



**Clinical Review Criteria
Lumbar Spine MRI**

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Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	Lumbar MRI (L37281) *Medical necessity review not required
Local Coverage Article (LCA)	Billing and Coding: Lumbar MRI (A57207)

For Non-Medicare Members

Adapted from Washington State Department of Labor & Industries Guidelines for Advanced Imaging Studies: Lumbar spine checklist. Retrieved 4/22/2020 from https://lni.wa.gov/patient-care/treating-patients/treatment-guidelines-and-resources/_docs/LBchecklist.pdf

Lumbar spine MRI is NOT indicated for the following:

Uncomplicated acute (<6 weeks) low back pain with or without suspected radiculopathy (no red flags) does not warrant the use of MRI, X-ray, CT, myelography or CT xylography, NUC Tc-99m bone scan with SPECT. Nonspecific lumbar disc abnormalities are commonly found in asymptomatic patients. (Chou, Qaseem et al. 2007) (American College of Radiology 2007)

**Note – most acute lumbar radicular pain will resolve with time and conservative management. Bulging discs will retract away from the affected nerve root spontaneously in a high percentage of cases. Most patients will respond to 6 weeks medical/conservative treatment including physical therapy.*

If advanced imaging is needed, lumbar spine MRI is the preferred imaging modality for the following circumstances unless contraindicated or not tolerated by the patient (i.e., due to presence of ferrous metal in body, or severe anxiety) or unavailable.

I. Acute low back pain (onset within past 6 weeks)

Lumbar spine MRI not indicated unless **ONE or more** of the following red flag conditions are present:

Red Flags:

1. **Progressive (objective) neurological signs on repeat in-person examination** (i.e. progressive motor weakness present) (*MRI without contrast*)
2. **Suspect Cauda Equina syndrome** (*MRI without contrast*) due to the following:
 - o New onset bilateral neurologic signs and symptoms of cauda equina (e.g., saddle numbness with acute bladder or bowel dysfunction)

*ACR appropriateness recommendation ranks MRI without contrast highest (rating = 9). MRI with and without contrast (rating = 8) depends on clinical circumstances. Other methods: Myelography and postmyelography CT (rating = 6), CT with and without contrast (rating = 5)-may be indicated if MRI is confusing or contraindicated, x-ray, NUC Tc-99m bone scan with SPECT and x-ray myelography are rated < 5.

3. **Strong clinical suspicion of spine infection** (*MRI with and without contrast*) and **TWO or more** of the following:
 - Fever
 - Immunosuppression (e.g., chronic steroid use, diabetes)
 - IV drug use
 - Known bacteremia
 - Elevated sedimentation rate/c-reactive protein
4. **History or strong clinical suspicion of cancer with new onset of low back pain and non-diagnostic plain films** and **TWO or more** of the following (*MRI with and without contrast*):
 - Unexplained weight loss
 - Failure of back pain to improve after one month
 - Age over 50

*ACP recommends plain radiography for unexplained weight loss, MRI or plain radiography if multiple risk factors present. ACR Guidelines for suspicion of cancer, infection or immunosuppression rate MRI without and with contrast highest (rating = 8). CT without contrast (rating = 6)-useful if MRI is contraindicated or unavailable. Other imaging methods: use of x-ray, NUC Tc-99m bone scan whole body with optional targeted SPECT, myelography and postmyelography CT (appropriateness rating < 6 for these).

5. **Suspected vertebral fracture in a patient with pain and non-diagnostic plain films** (*MRI without contrast*) with **ONE** or more of the following:
 - Low velocity trauma (e.g., fall from height or struck by object) OR
 - Osteoporosis OR
 - Age >70 years with other acute fracture(s)

*ACP Guideline recommends: if vertebral compression fracture is suspected due to history of osteoporosis, use of steroids, or age ≥ 70 plain radiography should be completed prior to MRI.
 *For low velocity trauma, ACR Guidelines do not support use of NUC Tc-99m bone scan with SPECT, MRI with and without contrast, myelography and postmyelography CT, or x-ray myelography (appropriateness ratings < 5 for these)

II. Subacute Low back pain >6 weeks: (*MRI without contrast*)

- A. Patient has had **at least 6 weeks** medical/conservative treatment (must include **at least 4 weeks** of physical therapy, including an initial evaluation with PT and at least one follow up, within the last 3 months) for *current episode* of back pain with no significant improvement (remote past history of physical therapy does not qualify)

AND

- **ONE or more** of the criteria under acute low back pain met (from section I above)

OR

- Suspected radiculopathy with **ALL of the following** documented in notes:
 - Lower extremity pain is > than back pain present in nerve root distribution (e.g., L5, S1, etc.)
ONE or more of the following:
 - Positive supine straight leg raising test - radicular leg pain reproduced when the leg is extended >30° and <70° (pain reproduced only in the back is a negative test) or positive crossed straight leg raising test, **OR**
 - Motor weakness or sensory loss in a radicular distribution (must be in a specific radicular distribution), **OR**
 - EMG/NCS confirms acute radiculopathy consistent with the patient's symptoms

OR

- Strong clinical suspicion of lumbar spinal stenosis, with documentation of neurogenic claudication (bilateral or unilateral leg pain upon standing that is temporarily relieved by forward flexion or sitting)

OR

- Patient's clinical presentation indicates need for urgent surgery or other intensive intervention as determined by a surgeon or interventional specialist, even without 6 weeks of conservative/medical treatment.

*ACP recommendation: consider EMG/NCS testing if symptoms > 1 month. For suspected radiculopathy, ACR Guidelines rate MRI without contrast as most appropriate. CT without contrast may be useful if MRI is not available or contraindicated. MRI with and without contrast may be indicated if noncontrast MRI is nondiagnostic or indeterminate. MRI is preferred over myelography and postmyelography CT but may be indicated if MRI is nondiagnostic. In some circumstances (facet arthropathy, stress fracture and spondylolysis) NUC Tc-99m bone scan with SPECT may be useful. Least appropriate x-ray (appropriateness rating 2).

III. Chronic low back pain

A. Chronic low back pain (> 3 months) with no prior MRI of lumbar spine: (MRI without contrast)

All patients should have **at least 6 weeks** of medical/conservative treatment (must include at least **4 weeks** of physical therapy, including an initial evaluation with PT and at least one follow up within the last 6 months) for *current episode* of back pain with no significant improvement (remote past history of physical therapy does not qualify **and must meet ONE of the following**:

- Any of the criteria under subacute low back pain (section II above)
- Lack of improvement accompanied by severe functional impairments
- Patients' clinical presentation indicates need for surgery or other invasive intervention as determined by a surgeon or interventional specialist.

B. Chronic low back pain (> 3 months) with prior MRI of lumbar spine: (MRI without contrast)

All patients should have **at least 6 weeks** medical/conservative treatment (must include at least **4 weeks** of physical therapy, including an initial evaluation with PT and at least one follow up therapy visit within the last 6 months) for *current episode* of back pain with no significant improvement (remote history of physical therapy does not qualify) **and must meet ONE of the following**:

1. Patient has not been determined to be a surgical candidate in the past
 - Documented objective worsening of neurological status on current physical exam (e.g. absence of reflexes, dermatomal sensory changes, radicular motor weakness, etc.) *OR* electrodiagnostic testing confirming new radiculopathy *OR*
2. Patient has been determined to be a definite candidate for spine surgery by neurosurgery/orthopedics, (and **ONE** of the following):
 - Progressive changes in objective neurological findings
 - If no objective neurological findings: the surgeon is requesting another MRI prior to surgery and it has been at least 1 year since last lumbar MRI

* ACR Guidelines rate MRI without contrast as most appropriate. CT without contrast may be useful if MRI is not available or contraindicated. MRI with and without contrast may be indicated if noncontrast MRI is nondiagnostic or indeterminate. MRI is preferred over myelography and postmyelography CT but may be indicated if MRI is nondiagnostic. In some circumstances (facet arthropathy, stress fracture and spondylolysis) NUC Tc-99m bone scan with SPECT may be useful. Least appropriate x-ray (appropriateness rating 2).

3. Prior lumbar surgery with **ONE or more** of the following (MRI with and without contrast):
 - Objective and/or new or worsening neurological signs on physical exam (new absence of reflexes, dermatomal sensory changes, radicular motor weakness, or new radiculopathy on electrodiagnostic studies, etc.)
 - Plain radiography OR clinical findings suggest new adverse effects of surgery (e.g., hardware failure or concern for epidural scarring/arachnoiditis)
 - New changes to electrodiagnostic studies

*ACR appropriateness rates MRI with and without contrast highest (rating =8), CT without contrast(rating=6) may be indicated in postfusion patients or when MRI is contraindicated or indeterminate. Other methods rated lower: MRI without contrast (rating=6) as contrast is often necessary, myelography and postmyelography CT (rating= 5, x-ray (rating = 5)-flex/extension may be useful, NUC Tc-99m bone scan with SPECT (rating=5)-helps detect and localize pseudoarthrosis, x-ray myelography (rating = 2).

C. Indication not listed: provide clinical justification

Patient with chronic pain not meeting the above criteria may be considered on a case by case basis. Indications here should be well documented. For example, while the vast majority of true radiculopathy cases would meet the criteria, specific syndromes (lateral stenosis, L1-L3 syndromes) may only meet some of these criteria. In these cases, clinical correlation should be clearly documented.

IV. Multiple Sclerosis (MS): There is no indication for Lumbar MRI for initial or subsequent evaluation of suspected or confirmed MS.

V. Ankylosing Spondylitis (AS):

Advanced imaging of the spine for the indication of ankylosing spondylitis (AS) is considered medically necessary when **ONE** of the following are true:

A. Suspected AS and **ALL** of the following criteria are met:

1. Radiographs of the affected area are not diagnostic
2. Inflammatory back pain which has been present for at least 3 months. Inflammatory back pain is defined as back pain with at least **FOUR (4)** of the following features:
 - a. Patient is younger than age 40
 - b. Insidious (gradual) onset
 - c. Improvement with exercise
 - d. No improvement with rest
 - e. Pain at night that improves on getting up
3. Advanced imaging is ordered by or in conjunction with a Rheumatologist

B. Confirmed AS diagnosis and **ALL** of the following criteria are met:

1. Advanced imaging is ordered by the patient's managing Rheumatologist
2. Unclear disease activity after full clinical and laboratory evaluation
3. Progression on MRI will lead to a change of biologic drug or cessation of biologic therapy

References:

American College of Radiology (2008). ACR appropriateness criteria: low back pain. Available at: http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonNeurologicImaging/LowbackPainDoc7.aspx

Chou, R., A. Qaseem, et al. (2007). "Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society." *Ann Intern Med* 147(7): 478-91.

If requesting this service, please send the following documentation to support medical necessity:

- Last 6 months of clinical notes from requesting provider &/or specialist

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

Summary of Recommendations

- Uncomplicated acute LBP and/or radiculopathy are benign, self-limited conditions that do not warrant any imaging studies.
- MRI of the lumbar spine should be considered at any point for those patients presenting with red flags raising suspicion for a serious underlying condition, such as cauda equina syndrome (CES), malignancy, or infection.
- In patients with a history of low-velocity trauma, osteoporosis, or chronic steroid use, initial evaluation with radiographs is recommended.
- In the absence of red flags, first-line treatment for chronic LBP remains conservative therapy with both pharmacologic and nonpharmacologic (eg, exercise, remaining active) therapy.

- If there are persistent or progressive symptoms during or following 6 weeks of conservative management and the patient is a surgery or intervention candidate or diagnostic uncertainty remains, MRI of the lumbar spine has become the initial imaging modality of choice in evaluating complicated LBP.
- MRI is the imaging procedure of choice in patients suspected of cord compression or spinal cord injury.
- Patients with recurrent low back pain and history of prior surgical intervention should be evaluated with contrast-enhanced MRI.

Applicable Codes

Medicare – Medical Necessity review not required

Non-Medicare - Considered Medically Necessary when criteria in the applicable policy statements listed above are met

CPT® Codes	Description
72148	Magnetic resonance (eg, proton) imaging, spinal canal and contents, lumbar; without contrast material
72149	Magnetic resonance (eg, proton) imaging, spinal canal and contents, lumbar; with contrast material(s)
72158	Magnetic resonance (eg, proton) imaging, spinal canal and contents, without contrast material, followed by contrast material(s) and further sequences; lumbar

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

**To verify authorization requirements for a specific code by plan type, please use the [Pre-authorization Code Check](#).

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Date Created	Date Reviewed	Date Last Revised
05/05/2020	05/05/2020 ^{MPC} , 05/04/2021 ^{MPC} , 05/03/2022 ^{MPC} , 05/02/2023 ^{MPC}	10/03/2023

^{MDCRPC} Medical Director Clinical Review and Policy Committee

^{MPC} Medical Policy Committee

Revision History	Description
05/05/2020	MPC approved to adopt new clinical criteria. Requires 60-day notice, effective date 9/1/2020.
04/30/2021	Added clarifying language and formatting changes
10/04/2022	MPC approved to include quantifying number of 3 visits for physical therapy of subacute low back pain. 60-day notice required.
04/04/2023	MPC approved to modify MRI criteria with 4 weeks of physical therapy (instead of 6 weeks)
08/08/2023	MPC approved to modify existing to indicate advanced imaging prior to a procedure is considered reasonable. Requires 60-day notice, effective 01/01/2024.
10/03/2023	MPC approved updates to criteria allow Ankylosing Spondylitis (AS) indications. 60-notice required; effective March 1, 2024.