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Syracuse Orthopedic Specialists, PC

Patient name: _____

Date: _____

**PHYSICAL THERAPY PRESCRIPTION AND PROTOCOL:
ACL Reconstruction +/- Meniscus Repair**

While in the hospital:

Following your surgery, your leg will be placed in a post-operative brace while in the operating room. A Cryocuff or ice packs should be used to minimize swelling. The brace is to be worn full-time until your first post-operative visit, with the exception of performing your exercises.

You will start to rehabilitate your knee the day of surgery. You will be getting up and walking, wearing your brace and using both crutches. You will be instructed in specific range of motion and strengthening exercises by a physical therapist either prior to or shortly after your surgery. You should wear the brace while sleeping, as well as during the day and while walking.

Before leaving the surgery center or hospital, you should be comfortable walking independently with crutches. You should also be familiar with your home exercise program. **You should have full knee extension and 90° of knee flexion by the time of your first post-operative visit with Dr. Battaglia.**

Following hospital discharge:

Usually, discharge occurs on the same day as your surgery. You will need to set aside 3-4 times per day for your stretching and strengthening home exercise program. Icing should be done for at least 15-20 minutes at a time, after each exercise session and may be done up to once per hour.

You may loosen the brace straps or remove the brace when sitting, but always wear the brace with the straps tightened when walking. You should also continue to use both crutches. Use the elastic stocking or ace wrap on your leg until you no longer need the brace. Elevating your leg in bed by placing a pillow or rolled-up blanket between your mattress and box spring will assist in decreasing your leg swelling.

You will return to see Dr. Battaglia approximately 10-14 days following surgery to have sutures removed and progress assessed. BEFORE this visit, you will begin formal physical therapy – typically, we wish that you start formal PT within 5-7 days after surgery. Your therapist will instruct you on proper exercise progression based on individual assessment of swelling, range of motion, strength and leg control. Crutches can be discontinued after a proper assessment by your therapist or physician. **At all times, maintenance of full knee extension is critical.**

Phase I (Week 0-2): Two to three visits per week, teach home program

Goals

- Control inflammation and pain
- Full active extension and 90° of flexion
- Active quadriceps control

Brace

- Locked in extension for ambulation for 2 weeks
- Sleep with brace locked in extension for 2 weeks
- **If no meniscus repair:** May unlock brace (0-90) as desired when not sleeping or weight bearing
- **If meniscus repair:** May unlock brace for exercises only(except straight leg raises)

Weight bearing status

- **If no meniscus repair:** Weight bearing as tolerated (with brace locked), crutches as needed
- **If meniscus repair:** Non-weight bearing (with brace locked) with crutches at all times

Therapeutic exercises

- Ice, compression garment and modalities to reduce pain and inflammation
- ROM: need full extension; flexion to 90°
- Straight leg raises in all planes (use brace locked in extension initially until quad strength is sufficient to prevent extensor lag)
- Heel slides, calf pumps, quadriceps sets
- Electrical stimulation as needed
- Patellar mobilization
- Prone leg hangs
- Proprioception with active and passive joint positioning
- Wall slides to 45° (if no meniscus repair)

Phase II (Weeks 2-5): Two to three visits per week

Goals

- Restore normal gait
- Restore full range of motion, unless also meniscal repair. (If meniscal repair, limit knee flexion to < 90° for 4 weeks)

Brace

- **If no meniscus repair,** may unlock brace at all times (including ambulation) once normal gait pattern and quad control is achieved
- **If meniscus repair,** brace will be worn for 5 weeks at 0-90°

Weight bearing status

- **If no meniscus repair,** crutches can be discontinued when good quadriceps control and normal gait is achieved (usually 2-3 weeks). May then advance to brace unlocked during ambulation.
- **If meniscus repair,** crutches can be discontinued when good quadriceps control and normal gait is achieved (usually 2-3 weeks), but must continue brace locked in extension for ambulation. (May unlock brace 0-90° when not ambulating.)

Therapeutic exercises

- Toe raises, hamstring and gastroc / soleus stretches
- Prone leg hangs with ankle weights until full extension achieved
- Stationary bike with seat high to avoid deep flexion, low resistance
- Short-arc leg press and closed-chain exercises with maximum 50% body weight
- Leg extensions within ROM restrictions, use high volume / light weight
- Leg curls within ROM restrictions, use high volume / light weight
- ONLY IF NO MENISCUS REPAIR:
 - Mini-squats (0-45°)
 - Pool walking / light jogging
 - Stair climbing (up, down, forward, backward) and StairMaster

Phase III (Weeks 5-12): Two to three visits per week

Goals

- Improve confidence in the knee
- Avoid overstressing the graft
- Protect patellofemoral joint
- Progress with strength and proprioception

Brace

- **If no meniscus repair**, may d/c brace at all times once normal gait pattern and quad control is achieved.
- **If meniscus repair**, begin to unlock brace during ambulation. May d/c brace when quad control sufficient.

Weight bearing status

- Full weight bearing as tolerated

Therapeutic exercises

- Continue with flexibility exercises. May now advance ROM as tolerated (including $>90^\circ$ if meniscus repair)
- No pivoting, twisting, hopping, jumping, running
- Normalize gait mechanics
- Progress resistance exercises with open/closed chain as tolerated:
 - Begin use of conventional weight lifting equipment (i.e. leg extension machines, Smith machines, squat racks etc), start with light weight and high reps and sets and progress towards shorter sets and reps and high weight; *****if hamstring autograft, wait until 8 weeks post-op before using leg curl machines*****
- Isokinetic exercises at 60, 90, 120, 150°/sec if available
- Treadmill forward and retro walking
- Cable column exercises
- Single leg stands for proprioception
- Elliptical or Stairmaster prn
- Slideboard – start with short distance and increase as tolerated

Phase IV (Weeks 12-16): Two to three visits per week

- Continue as above
- Proprioception: Mini-tramp bouncing, lateral slide board, ball throwing and catching on unstable surface
- Begin light jogging on treadmill; straight-ahead only
- Plyometrics
 - Low intensity vertical and lateral hopping to begin, use both feet, move to one foot ASAP
 - 40-60 foot contacts/session for beginners
 - 60-80 foot contacts/session for intermediate
 - 80-100 + foot contacts/session for advanced
 - If plyometric exercise intensity is high, volume must be decreased, give ample recovery time between sets
- Agility at 12 weeks: careful shuttle runs, lateral slides, Carioca cross-overs, stair running, box jumps (1-2 foot heights)
 - Lateral movements – stepping, shuffling, hopping, carioca
- Isokinetic ex: 180, 150, 120, 90, 60°/sec 8-10 reps each up and down spectrum
- Eccentric quad exercises with manual resistance

Phase IV (Weeks 16+): One to two visits per week*Goals*

- Transition to HEP
- Return to unrestricted activity by 6-7 months

Therapeutic exercises

- Progress with flexibility and strengthening program
- Continue running, advance speed, may incorporate figure-of-eight patterns
- Incorporate gradual cutting drills into agility training
- Advance heights for plyometric conditioning
- Sports-specific drills (start at 25% speed and advance as tolerate)

Ultimate criteria for return to sports: Full painless range of motion, no effusion, quadriceps strength 85% of contralateral side, hamstring strength 100% of contralateral side, side-to-side difference <3mm translation

Frequency: 2-3x per week**Duration: 16-20 weeks****Special instructions:** _____

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