Subject: Upper Extremity Joint MRI (73221, 73222, 73223) Upper Extremity Non-Joint MRI (73218, 73219, 73220)	Original Effective Date: 12/13/17
Policy Number: MCR: 629	**Revision Date(s): 12/11/18**
Review Date: 12/13/17, 12/19/18	

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

MRI (Magnetic Resonance Imaging) is a non-X-ray (no ionizing radiation) imaging scan that uses a strong magnetic field and radiofrequency waves to produce detailed cross sectional views of soft tissues, bones and vascular structures. These cross sectional images can be reconstructed, rotated and displayed in many different planes. A MR scan can be performed either without (non-enhanced) or with (contrast enhanced) injection of gadolinium containing contrast material into a vein.

APPROVAL SUPPORT

Ultrasound has been shown to have similar diagnostic accuracy when compared to MRI and can be considered in lieu of MRI imaging for evaluation of rotator cuff tears, labral injuries, and bicep tendon tears. It is recommended that the ultrasound be completed at a facility competent in performing and interpreting musculoskeletal ultrasound studies. Ultrasound has the benefit of being portable, does not expose the patient to ionizing radiation, and has dynamic imaging capabilities.

In children and adolescents, joint imaging is not necessarily subject to a failed course of conservative therapy. Early intervention may be appropriate.

<u>Known tumor or mass</u>

- 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.

Suspected tumor or mass not confirmed as cancer

- Evaluation of an abnormality seen on x-ray or other imaging
- Evaluation of an abnormality on physical examination and initial evaluation with x-ray or ultrasound has been completed.

Evaluation of known or suspected infection

- Suspected osteomyelitis and initial x-ray has been completed

Evaluation of known or suspected fractures

- Suspected fracture and x-ray is non-diagnostic
- Evaluation of fracture involving the joint space

Pre/Post Procedural

- Pre-operative evaluation
- 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.
- Preoperative planning for robotic surgery.

Other

- Evaluation of suspected avascular necrosis (AVN) when initial x-ray is non-diagnostic
- Evaluation of known or suspected autoimmune disease and x-rays are non-diagnostic and there is consideration to change the treatment regimen. Imaging should be limited to the most symptomatic joint.
- Evaluation of osteochondral defects or osteochondritis dessicans
- Evaluation of an abnormality seen on other imaging and the diagnosis remains uncertain
- For evaluation of the brachial plexus

Wrist Pain

Conservative therapy consists of a combination of passive modalities such as rest, ice, activity modification, splinting or bracing, and active modalities such as physical therapy, a supervised home exercise program, and/or failed injections.

- Initial x-ray has been performed and there has been at least 4 weeks of conservative therapy *
- Hemarthrosis – blood in the joint
- Suspected ligament tear with instability on examination or with joint space widening on stress view x-rays
- Locked wrist
- For suspected TFCC (triangular fibrocartilage complex) tear
- MRI arthrogram

Shoulder Pain

Conservative therapy consists of a combination of passive modalities such as rest, ice, activity modification, splinting or use of sling, and active modalities such as physical therapy, a supervised home exercise program, and/or failed injections.

- Initial x-ray has been performed and there has been at least 4 weeks of conservative therapy *
- Hemarthrosis – blood in the joint
- Exam findings suggestive of a rotator cuff tear (Neer, Hawkins, Apley Scratch test, drop arm test, empty can sign)
- MRI Arthrogram for evaluation of a labral injury (SLAP, Bankart lesion)
- First episode of dislocation in any patient under the age of 30.

Elbow Pain

Conservative therapy consists of a combination of passive modalities such as rest, ice, activity modification, splinting or bracing, and active modalities such as physical therapy, a supervised home exercise program, and/or failed injections.

- Initial x-ray has been performed and there has been at least 4 weeks of conservative therapy *
- Hemarthrosis – blood in the joint
- Exam findings of instability to varus or valgus stress
- Locked elbow
- Evaluation of distal biceps tendon tear
- MRI arthrogram

ADDITIONAL CRITICAL 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. Wise JN, Daffner RH, Weissman BN, et al, Expert panel on musculoskeletal imaging, ACR Appropriateness criteria- acute shoulder pain. Accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/AcuteShoulderPain.aspx. June 5, 2011.
2. Pedowitz RA, Yamaguchi K, Ahmad CS et al, Optimizing the management of rotator cuff problems guideline and evidence report, American Academy of Orthopaedic Surgeons. Accessed at http://www.aaos.org/research/guidelines/RCP_guideline.pdf. July 25, 2011.
3. Fitzgerald JJ, Roberts CC, Daffner RH, , et al, Expert Panel on Musculoskeletal Imaging, Appropriateness Criteria- follow-up of malignant or aggressive musculoskeletal tumors, Accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/FollowUpofMalignantorAggressiveMusculoskeletalTumorsDoc11.aspx. August 5, 2011.
4. Boutry N, Morel M, Flipo R-M, et al, Early rheumatoid arthritis: a review of MRI and sonographic findings, AJR, 2007;189:1502-1509.
5. Ng, A.W., Chu, C.M., Lo, W.N., Lai, Y.M., & Kam, C.K. (2009). Assessment of capsular laxity in patients with recurrent anterior shoulder dislocation using MRI. American Journal of Roentgenology, 192(6), 1690-1695. doi:10.2214/AJR.08.1544
6. Anderson MW and Greenspan A, Stress fractures, Radiology, 1996; 199:1-12.
7. Tuite, Michael, Small, Kirstin, Imaging Evaluation of Nonacute Shoulder Pain. AJR 2017; 209:525-533.

8. Roy EA, Cheyne I, Andrews G et al. Beyond the Cuff: MR Imaging of Labroligamentous Injuries. Radiology 2016; 279:328
9. Magee T, Usefulness of Unenhanced MRI and MR Arthrography of Shoulder in Detection of Unstable Labral Tears. American Journal of Roentgenology. 2015; 205:1056-1060
10. Taneja A, Kattapuram S, Chang C, Simone F et al. MRI Findings of Rotator Cuff Musculotendinous Junction Injury. American Journal of Roentgenology. 2014; 203:406-411.
11. DeConinck T, Ngai S, Tafur M, Chung C. Imaging the Glenoid Labrum and Labral Tears. Radiographics 2016; 36: 1628-1647
12. Pierce J, Nacey N, Jones S et al. Postoperative Shoulder Imaging. Radiographics 2016; 36:1648-1671
13. Karchevsky M, Schweitzer ME, Morrison WB, Parellada JA. MRI findings of septic arthritis and associated osteomyelitis in adults. American Journal of Roentgenology. 2004; 182:119-122.
14. George E, Tsipas S, Wozniak G. MRI of the Knee and Shoulder Performed before Radiography. J Am College Radiology 2014: 11; 1053-1058
15. Termaat M, Raijmakers P, Scholten H, et al. The accuracy of diagnostic imaging for the assessment of chronic osteomyelitis: a systematic review and meta-analysis. J Bone Joint Surg Am. 2005; 87(11):2464-2471.
16. Morrison WB, Zoga AC, Daffner RH, et al, Expert Panel on Musculoskeletal Imaging, American College of Radiology Appropriateness Criteria- Soft Tissue Masses. Accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/SoftTissueMassesDoc19.aspx. February 6, 2010.
17. Hayter CL, Gold SL, Potter HG. Magnetic resonance imaging of the wrist: bone and cartilage injury. J Magn Reson Imaging. 2013; 37(5):1005-19.
18. Haims AH, Moore AE, Schweitzer ME, et al, MRI in the diagnosis of cartilage injury in the wrist, AJR, 2004; 182:1267-1270.
19. Rubin DA, Daffner RH, Weissman BN, et al, Expert Panel on Musculoskeletal Imaging, American College of Radiology Appropriateness Criteria-Acute Hand and Wrist Trauma, Expert Panel on Musculoskeletal Imaging, American College of Radiology Appropriateness Criteria- acute hand and wrist trauma, accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/AcuteHandandWristTraumaDoc1.aspx. January 2, 2010.
20. Jacobson JA, Daffner RH, Weissman BN, American College of Radiology Appropriateness Criteria-chronic elbow pain, accessed at http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonMusculoskeletalImaging/ChronicelbowPainDoc6.aspx. January 8, 2010.
21. Langer P, Fadale P and Hulstyn M, Evolution of the treatment options of ulnar collateral ligament injuries of the elbow, Br J Sports Med, 2006; 40:499-506.
22. Chumbley EM, O'Connor FG, Nirschl RP, Evaluation of overuse elbow injuries, Am Fam Physician, 2000; 6:1691-700. Accessed at http://www.aafp.org/afp/20000201/691.html. September 5, 2011.
23. Johnson GW, Cadwallader K, Scheffel SB, Epperly TD. Treatment of lateral epicondylitis. Am Fam Physician. 2007; 76(6):843-848.
24. Itoi E. Rotator cuff tear: physical examination and conservative treatment. Journal of Orthopaedic Science. 2013; 18(2):197-204. doi: 10.1007/s00776-012-0345-2.

Coding Information: the codes listed in this policy are for reference purposes only. listing of A SERVICE OR DEVICE CODE IN THIS POLICY DOES NOT IMPLY THAT THE SERVICE DESCRIBED BY THIS CODE IS COVERED OR NON-COVERED. COVERAGE IS DETERMINED BY THE BENEFIT DOCUMENT. THIS LIST OF CODES MAY NOT BE ALL INCLUSIVE.

CPT	Description

73221	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) Joint without contrast)
73222	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) Joint with contrast)
73223	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) Joint without and with contrast)
73218	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) without contrast)
73219	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) with contrast)
73220	MRI (Magnetic Resonance Imaging) Upper Extremity (arm) without and with contrast)