



# Orthopedic Exam for the Primary Care Provider

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**Knee:** compare all aspects of the exam with uninvolved side

Approach- visualize both knees exposed for surgical scars, quad atrophy, alignment or deformity, soft tissue swelling, erythema

Effusion-with knee fully extended, palpate for an effusion after observing for loss of medial dimple- "milk" the suprapatellar pouch and feel for fluid in opposite fingertips.

(If patient unable to tolerate full extension, consider use of knee to hold patient's knee slightly flexed)

Patella exam- apprehension test followed by palpation of facets with mild subluxation, assess mobility of patella; finish with grind test.

Straight leg test for continuity of the extensor mechanism or quad inhibition

ROM- checking B knee motion differences

Extension: slip hand posterior to knee between knee and table to be sure of full extension (document any recurvatum)

Flexion: should reach 135 degrees- note lack of motion due to pain or body habitus and c/w opposite side

Observe motion of patella (best seen with patient seated) thru full ROM to note tracking, malalignment or J- sign

Strength testing- SLR and/or resisted extension if suspected disruption of extensor mechanism (quad or patella tendon rupture) and resisted flexion for suspected hamstring injury

Palpation-

Important to be familiar with the bony and tendinous superficial anatomy- Quadriceps muscle, quadriceps tendon, Patella, patella tendon, tibial tubercle, MJL, Medial tibial plateau, pes anserine bursa, MCL, medial femoral condole, LJJ, lateral tibial plateau, LCL (with figure of 4), lateral femoral condyle, medial and lateral hamstring tendons

Special test-

Meniscus: McMurray, Thessally

Stability/ligaments: varus and valgus at 0 and 30 degrees for pain and joint line opening (LCL and MCL); Lachman, Anterior drawer (ACL); posterior drawer and sag sign (PCL)

Standing for alignment- genu valgum, genu varum, hyper pronation of feet

One-leg squat for hip/core weakness (as well as pain at LFC c/w IT band friction syndrome)

## Shoulder:

Approach- visualize both shoulders exposed for surgical scars, atrophy/wasting, scapular winging, alignment or deformity, soft tissue swelling, erythema

ROM- checking B shoulder motion differences, scapular dyskinesia

Ext. rotation w elbows against sides (non-impingement motion to R/O frozen shoulder)- normal at 45 degrees or similar to the contralateral

Internal rotations w thumbs to mid T spine

Forward Flexion to 180 degrees overhead

Abduction to 180 degrees overhead

Cross-chest adduction for AC joint injury or degenerative change

Strength testing- usually at 90 degrees of FF, ABduction and in the scapular plain (position of Jobe), but may need to be done in range that allows for comfort. Primarily testing SS, IS and teres minor

ER/IR strength done with elbows against sides with IR testing subscap

Special strength testing:

Drop-arm test- loss of ability to hold the arm at 90 degrees against minimal resistance

Liftoff/ belly press- lower and upper subscap

Speeds- biceps

Yergason's - biceps

## Palpation-

Important to be familiar with the bony superficial anatomy- SC joint, clavicle, AC joint, acromion, coracoid, biceps tendon, insertion of SS onto humeral head, muscle bellies of SS, IS, trap, levator scapula and Rhomboid posterior lumbar and pec major and biceps anteriorly, with deltoid laterally

## Special test-

Impingement: for RC tendinitis/ SA bursitis- Hawkins/Neer

Internal impingement (mostly throwers)- Miester test

Instability: Apprehension/relocation/accentuation; Load and shift

Labral tears: keep in mind that labral tears in over 40 years old are essentially inconsequential and all tests are notoriously poor; O'Brien's test (if no positive impingement), Speeds, supination/elbow flexion resistance testing at 90/90- must "put it all together "

Sources for exam techniques:

Macleod's Physical Examination Of The Musculoskeletal System OSCE Guide 2016

<https://www.youtube.com/watch?v=8RzL0YhjfXc>

Stanford video:

<https://stanfordmedicine25.stanford.edu/the25/shoulder.html>

**Knee Pain in Adults and Adolescents: The Initial Evaluation in American Family Physician**

<https://www.aafp.org/afp/2018/1101/p576.html>