

**MRI Knee Guidelines****DEPARTMENT: Utilization Management Physician Practice Guidelines****EFFECTIVE DATE: 08/04****DATE LAST REVIEWED: 02/21****SOURCES:** Milliman, Inc.<https://acsearch.acr.org/docs/69419/Narrative/><https://acsearch.acr.org/docs/69419/EvidenceTable/><https://acsearch.acr.org/docs/69432/Narrative/><https://acsearch.acr.org/docs/69432/EvidenceTable/><https://acsearch.acr.org/docs/3097211/Narrative/><https://cde.ismrm.org/protected/10MProceedings/SearchResults.php>**RECOMMENDED GUIDELINES:**

An MRI is not indicated for knee pain alone.

**Indications:**

- 1) MRI of knee is indicated for knee pain with ANY ONE of the following:
  - a) Knee pain with all of the following:
    - i) Knee pain of at least 6 weeks duration
    - ii) Normal findings on plain x-ray
    - iii) Normal findings on physical examination
    - iv) Absence of other cause of pain; examples include:
      - (1) Patellofemoral syndrome
      - (2) Osteoarthritis or degenerative joint disease
      - (3) Bursitis or tendonitis
    - v) Unresponsive to appropriate conservative measures (eg, NSAIDs, PT, rest)
  - b) Knee pain associated with sensitivity to palpation along medial or lateral joint line— (possible meniscal tear)
  - c) Symptomatic Baker Cyst (eg, pain mass in popliteal space)
  - d) Suspected osteonecrosis or osteochondritis dissecans as indicated by ANY ONE of the following:
    - i) Focal radiolucency on plain xray
    - ii) Bone scan demonstrating well localized increased uptake
    - iii) Pain, stiffness and swelling associated with localized tenderness to pressure
    - iv) Persistent pain in patient with sickle cell anemia or chronic corticosteroid usage
  - e) Suspected fatigue stress fracture as indicated by ALL of the following:
    - i) History of overuse or excessive activity
    - ii) Localized pain
    - iii) Symptoms persist or recur despite rest
    - iv) Normal findings on plain x-ray on 2 occasions at least 2 weeks apart
    - v) Bone scan negative, contraindicated, or nonspecific due to possibility of infectious or inflammatory process

- f) Suspected insufficiency stress fracture as indicated by ALL of the following:
  - i) Localized pain or tenderness
  - ii) Osteopenia
  - iii) Negative findings on plain x-ray
  - iv) Bone scan negative, contraindicated, or nonspecific due to possibility of infectious or inflammatory process
- g) Suspected tear of extensor mechanism (eg, quadriceps, patellar tendons)
- h) Evaluation of synovial pathology examples include:
  - i) Chronic synovitis secondary to hemarthrosis of hemophilia
  - ii) Surveillance following synovectomy for pigmented villonodular synovitis
- 2) MRI of knee is indicated for Suspected Ligament Tear and ANY ONE of the following:
  - a) Evidence of instability on physical examination as indicated by ANY ONE of the following:
    - i) Positive anterior or posterior drawer sign (ie, laxity with anterior or posterior stress to knee)
    - ii) Positive Lachman test
    - iii) Laxity with valgus or varus stress to knee
    - iv) Posttraumatic effusion
    - v) Inability to bear weight after injury
    - vi) History of tearing or popping after acute injury
    - vii) Symptoms of instability (ie, giving way or buckling, particularly with sudden stops or rotational and cutting maneuvers)
    - viii) Fracture with high association of ligament tear, examples include:
      - (1) Second fracture
      - (2) Avulsion of fibular head (Arcuate Sign)
      - (3) Tibial plateau fracture
      - (4) Avulsion of either tibial spine (intercondylar trauma)
  - b) Significant trauma from Motor Vehicle accident and suspected knee dislocation
- 3) MRI of knee is indicated for Meniscal Injury and ANY ONE of the following:
  - a) Restricted range of motion, buckling or locking
  - b) Effusion with acute injury or with subsequent episodes of minor injury or vigorous activity
  - c) Persistent knee pain associated with sensitivity to palpation along medial or lateral joint line
  - d) Positive McMurray test
  - e) Fractures with a high association of meniscal tear (eg, tibial plateau)
  - f) For suspected recurrent tears in the postoperative knee
- 4) MRI of knee is indicated for osteomyelitis and ANY ONE of the following:
  - a) Localized bone pain associated with chills or fever, particularly after trauma or orthopedic surgery
  - b) Cellulitis that responds poorly to antibiotics
  - c) Diabetes or severe peripheral vascular disease and ANY ONE of the following:
    - i) Persistent knee pain even without ulcer present
    - ii) Persistent worsening ulcer
  - d) Focal lesion seen on bone scan
  - e) Suspected sinus tract infection from ulcer
  - f) Suspected stump abscess in patients requiring lower extremity amputation for osteomyelitis
- 5) MRI of knee is indicated for Bone Neoplasm (malignant or benign) and ANY ONE of the following:
  - a) Abnormal finding on plain xray or bone scan
  - b) Palpable bony abnormality with normal findings on plain xray
  - c) Known diagnosis of cancer located elsewhere and ANY ONE of the following:
    - i) Unexplained localized signs and symptoms
    - ii) Indeterminate findings on plain xray or bone scan
  - d) Persistent pain of unclear etiology
  - e) Ewing Sarcoma or osteosarcoma and ANY ONE of the following:
    - i) Initial staging
    - ii) Monitoring response after treatment completed
    - iii) Surveillance for tumor recurrence, including ANY ONE of the following:
      - (1) Every 3 months for 2 years
      - (2) Every 4 months for year 3

(3) Every 6 months for years 4 and 5

(4) Annually after 5 years

- 6) MRI of knee is indicated for Patellar Dislocation and ANY ONE of the following:
  - a) Evaluation after reduction of acute traumatic dislocation
  - b) Preoperative evaluation of patient with recurrent dislocation
- 7) MRI knee MAVRIC protocol (GE) is indicated to evaluate soft tissue pathology around knee prosthesis— example would include quadriceps tear after knee replacement
- 8) MRI knee is indicated for chronic knee pain and suspicion for inflammatory arthritis (e.g., rheumatoid arthritis, seronegative spondyloarthropathy, and gout).