

**MRI Thoracic Spine Guidelines****DEPARTMENT: Utilization Management Physician Practice Guidelines****EFFECTIVE DATE: 08/09****DATE LAST REVIEWED: 04/22**

**SOURCES:** National Imaging Associates, Inc.  
<https://acsearch.acr.org/docs/69484/Narrative/>  
<https://acsearch.acr.org/docs/69484/EvidenceTable/>  
[Significance of preoperative MRI in establishing levels of augmentation for percutaneous vertebroplasty, J Pain Res v.6; 2013 PMC3656912](#)  
Value of MRI imaging prior to a kyphoplasty for osteoporotic insufficiency fractures, Eur Spine J. 2009 Sep; 18(9): 1287–1292.  
<https://acsearch.acr.org/docs/69359/Narrative/>

**RECOMMENDED GUIDELINES:**

An MRI is not indicated for back pain alone.

**Indications:**

- 1) Urgently when ANY ONE (1) of the following is suspected:
  - a) Evidence of thoracic cord dysfunction due to presence of ANY ONE (1) of the following:
    - i) Urinary urgency, frequency, retention, or overflow incontinence
    - ii) Fecal incontinence
    - iii) Lower extremity spasticity
    - iv) New or progressive sensory or motor deficit of the lower extremities
    - v) Clearly defined sensory level below the armpit.
    - vi) Hyperreflexia or clonus of the lower extremities
    - vii) Positive Babinski
    - viii) Suspected transverse myelitis
- 2) Suspected spinal injury and ONE (1) or more of the following in:
  - a) Fracture and concern for ligamentous injury
  - b) Neurologic symptoms associated with thoracolumbar trauma and suspicion of ONE (1) or more:
    - i) Epidural hematoma
    - ii) Traumatic disc herniation
    - iii) Cord contusion
    - iv) Nerve root avulsion
- 3) Suspected spinal infections (osteomyelitis, disk space infection, or epidural abscess) plus ONE (1) or more of the following:
  - a) Localized midline thoracic back pain
  - b) Fever
  - c) Elevated sedimentation rate
  - d) Recent history of spinal surgery
  - e) Immunosuppression

- f) History of IV drug abuse
  - g) Recent invasive procedure
  - h) Positive bone scan
  - i) Concurrent or suspected diagnosis of tuberculosis
- 4) Localized thoracic back pain and ONE (1) or more of the following:
- a) History or current diagnosis of malignancy
  - b) Unexplained weight loss
  - c) Pain occurring mainly at night
  - d) Acute onset of point tenderness localized to the thoracic spine
  - e) Exacerbation of chronic back pain unresponsive to a trial of conservative treatment for at least six (6) weeks.
  - f) Rapidly progressing weakness
  - g) Positive bone scan
  - h) Spasticity
  - i) Bowel or bladder dysfunction
- 5) Less urgently for ANY ONE (1) of the following:
- a) Confirmation of suspected inflammatory or demyelinating process.
  - b) Suspected multiple sclerosis with main presenting symptoms at the level of the thoracic spinal cord.
  - c) Suspected proliferative disease of bone marrow for ONE (1) or more of the following purposes:
    - i) Identify burden of disease
    - ii) Stratify treatment options
    - iii) Monitor response to therapy
- 6) Preprocedural planning for vertebroplasty/kyphoplasty
- a) Confirm correct level based on plain film
  - b) Confirm acuity/edema – determines procedural success
  - c) Exclude cord compression which may exclude the pt for the exam
  - d) Exclude concomitant disease not visible on plain films or CT

Taken from ACR Guidelines

**Summary of Recommendations**

- CT is usually the preferred first test in suspected spinal trauma.
- MRI is usually the preferred first test in nontraumatic myelopathy. Imaging should be limited to appropriate spinal levels by clinical judgment and physical examination.
- Gadolinium contrast administration is preferred in oncology, infection, inflammation, and suspected vascular causes of myelopathy.
- Spinal angiography (invasive and/or CTA/MRA) is crucial in the evaluation of selected patients with suspected treatable causes of vascular myelopathy.
- In oncologic patients and those in whom infectious disease is likely, additional imaging tests may be helpful in determining the source and extent of compressive components; however, MRI remains the first-line imaging test for the evaluation of myelopathic symptoms.
- No high-quality evidence supports the use of discography, thermography, epidural venography, ultrasound, or cerebrospinal fluid flow studies in the evaluation of myelopathy.