ACL Reconstruction Postoperative Protocol:
BTB and Hamstring

Patient Name:______________________________________________________

DOS:____________________________

Please call with questions:

[ACL Reconstruction with *Meniscal Repair*:

- PWB (50%) with brace (→→→→→→→) locked in *extension* for 4-6 weeks
  - restrict NWB flexion to < 90°

PHASE I - 1-4 weeks:
Goals: Quad activation, control effusion, early ROM, normalize gait, single leg balance [SLB] 30 sec.

WBAT with crutches, brace locked in extension until good quad control.

Exercises
- Patellar mobilizations
  - ROM:
    - Flexion:
      - Picture Wall slides [0-30 degrees until wk 3]
      - heel slides
      - stationary bike.
    - Extension: Prone hangs, heel sags if not equal to opposite
• Strengthening:
  o Quad/Ham/Glut sets
  o Straight Leg Raises x4
  o Toe-raises
  o Assisted squats
  o Hip & core strengthening
  o Leg-curls [as tolerated with hamstring graft]
• Stretching: Calves, hams (no quad stretch)
• Function:
  o SLB (eyes open/closed) ➔➔➔➔➔
  o weight shifting all planes
• Gait:
  o Gait training with brace
  o progress to without crutches (fwd, bwd, side-step, high knees, step-overs)
• Modalities:
  o ES for quad activation as needed
  o Ice
  o IFC
• Aquatics: Address problem areas [if wound healed, contact doc with wound issues]

**Phase II - 2-6 weeks:**
Goals: FWB without assistive device, no gait deviations AROM equal to opposite
Exercises
• ROM:
  o Flexion: Heel slides, stationary bike, wall slides [0-60 degrees]
  o Extension: heel sags ➔

***Add weight to prone hangs if ROM not equal to opposite side ➔
• **Strengthening:**
  - SLR’s x4 [add weight if no extensor lag]
  - assisted squats/ wall squats
  - bilateral leg press [0-60 degrees] / shuttle
  - hip and core strengthening
  - SL toe raises

• **Hamstring only:**
  *Add isotonic hamstring curls at week 4*

• **Proprioceptive Exercises:**
  - Dynamic SLB
  - standing Biomechanical Ankle Platform System [BAPS]
  - SLB reach progressing below waist level
    - avoid rotation

• **CV conditioning:**
  - Stationary bike [high seat/low resistance initially]
  - treadmill walking forward and backward
  - Stairmaster after week 4

• **Aquatics:** Address problem areas *[if wound healed, contact doctor with wound issues]*

• **Function:**
  - Single leg step and squat
  - side-step with tubing
  - forward step-ups
  - medial step-downs

• **Gait:** On land or in pool as needed, all directions

**Phase III Progressive Rehabilitation- 6-12 weeks:**
**Goals:** No PF symptoms, increase eccentric neuromuscular control to allow acceptance of impact activities, full ROM

**Exercises**
- **ROM:** PROM or bike with low seat, if not meeting flexion goals, at 6 weeks may add quad stretch with belt
  - **Strengthening:** Advance as appropriate
    - Add unilateral leg press
    - and/or shuttle if not doing so already
    - Hip and core strengthening
    - Leg extension 90°-40° if needed, single leg wall squats.
    - Stool scoots or MRE hams to increase ham strength.
  - **Proprioceptive Exercises:**
Progress as tolerated on gradually less stable surfaces, eyes closed, perturbation training, sport-specific exercises, etc.

****Avoid rotation.****

- CV Conditioning:
  - Stationary bike or in pool, treadmill walking, Stairmaster. Elliptical after 6 weeks
- Functional exercises:
  - Progress step-ups medial step-downs
  - Progress to multi-plane strengthening and functional exercises
    - Forward, side, retro lunges, medial rotation lunges at 8-10 weeks
    - Single leg squat
    - Pre-jump exercises (side jumps, calf jumps)
    - Single leg wall squats, slide board, sport cord.

**8-10 weeks:**

- Begin walk/jog program
- Carioca ➔
- Side shuffle
- High knee skipping
- Jump rope
- Functional knee class if >70% pre-op scores. +/- functional brace

**Phase IV- Return to Full Function: 10-16 weeks**

****Progress to Phase IV when Phase IV goals met and MD approval****

**Goal:** Running/cutting without a limp

**Exercises:**

- Plyometric Exercises:
  - Start with two leg jumping on level surface
    - [Head up, Land soft, flexed knees, knees pointing straight ahead]
  - AP, ML, box, horseshoe patterns
- Ice skater
- Progress to single leg hopping program with good technique
  - (if can single leg press body weight)
- Running: Gradually progress program, add cutting, turns
- Strengthening:
  - Open chain knee extension full ROM if needed ➔
• Continue hip and core strengthening

• Function:
  o Progress difficulty of lunges
  o Sport specific balance
  o Agility and functional strengthening activities

• Proprioceptive Exercises: Progress difficulty; sport specific

• CV Conditioning: Continue as previous

Physical Performance Testing
****when requested by physician****

Pre-operatively
  o KT-1000 Arthrometry: bilateral
  o Biodex of uninvolved LE: 6 reps at 60° and 180° per second
  o Single leg balance reach of uninvolved LE, best of 3 attempts
  o Single leg hop for distance of uninvolved LE, best of 3 attempts
  o Range of motion of uninvolved LE

4 months Post-Operatively
  o KT-1000 Arthrometry: bilateral
  o Biodex bilateral LES: 6 reps at 60° and 180° per second: should be > 85% to return to sport
  o Single leg balance reach of surgical leg(s), best of 3 attempts: should be > 85% to return to sport
  o Range of motion of the surgical leg
Anterior Cruciate Ligament (ACL)
Injury Rehabilitation Exercises

Wobble board exercise: A

Wobble board exercise: B

Wobble board exercise: C

Wobble board exercise: D

Wobble board exercise: E
Anterior Cruciate Ligament (ACL)
Injury Rehabilitation Exercises

- Heel slide
- Quad Sets
- Passive knee extension

- Wall squat with a ball
- Balance and reach exercise A
- Balance and reach exercise B

- Knee stabilization: A
- Knee stabilization: B
- Knee stabilization: C

- Knee stabilization: D
- Resisted terminal knee extension