



LOWER EXTREMITY RETURN TO PARTICIPATION PROTOCOL

Athletes will warm up on the stationary bike for 10 minutes, and then go through a dynamic warm-up routine to be adequately prepared.

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| Ground Clock | <ul style="list-style-type: none"> -6-point touch from front to past neutral behind -hands on hips and maintaining level hip position -touching foot to return to center after each rep -3 times around each leg / timed -making sure contralateral leg reaches to consistent position -utilize symmetry index to quantify deficits | <ul style="list-style-type: none"> X X X X X X |
| Lateral Shuffle | <ul style="list-style-type: none"> -weight down, level hips, no rotation, hands out in front -50 feet / 2 trials in each direction | |
| Carioca | <ul style="list-style-type: none"> -weight down, limited rotation in hips, hands out in front -50 feet / 2 trials in each direction | |
| Forward Jog / Trendelenburgs / High Knees | <ul style="list-style-type: none"> -looking at mechanics for compensation, guarding, eccentric control or if any pain while performing -3 times forward and back for 50 feet | |
| Unilateral Squats | <ul style="list-style-type: none"> -go down to a level of (height in inches X .33 = inches for chair/stool height for unilateral squats / this equals about 60-80 degrees of knee bend) -uninvolved leg out in front and abducted with hands on hips -how many in 30 seconds, comparing bilaterally | |
| Functional Jump Assessment | <ul style="list-style-type: none"> -bilaterally with hands free, countermovement on floor -horizontal movement focus to assess mechanics | |
| Y-Balance | <ul style="list-style-type: none"> -following the FMS criteria for Y-balance testing -standing on one leg and pushing boxes along pipes as far as able without touching back down -perform 3 on each side for an average score (total of both divided by 3 for each side) -difference should not be more than 4cm | |
| Functional Jump | <ul style="list-style-type: none"> -bilateral jump with feet comfortable distance apart, arms swing freely -4 trials warm up at 25, 50, 75, and 100% max effort, measure 5th | |

- measuring toes at start and toes at finish
- males should be able to jump 90-100% of their height
- females should be able to jump 80-90% of their height
- calculate % deficit from this norm

Figure-8's / Shuttle Runs

- Figure-8 runs with cones 10 yards apart, touching cone while pivoting around it
- 90-degree shuttle run cuts, planting outside foot, reaching to touch ground to inside of plant leg / 3 tests
- emphasizing the plant and change of direction
- observing for apprehension, compensation, eccentric control, or any pain while performing

U Hop for Distance

- unilaterally using arm swing (countermovement), must be able to stick landing and hold for 1 second
- 3 trials, taking the longest of the 3 for each side
- comparing bilaterally, measuring toes start to toes finish
- males should be able to hop 80-90% of their height
- females should be able to hop 70-80% of their height
- calculate % deficit to contralateral side and to norms

U Cross-over Hop

- unilaterally in crouched position, using arm swing, leap forward and across a line, then back across for 3 subsequent hops; stick and hold landing for each hop for 1 second
- 2 trials, taking the longest of the 2 for each side
- comparing bilaterally, measuring toes start to toes finish

Sprint / Jump Stops

- forward sprint with jump stops at 30 yds. / 3 tests
- focus on ability to accelerate mechanics / lower extremity control with jump stops and any apprehension or pain

Triple Hop for Distance

- unilaterally in a crouched position, using arm swing, leap forward as far as possible for 3 subsequent hops; stick and hold the landing for 1 second

REFERENCES: *"Utilization of Modified NFL Combine Testing to Identify Functional Deficits in Athletes Following ACL Reconstruction". JOSPT; Vol. 41, No. 6, June 2011, pp. 377-388.*

"Assessment of Functional Tests After Anterior Cruciate Ligament Surgery". JOSPT; Vol. 19, No. 4, April 1994, pp. 212-217.