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2025 Magnetic Resonance Imaging (MRI) Extremities

Diagnostic Imaging

MRI-EXT-HH

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MRI Extremities Overview

Important points to consider on the appropriate use of MRI for evaluating common musculoskeletal conditions:

- **Overuse of MRI:** MRI is often overused in diagnosing musculoskeletal conditions, sometimes before any conservative treatment is tried.
- **Diagnosis without MRI:** Most musculoskeletal conditions, such as neck, back, knee, or shoulder pain, can be diagnosed with a history, physical examination, and plain film radiography. If the injury is soft tissue related (serious sprain), often an ultrasound can be diagnostic.
- **Conservative Treatment:** Many conditions improve with conservative management, such as muscle strengthening, stretching, and physical therapy, without the need for MRI.
- **Incidental Findings:** MRI can identify incidental pathologies that may not be related to the patient's symptoms, leading to unnecessary referrals and surgeries.
- **Timing of MRI:** MRI should be considered after four to six weeks of conservative care for acute conditions and after a few months for chronic conditions if conservative treatment is ineffective.
- **Indication for MRI:** prior modality XRAY, Ultrasound, or CT shows aggressive infection or tumor.

Magnetic Resonance Imaging (MRI) Extremities

MRI General Contraindications

MRI is contraindicated for **ANY** of the following: [25] [11] [20]

- Safety, related to clinical status (body mass index exceeds MRI capability, intravascular stents within recent 6 weeks)
- Safety, related to implanted devices (aneurysm clips, cochlear implant, implantable cardio-defibrillators, insulin pump, permanent pacemaker, spinal cord stimulator)[1]

[1]Some implanted devices that were once absolute contraindications to a MRI may now be accepted, including if the specific MRI is able to accommodate the device or the device itself is deemed safe for MRI.

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MRI Extremities Guideline

Magnetic resonance imaging (MRI) of the extremities is considered medically appropriate when the documentation demonstrates **ANY** of the following: (*__NOTE__: *Plain X-rays **MUST** precede MRI evaluation, unless otherwise specified.*)

1. Shoulder specific pathology and **ANY** of the following:
    a. Brachial plexopathy is suspected, based on mechanism of injury **OR** electromyography/nerve conduction study (EMG/NCS) results. (*__NOTE__: *Chest MRI is preferred; depending on the suspected injury location, a cervical spine and/or shoulder MRI may be appropriate.*)
    b. Dislocation of the shoulder for first time and risk of repeated dislocation is known due to **ANY** of the following:
        i. Bankart lesion is demonstrated on X-ray.
        ii. Dislocations are recurrent.
        iii. Glenoid or humeral bone loss is demonstrated on X-ray.
        iv. Rotator cuff tear is suspected (eg, limited range of motion, sudden shoulder pain, weakness).
    c. Labral tear (eg, superior labral anterior to posterior complex [SLAP] lesions) or instability, and orthopedic tests are provocative[2].
    d. Rotator cuff is weak on exam, active conservative management (physical therapy) and **EITHER** of the following:
        i. Attempted within the last 6 months, for at least 4 weeks **AND** symptoms persist or worsen.
        ii. Symptoms progress or worsen during current course of conservative management
    e. Tendon tear (biceps, infraspinatus, subscapularis, supraspinatus, teres minor), with provocative orthopedic tests[3] and ultrasound is completed.

References: [9] [37] [38] [1] [33] [2] [48]

[2]Orthopedic test include the following: anterior load and shift, apprehension test, clunk test, crank test or comprehension-rotation test, grind test, jerk test, O'Brien's test, posterior load and shift test, sulcus sign

[3]Orthopedic tests include the following:

- Biceps, infraspinatus, subscapularis, supraspinatus, Teres minor includes the external rotation lag sign at 0 and 90 degrees, hornblower's test, pain or weakness with resisted external rotation testing, Popeye sign (acute or for evaluation of surgical correction)
- Subscapularis includes the bear hug test, belly press off test, internal rotation lag, lift-off test, Napoleion test

2. Elbow specific pathology and **ANY** of the following:
    a. Tendon tear (biceps) is suspected (eg, deformity of forearm, sharp pain in antecubital fossa, weakness with forearm flexion) with positive orthopedic sign[4] **AND** ultrasound is completed.
    b. Elbow instability, with provocative orthopedic tests[5]
3. Wrist specific pathology, triangular fibrocartilage complex tear of the wrist, with provocative orthopedic examination tests[6].
4. Hip specific pathology and **ANY** of the following:
    a. Femoroacetabular impingement (FAI) **OR** labral tear is suspected or known and **ANY** of the following:
        i. FAI is known (eg, decreased hip flexion, internal rotation, and positive flexion, adduction and internal rotation [FADIR) test or demonstrated on prior imaging), to evaluate candidacy for hip preservation surgery.
        ii. FAI is suspected from prior X-ray, labral tear is suspected **AND** mechanical symptoms (eg, catching, clicking, giving way, hip instability, locking) are persistent.
        iii. Labral tear, bilaterally is suspected and conservative management (physical therapy) is attempted and **EITHER** of the following:
            A. Attempted within the last 6 months, for at least 4 weeks **AND** symptoms persist or worsen.
            B. Symptoms progress or worsen during course of conservative management
        iv. Labral tear is suspected **AND** mechanical symptoms (eg, catching, clicking, giving way, hip instability, locking) persist.
        v. Orthopedic sign (eg, anterior impingement, posterior impingement) is positive. (**NOTE**: *With a positive orthopedic sign, an initial X-ray is preferred, but **NOT** required*.)

- Supraspinatus Includes the drop arm test, empty can test, full can test, Hawkins or Neer test (*__NOTE__: *Hawkins or Neer tests must be ordered by orthopedic doctor, when rotator cuff tear is suspected. **NOT** for impingement*)

[4]Orthopedic tests include biceps squeeze test, bicipital aponeurosis (BA) flex test, hook test, passive forearm pronation test, reverse Popeye sign (*__NOTE__: *For reverse Popeye sign, if finding is acute, evaluation for surgical correction*.)

[5]Orthopedic tests include milking maneuver, posterolateral rotary drawer test, push-up test, tabletop relocation test, valgus stress, varus stress

[6]Orthopedic tests include the press test, ulnar foveal sign/test, ulnocarpal stress test

b. Hip fracture is suspected (eg, acute onset of hip pain [within 24 hours], inability to bear weight, shortening of limb with external rotation) and X-rays are abnormal, non-diagnostic or indeterminate.

References: [27] [28]

5. Knee specific pathology and **ANY** of the following:
   a. Anterior cruciate ligament (ACL) injury is suspected with positive orthopedic physical sign (anterior drawer test, Lachman's test, pivot shift test).
   b. ACL rupture is suspected, when there is an acute knee injury, physical exam is limited by pain **AND** swelling and **ANY** of the following:
      i. ACL rupture is suspected based on mechanism of injury **AND** X-ray is normal.
      ii. Pain is severe, with inability to stand, audible pop at time of injury and/or very swollen joint.
      iii. X-ray is abnormal demonstrating large joint effusion.
   c. Ligament tear (lateral collateral, medial collateral or posterior cruciate ligament) is suspected **AND** orthopedic tests (valgus stress test/laxity, varus stress test/ laxity, posterior drawer test, posterior sag sign) are abnormal, non-diagnostic or indeterminate.
   d. Meniscal tear/injury is suspected and orthopedic signs (eg, Apley's test, McMurray's compression, Thessaly test) are abnormal, non-diagnostic or indeterminate.
   e. Patellar dislocation (acute or recurrent) is suspected or known and orthopedic sign (eg, patellofemoral apprehension test) or X-ray is abnormal, non-diagnostic or indeterminate.

References: [47] [47] [15] [10] [24] [3] [26]

6. Ankle specific criteria and **ANY** of the following:
   a. Ankle pain is chronic and **ALL** of the following:
      i. Ankle impingement syndrome is suspected.
      ii. Conservative management, active (physical therapy), and **ANY** of the following: (**NOTE**: *Indication does **NOT** apply to young children [age is less than 5].*)
         A. Attempted within the last 6 months, for at least 4 weeks **AND** symptoms persist or worsen.
         B. Symptoms progress or worsen during current course of conservative management

iii. X-rays are abnormal, non-diagnostic or indeterminate

b. Anterior talofibular ligament injury evaluation, **AND ALL** of the following:

i. Ankle fracture **OR** osteochondral injury of the talus is suspected.

ii. Ultrasound is completed.

iii. X-ray is non-diagnostic or indeterminate.

iv. **ANY** of the following

A. Orthopedic sign (eg, anterior or posterior drawer test) is positive.

B. Stress X-rays are abnormal, non-diagnostic or indeterminate.

c. High ankle injury (syndesmotic injury) is suspected, with tenderness over the syndesmosis (anterior inferior tibiofibular ligament [AITFL]), ultrasound is complete and **EITHER** of the following:

i. Orthopedic sign (eg, cotton test, dorsiflexion external rotation test, squeeze test) is positive.

ii. Stress X-rays are abnormal, non-diagnostic or indeterminate.

d. Trauma to the ankle is known and **ALL** of the following:

i. Pain is persistent for at least 1 week.

ii. X-ray is abnormal, non-diagnostic or indeterminate.

References: [4] [5]

7. Pain in an extremity (upper or lower) and **ANY** of the following:

a. **All** of the following:

i. Conservative management, active (physical therapy), and **ANY** of the following: (**NOTE**: *Indication does **NOT** apply to young children [age is less than 5].*)

A. Attempted within the last 6 months, for at least 4 weeks **AND** symptoms persist or worsen.

B. Symptoms progress or worsen during current course of conservative management

ii. X-rays are performed within the last 60 days.

b. Soft tissue injury (ligament or tendon) **AND** ultrasound was completed. (*__NOTE__: *ultrasound is **NOT** necessary for hip or knee*)

References: [12] [22] [41] [32]

8. Infection (eg, abscess, bursitis, osteomyelitis, septic arthritis) evaluation for **ANY** of the following:
    a. Acute limp **AND** age is less than 5 years old. [29]
    b. Chronic osteomyelitis is suspected or known and laboratory work-up (eg, c-reactive protein [CRP], erythrocyte sedimentation rate [ESR]) and X-ray are abnormal, non-diagnostic or indeterminate.
    c. Infection of joint or bone is clinically suspected (eg, elevated complete blood count [CBC], CRP, ESR or joint aspiration is positive), symptomatic (eg, fever, pain, swelling) **AND** prior X-ray or ultrasound is abnormal, non-diagnostic or indeterminate.
    d. Ulcer is **NOT** improving with treatment **AND** bone or deep infection is suspected.
    e. Ultrasound (soft tissue abnormalities) or X-ray (bony abnormalities) is abnormal, non-diagnostic or indeterminate.

    References: [30]

9. Fracture healing assessment for **ANY** of the following: [34] [19] [40] [42] [2] [31]
    a. Delayed or non-union fracture, when there is **NO** healing demonstrated between 2 sets of X-rays at least 10 days apart.
    b. Fracture is demonstrated on prior CT or X-ray, ligamentous, tendon or osteochondral injury is suspected, **AND** surgery may be required.
    c. Insufficiency, occult or stress fracture is suspected and bone scan or X-ray is non-diagnostic or indeterminate. [6]
    d. Pathologic fracture is known and demonstrated on prior CT or X-ray.

    References: [34] [19] [40] [42] [2] [31] [6]

10. Mass, lesion or cyst is suspected or known **AND** X-ray (bony abnormalities) or ultrasound (soft tissue abnormalities) are non-diagnostic or indeterminate.
    References: [7]

11. Joint prosthesis or replacement is known, **AFTER** X-ray is completed **AND** joint prosthesis loosening or dysfunction (eg, pseudotumor formation) is suspected.
    References: [17] [13]

12. Autoimmune disease (eg, lupus, rheumatoid arthritis) is suspected or known, for monitoring treatment response **AND** prior imaging is abnormal, non-diagnostic or indeterminate.
    References: [36]

13. Vascular malformations are suspected or known, ultrasound is abnormal, non-diagnostic or indeterminate **OR** for pre-preocedural planning.
References: [23]

14. Cancer in an extremity is suspected or known for **ANY** of the following:
    a. Known and **ANY** of the following: (*__NOTE__: *Prior X-ray is **NOT** required*)
        i. Primary cancer follow-up when active treatment was received in the last year.
        ii. Staging, restaging, recurrence or metastasis evaluation
        iii. Surveillance following the **National Comprehensive Cancer Network (NCCN) Guideline's** surveillance recommendations (*see **Surveillance** section*).
    b. Osteoid osteoma is suspected, in a pediatric individual, **AND** CTor X-ray is abnormal, non-diagnostic or indeterminate.

    References: [7] [35] [18]

15. Peri-procedural planning and **ANY** of the following:
    a. Post-operative follow-up (eg, complication or recurrence of disease), within 90 days of surgery
    b. Pre-procedure evaluation when prior imaging (ultrasound, X-ray) or orthopedic provocative tests are abnormal, non-diagnostic or indeterminate.

    References: [14]

16. Avascular necrosis is suspected or known (eg, persistent joint pain, corticosteriod use, alcoholism) and prior imaging is abnormal, non-diagnostic or indeterminate.
References: [8] [21]

17. Inflammatory condition (inflammatory arthritis [sero-positive or sero-negative] or erosive osteoarthritis) (eg, pain, redness, swelling) is suspected or known and X-rays are abnormal, non-diagnostic or indeterminate.
References: [36]

Extremity Surveillance section

Bone Cancer Surveillance

Bone cancer surveillance includes **ANY** of the following:

1. Chondrosarcoma surveillance for **ANY** of the following:

a. Atypical cartilaginous tumor surveillance with cross-sectional imaging (CT + contrast, MRI ± contrast) every 6 to 12 months for 2 years, then annually as clinically indicated

b. Low-grade, extracompartmental appendicular tumor, grade I axial tumors or high-grade (grade II or III, clear cell or extracompartmental) tumors surveillance with **ALL** of the following:

i. Chest CT at least every 6 months for 5 years, then annually for at least 10 years, then if symptoms are new or progressing.

ii. MRI (± contrast) or CT (+ contrast) if symptoms are new or progressing.

2. Chordoma surveillance with **ALL** of the following:

a. Chest CT imaging every 6 months, annually for 5 years, then annually thereafter, then if symptoms are new or worsening.

b. Imaging of primary site, timing and modality (eg, MRI ± CT [both + contrast]) if symptoms are new or progressing, up to 10 years

3. Ewing Sarcoma after primary treatment completed surveillance with **ALL** of the following:

a. Chest CT: every 3 months

b. Primary site imaging with MRI ± CT (both + contrast), increase intervals after 24 months and after 5 years, annually, then if symptoms are new or progressing (indefinitely) (*__NOTE__: *PET/CT [head-to-toe] is appropriate*)

4. Giant cell tumor of the bone surveillance with **ALL** of the following:

a. Chest CT or MRI imaging every 6 to 12 months for 4 years, then annually thereafter, then if symptoms are new or progressing

b. Surgical site imaging if symptoms are new or progressing (eg, CT and/or MRI, both with contrast)

5. Osteosarcoma surveillance with primary site and chest imaging (using same imaging that was done for initial work-up) for **ANY** of the following: (*__NOTE__: *PET/CT [head-to-toe] is appropriate*.)

a. Image every 3 months for years 1 and 2

b. Image every 4 months for year 3

c. Image every 6 months for years 4 and 5

d. Image annually for year 6 and thereafter, then if symptoms are new or progressing

References: [2025 Bone Cancer Version 2.2025]

Soft Tissue Sarcoma Surveillance

Soft tissue sarcoma surveillance includes **ANY** of the following: (*__NOTE__: *Use contrast imaging; for long term surveillance to minimize radiation exposure,MRI may be substituted.*)

1. Desmoid tumor (aggressive fibromatosis) imaging surveillance includes computed tomography (CT) or magnetic resonance imaging (MRI) every 3 to 6 months for 3 years, then every 6 to 12 months thereafter
2. Extremity, trunk or head and neck, for long-term follow-up with **ANY** of the following:
    a. Long-term follow-up with **ALL** of the following:
        i. Chest CT imaging (- contrast) to detect asymptomatic distant recurrence
        ii. MRI for imaging of primary site
    b. Stage I tumors and **ALL** of the following:
        i. Chest CT imaging (- contrast) every 6 to 12 months
        ii. Post-operative baseline and periodic imaging of primary site with MRI or CT if MRI is **contraindicated or unavailable**.
    c. Stage II and III tumors and **ANY** of the following:
        i. Baseline and periodic imaging of primary site
        ii. Chest and other known sites of metastatic disease imaging (CT [- contrast] or X-ray) every 2 to 6 months for 2 to 3 years, then every 6 months to complete a total of 5 years, then annually.
        iii. Post-operative reimaging to assess the primary tumor site and rule out metastatic disease (MRI or CT if MRI is **contraindicated or unavailable**.
3. Retroperitoneal/intra-abdominal, after management of primary disease imaging surveillance includes chest/abdomen/pelvis CT or MRI every 3 to 6 months for 3 years, then every 6 months for the next 2 years, then annually.

References: [2025 Soft Tissue Sarcoma Version 1.2025]

MRI Extremities Procedure Codes

Table 1. Magnetic Resonance Imaging Lower Extremities Associated Procedure Codes

Code	Description
73218	Magnetic resonance (eg, proton) imaging, upper extremity, other than joint; without contrast material(s)
73219	Magnetic resonance (eg, proton) imaging, upper extremity, other than joint; with contrast material(s)

Code	Description
73220	Magnetic resonance (eg, proton) imaging, upper extremity, other than joint; without contrast material(s), followed by contrast material(s) and further sequences
73221	Magnetic resonance (eg, proton) imaging, any joint of upper extremity; without contrast material(s)
73222	Magnetic resonance (eg, proton) imaging, any joint of upper extremity; with contrast material(s)
73223	Magnetic resonance (eg, proton) imaging, any joint of upper extremity; without contrast material(s), followed by contrast material(s) and further sequences
73718	Magnetic resonance (eg, proton) imaging, lower extremity other than joint; without contrast material(s)
73719	Magnetic resonance (eg, proton) imaging, lower extremity other than joint; with contrast material(s)
73720	Magnetic resonance (eg, proton) imaging, lower extremity other than joint; without contrast material(s), followed by contrast material(s) and further sequences
73721	Magnetic resonance (e.g. proton) imaging, any joint of lower extremity; without contrast material
73722	Magnetic resonance (eg, proton) imaging, any joint of the lower extremity; with contrast material(s)
73723	Magnetic resonance (eg, proton) imaging, any joint of the lower extremity; without contrast material(s), followed by contrast material(s) and further sequences
0649T	Quantitative magnetic resonance for analysis of tissue composition (eg, fat, iron, water content), including multiparametric data acquisition, data preparation and transmission, interpretation and report, obtained with diagnostic MRI examination of the same anatomy (eg, organ, gland, tissue, target structure); single organ

MRI Extremities Summary of Changes

MRI extremities had the following version changes from 2024 to 2025:

- Removed the following as current evidence does not support the indication:
  - "Achilles tendon tear" as it is covered under "Ankle pain"
  - "Foreign body evaluation" indication as it is covered under "Pain in an extremity"
  - "Peripheral neurogenic" indication as it is covered under "Pain in an extremity"
  - "Prior extremity MRI is non-diagnostic or indeterminate" as it is too broad
  - "Synovial chondromatosis" indication as it is covered under "Pain in an extremity"
- Reworded "Pain" indication to mirror MRI spine guidelines

MRI Extremities Definitions

Abscess is a swollen area within body tissue, containing an accumulation of pus.
Anterior cruciate ligament (ACL) is a ligament in the center of the knee that prevents the shin bone (tibia) from moving forward on the thigh bone (femur).
Anterior impingement test is intended to detect anterosuperior acetabular labral lesions. Anterior impingement sign is performed by flexing a person's hip to 90 degrees and then placing

the hip in about 25 degrees of adduction. The hip is then medially rotated to end range. The test is considered positive if anterior hip pain is produced.

Apley test refers to a compression test used to evaluate meniscal problems or injuries in the knee.

Apprehension test is a physical examination maneuver used to assess patellar stability by attempting to subluxate the patella laterally, with a positive result indicated by the patient's pain and distress or sudden quadriceps contraction.

Avascular necrosis is localized death of bone tissue due to impaired or disrupted blood supply (as from traumatic injury or disease).

Bankart lesion is the name for a tear that happens in the lower rim of the labrum. Once the labrum is torn, it's much easier for the humerus to slip out of its socket.

Bear Hug test tests for tears in the subscapularis muscle by asking a patient to press the palm of the affected arm against the opposite shoulder, through shoulder external rotation. It is positive if the individual cannot hold their palm to their shoulder, or they have trouble holding on.

Belly Press test tests for subscapularis muscle dysfunction by asking a patient to press the palm of the hand against the abdomen, through shoulder internal rotation. It is positive if the patient compensates the movement through started wrist flexion, shoulder adduction and shoulder extension.

Biceps squeeze test is performed with the elbow supported in 60 to 80 degrees of flexion and the forearm is pronated. The examiner squeezes the distal biceps muscle. The test is positive when there is no supination of the forearm or wrist.

Bicipital aponeurosis flex test is performed by clenching the fist, supinating the forearm with the elbow at a 75 degree flexion, and palmar flexes the wrist.

Bone scan is a nuclear imaging procedure that examines the bones in the skeleton. It can help diagnose and track bone diseases, and can also be used to monitor the progress of certain treatments.

Brachial plexopathy is a type of peripheral neuropathy that occurs when the brachial plexus is damaged. The brachial plexus is a group of nerves that run from the lower neck to the upper shoulder. These nerves send signals from the spine to the shoulder, arm and hand.

Bursitis is swelling of the fluid filled sac or sac-like cavity that reduces friction between moving parts in the joints.

C-reactive protein (CRP) is a pentameric protein synthesized by the liver, whose level rises in response to inflammation.

Clunk test evaluates the glenoid labrum in people with shoulder pain. It is used to identify superior anterior and posterior glenoid labral tears of the shoulder joint.

Conservative management is an approach to treating pain utilizing non-surgical treatments that are both passive **AND** active, for a designated time (usually 4 to 6 weeks). Passive conservative management includes acupuncture, braces, ice/heat, injections, medications (NSAIDS, Tylenol). Active conservative management includes physical therapy (PT) program,

supervised by a licensed physical therapist and/or osteopathic manipulative medicine (OMT) or chiropractic care.

Cotton test is designed to test for syndesmosis instability caused by the separation of the tibia and fibula. Cotton test is a manual stress test used to identify the amount of lateral translation of the talus within the ankle mortise. The examiner stabilizes the proximal ankle while shifting the talus laterally.

Crank test, also known as the compression rotation test or labral crank test, is a physical examination maneuver used to identify glenoid labral tears in the shoulder joint and assess unstable superior labral anterior posterior (SLAP) lesions.

Delayed union fracture a fracture that has not healed within the expected timeframe for a specific fracture location, typically taking longer than 3 to 4 months to show adequate radiographic signs of healing.

Dorsiflexion external rotation stress test (Kleiger's test) determines rotator damage to the deltoid ligament or the distal tibiofibular syndesmosis.

Drop Arm test is a physical exam that assesses a person's ability to maintain humeral joint motion. It can help determine if a person has a rotator cuff tear, specifically of the supraspinatus. The test can also help diagnose sub-acromial pain syndrome (shoulder impingement).

Effusion is an abnormal accumulation of fluid in a body cavity, such as the pleural space or pericardial space.

Electromyogram (EMG) is a diagnostic test that measures the electrical activity of muscles at rest and during contraction using a needle electrode inserted into the muscle.

Empty can test is an orthopedic test that assesses the integrity of the supraspinatus muscle and tendon in the shoulder. The test isolates the supraspinatus muscle from other rotator cuff muscles.

Erythrocyte sedimentation rate (ESR) is a blood test that measures the rate at which red blood cells settle at the bottom of a test tube over one hour, indicating the presence of inflammation in the body.

External rotation lag sign (ERLS) is a clinical test that assesses the integrity of the supraspinatus and infraspinatus tendons in the shoulder.

Femoroacetabular impingement is a condition characterized by abnormal contact between the femoral head and the acetabulum, leading to hip pain and potential damage to the labrum and cartilage.

Flexion, adduction and internal rotation (FADIR) test involves placing the hip in passive flexion at 90°, then adducting and internally rotating it. Pain elicited during this maneuver is considered a positive finding for FAI.

Full Can Test is used to assess the function of supraspinatus muscle and tendon of the shoulder complex.

Grind test involves the examiner passively rotating the individual's shoulder while feeling for palpable crepitus. Crepitus is a grinding, clicking or cracking sensation that can be felt when the

surface of the cartilage is irregular, such as with shoulder arthritis. A positive result from the subacromial grind test is the presence of palpable crepitus.

Hawkins' test is a clinical shoulder examination used to assess for impingement of the supraspinatus tendon. The test involves flexing the patient's shoulder and elbow to 90 degrees, then forcibly internally rotating the shoulder. Pain elicited during this maneuver suggests subacromial impingement or rotator cuff pathology. It is specifically sensitive for detecting impingement of the supraspinatus tendon beneath the coracoacromial arch.

Hook test is is a clinical sign used to diagnose distal biceps tendon ruptures or tears. The test is performed during a physical exam by inserting a finger near the elbow and hooking it around the tendon. If the finger cannot be hooked, the tendon has detached from the bone.

Hornblower's Sign tests for teres minor tears. It is performed with the individual seated or standing and the examiner places the person's arm to 90° in the scapular plane and flexes the elbow to 90°. The individual is then asked to externally rotate against resistance. The test is positive if the person is unable to perform external rotation.

Indeterminate findings are inconclusive or insufficient for treatment planning.

Insufficiency fracture is a type of fracture that occurs in weakened bone due to normal stress or low-energy trauma, often associated with conditions like osteoporosis.

Internal Rotation Lag Sign tests for rotator cuff tears of the subscaplularis tendon. It is performed with the individual is seated with examiner behind them and the affected arm is brought into maximal internal rotation behind the back (dorsum of the person's hand against the lumbar region). The examiner controls the individual's arm at the elbow and wrist/hand, which is passively brought into 20 degrees of extension taking the forearm and hand away from the back. The person is instructed to actively maintain this position as the examiner releases the wrist but maintains support at the elbow. A lag is indicative of a subscapularis tendon tear.

Jerk test is used to assess the stability of the glenohumeral joint in the shoulder. It can also be used to confirm or rule out posteroinferior labral lesions. A painful jerk test can predict the success of nonoperative treatment for posteroinferior instability.

Lachman's sign is a physical examination maneuver used to assess the integrity of the anterior cruciate ligament in a suspected anterior cruciate ligament (ACL) injury.

Lift-off test is performed by placing the dorsum of the hand against the lumbar spine and attempt to pull their own hand away. The positive test is defined by the inability to move the hand away from the spine.

Load and shift test is one of the hallmark physical examination maneuvers for assessing laxity and instability of the shoulder. It is typically performed with the arm slightly abducted while the examiner supports the patient's arm with one hand to aid in relaxation.

Magnetic resonance imaging (MRI) is a non-invasive diagnostic technique that produces computerized images of internal body tissues and is based on nuclear magnetic resonance of atoms within the body induced by the application of radio waves.

McMurray's test is a series of knee and leg movements healthcare providers use to diagnose a torn meniscus. McMurray's sign is a test where a patient lies on his or her back with the knee completely flexed. The examiner rotates the foot fully outward while slowly extending the knee: a painful click in outward rotation indicates a torn medial meniscus; a painful click in inward rotation indicates a torn lateral meniscus.

Milking maneuver places valgus stress on the medial (or ulnar) collateral ligament of the elbow in a throwing position. The test evaluates the elbow's anterior and posterior bundle of the ulnar collateral ligament. It also assesses the posterior band of the medial ulnar collateral ligament.

Neer test is a medical exam that assesses whether shoulder pain and limited range of motion may be caused by rotator cuff impingement, or pinching of tissue. The test is designed to reproduce symptoms of rotator cuff impingement by flexing the shoulder and applying pressure.

Napoleon test is used to diagnose subscapularis tendon tears. It is performed by lying supine with the hand on the belly. The examiner holds the hand and shoulder to prevent compensatory movement. The person is asked to move the elbow upward, while the examiner tries to externally rotate the arm while the person tries to keep their hand on the sholder.

Nerve conduction study (NCS) is a test that measures how fast an electrical impulse moves through the nerve and can identify nerve damage.

Non-diagnostic is a result that does not lead to a confirmed diagnosis.

Non-union fracture is demonstrated by no healing between two sets of x-rays. Incomplete healing by 6 to 8 months is non-union.

Occult fracture is a suspected broken bone that doesn't show up on X-rays.

O'Brien's test, also known as the active compression test, is a procedure used by healthcare professionals to assess shoulder pain. It can help detect a cartilage tear or an acromioclavicular (AC) joint problem.

Osteoid osteoma is a benign (non-cancerous), small tumor that usually grows in the long bones of a person's lower extremities. The thighbone is the most common location, although it can occur in the bones of the hand, and it sometimes occurs in the lower part of the spine.

Osteomyelitis is an infectious, inflammatory disease of bone. It is often painful, bacterial in origin and may result in the death of bone tissue.

Osteonecrosis is localized death of bone tissue due to impaired or disrupted blood supply.

Patellarfemoral apprehension test is used to test whether the patella is likely to dislocate laterally.

Pathological fracture is a broken bone caused by disease, often by the spread of cancer to the bone.

Popeye sign is a pronounced bulging muscle in the distal aspect of the biceps region of the arm. It is clinically apparent with a complete long head of biceps tendon tear which causes distal migration of the long head of biceps muscle.

Posterior drawer test is used to assess for posterior cruciate ligament tears. Posterior drawer test is performed when the person is supine and the knee to be tested is flexed to approximately

90 degrees. The examiner then sits on the toes of the tested extremity to help stabilize it. The examiner grasps the proximal lower leg, approximately at the tibial plateau or joint line with the thumbs placed on the tibial tuberosity. Then the examiner attempts to translate the lower leg posteriorly. The test is considered positive if there is a lack of end feel or excessive posterior translation.

Posterior impingement test assesses for ischiofemoral impingenment fo the hip. Posterior impingement test is performed with the patient supine on the exam table, the leg is maximally extended and externally rotated resulting in posterior hip pain. The test is considered positive if the patient experiences deep posterior pain.

Posterior sag sign (gravity Drawer test) tests for rotary instability posteriorly and/or torn posterior cruciate ligament (PCL). In a supine position, the subject's hip and knee are flexed to 90° while the examiner supports the leg under the lower calf or heel in the air. A positive sign is a posterior sag of the tibia caused by gravitational pull.

Posterolateral Rotatory Drawer Test of the elbow assesses for posterolateral rotatory instability of the elbow in the posterior cruciate ligament. It determines the amount of rotation of the tibial tubercle compared to the distal femur.

Press test is for triangular fibrocartilage complex (TFCC) diagnosis. It is performed with the person seated, lifting their body weight out of the chair, using their extended wrists. Pain during the test indicates a positive result.

Pseudotumor is a medical term that means "false tumor". It's an abnormality that looks like a tumor, such as a temporary swelling.

Pushup test tests the muscle strength and endurance of the chest and arms.

Reverse Popeye sign is a medical term that describes a bulge in the arm that occurs when the proximal muscle belly retracts due to a loss of counter traction. It's also known as a "reverse Popeye deformity" because the muscle-tendon unit "balls up" due to a lack of distal tension.

Rheumatoid arthritis (RA) is an autoimmune disease (usually chronic) that is characterized by pain, stiffness, inflammation, swelling and sometimes destruction of the joints.

Septic arthritis is an infection in the joint (synovial) fluid and joint tissues.

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by inflammation and immune-mediated injury to multiple organ systems, including the skin, joints, kidneys, central nervous system, and cardiovascular system.

Squeeze test is a clinical test for detecting "stable" syndesmosis injuries. The test compresses the proximal fibula against the tibia to assess the integrity of the bones, interosseus membrane and syndesmotic ligaments. Pain occurs with fracture or diastasis and is considered positive.

Stress fracture is a tiny crack in a bone caused by repetitive force, often from overuse — such as repeatedly jumping up and down or running long distances.

Sulcus sign is an orthopedic test that evaluates the shoulder for glenohumeral instability. The test is performed by applying downward force to the patient's arm while they are sitting or standing. If the test is positive, a dimple appears beneath the acromion, which is called a sulcus.
Superior Labrum Anterior to Posterior (SLAP) lesion is an injury to the labrum of the shoulder, which is the ring of cartilage that surrounds the socket of the shoulder joint. These tears are common in overhead throwing athletes and laborers involved in overhead activities.
Tabletop relocation test is a clinical test used to assess for posterolateral rotatory instability of the elbow. It involves having the patient push up in a push-up position against a table, with their forearm supinated and elbow flexed. A positive test occurs when the patient experiences lateral elbow pain, apprehension, or a feeling of instability during the push-up, indicating potential radial head dislocation.
Thessaly test is a clinical examination used to detect meniscal tears in the knee.
Ulcerated is a break in the skin or mucous membrane with loss of surface tissue, disintegration and necrosis of epithelial tissue and often pus.
Ulnar fovea sign helps identify the source of ulnar-sided wrist pain. The test involves eliciting tenderness in the ulnar fovea region, which is bounded by the ulnar styloid process, the flexor carpi ulnaris tendon, the distal volar surface of the ulnar, and the pisiform bone. A positive ulnar fovea sign indicates tenderness in the ulnar fovea.
Ulnocarpal stress test, also known as the TFCC stress test or ulnar carpal stress test, is a medical test that evaluates the integrity of the triangular fibrocartilage complex (TFCC). The test is used to diagnose ulnar-sided wrist pain and is sensitive for ulnar impaction syndrome (UIS). A positive test result indicates the presence of ulnar-sided wrist pathology and pain with the maneuver.
Ultrasound is the diagnostic or therapeutic use of ultrasound and especially a noninvasive technique involving the formation of images used for the examination and measurement of internal body structures and the detection of bodily abnormalities.
Valgus stress sign is a test of medial collateral ligament integrity, where a passive force is exerted on a joint that, in the presence of ligamentous insufficiency, would cause the medial joint space to open.
Varus stress sign is a test of lateral collateral ligament integrity, where a passive force is exerted on a joint that, in the presence of ligamentous insufficiency, would cause the lateral joint space to open (eg, lateral collateral ligament of the knee and radial collateral ligament of the elbow).

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Disclaimer section

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

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National and Local Coverage Determination (NCD and LCD)

NOTICE
To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to https://www.cms.gov/medicare-coverage-database/search.aspx.

Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.
CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.
In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

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