



# Goshen Physicians

ORTHOPEDICS & SPORTS MEDICINE

## ACL Reconstruction with Meniscal Repair Protocol

### **Recommendations:**

TDWB for balance only for first 4 weeks (May vary by physician or procedure)  
May be required to wear immobilizer for 4 weeks depending on physician preference.  
(May come out of brace for exercise)  
No Passive ROM past 90 degrees for initial 4 weeks (ROM restrictions may vary with surgical procedure.)

### **Day 1 – 14:**

**ROM 0-90 degrees days 0-4**

**TDWB only with 2 crutches**

**AROM to tolerance after day 4; No passive ROM past 90 degrees**

Focus on achieving full extension with heel props and prone hangs

Ice and Elevation, 3-4 times a day

Biofeedback or E-Stim for muscle re-education and effusion reduction as needed

Patella mobilization

Isometrics for Quads, hip abductors and adductors

Straight leg raises (SLR)

Hip Flexion, Abduction or Adduction (opposite repair), hip extension

Hamstring/Calf stretching (avoid aggressive stretching if hamstring autograft used)

### **Weeks 2-4:**

**TDWB only with 2 crutches**

**No passive ROM past 90 degrees**

Continue biofeedback for Quads

Control knee effusion as needed

Progress weight for SLR (only if full knee extension is maintained)

Hamstring curls in pain free range (not to exceed 90 degrees flexion) (hold resistance until after 6 weeks if hamstring autograft is used)

*Developed in conjunction with the physicians at OrthoCarolina*

## **Weeks 4-8:**

### **Partial weight bearing at 4 weeks (FWB at 6 - 8 weeks)**

Bike, pool, wall slides

Balance training (partial progressing to full weight bearing)

Rocker board; progress to BAPS

Single leg balance, balance reach, etc.. when allowed

Endurance training

Light bike work as ROM allows

Closed chain strengthening exercises (PWB to FWB)

Squats, lunges, calf raises, leg press, step downs, sports cord, etc..

Flexibility

Lower extremity stretching as tolerated

**At 6 weeks:** Begin knee extension on isotonic machine (90-40 deg only) if minimal effusion and no patellofemoral/patellar tendon pain

## **Weeks 8-16:**

### **ROM - Achieve full ROM by 8-10 weeks**

Progressive resistance on Cybex machines (**90-0 deg knee extension beginning at 12 weeks**)

Multi-hip; knee flexion; leg press; calf raises

Isokinetics

Velocity spectrum

Increase endurance activities

Bike, pool, **versaclimber**, walking, **No Running**

### **16 weeks:** Straight Line Jogging

Begin with 1 mile jog/walk and increase in 1/4 mile increments. Once patient is able to jog 20 minutes with no discomfort or swelling may progress functional activities to include figure 8's, cutting, jumping, etc.

Begin with low impact 2 leg jumping (jump squats, jump rope on soft but stable surface)

Advance 2 leg jumping to include broad jumps for distance, tuck/vertical jumps

Progress into one leg hopping with proper mechanics

Begin working on explosive power and eccentric strength for controlled landings

Box jumps/hops, one leg vertical jumps, progress to unilateral box jump landing

May begin progressive functional activity only with physician approval

Patient should demonstrate 85% symmetry on single-leg hop for distance prior to moving to next phase

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**24 weeks:** Advanced functional tests are performed. \*Use the attached test battery to improve sensitivity. Goal is 90% symmetry prior to return to sport.

Continue to progress functional activities and sport specific drills as tolerated- figure 8's, full speed cutting, modified agility T-test.

**Criteria for Return to Full Activity:**

Adequate healing time

Full pain free ROM

Adequate performance on Post-Op ACL Reconstruction Return to Sport Test Battery

Satisfactory performance of sport specific activities without swelling

Physician approval

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## Post-Op ACL Reconstruction Return to Sport Test Battery

Patient must tolerate all exercises for strengthening, agility, running, sprinting and plyometrics with no demonstration of compensation strategies, reports of pain or instability, or signs/symptoms of inflammation.

All testing items on the involved side must be within 90% of the uninvolved to pass the test. Balance must be held for at least 2 seconds without any extra hops.

### 1. 10 Single Leg Squats with weight:

The patient must squat down on one leg at least 60° of knee flexion while maintain balance and motor control. The patient cannot allow their knee to deviate into genu varum or valgum. The patient must complete 10 consecutive repetitions. The patient will hold weight in the form of a weighted vest or dumbbells. To pass the test, the involved leg must squat with at least 90% of weight compared to the uninvolved. Body weight is independent of the test. For example, if the patient squats with 20 pounds of extra weight on the uninvolved leg, he/she must squat with at least 18 pounds of extra weight on the involved leg to pass.

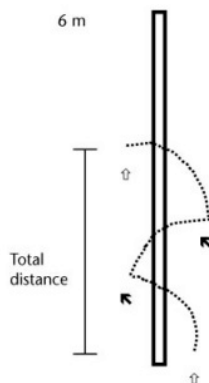
### 2. Single Broad Jump, landing on one foot:

Starting at a designated line, the patient will jump using both legs as far forward as possible, landing on one foot and maintaining balance. To pass, the involved leg must measure at least 90% of the distance compared to the uninvolved leg.

### 3. Single Leg Triple Crossover Hop

Starting at a designated line, the patient will balance on one leg and hop medially at a 45° angle as far as possible, immediately hop laterally at a 45° angle, and then immediately hop medially again at a 45° angle, landing on the same leg. The patient must maintain their balance on the last hop. To pass, the involved leg must measure at least 90% of the distance forward compared to the uninvolved leg.

Crossover Hop for Distance



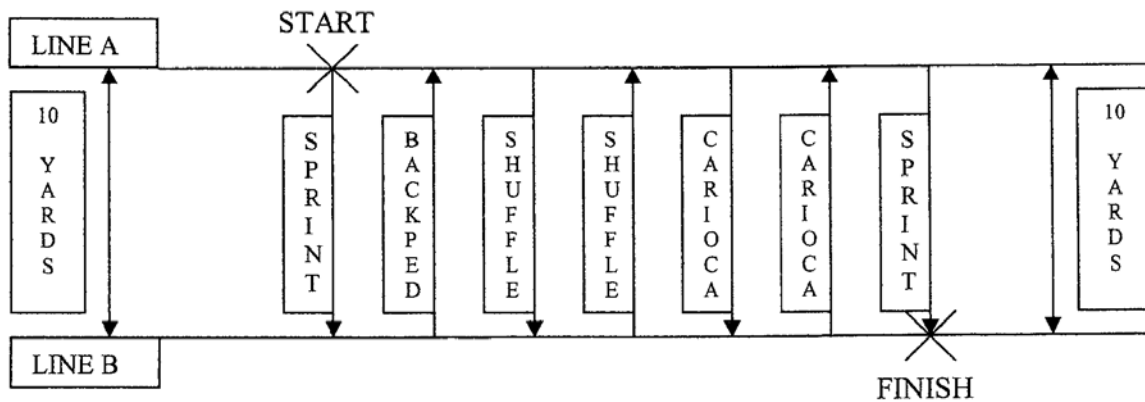
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#### 4. Single Leg Vertical Hop

While balancing on one leg and using the arm on the same side as the testing leg, the patient will reach vertically as far as possible without straining. The height to the tip of the patient's middle finger will be measured. The patient will balance on one leg and hop vertically as far as possible reaching with the same arm. The difference between the original standing height and the hopping height will then be measured. To pass, the involved distance must measure at least 90% of the distance compared to the uninvolved leg.

#### 5. 10 Yard Lower Extremity Functional Test

Starting at line A, the patient will sprint ten yards forward to line B then backpedal to line A. Next, the patient will side shuffle to line B then side shuffle back to line A. Then the patient will carioca to line B then carioca back to line A. Finally, the patient will sprint through line B. The patient must make sure to touch each line with his/her foot. The administrator will measure the time it takes the patient to complete the test. (Males  $\leq$  17-20 seconds; Females  $\leq$  19-23 seconds) See diagram.



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