spine imaging in MS patients. Added definitions. Removed relative contraindications (contrast allergy, metallic clips, incompatible implantable devices, metallic foreign body).