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ACL Reconstruction with Allograft or Hamstring Autograft: Post-op Protocol

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. If so, this should be done by direct communication with the therapist, or in writing on the therapy referral form given to the patient on the day of surgery.

Guidelines for Crutches and TROM Brace

- Bilateral axillary crutches to be used immediately post-op, WBAT unless otherwise specified. Patient will gradually reduce use of crutches once able to perform SLR independently.
- TROM brace usage:
    - To be fitted at 1st post-op visit and worn with all ADL's for first 2-4 weeks, initially locked at 0o extension for all weight-bearing activities.
    - To be removed only for sleeping, bathing, and exercises.
    - Unlock brace for ambulation when able to perform good quad set and independent SLR.
    - Discharge TROM for everyday use when patient has normal gait pattern, can perform SLR without quad lag, and maintains 0o knee extension at rest – usually within first four weeks.
    - Continue use of TROM for first 8-10 weeks when on unstable surfaces or in large crowds, or when on feet for extended period of time.

Initial goals/precautions:

- Achieve full ROM by 8-10 weeks post-op
- Avoid hyperextension of knee
- No deep squats or lunges past 45 degrees of knee flexion until 16 weeks post-op
- No running until 4 months post-op
- No torsion or cutting drills till 6 months post-op
- No sports till 8 months post-op

Guidelines for Wound Care

- Place occlusive dressing over steri-strips at wound sites at first visit. Change occlusive dressing every other day, 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 until stitches are removed. After that, cover with standard adhesive bandages until wounds are fully healed (wrap knee in plastic wrap for showers).

Frequency of Physical Therapy Visits

Schedule physical therapy visits 3x/week for the first four weeks, or until full passive ROM flexion and extension is achieved and there is no quad lag with SLR. Then decrease to 2x/week until about 8 weeks post-op, at which time the patient may be seen 1x/week or once every other week as appropriate based on patient status and compliance with HEP.

Day 1 Post-Op

• Remove bulky dressings. Leave steri-strips on; place occlusive dressing over all portals and incisions.
• Discard post-op immobilizer. Issue TROM brace (adjusted to fit patient at pre-op visit).
• Begin PROM knee flexion
• Begin PROM knee extension to zero degrees, no hyperextension.
• No prone hangs or heel props due to allograft/hamstring (risk of stretching graft)
• Patellar mobilization
• Quad sets, SLR's, ankle pumps/elastic band ankle exercises
• Frequent icing using "Game Ready" machine or Cryocuff for first 48 hours

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. ROM Goal: 110° flexion in prone by Week 2, 135° by Week 4.

• Continue above exercises.
• Apply e-stim to the quadriceps for muscle recruitment with open- and closed-chain exercises per therapist discretion
• Side-lying hip abduction, adduction, and extension exercises
• Prone hamstring curls.
• At Week 2, add stationary bike without resistance
• Standing weight shifts and standing resisted TKE's
• When patient has good quad recruitment, add closed-chain exercises: heel raises, linebackers (0-45 o), soleus reaches, mini-squats (0-30 o), etc.
• Initiate single leg stance with reaching activities, ball toss, etc.

Week 5-6
• Start training on the Proprio 5000 machine if available. Begin with small angles and slow speeds in bilateral stance, gradually progressing to large angles and high speeds including unilateral stance.
• Retro-walking on treadmill and retro-Stairmaster to emphasize quad recruitment
• Progress to bilateral and unilateral leg exercises on unstable surfaces (Airex pad, BOSU ball etc.) as tolerated
• Step-ups (forward and lateral) and resisted sidestepping using pulley around waist or elastic band around thighs
• Leg press from 10-60 o of flexion, bilateral legs
• Lateral lunges to the non-operative side

Weeks 7-8
• Forward Stairmaster and elliptical machine
• Unilateral leg press
• Add step-downs, step-up with rotation, star squats, and cone pickup from floor
• Add forward lunges and lateral lunges to operative side
• Plyometric lateral shuffles
• Incorporate total-body strengthening, focusing on core control:
    • Unilateral bridges, fire hydrants, resisted clamshells, prone and side planks

Week 9-12
• Add resistance to above exercises as tolerated
• Add lunge walking with dumbbells
• Add crossover (karaoke) shuffles

Week 13 – 24
• Add slide-board activities
• Add destabilization and uneven surfaces to double and single-leg closed-chain co-contraction exercises
• Add slide-board activities
• Add step-downs, step-up with rotation, star squats, and cone pickup from floor
• Progress to advanced Proprio 5000 drills, including endurance protocols. Run Proprio Test when ready.
• At Week 16, begin jogging if patient has good control and endurance with above exercises

At 6 Months Post-Op: Patient seen on as-needed basis for HEP progression.
Phase IV Rehab:
At some point after 6 months post-op or when deemed appropriate by therapist and surgeon, assess for return to sport-specific training using the ACE program or other specific tests such as the Triple Hop Test, Single Leg Hop (Goal = within 80% of non-operative LE), and Quad Girth 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.

Contact Sports:
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 8 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 or Full Force) may be recommended by the physician or therapist for improved proprioception.