Connecticut Orthopaedics

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Sports Medicine/Foot & Ankle

Anterior Cruciate Ligament (ACL) Reconstruction
Post-Operative Protocol

Phase I – Maximum Protection

Weeks 0 to 1:

- Use crutches - 50% weight bearing
- If using brace, locked in extension for 1 week

Goals

- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Full extension
- 90° - 100° of knee flexion, progressing to full as tolerated
- Heel-toe gait pattern, with crutches

Exercise progression

- Quadriceps setting using NMES as needed
- Multi-plane straight leg raising

Weeks 1 to 2:

- Use crutches - 50% weight bearing, wean from crutches by week 2, or sooner if gait normalized
- If using brace, open for full ROM x3 more weeks

Goals

- Reduce inflammation
- Full knee extension/hyperextension
- 100° – 120° of knee flexion, progress as tolerated

Phase II – Progressive Stretching and Early Strengthening

Weeks 2 to 4:

Goals

- Progress off crutches
- Full knee extension/hyperextension
- Knee flexion to 120°, progress as tolerated
- Normalize gait mechanics
- Normalize patellofemoral joint and scar mobility

Exercise progression

- Bilateral squat progression
- Multi-plane open and closed kinetic chain hip strengthening
- Step-up and step-down progression
- Stationary biking and treadmill/outdoor walking
- Proprioception drills

Weeks 4 to 6:

Goals

- Reduce inflammation
- Full range of motion
- Normal gait

Exercise progression

- Leg press, hamstrings curls
- Increase intensity of stationary bike program, may add elevation to treadmill walking and elliptical

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Phase III – Advanced Strengthening and Proprioception

Weeks 6 to 12:

Goals
- Progressive strengthening and endurance training
- Eliminate movement dysfunction (i.e. no dynamic valgus at the knee)

Exercise progression
- Weighted squat progression
- Lunge progression (retro, walk and split) as indicated
- Single limb stability exercises

Weeks 8 to 12:

Exercise progression
- Outdoor biking – week 8
- Lateral lunge progression – week 8 to 10
- Shallow water pool running – week 8 to 10
- Swimming free style – week 8 to 10
- Backward elevated treadmill walking – week 8 to 10
- Basic ladder series – week 10
- Begin linear treadmill jogging – week 10-12

Weeks 12-14

Administer preliminary functional test for physician to review

Phase IV – Advance Strengthening and Running Progression

Weeks 12 to 20:

Exercise progression
- Progress resistance with squat and lunge strengthening program
- May add leg extensions at 30° - 0° (exclude patients with patellar or trochlear groove chondral pathology)
- Linear running progression
- Advanced ladder series
- Basic plyometric box progression

Criteria to progress to Phase V
- Pass Return to Sport test at >90% (involved vs uninvolved limb)
  - See testing protocol

Phase V – Return to Sport

Weeks 20 to 24:

Exercise progression
- Hurdle and plyo box progressions
- Sport specific field/court drills
- Non-contact drills

Criteria to be released for return to sport
- Follow-up examination with the physician
- Pass return-to-sport functional test at >90% (involved vs uninvolved limb)
  - See testing protocol
- Display symmetry and confidence in high-speed cutting, multi-plane plyometric drills, sprinting and decelerating