Cohere Medicare Advantage Policy - Computed Tomography (CT), Lower Extremity

Clinical Policy for Medical Necessity Review

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Important Notices

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Policy Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medicare Advantage Policy - Computed Tomography (CT), Lower Extremity
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

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Medical Necessity Criteria

Service: Computed Tomography (CT), Lower Extremity

Related CMS Documents

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

- National Coverage Determination (NCD). Computed tomography (220.1)

Description

Computed tomography (CT) is a common, noninvasive imaging modality that allows for the visualization of the lower extremities. CT is used to visualize and evaluate the morphology and pathology of the lower limbs. Depending on the indication, CT of the lower extremity can be performed with and without contrast. Intra-articular contrast can be employed for patients with suspected internal joint derangement or cartilage loss, for whom magnetic resonance (MR) is not possible (e.g., incompatible pacemaker, unable to tolerate MR exam, metallic artifact).[1-4]

Medical Necessity Criteria

Indications

Computed tomography (CT), lower extremity is considered appropriate if **ALL** of the following are **TRUE**:

- Plain radiographs or ultrasound of the area of concern are nondiagnostic or inconclusive, and have been completed during the current episode of symptoms or change of symptoms; **AND**
- **ANY** of the following:
  - Acute traumatic lower extremity injury (e.g., fracture, dislocation) with **ALL** of the following[1,2]:
    - **ANY** of the following:
      - More detail is required than is available with plain radiographs; **OR**
      - MRI is contraindicated; **AND**

- **ANY** of the following:
  - Bone injury and **ANY** of the following is **TRUE**:
    - Fracture (known) and additional detail needed; **OR**
    - Acute injury with occult fracture suspected; **OR**
    - Joint dislocation or instability; **OR**
    - Stress/insufficiency fracture (known) and follow-up imaging needed; **OR**
    - Stress/insufficiency fracture (suspected) with negative radiographs and MRI cannot be performed or is contraindicated; **OR**
  - Suspected soft tissue injury (e.g., tendon injury) and MRI cannot to be performed or is contraindicated; **OR**

- Neoplastic conditions (including masses and mass-like conditions) requiring evaluation (e.g., for treatment planning, treatment response, or prognostication) with **ANY** of the following[5-8]:
  - Malignant or aggressive primary bone tumor[6]; **OR**
  - Malignant or aggressive primary soft tissue tumor[6]; **OR**
  - Metastatic lesions of the lower extremity; **OR**
  - Nonsuperficial (deep) soft tissue mass[7]; **OR**
  - Soft tissue mass and magnetic resonance imaging (MRI) or ultrasound is unable to be performed or is contraindicated[7]; **OR**
  - A primary bone tumor is suspected, and radiographs indicate **ANY** of the following[8]:
    - Radiograph is negative; **OR**
    - Benign features (osteoid osteoma is not suspected); **OR**
    - Osteoid osteoma is suspected; **OR**
    - Lesion is present on plain radiographs; **OR**
    - Indeterminate or aggressive appearance for malignancy; **OR**
    - Osseous lesion discovered on a routine radiograph conducted for an unrelated indication; **OR**
  - Presence of a mass with **ANY** of the following[7]:
    - Absence of trauma; **OR**
    - Rapid growth; **OR**
    - Recurrence after prior surgery; **OR**
    - Non-diagnostic ultrasound or other inconclusive imaging; **OR**
  - Follow-up exam to further characterize a bone or soft tissue lesion diagnosed on the initial radiologic exam, including radiograph,

ultrasound, magnetic resonance (MR), and nuclear medicine studies[8]; **OR**
    - Known malignancy with unexpected, localized lower extremity pain or swelling; **OR**
    - Persistent palpable abnormality with non-diagnostic imaging (e.g., radiograph, ultrasound); **OR**
    - Routine surveillance of known malignancy; **OR**
- Preoperative imaging prior to surgical management of congenital condition, injury, recurrent instability, malignancy, mass, infectious disorder, or vascular abnormality; **OR**
- The patient requires a CT with arthrogram and **ALL** of the following conditions[9]:
    - **ANY** of the following:
        - Knee meniscal tear; **OR**
        - Hip labral tear; **AND**
    - **ALL** of the following:
        - Concern for rupture or tear based on clinical history, imaging, or physical exam; **AND**
        - Joint-specific orthopedic evaluation and maneuvers suggest a tear; **OR**
- Vascular conditions, known or suspected, including **ANY** of the following:
    - Detection, screening, surveillance, and follow-up of autoimmune, collagen vascular diseases, or inflammatory conditions (e.g., inflammatory arthritis)[10]; **OR**
    - Osteonecrosis, known or suspected, with negative radiographs, when MRI is contraindicated or cannot be performed[11]; **OR**
    - The patient requires evaluation for vascular malformation (with or without pain) due to **ANY** of the following symptoms[12]:
        - Diffuse or focal enlargement; **OR**
        - Discoloration; **OR**
        - Soft tissue mass; **OR**
        - Ulceration; **OR**
        - Vascular bruit or thrill; **OR**
- Infection or an infectious disorder including **ANY** of the following:
    - Septic arthritis with **ANY** of the following:
        - Elevated laboratory markers (e.g., erythrocyte sedimentation rate ESR ,C-reactive protein (CRP), white blood cell count); **OR**

- Findings are suggestive of joint effusion or soft tissue swelling[13]; **OR**
- Clinical history of **ANY** of the following:
  - Adjacent infection; **OR**
  - Diabetes; **OR**
  - Intravenous drug use; **OR**
  - Previous surgery on the suspected joint of concern (e.g., joint replacement/ ligament, labral, meniscus repair); **OR**
- Physical exam that supports suspicion of septic arthritis; **OR**
- Positive joint aspiration; **OR**
- Septic arthritis is suspected with normal initial radiographs[13]; **OR**

■ Osteomyelitis, suspected[14,15]; **OR**

■ Soft tissue infection suspected with a history of puncture wound with possible retained foreign body (radiographs normal)[13]; **OR**

■ Soft tissue infection suspected with high clinical suspicion of necrotizing fasciitis[13]; **OR**

○ Pre- and post-intervention evaluation (including the diagnosis of postoperative complications) for **ANY** of the following:

■ Imaging after hip arthroplasty and **ANY** of the following[15]:
- Hardware fracture; **OR**
- History of acute injury; **OR**
- Metal-on-metal prosthesis with an adverse reaction to metal debris; **OR**
- Trunnionosis (corrosion or metallosis), suspected; **OR**
- Pain with ANY of the following (infection excluded):
  - Aseptic loosening; **OR**
  - Instability; **OR**
  - Osteolysis; **OR**
- Periprosthetic fracture; **OR**

■ Imaging after knee arthroplasty and **ANY** of the following are suspected (with or without pain)[14]:
- Hardware fracture; **OR**
- Infection; **OR**
- Pain with **ANY** of the following (infection excluded):
  - Aseptic loosening; **OR**
  - Instability; **OR**
  - Osteolysis; **OR**
- Periprosthetic fracture; **OR**

        - Concern for injury to extensor mechanism; **OR**
    - Concern for rupture or tear of a tendon, ligament, or other soft tissue injury (including labrum tear) with **ALL** of the following:
        - MRI is contraindicated or could not be performed; **AND**
        - **ANY** of the following:
            - 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**
            - **ALL** of the following:
                - Symptoms were not the direct result of a preceding acute injury (i.e., new symptoms that are not the result of a traumatic injury), surgery is being considered, and **ALL** of the following:
                    - Ongoing symptoms; **AND**
                    - 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**
                        - Physical therapy or a provider-directed home exercise program (HEP)[A]; **AND**
                - Worsening of symptoms during the trial of conservative treatment; **OR**
    - Radiographs are negative for osseous injury, an alignment abnormality is suspected based on physical examination, and **ALL** of the following**:**
        - Magnetic resonance imaging and/or ultrasound are contraindicated or cannot be performed; **AND**
        - Radiographs that suggest **ANY** of the following:
            - Dislocation; **OR**
            - Syndesmotic injury; **OR**
            - Other ligamentous injury; **OR**
    - Evaluation of **ANY** of the following uncategorized/miscellaneous symptoms when MRI is contraindicated or cannot be performed, and the patient requires evaluation[9]:
        - Marrow abnormalities[7]; **OR**

- Joint-specific orthopedic evaluation and maneuvers suggest a tear; **OR**
- Persistent joint/muscle pain or weakness unresponsive to conservative treatment and **ALL** of the following:
  - Nondiagnostic or indeterminate imaging (e.g., radiographs, ultrasound); **AND**
  - 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); **AND**
  - Documented failure of at least 6 weeks of conservative treatment within the past 6 months, including **ALL** of the following:
    - Anti-inflammatory medications, nonopioid analgesics, or prescription medications (e.g., oral steroids, neuropathic pain medications) if not contraindicated; **AND**
    - Physical therapy or a provider-directed home exercise program (HEP)[A]; **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), lower extremity is not considered appropriate if **ANY** of the following is **TRUE**:[18]

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms.

*NOTE: The referring professional and radiologist should discuss the risks and benefits of contrast media administration, including possible prophylaxis, in

patients with chronic or worsening kidney disease or severe renal failure.
**NOTE: CT in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.
***NOTE: CT in patients with claustrophobia should be requested at the discretion of the ordering provider.

[A]**Provider-directed home exercise programs (HEP)** should include[12]:
- Patient education of prescribed exercises with written instructions,
- Documentation of patient compliance with the HEP.

Disclaimer on Radiation Exposure in Pediatric Population

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.[19,20]

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.[19,20]

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.[19,20]

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.[19,20]

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
73700	Computed tomography (CT), lower extremity; without contrast material
73701	Computed tomography (CT), lower extremity; with contrast material
73702	Computed tomography (CT), lower extremity; without contrast material, followed by contrast material(s) and further sections
76380	Computed tomography, limited or localized follow-up study

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 may include:

- Computed tomography imaging employs ionizing radiation in the form of radiographs, and while routine radiographs use low levels of ionizing radiation, this form of radiation is known to increase the risk of cancer.[2]
- Young children are more sensitive to radiation than adults and even the low-dose radiation of CT may pose a significant cancer risk to pediatric patients. In growing children, the thyroid gland, breast tissue, and gonads are particularly sensitive to radiation.[3,4]
- The contrast agent, or dye, employed in some lower extremity CT scans has been linked to a renal dysfunction called contrast-induced nephropathy. Patients undergoing consecutive scans, or patients with cirrhosis, hypotension, or peritoneal carcinomatosis may be predisposed to contrast-induced nephropathy.[21]
- Contrast agents may also produce adverse anaphylactoid or nonanaphylactoid reactions. Women, infants, older adults, and Individuals with medical conditions such as diabetes, asthma, or thyroid disorders may be predisposed to contrast induced allergic reactions.[16]
- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- As a component of a whole-body trauma study, CT may aid in surgical planning by enabling triage through the simultaneous consideration of extremity and intracavitary injuries.[17]
- Computed tomography is more sensitive to lower extremity fractures than conventional radiographic examinations, while delivering an equivalent dose of radiation.[22]

- For patients for whom magnetic resonance imaging is unavailable or contraindicated, CT can serve as an alternative when an occult proximal femoral fracture is suspected.[23]
- Computed tomography scans can visualize anatomical structures, including the posterior cruciate ligament, allowing for better soft tissue protection in surgical procedures such as total knee arthroplasty.[5]
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

Dreizin et al. (2022) reviewed the role of computed tomography (CT) and computed tomography angiography (CTA) in trauma and salvaging a threatened or mangled extremity. When reviewing CT scans to assess complications around the amputation site, attention should focus on signs such as surgical wound opening, ulceration, infection, post-surgical blood collections, lingering bone fragments, abnormal bone growth, excessive scarring, and the maintenance of vascular function. Damage control techniques involve swift actions to manage bleeding and restore blood circulation. Early implementation of fasciotomies may be required, along with immediate temporary realignment and stabilization using splints, traction, or external fixation. The measures aim to safeguard the repaired blood vessels and ensure a smooth connection without tension.[17]

Allen et al. (2020) performed an observational study to evaluate the incidence of fractures and ligament injuries among patients presenting with an acute ankle injury and normal findings on radiographic examination while also exploring optimal examination protocols. A total of 100 patients were enrolled in the study - 19 were diagnosed with major fractures, and 42 had small avulsion fractures. Further, 42 patients exhibited ankle effusions,

alongside a notable occurrence of soft tissue injuries. CT scans and ultrasound can identify fractures and soft tissue injuries yet may be utilized less frequently in standard clinical practice. The authors also discuss advances in imaging techniques. Research indicates that cone beam CT surpasses ultrasound examination and the traditional combination of clinical assessment and radiography in fracture detection sensitivity. Despite this heightened sensitivity, cone beam CT maintains a radiation exposure level comparable to conventional radiography, suggesting it is a safer and more precise imaging alternative.[22]

Kellock et al. (2019) conducted a meta-analysis on the diagnostic accuracy of CT to identify occult proximal femoral fractures. The authors report 13 studies of varied reporting quality that included 1248 patients (496 with hip fractures, 752 without) with MRI or clinical follow-up serving as the reference standard. Fifty false-negative examinations were identified. The pooled sensitivity estimate was 94%, with specificity reaching 100%. The authors conclude that when clinical suspicion arises for occult proximal femoral fracture, and MRI is either contraindicated or inaccessible, CT represents a viable option. In cases where clinical concern persists despite normal CT results, MRI may be indicated.[23]

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Policy Revision History/Information

Original Date: October 3, 2024		
Review History		
Version 2	10/02/2025	Annual review Updated conservative care language Rearranged, reworded, reformatted, and consolidated indications for consistency and clarity. No changes to procedure codes. Added references #13, 22.