Subject: Thoracic Spine MRI (72146, 72147, 72157)		Original Effective Date: 9/19/17
Policy Number: MCR: 620	**Revision Date(s): 11/15/18**	
Review Date: 9/19/17, 12/13/17, 12/13/18		

DISCLAIMER

This Molina Clinical Review (MCR) is intended to facilitate the Utilization Management process. It expresses Molina's determination as to whether certain services or supplies are medically necessary, experimental, investigational, or cosmetic for purposes of determining appropriateness of payment. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered (i.e., will be paid for by Molina) for a particular member. The member's benefit plan determines coverage. Each benefit plan defines which services are covered, which are excluded, and which are subject to dollar caps or other limits. Members and their providers will need to consult the member's benefit plan to determine if there are any exclusion(s) or other benefit limitations applicable to this service or supply. If there is a discrepancy between this policy and a member's plan of benefits, the benefits plan will govern. In addition, coverage may be mandated by applicable legal requirements of a State, the Federal government or CMS for Medicare and Medicaid members. CMS's Coverage Database can be found on the CMS website. The coverage directive(s) and criteria from an existing National Coverage Determination (NCD) or Local Coverage Determination (LCD) will supersede the contents of this Molina Clinical Review (MCR) document and provide the directive for all Medicare members.

DESCRIPTION OF PROCEDURE/SERVICE/PHARMACEUTICAL

A **Thoracic Spine MRI** uses powerful magnets and radio waves to create pictures of the structures that make up the spine, the spinal cord, and the spaces between the vertebrae, through which the nerves travel. An MRI does not use radiation (x-rays).

RECOMMENDATIONS

MRI Imaging can be contraindicated in any of the following circumstances; there is a metallic body in the eye, for magnetically activated implanted devices such as pacemakers and defibrillators, insulin pumps, neurostimulators, and for some types of metal, and aneurysm clipping. The imaging facility should always be consulted with any compatibility questions as the types of metal used and development of MRI compatible devices is continually changing.

Chronic Pain:

- Evaluation of chronic pain with recent documented (ending within the last 6 months) trial of conservative therapy for 6 weeks. *Conservative care consists of inactive treatments such as anti-inflammatory medications, activity modification, bracing, icing, epidural steroid injections, etc. plus active treatments such as one of the following:
  - Physical Therapy
  - Chiropractic therapy
  - Provider supervised home exercise program
- Worsening pain or symptom progression during the course of conservative treatments.

Abnormal Neurologic Findings

- Weakness, abnormal reflexes, or dermatomal sensory change documented on physical exam
- Abnormal electromyography (EMG) or nerve conduction study (NCS) findings indicating a thoracic spine abnormality
- Atrophy of related muscles
- Scoliosis, when ordered by orthopedist or neurosurgeon and age of patient and severity of scoliosis on x-ray indicate bracing or surgery may be provided.

Signs of Thoracic Cord Compression (Myelopathy)

- Difficulty with balance and ambulation (unsteadiness, broad-based gait)
- Increased muscle tone
- Hyperreflexia
- Clonus
- Positive Babinski sign (toes up going in adult)
- Positive Hoffman's sign (flick test of middle finger)
- Diminished sensation to light touch, temperature, proprioception, vibration
- Bowel or bladder dysfunction

Trauma

- Blunt trauma to the spine with any abnormal neurological findings described above
- Failure to respond to a 6 week trial of *conservative care
- Worsening pain or symptom progression during the course of *conservative treatments

Known or Suspected Tumor or Mass

- Initial evaluation of a recently diagnosed cancer
- Follow up of a known tumor or mass after completion of treatment or with new signs/symptoms
- Surveillance of a known tumor or mass according to accepted clinical standards.
- Severe bone pain with history of cancer
- Positive bone scan and/or x-rays suggestive for bone cancer (primary or metastatic)

Spine Issues Related to Immune System Suppression

- Evaluation of spine abnormalities related to immune system suppression, e.g. HIV, chemotherapy, leukemia, or lymphoma.

Spine Issues Related to Infection or Other Inflammatory Process

- Suspected infection, abscess, or inflammatory disease with abnormal signs, symptoms, lab tests or other imaging findings.

Pre/Post Procedural

- Pre-operative evaluation when surgery is planned on the cervical spine
- Post-operative for routine recommended follow up or for potential post-operative complications.
- A repeat study may be needed to help evaluate a patient's progress after treatment procedure intervention or surgery. The reason for the repeat study and that it will affect care must be clear.

Congenital Conditions

- Known or suspected syrinx/syringomyelia when ordered by Neurologist, Orthopedist or Neurosurgeon
- Suspected tethered cord

Multiple Sclerosis

Known Multiple Sclerosis (with symptoms or exam findings consistent with thoracic spine involvement)

- Worsening or new symptoms without imaging in the past three months
- Follow up of or surveillance of known disease and no imaging within the last year
- Follow up of disease progression after a change in medications and no imaging in the last three months

Suspected Multiple Sclerosis

- For evaluation of patients with symptoms consistent with a possible diagnosis of multiple sclerosis with signs of thoracic myelopathy

Other

- Known or suspected spinal vascular lesion/malformation

ADDITIONAL INFORMATION

The above medical necessity recommendations are used to determine the best diagnostic study based on a patient's specific clinical circumstances. The recommendations were developed using evidence based studies and current accepted clinical practices. Medical necessity will be determined using a combination of these recommendations as well as the patient's individual clinical or social circumstances.

- Tests that will not change treatment plans should not be recommended.
- Same or similar tests recently completed need a specific reason for repeat imaging.

REFERENCES USED FOR DETERMINATIONS

1. American College of Radiology. (2016). ACR Appropriateness Criteria® Retrieved from https://acsearch.acr.org/list.
2. Doyle R. Milliman Robertson Healthcare Guidelines. Vol. 4. Ambulatory Care Guidelines. Seattle, WA: Milliman; 1995; 2.54, 2.59-2.60.
3. Schiff D, O'Neill BP, Suman VJ. Spinal epidural metastasis as the initial manifestation of malignancy: clinical features and diagnostic approach. Neurology 1997; 49:452.
4. Rothman S. The diagnosis of infections of the spine by modern imaging techniques. Orthop Clin North Am. 1996; 27(1):15-31.
5. Indications for magnetic resonance imaging in presumed adolescent idiopathic scoliosis. J Bone Joint Surg Am. 2004 Oct; 86-A (10):2187-95. http://www.ncbi.nlm.nih.gov/pubmed/15466727
6. Loblaw DA, Laperriere NJ. Emergency treatment of malignant extradural spinal cord compression: an evidence-based guideline. J Clin Oncol 1998; 16:1613.
7. Association of early imaging for back pain with clinical outcomes in older adults. JAMA, 313(11), 1143-1153. doi: 10.1001/jama.2015.1871.
8. North American Spine Society. Five things physicians and patients should question. Choosing Wisely. Philadelphia, PA: American Board of Internal Medicine; 2013.
9. Thawait SK, Marcus MA, Morrison WB, et al. Research synthesis: What is the diagnostic performance of MRI to discriminate benign from malignant vertebral compression fractures? Systematic review and meta-analysis. Spine (Phila Pa 1976). 2012; 37(12):E736-E744.
10. MRI in the diagnosis and treatment of suspected malignant spinal cord compression, The British Journal of Radiology, 2001; 74:15-23.

11. 9. Hsu JM, Joseph T, Ellis AM. Thoracolumbar fracture in blunt trauma patients: guidelines for diagnosis and imaging. *Injury.* 2003; 34(6):426-433.
12. Chang CH, Holmes JF, Mower WR, Panacek EA. Distracting injuries in patients with vertebral injuries. *J Emerg Med.* 2005; 28(2):147-152.
13. Cheshire WP, Santos CC, Massey EW, Howard JF Jr. Spinal cord infarction: etiology and outcome. Neurology 1996; 47:321.
14. Masson C, Pruvo JP, Meder JF, et al. Spinal cord infarction: clinical and magnetic resonance imaging findings and short term outcome. J Neurol Neurosurg Psychiatry 2004; 75:1431.
15. Muralidharan R, Saladino A, Lanzino G, et al. The clinical and radiological presentation of spinal dural arteriovenous fistula. Spine (Phila Pa 1976) 2011; 36:E1641.

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CPT	Description
72146	MRI thoracic spine w/o contrast
72147	MRI thoracic spine w/contrast
72157	MRI thoracic spine w/o & w/contrast