

Anterior Cruciate Ligament (ACL) Reconstruction

Phase 1 – Maximum Protection

Weeks 0 to 1

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

Goals:

- Reduce pain and inflammation
- Protect the surgical repair
- Normalize patella mobility with manual mobilizations
- Full extension
- 90-100 degrees 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 pain and inflammation
- Full knee extension
- 100-120 degrees of knee flexion, progress as tolerated

Phase 2 – Progressive Stretching and Early Strengthening

Weeks 2 to 4

Goals:

- Progress off crutches
- Full knee extensions
- Knee flexion to 120 degrees, 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, hamstring curls
- Increase intensity of stationary bike program, may add elevation to treadmill walking and elliptical

Phase 3 – 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 to 12

Weeks 12 to 14

Administer preliminary functional test for physician to review

Phase 4 – Advanced Strengthening and Running Progression

Weeks 12 to 20

Exercise Progression:

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

Criteria to progress to Phase 5

- Perform return to sport functional test at 18-20 weeks
- Pass return to sport test at >90% (involved vs uninvolved limb)

Phase 5 – Return to Sport

Weeks 20 to 24

Exercise Progression:

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

Criteria for return to play:

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

Anticipated return to sport:

- 6-9 months for contact and non-contact athletes