

**SELECT HEALTH NETWORK, INC.  
PHYSICIAN PRACTICE GUIDELINES**

**SUBJECT: MRI Knee**

**Date Issued: 08/04**

**Date Revised: 10/08, 10/09, 02/12, 3/13, 3/14, 3/15, 3/16, 2/17, 3/18, 2/19, 2/20  
2/21**

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**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/>  
[http://cds.ismrm.org/protected/10MProceedings/files/130\\_2501.pdf](http://cds.ismrm.org/protected/10MProceedings/files/130_2501.pdf)

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General Guidelines: An MRI is not indicated for knee pain alone.

Indications:

- I. MRI of knee is indicated for knee pain with ANY ONE of the following:
  - A. Knee pain with all of the following:
    1. Knee pain of at least 6 weeks duration
    2. Normal findings on plain x-ray
    3. Normal findings on physical examination
    4. Absence of other cause of pain; examples include:
      - a. Patellofemoral syndrome
      - b. Osteoarthritis or degenerative joint disease
      - c. Bursitis or tendonitis
    5. 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:
    1. Focal radiolucency on plain xray
    2. Bone scan demonstrating well localized increased uptake
    3. Pain, stiffness and swelling associated with localized tenderness to pressure
    4. Persistent pain in patient with sickle cell anemia or chronic corticosteroid usage
  - E. Suspected fatigue stress fracture as indicated by ALL of the following:
    1. History of overuse or excessive activity
    2. Localized pain

3. Symptoms persist or recur despite rest
  4. Normal findings on plain x-ray on 2 occasions at least 2 weeks apart
  5. Bone scan negative, contraindicated, or non specific due to possibility of infectious or inflammatory process
- F. Suspected insufficiency stress fracture as indicated by ALL of the following:
1. Localized pain or tenderness
  2. Osteopenia
  3. Negative findings on plain x-ray
  4. 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:
1. Chronic synovitis secondary to hemarthrosis of hemophilia
  2. Surveillance following synovectomy for pigmented villonodular synovitis
- II. 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:
1. Positive anterior or posterior drawer sign (ie, laxity with anterior or posterior stress to knee)
  2. Positive Lachman test
  3. Laxity with valgus or varus stress to knee
  4. Posttraumatic effusion
  5. Inability to bear weight after injury
  6. History of tearing or popping after acute injury
  7. Symptoms of instability (ie, giving way or buckling, particularly with sudden stops or rotational and cutting maneuvers)
  8. Fracture with high association of ligament tear, examples include:
    - a. Segond fracture
    - b. Avulsion of fibular head (Arcuate Sign)
    - c. Tibial plateau fracture
    - d. Avulsion of either tibial spine (intercondylar trauma)
- B. Significant trauma from Motor Vehicle accident and suspected knee dislocation
- III. 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
- IV. 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:
    - 1. Persistent knee pain even without ulcer present
    - 2. 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
- V. 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:
    - 1. Unexplained localized signs and symptoms
    - 2. 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:
    - 1. Initial staging
    - 2. Monitoring response after treatment completed
    - 3. Surveillance for tumor recurrence, including ANY ONE of the following:
      - a. Every 3 months for 2 years
      - b. Every 4 months for year 3
      - c. Every 6 months for years 4 and 5
      - d. Annually after 5 years
- VI. 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
- VII. MRI knee MAVRIC protocol (GE) is indicated to evaluate soft tissue pathology around knee prosthesis—example would include quadriceps tear after knee replacement
- VIII. MRI knee is indicated for chronic knee pain and suspicion for inflammatory arthritis (e.g. rheumatoid arthritis, seronegative spondyloarthropathy, and gout).