

Movement Assessment

#	Type	Measurement	Position	Purpose & Application	Foundational Mover	Performance Competitor	Elite Athlete
1	ROM	Neck Rotation	Supine	Maximizes Tactical Awareness: Allows for efficient visual scanning and reaction to the competitive environment without compromising core stability or athletic posture.	>70°	>80°	>85° & Symmetrical
2	ROM	Shoulder Flexion	Supine	Creates a Stable Overhead Platform: Enables efficient overhead lifting and reaching by optimizing scapular mechanics, which directly reduces the risk of shoulder impingement.	>165°	>175°	180° (no compensation)
3	ROM	Shoulder External Rotation @ 90	Supine	Stores Elastic Energy for Power: Primes the shoulder for explosive, high-velocity movements by "loading" the rotator cuff and other tissues, maximizing the stretch-shortening cycle.	>90°	>100°	>110° (maintain total arc)
4	ROM	Shoulder Internal Rotation @ 90	Supine	Drives Peak Acceleration & Deceleration: Generates the rapid arm speed in a throw or strike and, just as critically, provides the eccentric braking force to protect the joint afterward.	>60°	>70°	Maintain total arc >160°
5	ROM	Hip External Rotation - Seated	Seated	Unlocks Power & Agility: Creates a stable base for lateral movement and allows access to full gluteal power. Essential for deep squats and powerful changes of direction.	>35°	>45°	>45° & Symmetrical
6	ROM	Hip Internal Rotation - Seated	Seated	Enables Safe Deceleration: Crucial for absorbing rotational forces during landing and cutting maneuvers. Adequate ROM here is a primary defense against hip and knee injuries.	>30°	>35°	>40° & Symmetrical
7	ROM	Thoracic Rotation	4-Point Kneeling	Engine of Power Transfer: Links lower and upper body actions (kinetic chain). Essential for converting ground force into explosive velocity for swings, throws, and strikes.	>35°	>45°	>50° (stable lumbar)
8	ROM	Weight Bearing Lunge Test (Dorsiflexion)	Standing	Foundation of Lower Body Mechanics: Permits correct knee tracking and shock absorption in squats, jumps, and sprints. Limited range is a key predictor of knee and ankle pathologies.	>35°	>40°	>45° & Symmetrical
9	AxIT	Stomp-IT Push Up Normal	Push Up	Core & Shoulder Endurance: Measures anterior core endurance against extension while assessing isometric shoulder stability and external rotation strength.	>40% BW	>55% BW	>70% BW
10	AxIT	Stomp-IT Squat Normal	Standing	Definitive Movement Signature: A full-system diagnostic that reveals an athlete's total force output, left-right asymmetries, and their neuromuscular strategy for controlling their center of mass.	Peak Force > 1.5x BW	Peak Force > 2.0x BW	Peak Force > 2.5x BW
11	AxIT	Double Leg Balance Quiet Stand - Eyes Open	Standing	Baseline Proprioceptive Acuity: Assesses the efficiency of the neuromuscular system to maintain equilibrium, providing a fundamental measure of an athlete's sensory feedback loop.	Sway Velocity < 0.6 in/s	Sway Velocity < 0.4 in/s	Sway Velocity < 0.3 in/s
12	AxIT	Stomp-IT Paused Squat	Standing	Assesses Stability Under Load: Isolates strength and control at the point of maximum vulnerability, revealing deficits in stability that momentum might otherwise hide.	> 1.2x BW	> 1.8x BW	> 2.2x BW
13	AxIT	Stomp-IT Lunge Pause	Standing	Single-Leg Neuromuscular Control: Exposes deficits in stability under load in a sport-specific split stance, highlighting weaknesses not seen in bilateral movements.	> 0.8x BW	> 1.1x BW	> 1.4x BW & <5% asymmetry
14	AxIT	Grip Strength	Standing	Global Neuromuscular Indicator: A scientifically validated proxy for total-body strength, central nervous system readiness, and an athlete's ability to transfer force through the kinetic chain.	>88 lbs (M) / >55 lbs (F)	>121 lbs (M) / >77 lbs (F)	>154 lbs (M) / >99 lbs (F)
15	AxIT	Pull-IT Spinal Rotation	Seated	Transverse Plane Power: Directly quantifies force production from the core's rotational sling system (obliques/fascia), the engine for all rotational athletes.	>0.27 ft-lbf/lb	>0.40 ft-lbf/lb	>0.50 ft-lbf/lb & Symmetrical
16	AxIT	Push-IT Hip External Rotation - Seated	Seated	Foundation of Rotational Power: Measures the hip's ability to generate torque from the ground up, initiating the kinetic chain for powerful swings and throws.	>15% BW	>20% BW	>25% BW
17	AxIT	Push-IT Hip Internal Rotation - Seated	Seated	Deceleration & Pivoting Capacity: Assesses the hip's ability to absorb rotational loads during cutting and landing, crucial for preventing hip impingement and ACL injuries.	>10% BW	>15% BW	>20% BW (ER:IR ratio ~1.5:1)
18	AxIT	Push-IT Shoulder External Rotation at 90	Supine	Measures Rotational Braking Strength: Quantifies the rotator cuff's ability to eccentrically control and decelerate the arm, a key factor in preventing overuse injuries in throwing athletes.	>9% BW	>12% BW	>15% BW
19	AxIT	Push-IT Shoulder Internal Rotation at 90	Supine	Measures Rotational Acceleration Strength: Quantifies the force-producing capacity of the internal rotators, which directly contributes to peak velocity in throwing and striking actions.	>13% BW	>17% BW	>22% BW (ER:IR ratio > 0.65)
20	AxIT	Push-IT Hip Abduction - Side Lying	Side Lying	Frontal Plane Knee Control: Measures the gluteus medius's ability to prevent knee valgus (collapse), a key factor in ACL and lower-extremity injury prevention.	>20% BW	>30% BW	>40% BW
21	AxIT	Push-IT Hip Adduction - Side Lying	Side Lying	Groin Injury Resilience: Assesses peak force of the adductors. Strength here is vital for pelvic stability, change-of-direction speed, and preventing common groin strains.	>18% BW (Add:Abd > 0.8)	>25% BW (Add:Abd > 0.9)	>35% BW (Add:Abd > 0.95)
22	AxIT	Stomp-It CMJ (3 reps)	Standing	Slow Stretch-Shortening Cycle (SSC) Efficiency: Measures lower-body explosive power by quantifying how effectively an athlete can translate eccentric loading into concentric power.	>11.8 in (M) / >7.9 in (F)	>17.7 in (M) / >13.8 in (F)	>23.6 in (M) / >19.7 in (F)
23	AxIT	10/5 Repeat Jump	Standing	Fast Stretch-Shortening Cycle (SSC) Efficiency: A measure of reactive strength and ankle stiffness. This is a key indicator of an athlete's running economy, agility, and true plyometric ability.	RSI: <1.5	RSI: 1.5 - 2.5	RSI: >2.5
24	AxIT	Stomp-IT Isometric Mid Thigh Pull (IMTP)	Standing	Maximal Whole-Body Force: The gold standard for measuring an athlete's peak force-producing potential. Strongly correlates to dynamic performance like sprinting and lifting.	>3.1 lbf/lb	>4.1 lbf/lb	>5.1 lbf/lb
25	AxIT	Pull-IT Knee Extension - Seated	Seated	Peak Quadriceps Force: A direct measure of the primary driver for vertical jumping and acceleration. Essential for tracking progress and left/right asymmetries.	>0.67 ft-lbf/lb	>0.94 ft-lbf/lb	>1.17 ft-lbf/lb
26	AxIT	Pull-IT Knee Flexion - Seated	Seated	Hamstring Capacity & ACL Protection: Measures peak hamstring force, which is essential for high-speed running and maintaining a protective hamstring-to-quadriceps strength ratio.	>0.40 ft-lbf/lb (H:Q > 0.55)	>0.57 ft-lbf/lb (H:Q > 0.6)	>0.70 ft-lbf/lb (H:Q > 0.6)