Cohere Medical Policy - Computed Tomography (CT), 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:

Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein.

Guideline Information:

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

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Medical Necessity Criteria

***Service*: Computed Tomography (CT), 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

Computed tomography (CT) utilizes ionizing radiation to create images based on the varying absorption of X-rays by different tissues. This technology provides detailed cross-sectional views and enables the generation of multidimensional 2-D and 3-D reconstructions. CT scanning is highly valuable in clinical practice, particularly for evaluating spinal structures.[1] CT scan (non-contrast) is appropriate in the setting of acute trauma or suspected fracture. CT myelogram (CT with contrast) is a two-part procedure - iodinated contrast is first injected into the spinal canal under fluoroscopic guidance before a CT scan covering the region of concern is performed.[2-4]

Medical Necessity Criteria

*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.

Computed tomography (CT), 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:
  - MRI is contraindicated or cannot be performed; **AND**
  - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following[5-8]:
    - 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[9-12]:
  - Pediatric patient with equivocal radiographs; **OR**
  - Adult patient with **ALL** of the following:
    - Equivocal radiographs; **AND**
    - MRI is contraindicated or cannot be performed; **AND**
    - Documented failure of at least 6 weeks of conservative treatment in the past 6 months, including **ALL** of the following[5-8]:
      - 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 **ALL** of the following[1-3]:
  - MRI is indeterminate or cannot be performed; **AND**
  - **ANY** of the following:
    - 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) (i.e., ankylosing spondylitis [AS], reactive arthritis, psoriatic spondyloarthritis, enteropathic spondyloarthritis, juvenile spondyloarthritis, undifferentiated spondyloarthritis) with **ALL** of the following[3,12]:
    - Initial imaging with radiographs; **AND**
    - MRI is contraindicated or cannot be performed; **AND**
    - Ankylosing spondylitis of unclear disease activity while on biologic medication; **OR**
- Diagnosis and surveillance of soft tissue masses/neoplasms (bone, intradural-extramedullary, intramedullary, extradural etc.) and **ANY** of the following[3,12]:
    - 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[13]:
        - 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 **ALL** of the following[14]:
    - MRI is indeterminate or cannot be performed; **AND**
    - **ANY** of the following:

        - **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[15–17]:
    - Follow-up to initial imaging (e.g., radiograph, MRI) 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 **ALL** of the following:
        - MRI is indeterminate or cannot be performed[15]; **AND**
        - **ANY** of the following:
            - Suspected cauda equina syndrome; **OR**
            - Low back pain with or without radiculopathy and **ANY** of the following risk factors:
                - 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; **OR**

    - New onset post-traumatic neurological deficit (myelopathy) following significant trauma[C] with **ALL** of the following:
        - MRI is indeterminate or cannot be performed[15]; **AND**
        - **ANY** of the following:
            - 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 **ALL** of the following[4]:
    - MRI is indeterminate or cannot be performed; **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**

- Preoperative, postoperative, or pre-treatment evaluation with **ALL** of the following:
  - **ANY** of the following:
    - Postradiation changes (e.g., myelopathy); **OR**
    - Epidural and subdural fluid collection[1]; **OR**
    - Pre-procedure assessment for vertebroplasty and kyphoplasty[20] when imaging will impact management[21]; **OR**
    - Postoperative fluid collections and soft-tissue changes (extradural and intradural)[1]; **OR**
    - Postoperative with new or worsening neurological symptoms; **OR**
- Ossification of the posterior longitudinal ligament (OPLL); **OR**
- **ANY** of the following congenital conditions[1,22]:
  - MRI is indeterminate or cannot be performed; **AND**
  - 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)[23]; **OR**
  - Toe walking in a child under 5.5 years of age[24–26]; **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[27]:
    - 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[28]:
    - 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

Computed tomography (CT), 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[29]; **OR**
- Chronic neck pain in the absence of other criteria[3]; **OR**
- Plexopathy (non-traumatic, with or without malignancy) including **ANY** of the following[30]:
  - Brachial; **OR**
  - Lumbosacral; **OR**
- Diagnosis, surveillance, or management of multiple sclerosis (MS).[31,32]

**NOTE: CT in patients with claustrophobia should be requested at the discretion of the ordering provider.
***NOTE: CT 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[33]:

- 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.[34]

[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.[35,36]

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.[37,38]

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.[37,38]

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.[37,38]

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.[37,38]

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
72125	Computed tomography (CT), cervical spine; without contrast material
72126	Computed tomography (CT), cervical spine; with contrast material
72127	Computed tomography (CT), cervical spine; without contrast material, followed by contrast material(s) and further sections
72128	Computed tomography (CT), thoracic spine; without contrast material
72129	Computed tomography (CT), thoracic spine; with contrast material
72130	Computed tomography (CT), thoracic spine; without contrast material, followed by contrast material(s) and further sections
72131	Computed tomography (CT), lumbar spine; without contrast material
72132	Computed tomography (CT), lumbar spine; with contrast material
72133	Computed tomography (CT), lumbar spine; without contrast material, followed by contrast material(s) and further sections
76380	Computed tomography, limited or localized follow-up study

Medical Evidence

Ahmad et al. (2023) conducted a systematic review on the use of computed tomography (CT) and magnetic resonance imaging (MRI) with respect to the correlations between bone mineral density (BMD) derived from scans and Dual-Energy X-ray Absorptiometry (DEXA). A comprehensive analysis of 25 studies was included (15 utilizing CT and 10 utilizing MRI) with a total of 2745 patients. Articles published from 2011 to 2021 were included investigating the associations between CT or MRI measurements such as CT-derived Hounsfield units (CT-HU) values or MRI parameters, and DEXA-derived BMD, specifically focusing on lumbar spine or hip regions. CT-HU exhibits stronger correlations with DEXA measurements than MRI parameters; however, both CT and MRI demonstrate moderate correlations with DEXA. Additional research is needed within spine surgery cohorts, including inferior correlations in populations with degenerative spine conditions.[39]

Bäcker et al. (2021) performed a systematic literature review and meta-analysis to assess the sensitivity, specificity, and accuracy of dual-energy computed tomography (DE-CT) in detecting bone marrow edema and disc edema in spinal injuries. Early diagnosis of vertebral injuries is crucial to prevent treatment delays. Imaging modalities such as MRI or DE-CT are necessary to identify bone marrow or disc edemas. The analysis encompassed 13 studies involving 515 patients, 3335 vertebrae, and 926 acute fractures confirmed by MRI, which was used for comparison in 12 publications. DE-CT demonstrated an overall sensitivity of 86.2%, specificity of 91.2%, and accuracy of 89.3%. In addition, five studies reported the accuracy of conventional CT, yielding an overall sensitivity of 81.3%, specificity of 80.7%, and accuracy of 80.9%. Overall, DE-CT shows promise as a diagnostic tool for detecting bone marrow and disc edemas, potentially offering an alternative to MRI, the current gold standard.[40]

Ghodasara et al. (2019) review the use of postoperative CT following spine surgery. Scans are useful to identify implant locations and integrity, evaluate the efficacy of decompression and intervertebral arthrodesis procedures, and identify associated complications. While metallic implant artifacts may limit postoperative spinal CT scans, advancements in parameter optimization and metal artifact reduction techniques (e.g., iterative reconstruction and monoenergetic extrapolation methods) offer significant improvements in

image quality. Furthermore, they are valuable in detecting and characterizing any postoperative irregularities. Complications following spinal surgery and intervertebral arthroplasty range from issues with implant position and integrity to adjacent segment degeneration, collections, fistulas, pseudo meningoceles, cerebrospinal fluid leaks, and surgical site infections.[41]

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Policy Revision History/Information

Original Date: April 29, 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. Allowed for "out" from conservative care requirement for patients with CES, OPLL. Added references.
Version 5	09/11/2025	Annual review. Further refined conservative care indications. Simplified/streamlined indication for radiculopathy to avoid redundancy Added new indication for spondylosis/spondylolisthesis; axial spondyloarthropathy. Expanded indication for spinal infection; Chiari malformation. Added definitions. Added new indications for toe walking in a child; back and neck pain with red flag symptoms in a child; atlantoaxial instability. Added new non-indication for axial spondyloarthropathy when disease is stable and imaging is meant to confirm disease inactivity - in accordance with professional society guidelines.

		Removed relative contraindications (contrast allergy, metallic clips, incompatible implantable devices, metallic foreign body)