INTRODUCTION:

Magnetic resonance imaging (MRI) is used in the evaluation, diagnosis and management of spine related conditions, e.g., degenerative disc disease, cauda equine compression, radiculopathy, infections, or cancer in the lumbar spine. MRI provides high quality multiplanar images of organs and structures within the body without the use of x-rays or radiation. In the lumbar area where gonadal exposure may occur, MRI’s lack of radiation is an advantage.

INDICATIONS FOR LUMBAR SPINE MRI:

For evaluation of chronic or degenerative changes, e.g., osteoarthritis, degenerative disc disease
- With any of the following new neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop.
- With changing or new onset of radiculopathy or radiculitis.
- With new abnormal electromyography (EMG) or nerve conduction study.
- With new extremity numbness or tingling and trial of conservative treatment for at least six (6) weeks.
- With new extremity numbness or tingling and failed physical therapy (PT).
- With exacerbation of chronic back pain unresponsive to trial of conservative treatment, including PT/home exercise program (HEP), for at least six (6) weeks.
- With failed PT/HEP during the last four months.

For evaluation of trauma or acute injury within past 72 hours
- With any of the following neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop
- With radiculopathy or radiculitis
- With abnormal EMG or nerve conduction study

For evaluation of known tumor, cancer or evidence of metastasis as ordered by specialist: oncologist, neurologist, neurosurgeon and orthopedist or PCP on behalf of specialist:
- For staging of known tumor.
- With new signs, e.g., laboratory or imaging findings.
- With any of the following neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop.
- With radiculopathy or radiculitis.
- With abnormal EMG or nerve conduction study.
• With evidence of metastasis on bone scan or previous imaging study.
• With no new signs or symptoms and three (3) or fewer follow-up lumbar spine MRIs have been performed
• With no new signs or symptoms and four (4) or more follow-up lumbar spine MRIs have been done more than six months ago.
• For follow-up evaluation of known tumor or cancer of patient undergoing active treatment.

For evaluation of suspected tumor
• Shown on bone scan or previous imaging study needing further clarification.

For evaluation of known or suspected infection or abscess and to rule out infection
• Osteomyelitis as evidenced by laboratory or x-ray findings.
• Meningitis as evidenced by positive physical findings.
• Septic arthritis or discitis as evidenced by laboratory or x-ray findings.
• Paraspinal abscess as evidenced by laboratory or x-ray findings.
• Immunocompromised states, e.g., HIV, chemotherapy, leukemia, lymphoma.

For evaluation of immune system suppression, e.g., HIV, chemotherapy, leukemia, lymphoma
• Back pain due to or a symptom of documented clinical findings of immune system suppression.

For preoperative evaluation ordered by specialist oncologist, neurologist, neurosurgeon or orthopedist or PCP on behalf of specialist:
• When ordered by specialist or PCP on behalf of specialist.
• Known infection meets one of the infection guideline criteria.
• Radiculopathy or radiculitis.
• Abnormal EMG or nerve conduction study.
• Any of the following neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop.

For follow-up evaluation of surgery occurring within past six (6) months:
• If patient seen by or MRI ordered by specialist (Identified specialist: oncologist, neurologist, neurosurgeon, orthopedist),
• Continuing or recurring symptoms of any of the following neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop.
• Changing radiculopathy,
• New abnormal EMG or nerve conduction study,
• Physical or laboratory findings of a surgical infection,
• Physical or plain film findings of delayed or failed healing,
Other indications for a lumbar spine MRI:
- Lumbar back pain associated with abdominal pain, e.g., pain related to aneurysm, paraspinal abscess or infection.
- Tethered cord or known/suspected spinal dysraphism.

For evaluation of new onset of back pain
- With any of the following neurological deficits: lower extremity weakness; abnormal gait; asymmetric reflexes; evidence of Cauda Equina Syndrome; bowel or bladder dysfunction; new foot drop.
- With radiculopathy or radiculitis.
- With an abnormal EMG or nerve conduction study.

COMBINATION OF STUDIES WITH LUMBAR SPINE MRI:
- Cervical/Thoracic/Lumbar MRIs – any combination of these for scoliosis survey in infant/child.
- Brain/Abdominal/Pelvis/Chest/Neck/Thoracic Spine/Thoracic Spine/Lumbar Spine - any MRI and/or CT combination up to five total exams for patient with cancer history, to rule out metastasis or when suspect new tumor development.
- Cervical/Thoracic/Lumbar MRIs – any combination of these for spinal survey in patient with metastasis.

INDICATIONS THAT REQUIRE FURTHER CLINICAL REVIEW:
- Evaluation of numbness and tingling in lower extremities without any other identified neurological deficit.
- Evaluation of sciatica without any other neurological deficit.
- Examination includes myelogram.
- Examination includes discogram.
- Preoperative evaluation of patient without any neurological symptoms.
- Evaluation of spondylosis.
- Evaluation of stenosis alone without any other noted symptoms.
- Evaluation to rule out herniated disc (HNP) without any other findings or symptoms.
- Evaluation of patient 75 years or older without symptoms.
- For same imaging tests less than six weeks apart unless specific guideline criteria states otherwise.
- Different imaging tests, such as CT and MRI, of same anatomical structure less than six weeks apart without high level review to evaluate for medical necessity.
- Re-imaging of same, poor, or contrast enhanced studies.
- Metal devices within the body, such as indwelling pacemakers and intracranial aneurysm surgical clips that are not compatible with the use of MRI, may be contraindicated. Other implanted active metal devices in the patient as well as external devices such as portable O₂ tanks may also be contraindicated. An open MRI may be appropriate for patients who are claustrophobic.
ADDITIONAL INFORMATION RELATED TO LUMBAR SPINE MRI:

Request for a follow-up study - A follow-up study may be needed to help evaluate a patient’s progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) of requested imaging.

Conservative Therapy: (musculoskeletal) includes a combination of modalities, such as rest, ice, heat, modified activities, medications, diathermy, chiropractic treatments, physician supervised home exercise program. Part of this combination may include the MD instructing patient to rest the area or stay off the injured part. For spinal guidelines, it may also include epidurals. NOTE - conservative therapy can be expanded to require active therapy components (physical therapy and/or physician supervised home exercise) as noted in some elements of the guideline.

Home Exercise Program (HEP) – the following two elements are required to meet guidelines for completion of conservative therapy:

- Information provided on exercise prescription/plan AND
- Follow up with member with information provided regarding completion of HEP (after suitable 4-6 week period), or inability to complete HEP due to physical reason- i.e. increased pain, inability to physically perform exercises. (Patient inconvenience or noncompliance without explanation does not constitute “inability to complete” HEP).

MRI and Back Pain – MRI is the initial imaging modality of choice in the evaluation of complicated low back pain. Contrast administration may be used to evaluate suspected inflammatory disorders, e.g., discitis, and it is useful in evaluating suspected malignancy. Radiculopathy, disease of the nerve roots, is the most common indication for MRI of patients with low back pain. The nerve roots become irritated and inflamed, due to direct pressure from degenerative changes in the lumbar spine, creating pain and numbness. Symptoms of radiculopathy also include muscle weakness. MRI is indicated for this condition if the symptoms do not improve after conservative treatment over six weeks. MRI is also preformed to evaluate Cauda equina syndrome, severe spinal compression.
REFERENCES: