

Orthopaedic Sports Specialists, P.C.

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ACL RECONSTRUCTION REHABILITATION (Hamstring: semitendinosus/gracilis - Graft)

I. Immediate Post-Operative Phase

POD Week one:

Brace - EZ wrap brace locked in extension

Weight bearing - Two crutches WBAT

Exercises

- * Ankle pumps
- * Passive knee extensions to 0 degrees - terminal knee extension
- * Quad sets (20 degrees) gluteal sets
- * Straight leg raises (knee 20 degrees flexion)

Muscle stimulation - Muscle stimulation to quads during active exercises
& ADL's (4-6 hrs/day)

ICE - ice 20 min/per hour & elevation

Range of motion - Motion exercises 4-5 x day -> 0 - 90 degrees

Exercises - multi-angle quad isometrics 90, 60, 40 degrees

- * Intermittent ROM exercises
- * Patellar mobilization
- * Ankle pumps
- * Straight leg raising (4 directions)
- * Isometric hamstring curls
- * Continue quad sets, gluteal sets
- * Continue electrical muscle stimulation

ICE - continue use of ice/elevation/compression

II.

Maximum Protection Phase

Goals: Absolute control of external forces on graft

Nourish articular cartilage
Prevent quadriceps atrophy
Decrease swelling

A. Week Two

1. Brace - locked in extension
2. Weight bearing -WBAT with crutches (no crutches at home)
3. Exercises - Multi-angle (90,60,40) quad isometrics
straight leg raises (4 places) with 1 lb - increase lb per week
hamstring curls
knee extensions 90-20 degrees
mini-squats (0-40) degrees
standing weight shifts
balance activities
PROM/AAROM 0-90 degrees
Patellar mobilization
4. Control swelling - ice, compression, elevation

B. Week Four

1. Brace - open hinge, or if good quad control d/c brace
2. WBAT
3. Exercises - same as week 2
Initiate bicycle for ROM stimulus (can begin at week 3)
Pool walking, swimming
4. Control Swelling - ice, compression,elevation

C. Week Six

1. Brace - D/C (consider ordering custom ACL brace)
2. Weight bearing - no restrictions

3. Exercises - advance - weight on PRE's 5 lb
Hamstring curls
pool program
AROM 0-120 degrees
PROM-0-120 degrees
emphasize close chair exercises
4. Proprioception program

III. Moderate Protection Phase (Week 8 -16)

Goals: Maximal strengthening for quads/lower extremity
Protect patellofemoral joint

A. Week 8 - 12

1. Exercises
 - * Knee extension (90-40 degrees)
 - * Leg press (0-60 degrees)
 - * Mini squats (0-45 degrees)
 - * Lateral step ups
 - * Hamstring curls
 - * Hip abd/add
 - * Toe/calf raises
 - * Bicycle
 - * StairMaster
 - * Nordic trac
 - * Pool running
 - * Proprioceptive training
 - * D/C brace (unless specified)
 - * continue PRE progression (no weight restrictions)

B. Week 12 - 16

1. Exercises: Continue all above exercises
2. Testing: Isokinetic test (180/300 o/s)
full range 10 reps
KT 1000 Test -

IV. Light Activity Phase (month 5-6)

Goals: Development of strength, power, endurance
Begin gradual return to functional activities

A. Week 20-21

1. Exercises - continue all exercises
emphasize close chair strengthening
high speed isokinetics
pool running, swimming, etc.
2. Testing - Isokinetic test (180/300 o/s)
full range, 10 reps
KT 2000 test (20 & 30 lb)

Criteria for Running:

1. Isokinetic test - 85% > of opposite leg (quads)
2. Isokinetic test - 90% > of opposite leg (hamstring)
3. Isokinetic test - quad torque/body weight (180 o/s)
60-65% males, 50-55% females
4. KT 2000 Test - unchanged
5. No pain/swelling
6. Satisfactory clinical exam

3. Functional Drills

Straight line running
Jog to run
Walk to run

V- Return to Activity Phase (month 7-8)

Goals: Achieve maximal strength & endurance
Return to sport activities

*Continue strengthening program for one year from surgery

4 quads

Knee extensions
1/4 squats
Leg press
Step ups

4 strength

Hamstring curls
Calf rises
Hip abduction
Hip adduction

4 endurance

Bicycle
StairMaster
Nordic trac
Swimming
*pick one

4 stability

High speed hamstrings
High speed hip f/e
Balance drills
Backward running