MedPOINT MANAGEMENT	**Clinical Protocol:** MRI, Lumbar Spine	
	ORIGINAL EFFECTIVE DATE: 03/02/2011	**REVIEWED/REVISED DATE(S):** 06/18/2019 08/13/2021 07/28/2022 11/15/2023 07/24/2025
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PROTOCOL OVERVIEW

This Clinical Protocol advises on indications and guidelines for Lumbar Spine MRI.

INDICATIONS

1. Lumbar spine MRI may be indicated for **1 or more** of the following:
    a. Ankylosing spondylitis or other seronegative spondylarthritis, suspected, and plain x-ray results nondiagnostic
    b. Cancer or neoplasm evaluation or staging needed, as indicated by **1 or more** of the following:
        i. Localized lumbar back pain and **1 or more** of the following:
            1. Bone scan positive
            2. Pain occurs mainly at night.
            3. Persistent back pain in patient older than 50 years
            4. Personal history or concurrent diagnosis of malignancy
            5. Weakness, rapidly progressing
            6. Weight loss, unexplained
        ii. Myelopathy signs or symptoms (eg, motor weakness, bowel or bladder dysfunction)
        iii. Post-treatment monitoring of spinal metastasis
2. Congenital spinal conditions, suspected, as indicated by **1 or more** of the following:
    a. Anterior sacral meningocele
    b. Caudal regression syndrome
    c. Diastematomyelia (ie, split cord malformation)
    d. Dorsal dermal sinus
    e. Hemangioma
    f. Hydromyelia
    g. Intradural lipoma
    h. Myelocele
    i. Myelomeningocele
    j. Split notochord syndrome
    k. Tight filum terminale
3. Infection, known or suspected (eg, vertebral osteomyelitis, disk space infection, epidural abscess), as indicated by **ALL** of the following:
    a. Localized midline back pain

b. Risk factors for spinal infection, as indicated by **1 or more** of the following:
    i. Bone scan or plain x-ray suggestive for infection
    ii. Erythrocyte sedimentation rate elevated
    iii. Fever
    iv. History of intravenous drug abuse, other source of infection, or recent invasive procedure(73)
    v. Immunosuppression
    vi. Positive blood culture
    vii. Recent history of spinal surgery
    viii. Tuberculosis, concurrent or suspected

4. Inflammatory or demyelinating process, suspected (eg, clinically isolated syndrome, multiple sclerosis, other demyelinating disease), as indicated by **1 or more** of the following:
    a. Multiple sclerosis, suspected, as indicated by **1 or more** of the following:
        i. Ascending numbness or tingling (eg, from foot to trunk)
        ii. Brown-Sequard syndrome
        iii. Conditions mimicking multiple sclerosis (eg, Sjogren syndrome, systemic lupus erythematosus, antiphospholipid syndrome) cannot yet be excluded.
        iv. MRI of brain nondiagnostic for multiple sclerosis
        v. Signs or symptoms of myelopathy or myelitis
    b. Transverse myelitis in spinal cord, suspected (idiopathic or in conjunction with multiple sclerosis), as indicated by **1 or more** of the following:
        i. Bilateral signs or symptoms of involvement of appropriate level of spinal cord
        ii. Clearly defined sensory level
        iii. Sudden onset of sensory, motor, and autonomic dysfunction attributable to appropriate level of spinal cord
5. Pain localized to low back or radicular in nature, subacute or chronic, as indicated by **ALL** of the following:
    a. Failure to improve after 6 or more weeks of nonoperative treatment, as indicated by **1 or more** of the following:
        i. Analgesics and NSAIDs
        ii. Exercise
        iii. Modification of activity that exacerbates or produces symptoms
        iv. Physical therapy
    b. Patient being considered for invasive treatment (eg, epidural steroids, surgery)
    c. Significant interference with daily function
6. Postoperative spinal complications, known or suspected, as indicated by **1 or more** of the following:
    a. Differentiating recurrent disk herniation from epidural fibrosis, soft tissue inflammation, facet joint inflammation, or bone marrow edema
    b. Postoperative hemorrhage or hematoma
    c. Pseudomeningocele
    d. Spondylodiscitis
    e. Sterile arachnoiditis
7. Scoliosis, as indicated by **1 or more** of the following
    a. Congenital scoliosis
    b. Early-onset scoliosis (age 9 years or younger)
    c. Neurofibromatosis
    d. Presurgical planning for adolescent idiopathic scoliosis to assess possible neural axis malformation, as indicated by **1 or more** of the following:
        i. Abnormal neurologic findings on clinical examination
        ii. Age at first visit 10 years or younger

iii. Kyphosis at curve apex
iv. Left-sided thoracic curvature
v. Male gender
vi. Pain, moderate to severe
vii. Rapid curve progression (ie, more than 1 degree per month)
viii. Short segment curve (ie, less than 6 vertebral segments)
ix. Thoracic kyphosis 30 degrees or greater
x. Vertebral abnormalities (eg, hemivertebrae, block vertebrae) detected on x-ray

8. Spinal cord compression, myelopathy, or cauda equina syndrome, suspected (eg, positive Babinski sign, depressed ankle deep tendon reflexes, gait abnormality, hyperreflexia, sensory or motor deficits
9. Spinal cord infarction or ischemia, suspected (eg, sudden-onset back pain, sensory or motor deficits, urinary retention)
10. Spinal cord stimulator placement planning needed, and no MRI of region within 12 months prior to placement

11. Spinal dysraphism, suspected, as indicated by **1 or more** of the following:
    a. For infants, as indicated by **1 or more** of the following:
        i. Absent reflexes
        ii. Aplasia cutis congenita
        iii. Decreased spontaneous leg movement
        iv. Decreased urinary stream
        v. Deviation of gluteal cleft
        vi. Foot asymmetry
        vii. Leg atrophy
        viii. Midline lumbosacral skin lesions (eg, atypical dimple, dermal sinus, lipoma, tail)
        ix. Unilateral lumbosacral hypertrichosis
    b. For toddlers: developmental delay in walking, abnormal gait
    c. For older children: spasticity, hyperreflexia, bowel or bladder disturbance, including incontinence
12. Spinal stenosis of lumbar spine, suspected, as indicated by **ALL** of the following:
    a. Neurogenic claudication with progressive or disabling symptoms, as indicated by **1 or more** of the following:
        i. Back, leg, or buttock pain worsens with prolonged standing and activities requiring lumbar extension.
        ii. Bilateral leg or buttock pain with prolonged walking that is relieved with sitting or leaning forward
        iii. Leg weakness
        iv. Wide-based gait or abnormal Romberg test
    b. Patient being considered for invasive treatment
13. Spondylolysis, known or suspected by radiologic evidence (eg, by plain x-ray, bone scan, CT scan), with or without spondylolisthesis, and **1 or more** of the following:
    a. Focal neurologic findings
    b. Low back pain that worsens with activity
    c. Urinary retention or incontinence
14. Stereotactic spine radiotherapy treatment planning
15. Syringomyelia in lumbar spine, suspected, as indicated by **1 or more** of the following:
    c. Muscle wasting in appropriate lumbar spine dermatomes
    d. Sensory loss in appropriate lumbar spine dermatomes
    e. Weakness in appropriate lumbar spine dermatomes

16. Tethered cord, suspected, as indicated by **1 or more** of the following:
    a. Anorectal malformation
    b. Cutaneous manifestations of occult spina bifida (eg, nevus, lipoma, tufts of hair, hemangioma, dimple overlying spine, asymmetric gluteal cleft, dermal sinus tract)
    c. Gait abnormality or difficulty
    d. Urinary dribbling or lack of bladder control
    e. Urodynamic tests abnormal
17. Trauma or fracture of lumbar spine, known or suspected, as indicated by **1 or more** of the following:
    a. Epidural hematoma, suspected
    b. Fall from height greater than 10 feet (3.1 meters)
    c. Myelopathy
    d. Neurologic findings that correspond to vertebral level above level of injury seen on plain x-ray or CT scan
    e. Osteoporosis, known or suspected
    f. Neurologic symptoms associated with traumatic mechanism of injury, as indicated by **1 or more** of the following:
        i. Ejection from motorcycle
        ii. High-speed motor vehicle accident (greater than 50 mph (80.5 kph))
        iii. Intoxicated state
        iv. Minimal trauma in osteoporotic patient with suspected fragility fracture
        v. Motor vehicle accident, with acute hyperflexion of spine over seat belt
    g. Pediatric patient
    h. Plain x-ray or CT scan results nondiagnostic
    i. Pre-existing spinal pathology
    j. Progressive neurologic deficit
    k. Radiculopathy
18. Tuberculosis of spine, known or suspected, as indicated by **1 or more** of the following:
    a. Diagnostic evaluation of suspected spinal tuberculosis
    b. Preparation for surgical management
19. Repeat evaluation of specific area or structure with same imaging modality, as indicated by **1 or more** of the following:
    a. Change in clinical status (eg, worsening symptoms or new associated symptoms)
    b. Need for interval reassessment that may impact treatment plan
    c. Need for re-imaging either prior to or after performance of invasive procedure

NOTES

Low Back Pain is among the most common reasons for patients to seek medical attention, yet specific diagnosis cannot be made in about 85% of cases. Fortunately, the vast majority of patients have symptomatic improvement within the first month. Therefore, spinal imaging is not generally necessary during the first month of symptoms except when a 'red flag' symptom is noted on physical exam or history. 'Red flags' suggest a medically emergent condition and require prompt attention.

In the absence of significant pain or neurologic symptoms, routine screening radiographs for acute episodes are not indicated. They should be considered after 6 to 8 weeks for patients who fail to improve after conservative management, particularly for patients more than 50 years of age. Early imaging is indicated for diagnosis of fractures, spodyloisthesis, arthritis, infection, spondylitis and malignancy.

MRI is usually preferred to CT for more specialized imaging and is superior to myelography for most indications. 'Red flag' conditions indicating potential need for MRI include significant trauma, history of malignancy, saddle anesthesia, sever or progressive neurologic deficit and incontinence or urinary retention, among others.

MRI with contrast is useful for suspected infection or neoplasia. In post-op patients, contrast enhanced MRI allows distinction between scar and disk. CT provides superior bone detail, useful for depiction of spondylolysis, pseudoarthrosis, and post-surgical evaluation of bone graft integrity and fusion or instrumentation.

RECOMMENDED RECORDS

Please submit history and physical or progress notes that show the symptoms, exam findings, and any pertinent diagnostic tests that may have been done. (i.e. X-ray, ultrasound).

CITATION

MCG Care Guidelines 27th Edition, 4/04/2025 MCG Releases 29th Edition of Care Guidelines with Updates for Observation Care and Cellular Therapy - MCG Health

Bradley, WG, Seidenwurm, DJ, et al, National Guideline Clearinghouse, Expert Panel on Neurologic Imaging, American College of Radiology, "Low Back Pain", online publication, 2005, p 7

Milliman Care Guidelines, Ambulatory Care, 10th Edition, "Spine, Lumbar (MRI)"

Milliman Care Guidelines, Ambulatory Care, 8th Edition, "Low Back Pain, Sciatica, and Arthritis"

Apollo Managed Care Consultants, "Medical Review Criteria Guidelines for Managing Care", Eighth Edition, pp 896-7

REVISION HISTORY

Revised By:	Ashley Gonzalez, UM Project Coordinator; Konstantin Yengoyan, Supervisor, Clinical Operations	**Date:** 07/24/25	
Approved By:	Dr. Shenoda Y.A Abd Elmaseh, Assistant Medical Director	**Date:** 01/29/2026	**Signature** Shenoda Abd Elmaseh,
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