GOLDEN STATE ORTHOPEDICS & SPINE

POSTERIOR CRUCIATE LIGAMENT (PCL) REHABILITATION

Exercises consisting of active hamstring muscle contractions are not allowed until 2 months post-surgery. This is to protect the posterior cruciate ligament graft against potentially damaging stresses occurring with posterior tibial translation.

STAGE 1: WEEKS 0-4:

Goals: Protection of the post-surgical knee, restore normal knee extension, eliminiate effussion, restore leg control

- The patient is placed in a **Jack brace** locked in extension, may unlock after good quad control is restored
- **Non-Weight Bearing for 2 weeks, WBAT after week2**
- **No open-chain hamstrings strengthening or isolated hamstring exercises. No hamstring stretches. No bicycle**
- ROM: 0-90 degrees
  - Knee extension on a bolster, avoid prone hangs secondary to hamstring guarding
  - Knee flexion - use gravity or assistance to minimize hamstring activity, such as supine wall slides or seated knee flexion exercises
- Quadriceps sets, open-chain knee extension against gravity, SLR, leg lifts standing with Jack Brace on for balance and hip strength (avoid hip extension secondary to hamstring restrictions)
- Patellar mobilization
- Modalities as needed
- Patient may progress to the next stage if they have met the above goals and demonstrates pain-free gait training using Jack Brace without crutches, no knee effussion, and knee flexion to 90 degrees

STAGE 2: WEEKS 4-12:

Goals: Single leg stance control, normalize gait mechanics, good control and no pain with functional movements (step up/down, squats, partial lunge -keeping the knee in <60 degrees of knee flexion)

- **Patient may wean out of brace at 6-8 weeks post-operative**
- **No open-chain hamstrings strengthening or isolated hamstring exercises. No hamstring stretches. No bicycle**
- At weeks 5-6, ROM should be 0-120 with a progression to full flexion (avoiding forced flexion)
  - Knee extension on a bolster, avoid prone hangs secondary to hamstring guarding
  - Knee flexion -use gravity or assistance to minimize hamstring activity, such as supine wall slides or seated knee flexion exercises
- Quadriceps strengthening - closed chain exercises short of 70 degrees of knee flexion
- Non-impact balance and proprioceptive drills
- Gait training
- Hip and lumbo-pelvic stabilization exercises

- Stretching for patient specific muscle imbalances
- Patient may progress to next stage if they have met all above goals and demonstrates normal gait on all surfaces, ability to carry out functional movements without unloading affected leg without pain (while demonstrating good control), single-leg balance> 15 seconds, and full ROM

STAGE 3: WEEKS 12-16:

Goals: Good control and no pain with functional movements (including step up/down, squat and lunges), good control and no pain with light agility and low-impact multi-planar drills

- No open-chain hamstrings strengthening or isolated hamstrings exercises
- Quadriceps strengthening - closed-chain (progressing to multi-plane) and open-chain exercises
- Non-impact balance and proprioceptive drills
- Impact control exercises beginning double leg to double leg, progressing from single leg to contralateral and then single leg to single leg
- Movement control exercise beginning with low velocity, single-planar activities and progressing to higher velocity, multi-planar activities
- Hip and lumbo-pelvic stabilization exercises
- Stretching for patient specific muscle imbalances
- Patient may progress to the next stage if they have met all above goals and demonstrates normal gait on all surfaces, ability to carry out multi-planar functional movements without unloading affected leg or pain (while demonstrating good control), ability to land from a sagittal, frontal and transverse plane leap with good control and balance

STAGE 4: WEEKS 16-24:

Goals: Good dynamic neuromuscular control and no pain with sport and work specific movements, including impact

- Sport/work specific balance and proprioceptive drills
- Progress impact control exercises to reactive strengthening and plyometrics
- Incorporate running program when appropriate
- Hip and lumbo-pelvic stabilization exercises
- Stretching for patient specific muscle imbalances
- Return to Sport/Work Criteria: Dynamic neuromuscular control with multi-planar activities, without instability, pain or swelling