

Table 18.1 Goniometric Examination for Hip Motions

Motion	Location of goniometer	Movement	Normal range
Flexion	P: Supine A: Greater trochanter S: Parallel to midline of trunk M: Long axis of femur	Flex hip to end of range; measure with knee flexed (KF) for joint motion and knee extended (KE) for hamstring muscle length.	KF = 0 to 110-125° KE = 0 to 90°
Extension	P: Supine A: Greater trochanter S: Parallel to midline of trunk M: Long axis of femur	Stabilize pelvis and passively hyper-extend hip to end range (knee in extension).	0 to 15°
Abduction	P: Supine A: ASIS S: Line connecting left and right ASIS M: Parallel with long axis of femur	From neutral (goniometer reading 90°), abduct hip to limit of motion.	0 to 45-50°
Adduction	P: Supine A: ASIS S: Line connecting left and right ASIS M: Parallel with long axis of femur	From neutral (goniometer reading 90°), adduct hip across opposite leg to limit of motion.	0 to 20-30°
Medial and lateral rotation	P: Seated A: Midpatella S: Perpendicular to floor M: Long axis of tibia	Rotate hip to limit of motion by moving the lower leg and foot laterally (internal) and medially (external).	0 to 35° (lateral) 0 to 45° (medial)

P = patient position; A = goniometer axis; S = stationary arm; M = movable arm.

From S. Shultz, P. Houglum, and D. Perrin, 2016. *Examination of musculoskeletal injuries*, 4th ed. (Champaign, IL: Human Kinetics).