Functional Testing Protocol - ANKLE

NAME: _____ DOB: _____ MRN: _____ DATE: _____

Involved: R or L DATE OF SURGERY: _____ PHYSICIAN: _____

Preliminary Functional Test

Test	Dynamic Valgus * (Y/N)	R	L	%
Single Leg Heel Raise				
Y-Balance (Anterior only)				
Leg Press Body weight:_____ Percentage of Body Weight: Seat setting:_____ ☐ 50% _____ ☐ 75% _____				

Functional Testing Protocol - ANKLE

NAME: _____ DOB: _____ MRN: _____ DATE: _____

Involved: R or L DATE OF SURGERY: _____ PHYSICIAN: _____

Return to Sport Test

Test		Dynamic Valgus * (Y/N)	R	L	%
Single Leg Heel Raise Test					
Y-Balance Leg Length (ASIS to medial malleolus): _____ cm	Anterior:				
	Posterolateral:				
	Posteromedial:				
	Composite:	N/A			N/A
Single Leg Vertical					
Single Lateral Hop with Fatigue Protocol					
Cross-Over Hop					
Figure 8 Hop					
Side Hop Test					
Square Hop Test					
Leg Press Percentage of Body Weight: ☐ 75%_____ ☐ 100% _____ other % _____	Body weight:____ Seat setting:_____				
Additional Comments:					

*** Dynamic Valgus** is defined as the kneecap being medial to the great toe during the test

Functional Testing Instructions

Warm-up
Allow 5-minute bike or elliptical warm-up with moderate resistance.

Demonstration and practice trials
The examiner may demonstrate each test. A maximum of two practice trials will be allowed for each test.

Scoring
Limb symmetry index (LSI) greater than or equal to 90% (involved vs. uninvolved limb) is required for each test, except for Composite Y-balance scoring, which is based on limb length norms.

Single Leg Heel Raise Test

Standing on the unaffected leg first, participant may use a single finger on the examiner for balance. Participant is to rise up onto the ball of their foot and down at the rate of 1 heel raise every 2 seconds for up to 25 repetitions. Record the number of successful repitions. Test is terminated if subject leaned or pushed down on examiner for assistance, subject flexed knee, heel height/planter flexion ROM decreases by 50% or subject stops.

Y-balance

Standing with one leg on the center platform with toes behind the red line and hands placed firmly on hips, the subject is instructed to push the indicator with the toes in the desired direction as far as they can while maintaining balance and return to starting position under control. The heel must stay in contact with the platform during the test. The subject may not touch the free leg to the ground during the movement to keep balance or put their foot on the top of the reach indicator to gain support. Once the subject has completed three successful trials with the uninvolved leg they will repeat the process with the involved leg before moving on to the next direction. The ***best*** of the three reaches is recorded as the patient's reach distance. Reach distances should be recorded to the nearest centimeter. For the Y-balance anterior, a difference of >4cm between limbs constitutes a failed test. Composite score is determined by the following equation: Anterior + Posterolateral + Posteromedial divided by (3 x leg length) multiplied by 100

Leg Press

Choose appropriate percentage of body weight based on current strength of the involved limb. Subject will perform a single-leg leg press for 60 seconds, trying for as many repetitions as possible. Repetitions will not be counted if the subject uses the opposite limb for support or loses proper form including dynamic valgus. Each repetition must be performed from 0-90 degrees.

Single Leg Vertical Leap

The subject is to jump off one leg without an approach step but may land on two legs. The object is to measure the maximal vertical jump, comparing uninvolved to involved. Devices such as the Vertec or the Just Jump (https://www.power-systems.com), or best methods available, should be used to objectify vertical leap. Three trials are performed on each side, accepting the ***best*** score from each of the three trials for comparison.

Hop Tests

Three trials are performed on each limb, and the best score for each limb is recorded. Start with lead toe behind marked line and measure to the nearest centimeter or ½ inch. Landing must be maintained for a minimum of **two** seconds while the toe measurement is being recorded. A failed attempt consists of loss of balance, touching the floor with arms or opposite leg, an additional short hop on landing, or presence of dynamic valgus.

Single Leg Lateral Hop after fatigue protocol

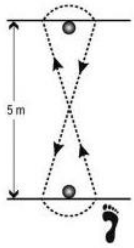
Prior to performing the single lateral leg hop test, participants perform a unilateral step-down from a 12-inch box, tapping their heel to the floor each time, and completing this as many times as possible on a single limb for two minutes. After performing the 2-minute fatigue protocol, single leg lateral hop for distance is performed on the same limb for 3 repetitions. Participant stands on 1 leg and jumps laterally 1 time. The best score is recorded. This same protocol is then repeated on the opposite limb.

Cross-Over Hop

Standing on one leg, perform three successive hops crossing over a 15-cm wide strip or marker, landing on the same limb. The first hop should be lateral in respect to the direction of the crossover. There should be no pauses between hops.

Figure 8 Hop

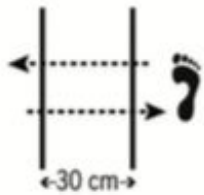
With two cones placed 5 meters (16 ft., 5 in.) apart, the participant will hop as fast as possible on one limb twice around the cones in a figure 8 pattern, with time being recorded. Failed test consists of: unable to maintain figure 8 course path or touching down with opposite limb. The best time from **two** trials is recorded. *(**See page 5 for calculation instructions for timed values*)



Caffrey E, Docherty CL, Schrader J, Klossnner J. The Ability of 4 Single-Limb Hopping Tests to Detect Functional Performance Deficits in Individuals With Functional Ankle Instability. *J Orthop Sport Phys Ther*. 2009;39(11):799-806. doi:10.2519/jospt.2009.3042

Side Hop Test

Mark 2 lines 30 cm apart. Standing on one leg, the participant will stand with the lines to the lateral (outside) of the test foot. Hop laterally over the line and back, which constitute to 1 rep. Participant will complete 10 repetitions as quickly as possible. Failed test consists of: fall, contralateral foot touches ground, did not completely clear 30-cm distance. The best time of **two** trials is recorded. *(**See page 5 for calculation instructions for timed values*)



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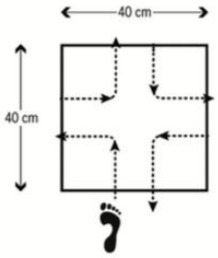
Square Hop Test

A 40 x 40 cm box is marked on the floor with tape. Participant with hop forward into the box, medially out of box, laterally into box, anterior out of box, posterior into box, lateral out of box, medial into box, posterior out of box; which will consist of one repetition. Participant will perform 5 repetitions. Failed test consists of: fall, contralateral foot touches ground, did not completely clear the outline of tap (for top and bottom only the ball of foot must clear; for left and right entire foot must clear). The best time of two trials is recorded. *(**See below for calculation instructions for timed values.)*



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****Timed calculation instructions**

First: work out the **difference** (**decrease**) between the two values. Then: divide the **decrease** by the non-operative and multiply the answer by 100.This gives you the percentage difference. Then subtract the percentage difference from 100.

For example:
Non-operative leg: 8 seconds
Operative leg: 10 seconds
10-8= **2 (difference)** divided by **8 (original value)** = **.25** x 100 = **25% (percentage difference)**
100 – 25= **75 % (final value)**

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Ankle-RSI Scale

Instructions: Please answer the following questions referring to your main sport prior to injury. For each question, circle the number between the two descriptions to indicate how you currently feel relative to the two extremes.

1. Are you confident that you can perform at your previous level of sport participation?

Not at all confident	0	10	20	30	40	50	60	70	80	90	100	Fully confident

2. Do you think you are likely to reinjure your ankle by participating in your sport?

Extremely likely	0	10	20	30	40	50	60	70	80	90	100	Not likely at all

3. Are you nervous about playing your sport?

Extremely nervous	0	10	20	30	40	50	60	70	80	90	100	Not nervous at all

4. Are you confident that you could play your sport without concern for your ankle?

Not at all confident	0	10	20	30	40	50	60	70	80	90	100	Fully confident

5. Do you find it frustrating to have to consider your ankle with respect to your sport?

Extremely frustrating	0	10	20	30	40	50	60	70	80	90	100	Not at all frustrating

6. Are you fearful of reinjuring your ankle by playing your sport?

Extremely fearful	0	10	20	30	40	50	60	70	80	90	100	Not fearful at all