

Differential Diagnosis of Knee Pain

The following was made for physicians and physician extenders to use to help determine potential causes of knee pain. This is intended to be used by providers and not patients. Every patient is specific and requires a full history, physical exam, and review of images to get the most accurate diagnosis. Do not use this as a definite diagnosis tool, but rather, a possible diagnosis. Disclaimer: this is intended for native knees only.

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1. Do X-rays show a bone lesion?
 - a. Yes
 - i. Benign or Malignant lesion or other lesion
 - b. No
 - i. Go to #2
2. Pain is described as “burning”, “tingling”, “numbness”?
 - a. Yes → Neurologic
 - i. Is symptom along the posterior leg or posterior knee?
 1. Yes
 - a. Sciatica
 2. No
 - a. Referred
 - b. Neuropathy
 - b. No
 - i. Go to #3
3. Pain location around knee:
 - a. Pain is anterior
 - i. Pain is around patella – go to #4
 - ii. Pain is superior to patella – go to #5
 - iii. Pain is inferior to patella – go to #6
 - iv. Pain is at anterior-lateral joint line – go to #11
 - b. Pain is medial
 - i. Pain is at anterior-medial joint line – go to #7
 - ii. Pain is at medial joint line – go to #8
 - iii. Pain is inferior to medial joint line – go to #9
 - iv. Pain is superior to medial joint line – go to #10
 - c. Pain is lateral
 - i. Pain is at anterior-lateral joint line – go to #11
 - ii. Pain is at lateral joint line – go to #12
 - d. Pain is posterior
 - i. Pain is posterior – go to #13
 - e. Pain is diffuse or nonspecific
 - i. Pain is diffuse or non-specific location – go to #14
 - f. Pain is in the groin
 - i. Pain is in the groin – go to #15

4. Pain is around patella

a. Trauma: Yes

i. Able to do straight leg raise (extensor mechanism intact)

1. Sensation of kneecap dislocated or X-rays show patella dislocated/subluxated

a. Patella dislocation

2. X-rays negative

- a. Pain over the medial patella or patella subluxates laterally

a. Patella dislocated and reduced

- b. No pain over the medial patella

a. Knee/patella contusion

- c. Patella does not subluxate laterally

a. Knee/patella contusion

ii. Unable to do straight leg raise

1. Pain over patella

- a. X-rays show fracture

a. Patella fracture

2. Pain over quadriceps/superior pole of the patella

a. Quadriceps tendon tear

3. Pain over patella tendon/inferior pole of the patella

a. Patella tendon tear

4. Nonspecific pain or joint swelling

a. Synovitis

b. Trauma: No

i. X-rays show patellofemoral arthritis?

1. Yes

a. Patellofemoral arthritis

2. No

a. Swelling: Yes

- a. Swelling anteriorly and intra-articular?

1. Patella chondromalacia

- b. Swelling is extra-articular

1. Prepatellar Bursitis

b. Swelling: No

- a. Crepitus : Yes

1. Patella chondromalacia

- b. Crepitus: No

1. Anterior Knee Pain Syndrome

5. Pain is superior to patella

a. Trauma: Yes

i. Unable to do SLR (Extensor mechanism is not intact)

1. Quadriceps tear

ii. Able to do SLR (Extensor mechanism intact)

1. Partial Quadriceps tear
 2. Quadriceps tendonitis/contusion
 3. Bone contusion
 - b. Trauma: No
 - i. Quadriceps tendonitis
6. Pain is inferior to the patella
 - a. Trauma: Yes
 - i. Patella tendon tear
 1. Unable to do straight leg raise
 - a. Extensor mechanism is not intact
 2. Able to do straight leg raise
 - a. Extensor mechanism is intact
 - ii. Bone contusion
 - b. Trauma: No
 - i. Patella tendonitis
7. Pain is at anterior-medial joint line
 - a. MRI
 - i. Anterior horn medial meniscal tear
 - ii. Subchondral insufficiency fracture
8. Pain is at medial joint line
 - a. Trauma: Yes
 - i. X-rays show fracture: Yes
 1. Tibia plateau fracture
 - ii. X-rays show fracture: No
 1. X-rays show joint space narrowing: Yes
 - a. Arthritis
 2. X-rays show joint space narrowing: No
 - a. Arthritis Medial meniscal tear
 - b. MCL sprain- midsubstance
 - c. Bone contusion
 - b. Trauma: No
 - i. X-rays show joint space narrowing: Yes
 1. Arthritis
 - ii. X-rays show joint space narrowing: No
 1. Cystic swelling along medial joint line: Yes
 - a. Medial meniscus tear
 2. Cystic swelling along medial joint line: No
 - a. Medial meniscal tear
 - b. Tibia subchondral insufficiency fracture
 9. Pain is inferior to the medial joint line
 - a. Trauma: Yes

- i. MCL sprain- insertion
 - ii. Proximal tibia fracture
 - iii. Bone contusion
 - b. Trauma: No
 - i. Pes tendonitis
- 10. Pain is superior to the medial joint line
 - a. Trauma: Yes
 - i. MFC fracture
 - ii. MCL sprain- origin of MCL
 - iii. Bone contusion
 - b. Trauma: No
 - i. Medial plica
- 11. Pain is at anterior-lateral joint line
 - a. Pain is at joint line
 - i. Anterior horn lateral meniscal tear
 - b. Pain is inferior to joint line
 - i. Lateral infrapatellar bursitis
- 12. Pain is at lateral joint line
 - a. Trauma: Yes
 - i. LCL sprain
 - ii. Bone contusion
 - b. Trauma: No
 - i. Pain over IT Band?
 - 1. Iliotibial band tendonitis
 - ii. Pain over Gerdy's tubercle?
 - 1. Iliotibial band tendonitis
 - iii. Pain over lateral joint line?
 - 1. X-rays show arthritis? Yes
 - a. Lateral compartment DJD
 - 2. X-rays show arthritis? No
 - a. Lateral meniscal tear
 - iv. Cystic swelling is at lateral joint line
 - 1. Lateral meniscal cyst
- 13. Pain is posterior
 - a. Trauma: Yes
 - i. Posterior horn (medial or lateral) meniscal tear
 - ii. PCL tear
 - iii. Posterior lateral corner injury
 - iv. Tibia plateau fracture
 - v. Knee dislocation

- vi. Bone contusion
 - b. Trauma: No
 - i. Bakers' cyst
 - ii. Posterior horn (medial or lateral) meniscal tear
 - iii. Hamstring pain
 - iv. Sciatica
14. Pain is diffuse or non-specific location
- a. Trauma: Yes
 - i. Positive Lachman's or Anterior Drawer test
 - 1. ACL tear
 - ii. Bone contusion
 - b. Trauma: No
 - i. Effusion: Yes
 - 1. Synovitis
 - 2. Infection
 - 3. Arthritis
 - 4. Inflammatory arthritis
 - a. Gout
 - b. Pseudo Gout
 - c. Rheumatoid arthritis
 - d. Psoriatic arthritis
 - e. Lupus
 - f. Lyme disease
 - ii. Effusion: No
 - 1. Mild arthritis
 - 2. Meniscal tear
 - c. Limited hip range of motion
 - i. See #15
15. Pain is in groin
- a. X-rays show arthritis: Yes
 - i. Hip arthritis

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