



Pivot Shift Protocol Program for the ACL Deficient Knee

Goals of the Program: To promote the use of the hamstring muscles group as a stabilizer for the ACL deficient knee.

Pivot Shift Control: (Hamstring control program)

- ◆ Manual control in back-lying partner exercise with eccentric hamstring tensioning to control instability.
- ◆ Hamstring tension in a closed chain dynamic position to control instability; incorporate this into walking, running, jumping and sports specific activities as tolerated.

Range of Motion and Flexibility Exercises:

1. Stretch into full extension and flexion of the knee
2. Stretch gastroc-soleus, hamstrings, quads, hip-flexor, ITB and patellar mobility as indicated.

Strengthening:

1. Strengthening exercises for quads, gastroc-soleus, hip musculature and hamstrings with emphasis on hamstrings.
2. Open-chain activities working gradually into closed chain incorporating hamstring control tensioning – to include hip, knee and ankle strengthening exercises.
3. Open-chain quad sets, co-contraction of quads and hamstrings, SLR in 4 planes and hamstring curls.
4. Closed-chain – start bilateral and advance to unilateral. Important to incorporate hamstring tensioning into activities. Including toe ups, partial squats, lock-outs, wall slides, LSU, ball squats, wobble squats, hip strengthening in standing (flex., ABD, ext. and adduction). Advance to weights or theraband for resistance. Shuttle bilateral and unilateral.
5. Machine weights: hamstring curls, leg press (shallow range) and knee extension machine (90-45 degrees initially). Advance weights and reps and ROM as tolerated.

Proprioceptive Exercises:

1. Wobble squats (front to back and side to side)
2. Single limb balance
3. Mini trampoline balance → Advance to ball toss
4. BAPS board
5. Lunges on disc
6. Euroglide slide board

General Conditioning:

1. Stairmaster
2. Bike
3. Swimming
4. Treadmill
5. Shuttle

Functional Activities/Agility Drills:

1. Shuttle bouncing and jumping
2. Light bouncing and jumping on ground
3. Jump rope
4. Jumping patterns bilateral and unilateral (tape on floor)
 - ◆ Forward-back
 - ◆ Side-side
 - ◆ "V"
 - ◆ Boxes
 - ◆ Straight line hopes: X—X—X—X
 - ◆ Zig-Zag: _____
 - ◆ Star Hop:
5. Jump for distance – bilateral and unilateral (instruct quiet and soft landing with good jumping)
6. Ladder drills: Jumping inside and outside the ladder
 - ◆ One foot/box
 - ◆ Two feet/box
 - ◆ Bunny hops
 - ◆ Sideway hops
 - ◆ Ski-inside-outside
 - ◆ 2 feet in / 2 feet out
 - ◆ Hop scotch

Reaction Drills:

1. Tennis ball drops – 10 ft. away, P.T. drops ball, pt gets on one bounce
2. Rapid fire tennis ball drop 2 tennis ball
3. Shadow drills, mirror what P.T. does
4. Shuffle/quick feet reaction drills
5. Crazy ball (those wild balls that bounce unpredictably)

Return to Running Program

(slow acceleration and deceleration initially, advance as tolerated)

- ◆ Straight ahead _____
 - ◆ Curves
 - ◆ Cuts
 - ◆ Accelerations off cuts
 - ◆ Figure "8"
 - ◆ Figure "8" with sharp cuts
1. Incorporate faster starts and stops
 2. Shuttle run
 3. Shuffle drills
 4. Longer runs for time for distance as tolerated
 5. Repeated emphasis on hamstring control with above activities. If control is lost while advancing program, work back into activities that are stable and "controlled".

Sports Specific Activities:

1. Higher impact closed chain activities.
2. More strength and velocity training.
3. Twisting and balance
4. More advanced knee control considerations.
5. Reaction drills – for specific sports.