ILLINOIS BONE & JOINT INSTITUTE

ACL REPAIR (NOT RECONSTRUCTION) PROTOCOL

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This protocol is intended to be a general outline only. The physician reserves the right to either advance or delay this protocol as deemed necessary. See PT prescription for unique instructions based on individual patients.

Guidelines for Ambulation / TROM Post-Op Immobilizer Brace

- Bilateral axillary crutches to be used immediately post-op.
- Patient is NWB x 2 weeks. TTWB the following 2 - 4 weeks.
- TROM brace locked in extension to be worn at all times except for dressing and bathing. Locked in extension 4-6 weeks.
- Return visit to MD at 2 weeks post-op for stitch removal.

- **Meniscal Repairs Restrictions** (check with Dr. Chams' staff to verify whether this was performed):
    - **Small and Stable Repair**:
    - No PROM restrictions. Progress ROM per normal ACL protocol.
    - Maintain NWB status with brace locked in extension for 2 weeks.
    - At end of Week 2, WBAT with TROM locked in extension for 2 more weeks and wean off crutches.
    - At end of Week 4, FWB'ing and advance to unlocking TROM, then removing brace. Patient must demonstrate excellent quadriceps control.
    - **Large Repair:**
    - No PROM restrictions. Progress ROM per normal ACL protocol.
    - Maintain NWB status with brace locked in extension for 4 weeks.
    - At end of Week 4, WBAT with TROM locked in extension for 2 weeks and wean off crutches.
    - At end of Week 6, FWB'ing and advance to unlocking TROM, then removing brace. Patient must demonstrate excellent quadriceps control.
    - **Unstable Repair:**
    - PROM limited to 90 degrees for first 4 weeks, then progress per ACL protocol.
    - Maintain NWB status with brace locked in extension for 4 weeks.
    - At end of Week 4, WBAT with TROM locked in extension for 2 more weeks and wean off crutches.
    - At end of Week 6, FWB'ing and advance to unlocking TROM, then removing brace. Patient must demonstrate excellent quadriceps control.
    - Maintain NWB with brace locked in extension for 6-8 weeks
    - After Week 6-8, WBAT with TROM locked in extension, wean from crutches.

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Meniscal Repair Precautions

- No closed-chain knee flexion for first eight weeks.
- No resisted hamstring exercises (open or closed chain) for first three weeks.
- No squats or lunges past 45 degrees of flexion for 16 weeks.
- Avoid hyperextension of knee.
- Knee flexion ROM performed in supine or prone to tolerance is allowed.
- For all meniscus repairs: no running until 16 weeks post-op.
- **FOR BUCKET HANDLE TEARS ONLY:** Knee flexion may be limited to 90 degrees for the first 4-8 weeks depending on size of repair. Any ROM restriction will be indicated on PT prescription.

Guidelines for Wound Care

- Place occlusive dressing over steri-strips at wound sites at first visit. Change occlusive dressing daily, leaving steri-strips on unless they come off easily. Cover old steri-strips with new ones if needed.
- Keep wound sites covered with occlusive dressing for showering until one week after stitches are removed. After that, cover with standard adhesive bandages until wounds are fully healed.

Patient to be seen Day One Post-Op.

- Remove bulky dressings. Leave steri-strips on; place occlusive dressing over all portals and incisions.
- Discard post-op immobilizer if issued. Issue and fit TROM brace if not given to paint at surgical center.
- Quad sets
- SLR to be performed in TROM brace.
- Issue Home E-Stim Unit for daily NMES to quadriceps.
- Begin PROM knee flexion as tolerated.
- Begin PROM knee extension to zero degrees, no hyperextension.
  - No prone hangs or heel props due to risk of stretching graft
- Patellar mobilization
- Quad sets
- Sidelying hip add/abd AROM
- Ankle pumps / elastic band ankle exercises
- Frequent cryotherapy using “Game Ready” machine or Cryocuff for first 48 hours

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Week 1-4
Patient to be seen 3x/week as needed. If ROM and quad strength are progressing well, consider decreasing to 2x/week with home e-stim unit if needed for improving quad recruitment.
No closed chain knee flexion exercises till 8 weeks post-op.
PROM goal:120 degrees knee flex by end of Week 4.

- Continue above exercises.
- Perform electric stimulation to the quadriceps for muscle recruitment with open chain per therapist discretion.
- Continue to advance knee ROM above repair restrictions. Once at 90 flexion degrees maintain and 0 degrees of extension.
- Add side-lying hip abduction, adduction, and extension exercises.

Week 4-8
Patient seen 2x/week as needed.
Only add below exercises after WBing restrictions are lifted, at 4-8 weeks per MD instruction.
PROM goal: Full PROM knee flex by end of Week 8.

- Begin scar massage once wounds are fully healed
- Add standing weight shifts
- Standing resisted TKE's
- Heel raises, soleus reaches
- At Week 5: Bilateral leg progressing to single leg balance activities on stable surfaces as tolerated.
- At Week 6: start stationery bike slowly and without resistance for ROM.

Week 8-16
Patient seen 1x/week as needed.
Closed chain knee flexion exercises can be added at 8 weeks.

- Progressive SLS drills — reaching activities, ball toss, etc.
- Leg press from 10-45 ^{o} of flexion, bilateral legs
- When patient has good quad recruitment, add closed-chain exercises: linebacker squats (0-45 ^{o})
- Progress from bilateral to unilateral leg exercises on stable surfaces as tolerated.
- Step-ups (forward and lateral) and resisted sidestepping using pulley around waist or elastic band around thighs. Avoid motions past 45 degrees of knee flexion and torsional movements.
- Initiate Proprio 5000 training if available. Begin with small angles and slow speeds in bilateral stance, gradually progressing to large angles and high speeds including unilateral stance.
- Add lateral lunges to the non-operative side no greater than 45 degrees.

- Incorporate total-body strengthening, focusing on core control: unilateral bridges, fire hydrants, RDL's, resisted clamshells, prone and side planks.

Week 16 and Beyond
Patient seen on as-needed basis for HEP progression.

- Begin jogging and then progress to running drills **if** patient has good control and endurance with above exercises (see below).
- Add destabilization and uneven surfaces to double and single-leg closed-chain co-contraction exercises.
- Add forward and lateral lunges, progressing to lunge walks with weights.
- Add slide-board activities.
- Begin plyometric lateral shuffles, progressing to karaoke shuffles.
- Add step-downs, step-up with rotation, star squats, and cone pickup from floor.
- Progress to advanced Proprio 5000 drills, including endurance protocols.

Phase IV Rehab:
At therapist discretion after Week 16, assess for return to sport-specific training using the ACE program, Move2Perform software, or other standardized tests such as the Triple Hop Test, Single Leg Hop (Goal = within 90% of non-operative LE for athletes). Quad girth should be within one inch of non-operative LE.
Once patient has excellent eccentric control of LE, progress to the following:

- Bilateral and unilateral hopping drills.
- Running, cutting, and pivoting.
- Begin sport-specific drills using soccer ball, basketball, etc.

<u>Return to Sport Guidelines</u>

Return to Running Guidelines:
Begin independent jogging at 4 months post-op, increasing running time by 5-minute increments to tolerance. Begin more strenuous running programs incorporating various terrain and inclines at 5 months post-op.

Contact Sports: See Phase IV guidelines above.
Prior to return to sports, patient should complete standard Proprio Test, showing good leg control and side-to-side symmetry. Begin non-competitive or competitive play at 6 months post-op, once physician and therapist are satisfied with sport-specific functional drill performance.
The use of a custom or off-the-shelf sports brace (Defiance, Full Force, etc.) may be recommended by the physician or therapist for improved proprioception.

Revised 1/24/16 - TJB.