Name_____

Date_____

Physician_____

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Patient Flow Sheet

ACL Reconstruction

This protocol encompasses the spectrum of ACL reconstruction techniques and may be modified to account for additional procedures and/or special circumstances outlined by the surgeon. Each therapist is encouraged to use evidence-based clinical reasoning when choosing an exercise or therapeutic procedure.

Key Considerations for Each Graft:

BPTB: Closely monitor complaints of anterior knee pain during the rehab process (tendonitis, anterior interval scarring).

Hamstring Tendon: Avoid isolated resisted hamstring exercises for ~6 weeks to allow scarring of the semitendinosus and gracilis to occur. Patients ready for resisted hamstring exercises will be non-tender to palpation and able to actively straight leg raise (SLR) to 70° without pain. Isometric hamstring activities can begin as early as 3 weeks.

Allograft: Avoid overstressing the graft between weeks 6 and 10 as revascularization takes longer with an allograft.

PHASE 1 (Week 1 – Week 6) – Graft Protection/Mobility

Goals
Minimize pain and swelling
Restore patellar complex mobility with emphasis on patellar tendon mobility
Restore voluntary quadriceps activation
Normalize motion and gait pattern

Brace
Worn at all times while not exercising in PT for 5-6 weeks. Locked at 0^{o} for 5-7 days, then unlocked 0^{o}-90^{o} for ~4 wks. Brace can be locked at -10^{o} hyperextension if extension loss is present (or set -10^{o}-90^{o} during the 4 weeks).
Sleep in brace locked in extension ~2 weeks or until symmetrical active extension is achieved

Weight-bearing
WBAT with 2 crutches
Crutch progression: 2 crutches → 1 crutch → no crutch when gait is symmetrical with appropriate quad activation in stance phase

ROM
Patellar tendon and patellar complex mobilization emphasized for at least the first 6-8 weeks
Restore ROM with goal of full range by 6 weeks. Emphasize symmetrical active extension.

Key Exercises
Quad sets and SLR (with NMES, biofeedback)
Gastrocnemius stretch for extension ROM
Wall/heel slides
Bike for motion starting at 1-2 weeks
Open- and closed-chain terminal knee extension (TKE)
Anterior/posterior weight shifting in brace
Double-leg shuttle leg press for muscle activation no earlier than 4 weeks (0-60°)
***Patient must demonstrate appropriate voluntary quad activation, co-contraction and endurance to allow for controlled motion on the shuttle

Exercises to AVOID
Squats with acutely inflamed knee
Progressing CKC strength before full active extension has been achieved

Name_____

Date_____

Physician_____

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Patient Flow Sheet

Criteria for Progression to Phase 2:

- Symmetrical active extension and >120° flexion
- Normal patellar mobility
- Minimal swelling (<1cm difference in mid-patellar girth)
- Minimal pain (<2/10 with activity)
- 3x30 straight leg raise with NO extension lag
- Static single leg balance x 1 minute (stable surface)
- Symmetrical gait

PHASE 2 (Week 7 – Week 12) – Endurance

Goals

Improve closed-chain single leg strength, endurance, and neuromuscular control
Develop strength and stability in the sagittal plane under various proprioceptive conditions with gradual initiation of frontal plane activities
Maximize cardiovascular fitness and muscular endurance

Brace

Optional hinged knee brace per surgeon, unlocked (no brace in controlled PT environment)

ROM

Ensure full extension is maintained as CKC activities progress

Key Exercises

Increase repetitions/weight of Phase 1 exercises, plus:

1. Double/Single leg bridges
2. Shuttle progression; add bilateral shuttle jumps in late phase II
3. Squat progression, including double and single leg squats with sport cord
4. Step-up progression
5. Lunge progression
6. Balance progression

Exercise progression:

Double leg → Single leg
Stable surface → Unstable surface
Sagittal plane → Frontal plane

Criteria for Progression to Phase 3:

- Minimal pain, no swelling
- No incidence of giving way
- Full AROM
- Y-balance Test anterior reach within 10cm
- Single leg squat with sport cord for 1 minute

PHASE 3 (Week 13 – Week 20) – Strength

Goals

Increase intensity and build on foundation of strength and cardiovascular fitness/endurance
Introduce transverse plane motions in late phase 3
Transition to movements geared towards speed, power, and function
Incorporate functional balance activities utilizing muscle strength, proprioception, and external perturbation
Emphasize safe deceleration, eccentric control, and proper biomechanical alignment/control

***Pass sport cord test between 5-6 months to allow return to participation progression to begin.
Expected full clearance for returning to sport is 6 months or beyond.

Name_____

Date_____

Physician_____

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Patient Flow Sheet

Brace Optional hinged knee brace per surgeon, unlocked (no brace in controlled PT environment)

Key Exercises
Focus on increasing sets/duration of four sport cord test components to prepare for test
Increase intensity of cardiovascular interval training
Initiate squat jump progression from shuttle to gravity dependent position
Advance plyometrics from bilateral to unilateral as pt demonstrates quad control

Running
Timeline: Between 3-4 months
Criteria:
1. Single leg squat with sport cord for 90 seconds
2. Forward & Backward sport cord jog for 1 minute each

Progression Guidelines: See Proaxis return to run progression

Criteria for Progression to Phase 4:

- Sport Cord Test ≥ 46/54 (black sport cord: >150 lbs; blue sport cord: female or <150lbs)
- Symmetric running gait: audibly rhythmic foot strike without gross asymmetries in visual kinematics when running between 6-10mph
- Y-Balance Test anterior reach within 4 cm

PHASE 4 (Week 20+) – Return to Sport Spectrum

Goals
Plyometric Power
Dynamic Balance
Multi-Planar Movement
Athletic Agility
Cardiovascular fitness

Brace Fit for sport brace (per surgeon preference)

Exercises Sport specific movement patterns practiced in supervised and controlled environment

Return to Participation
Graded re-integration into sport activities
Controlled, predictable environment → Unpredictable drills and environment
Individual drills → Team drills
Non-contact → Contact
Supervised rehabilitation ~1x/wk for 4-6 weeks with controlled practice and game participation
Coordination with ATC

Criteria for Progression to Return to Play:

- LESS of 5 or less
- Single hop for distance within 90% of uninvolved
- Y-Balance Test (94% composite) when fatigued
- Hand-held dynamometry within 90% of uninvolved quad/hamstring/hip abductors

Return to Play Clearance by surgeon, PT, and ATC for full, unrestricted return to sport at 6 months or beyond. Typical timeframe will be anywhere between 6-12 months.

Surgeon Comments: