

# Knee Return to Sport Assessment

This is a list of objective measures that will be tested during the Level 1 and Level 2 testing periods at their respective times post-operatively. Please use this information to prepare your patient for formal testing. Portions of the test may need to be re-assessed prior to clearance by the physician if there are significant deficits.

## Level 1 Test Components (3-4 months):

Functional Movements with Video Analysis (all performed on both limbs)

- 8" forward step down
- 18" drop jump
- Lateral shuffle 2x5 yards

### Single Leg Squat Test

- 60 bpm metronome (1 up, 1 down)
- Thigh parallel in sitting (18-21" height box or table works for most)
- · No touching foot during reps
- · Count reps to fatigue

## Single Leg Calf Raise Test

- 60 bpm metronome (1 up, 1 down)
- Count reps to fatigue
- To max height use stadiometer if possible

 $60^{\circ}$  Isometric quadricep strength testing bilaterally 3 reps each :05 holds :20 rest Isokinetics (use clinical judgment on preferred speeds)

• 60°/sec 2x5 reps :30 rest



## Midterm Testing (between Level 1 and Level 2 testing)

• Depending on patient progress and physician preference, selective midterm testing can be completed in between Level 1 and Level 2 tests. This can consist of any number of the items from Level 2 testing.

## **Level 2 Test Components (8+ months):**

- The purpose of the Level 2 test is to determine which areas the patient may need to improve to ensure a safe return to sport.
- Adequate testing scores (generally within 10% of the other side for most tests) will result in beginning a graduated return to sport or activity consistent with the patient's goals and safety in mind.

### ACL-RSI, IKDC 2000 SKF Outcome Measure

Mid-range isometric hip abduction strength testing bilaterally 3 reps each: 05 holds :10 rest Mid-range isometric hip ER strength testing bilaterally 3 reps each: 05 holds :10 rest Functional Movements with Video Analysis (all performed on both limbs)

- 8" forward step down
- 18" drop iump
- Lateral shuffle 2x5 yards
- Decelerations x2
- 90° cut
- Triple hop (90% of average triple hop distance)
- · Single leg countermovement jump (hands on hips) average of two trials for height

Single Leg Squat Test (if asymmetrical on Level 1)

- 60 bpm metronome (1 up, 1 down)
- Thigh parallel in sitting (18-21" height box or table works for most)
- No touching foot during reps
- Count reps to fatigue

Single Leg Calf Raise Test (if asymmetrical on Level 1)

- 60 bpm metronome (1 up, 1 down)
- Count reps to fatigue
- To max height use stadiometer if possible

Single leg hop for distance 3 repetitions each side

- Measure from the heel, MUST stick the landing for a full 2 seconds
- 3 trials average the best two
- Looking to be within 10% of opposite side

Lateral hop testing - tape lines 40 cm apart, number of successful side-to-side hops on single leg in 30 seconds (touching the tape does not count)

60° isometric quadricep strength testing bilaterally 3 reps each :05 holds :10 rest

Isokinetics (use clinical judgment on preferred speeds)

60°/sec 2x5 reps :30 rest, 300o/sec x20 reps

Compare isokinetic results to pre-surgery values (if available) on uninvolved side to ensure return to normal strength.

#### REFERENCES:

- 1. Adams D, et al. Current concepts for anterior cruciate ligament reconstruction: a criterion-based rehabilitation progression. JOSPT. 2012; (42):601-614.
- 2. Wilk, KE, Macrina LC, Cain EL, Dugas JR, Andrews JR. Recent advances in the rehabilitation of anterior cruciate ligament injuries. JOSPT. 2012 (42)3:15.3-171
- 3. Lewek M, Rudolph K, Axe M, Snyder-Mackler L. The effect of insufficient quadriceps strength on gait after anterior cruciate ligament reconstruction. Clin Biomech (Bristol Avon). 2002; 17:56-63.
- 4. Paterno MV, et al. Biomechanical measures during landing and postural stability predict second anterior cruciate ligament injury after anterior cruciate ligament reconstruction and return to sport. Am J Sports Med. 2010; (38):1968-1978.
- 5. ynch AD, Logerstedt DS, Grindem H, et al. Consensus criteria for defining 'successful outcome' after ACL injury and reconstruction: a Deleware-Oslo ACL cohort investigation. BR J Sports Med 2015; 49:335-342.
- 6. Bedoya AA, Milltenberger MR, Lopez RM. Plyometric training effects on athletic performance in youth soccer athletes: a systematic review. JSCR 2015.
- 7. Performance Enhancement in Rehabilitation: "Bridging the Gap", Dan Lorenz DPT, PT, LAT, CSCS, USAW: March 5-6, 2016.
- 8. Davies G, Riemann BL, Manske R. Current concepts of plyometric exercise. Int J Sports Phys Ther. 2015;10(6): 760-86.
- 9. Chmielewski TL, George SZ, Tillman SM, et al. Low- Versus High-Intensity Plyometric Exercise During Rehabilitation After Anterior Cruciate Ligament Reconstruction. Am J Sports Med. 2016;44(3): 609-17.
- 10. Grindem, H, Snyder-Mackler L, Moksnes H, Engebretsen L, Risberg MA. Simple decision rules reduce reinjury risk after anterior cruciate ligament reconstruction: the Delaware-Oslo ACL cohort study. Br J Sports Med, 2016 July; 50(13): 804-808.

Revision Dates: 2/2015, 5/2015, 02/2016, 09/2018, 01/2019, 11/2020, 6/2024

