

History and examination of the knee

Objective: assess the structure and function of the knee joint, identify abnormalities, and determine the presence of pathology.

Anatomy (i.e. possible origin of complaint):

Bones: Femur, tibia, patella

Ligaments: ACL, PCL, MCL, LCL

Intra-articular structures: Menisci (medial and lateral), cartilage, synovium

Surrounding muscles: Quadriceps, hamstrings, gastrocnemius

History Taking

Pain: Differentiate mechanical, inflammatory, neurogenic, referred pain

Mechanical: may point to a specific region of the knee

SOCRATES

Swelling: Acute vs. chronic vs. recurrent, localized vs. diffuse

Instability: Episodes of giving way, locking

Deformity: progressive varus / valgus

Mechanism of Injury: Trauma (direct blow, twisting), overuse, or non-traumatic.

Functional Impact: Difficulty with activities such as walking, climbing stairs

Walking distance, ADLs

Others: Different sites of pain, relation to diet

History guides provisional Dx and differential Dx

Most common Dx: Osteoarthritis (differentiate between 1° and 2°)

Need to rule out: Rheumatoid, Crystalline Arthropathy, Spondyloarthropathies

Examination (confirms diagnosis)

Inspection (from afar):

Gait abnormalities: varus thrust, swinging of pelvis/shoulder, antalgic.

Alignment: Check for varus, valgus, recurvatum, procurvatum deformities.

Sit patient on bed – observe patella tracking through active knee extension

Lie patient down:

Close inspection (look):

Attitude of limb (FFD, varus and valgus deformities usually becomes less severe)

Skin: Erythema, scars, signs of previous surgery.

Muscle Wasting: Particularly quadriceps

Feel:

Temperature (compare to contralateral), Swelling: patella tap, swipe test.

Tenderness: Palpate around the joint line, patella, ligaments, and tibial tuberosity.

*** synovial thickening: can't grasp the edges of patella

Range of Motion (move)

Extension - Flexion: Normal range is 0° to 135°. Ability of heel to reach buttocks

Special Tests

Ligament Integrity:

ACL – ant drawer, Lachman PCL – sagging, posterior drawer

Varus and Valgus Stress: Assess LCL and MCL, respectively.

Meniscal Tests:

McMurray Test: Detects meniscal tears.

Patellar Tests:

Patellar Grind Test: Suggests patellofemoral arthritis

Summary and Documentation

History: Summarize the key positive complaints – suggests your provisional Dx
 Outline relevant negatives to exclude differentials

Examination: Supportive findings of provisional Dx
 Also can outline the severity of condition

Plan: Further investigations (confirm Dx, stratify severity)
 Common management options:
 Conservative Surgical
 Weight loss Osteotomies
 NSAIDs Partial knee arthroplasty
 Lifestyle modifications Total knee arthroplasty
 Physiotherapy