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REHABILITATION GUIDELINES FOR ACL WITH QUAD TENDON AUTOGRAFT

PHASE I (0-3 WEEKS)

DATES:

Appointments	<ul style="list-style-type: none"> Physical therapy 2-3x/week, beginning 2-5 days post-op
Rehabilitation Goals	<ul style="list-style-type: none"> Full extension symmetrical to contralateral knee before the first post-op visit at 2 weeks Flexion to 120° 20° SLR without quad lag Off of crutches
Precautions	<ul style="list-style-type: none"> WB: WBAT with crutches Brace: Brace locked in extension until first PT visit, then unlocked at all times. May remove brace for sleep and exercises after 1 week
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> Prolonged extension- prone hang, supine with roll under ankle Heel slides, wall slides, prone knee flexion Isometric quad set, then SLR Hamstring isometrics 4-way hip and ankle exercises including calf pumps Initiate proprioceptive/balance exercises to include single leg stance, weight shifts forward, retro, lateral Patellar mobilizations (especially cranially) Ice 5x/day, 20 min each time, especially after exercises
Cardiovascular Exercises	<ul style="list-style-type: none"> Stationary bike- no resistance
Progression Criteria	<ul style="list-style-type: none"> DC crutches when quad control returns, full extension achieved, stable with low fall risk. May be weaned to 1 crutch with full extension if steady in gait



PHASE II (3-6 WEEKS)

DATES:

Appointments	Continue physical therapy 2-3x/week
Rehabilitation Goals	<ul style="list-style-type: none"> • Full ROM • Advanced strengthening • Consider early neuromuscular retraining
Precautions	<ul style="list-style-type: none"> • Wear brace except for sleeping, exercises
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • AVOID OPEN CHAIN RESISTIVE ESPECIALLY WITH WEIGHTS (resistance bands OK for hamstring/quad) • Quad: Mini squats/wall squats, step ups • Hamstring: bridge, standing hamstring eccentrics • Calf: heel raises, calf press • Hip: extension, ABD, ADD • Consider balance board/wobble board for early NM retraining
Cardiovascular Exercises	<ul style="list-style-type: none"> • Stationary bike: as soon as motion (0-115 degrees) allows • Elliptical • Stairmaster • Pool: walking, aqua-jogging, NO KICKING (begin 4-6 weeks)
Progression Criteria	<ul style="list-style-type: none"> • Full ROM • Minimal Effusion • Functional control for ADLs achieved • DC brace: with adequate quad control for gait on level surfaces, inside. 6 weeks post-op.

PHASE III (6 WEEKS – 3 MONTHS)

DATES:

Appointments	Continue physical therapy 1-2x/week as indicated
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Rehabilitation Goals	<ul style="list-style-type: none"> Maintain full ROM (should be full extension to 135° flexion) Progress neuromuscular retraining program Core integration
(Phase III continued) Precautions	<ul style="list-style-type: none"> No downhill walking/running, downhill skiing, downhill biking until 4.5 months
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> HEP 5x per week Progress neuromuscular proprioceptive/balance exercises including single leg balance progression- varying surfaces Pool: begin 4 way hip, lateral movement, deep water jogging in place (no freestyle or frog/breaststroke kick) Strengthening: lunges, sport cord, wall squats, step up/down
Cardiovascular Exercises	<ul style="list-style-type: none"> May begin road biking outdoor on flat roads only May begin treadmill walking
Progression Criteria	<ul style="list-style-type: none"> Neuromuscular exercises without difficulty

PHASE IV (3 TO 5 MONTHS)

DATES:

Appointments	Continue physical Therapy 1-2x per week
Rehabilitation Goals	<ul style="list-style-type: none"> Running: Light running/hopping without pain or swelling (12 weeks), progress to running patterns at 75% speed Good jumping mechanics- NO DYNAMIC VALGUS Hop drills without difficulty
Precautions	<ul style="list-style-type: none"> No downhill walking/running, downhill skiing, downhill biking until 4.5 months
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> HEP 5x per week Agility drills: shuffling, hopping, running patterns (Ex: figure 8) Some sport specific: closed-chain exercises including leg press (0-60°), step ups, mini squats (0-60°), short arc quad (30-90°), hamstring curls with light weight/high repetition



Cardiovascular Exercises	<ul style="list-style-type: none"> • Begin endurance closed-chain exercises 3-4x/week <ul style="list-style-type: none"> - Stairmaster, stationary bike, elliptical, NordicTrack (short stride). - Focus on increasing endurance. • Gait training: progress jogging on treadmill or even ground to running patterns at 75% • Pool: may start freestyle swimming (avoid frog/breaststroke kick), progress to shallow water jogging
(Phase IV continued) Progression Criteria	<ul style="list-style-type: none"> • Running without knee effusion • Hopping/agility drills without knee pain or effusion

PHASE V (5 TO 8 MONTHS)

DATES:

Appointments	Continue physical therapy 2 visits per month to review HEP
Rehabilitation Goals	<ul style="list-style-type: none"> • Able to complete a running program • May begin plyometric program: jump rope exercises • Hamstring and quadriceps strength 90 % of normal leg • Return to sport testing at 9 months post-op, prior to MD visit
Precautions	<ul style="list-style-type: none"> • Earliest return to full sports = 9 months.
(Phase IV continued) Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • HEP 4-5x per week • Agility drills: shuffling, hopping, running patterns (Ex: figure 8) • Sport Specific: plyometric program, fast straight running, backward running, cutting, cross-overs, carioca, etc. in controlled environment
Cardiovascular Exercises	<ul style="list-style-type: none"> • Pool available: may advance swimming (avoid frog/breaststroke kick)
Progression Criteria (Return to Sport)	<ul style="list-style-type: none"> • quadriceps and hamstring strength at least 90% of opposite leg • Single leg hop test and vertical jump at least 90% of opposite leg • Jog, full speed run, shuttle run, and figure of 8 running without a limp • Full controlled acceleration and deceleration • Squat and rise from a full squat • No effusion or quadriceps atrophy