
ACL Reconstruction Rehab Protocol

General Guidelines

- Brace will remain locked until patient demonstrates good quadriceps control (two to four weeks) with weight bearing activities. Then unlocked for additional two to four weeks.
- Time frames for brace or crutches may be extended by Dr. Thielen or physical therapist.
- If ACL reconstruction with meniscal repair, then range of motion limited from 0 to 90 degrees, 20 pounds partial weight bearing on operative leg with crutches and brace locked for period of time determined by Dr. Thielen.
- For hamstring autografts, hamstring stretching is avoided for four weeks, isolated hamstring strengthening for six weeks.
- Supervised physical therapy takes place for three to nine months. Usually between one to three visits a week.
- It is essential for the patient to have good core stabilization and postural control with exercises throughout all rehabilitation phases. Poor core control may indicate an exercise is too advanced for the patient.

Rehabilitation Progression

The following is a general guideline for progression of rehabilitation following ACL reconstruction with autograft hamstrings. Progress through each phase should take into account patient status (e.g. healing, function) and physician advisement. Please consult Dr. Thielen if there is any uncertainty concerning advancement of a patient to the next phase of rehabilitation.

Phase I: Protective (Weeks 0 to 2)

Goals

- Reduce swelling
- Full extension
- Flexion to 90 degrees
- Tolerate weight bearing
- Achieve quad activation
- Protect graft fixation
- Educate patient on rehabilitation progression

Modalities

- E-stim, cryotherapy, biofeedback

Exercises

- Patellar mobilizations
- Isometrics (quadriceps, gluteals)
- Ankle pumps
- Quad sets
- Heel raises
- Heel slides
- Non-weight bearing gastroc/soleus stretching

- Straight leg raises, all planes, with brace in full extension until quadriceps strength sufficient to prevent extensor lag
- Gait activities (if good quad control)
- Prone and/or side lying leg circles with emphasis on trunk stabilization
- Trunk stabilization exercises

Phase II: Controlled Stabilization (Weeks 2 to 4)

Goals

- Normalize gait
- Achieve full extension
- Flexion greater than 90 degrees
- No active extensor lag
- Moving to closed chain and proprioceptive exercises

Modalities

- E-stim until good quad control, cryotherapy, scar massage when healed

Exercises

- In line heel-toe walking
- Single leg standing
- Stationary bike as range of motion allows
- Mini squats
- Leg press to 45 degrees
- Seated hip internal and external rotation
- Side stepping
- Standing knee extension

Activities to maintain general conditioning (upper body strengthening, cardiovascular endurance) may be initiated once post-operative pain and side effects are under control. These activities may include upper body exercise, upper body weight lifting without stressing operative leg and pool therapy (after four weeks).

Phase III: Functional Strengthening (Weeks 4 to 12)

Goals

- Full range of motion
- Comfortable and reciprocal stair climbing
- Normal gait pattern and speed
- Monitor and address signs of patellofemoral pain

Weeks 4 to 8

Exercises

- Progressive squats
- Progressive step-ups (all directions)
- Quarter lunges
- Hamstring stretching
- StairMaster
- Reverse treadmill walking
- Progress proprioceptive exercises

Weeks 8 to 12

Modalities

- Cryotherapy, others as needed

Exercises

- Two footed hopping/jump roping
- Five-point agility drills (star drills)
- Lateral hops over six to eight inch mat
- Sliding board
- Ladder drills
- Hamstring strengthening
- Aquatic program if able
- Fast form walking
- Squats, lunges, step-ups
- Progressive hamstring strengthening
- Circuit training drills
- Begin walk/jog progression at 12 weeks

Phase IV: Performance (Weeks 12 to 24)

Goals

- Full, pain-free range of motion
- No patellofemoral joint irritation
- Progress strength, power, proprioception

Exercises

- Walk/jog progression
- Continue to progress flexibility and strengthening program
- Begin low intensity vertical plyometrics

Phase V: Return to Sport (Weeks 24 to 36)

Goals

- Safe return to athletics
- Maintenance of strength, endurance, proprioception

Exercises

- Advance plyometric program
- Figure eight jogging
- Cutting, crossover, carioca drills
- Sport specific drills in controlled environment with trainer or physical therapist
- Continue total body fitness, strengthening and endurance training

Release to full activity/sport upon Dr. Thielen and physical therapist approval.

