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ACL PATELLAR TENDON ALLOGRAFT RECONSTRUCTION
REHABILITATION PROTOCOL

	WEIGHT BEARING	BRACE	ROM	EXERCISES
PHASE I 0-4 weeks	As tolerated with crutches*	0-1 week: Locked in full extension for ambulation and sleeping 1-4 weeks: Unlocked for ambulation, remove for sleeping**	As tolerated	Heel slides, quad/hamstring sets, patellar mobs, gastroc/soleus stretch SLR w/ brace in full extension until quad strength prevents extension lag Side lying hip/core
PHASE II 4-12 weeks	Full, progressing to normal gait pattern	Discontinue at day 28 if patient has no extension lag	Main full extension and progressive flexion	Progress to weight bearing gastroc/soleus stretch Begin toe raises, closed chain extension, balance exercises, hamstring curls, stationary bike, step-ups, front and side planks
PHASE III 12-16 weeks	Full, without use of crutches and with a normalized gait pattern	None	Gain full and pain-free	Advance closed chain strengthening Progress proprioception activities Begin stairmaster, elliptical and running straight ahead at 12 weeks, hip/core, pool
PHASE IV 16-24 weeks	Full	None	Full and pain-free	16 wks: Begin jumping 20 wks: Advance running to sprinting, backward running, cutting/pivoting/changing direction; initiate plyometric program and sport-specific drills 22 wks: Advance as tolerated FSA completed at 22 wks***
PHASE V > 6 months	Full	None	Full and pain-free	Gradual return to sports participation after completion of FSA Maintenance program based on FSA

*Modified with concomitantly performed meniscus repair/transplantation or articular cartilage procedure

**Brace may be removed for sleeping after first post-operative visit (day 7-10)

***Completion of FSA (Functional Sports Assessment) not mandatory, but recommended at approx 22 wks post-op for competitive athletes returning to play after rehab

ACL Reconstruction Protocol

Phase I: Acute

Goals:

Alleviate acute pain and swelling
Increase ROM 0-90° (emphasize 0° extension)
Increase hamstring and quadriceps strength
Promote comfortable ambulation WBAT with brace and crutches
Patellar Mobilization
Maintain cardiovascular conditioning

Plan: (0-2 weeks)

Patellar mobilization
PROM positioning for knee extension
ROM
Heel/wall slides w/o brace
½ revolution non-resisted bike for knee flexion - progress to full revolution when patient reaches 110°.
Hamstring and quadriceps co-contraction
Hamstring and calf stretching
4-Quad (hip flexion, abduction, adduction, extension)
Modalities for pain and edema control

Plan: (2-6 weeks)

Soft tissue/scar mobilization
Prone/standing knee flexion
Proprioceptive training/ balance — BAPS, trampoline
Weight shifting in standing, 0-30° ROM mini squats
EMS co-contraction at VMO and hamstrings'
Theraband ankle exercises - progress to standing as WB dictates
Begin Stairmaster at 4 weeks
General conditioning
Aquatic therapy (when incisions healed) No whip kick

Phase II (6-12 weeks)

Goals:

Decrease swelling and prevent atrophy
Increase ROM -125°
Increase quadriceps and hamstring strength
Increase hip strength
Stimulate collagen healing
Independent ambulation without crutches
Continue general conditioning

Plan:

Continue phase I exercises
Continue patellar mobilization and ROM activities
Continue hamstring and calf stretching
Standing ½ squat
Joint and soft tissue mobilization as needed
Isotonic hamstring NK table
Leg press

Continue closed chain, balance and proprioceptive activities
Continue EMS as needed for muscle re-ed and edema
Step-ups (controlled - forward and side)
*McConnell tapping as necessary
May begin swimming with modified kick (No "whip kick" or "egg beater kick")
General conditioning

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Phase III (12-16 weeks)

Goals:

Full ROM

Continue all goals from Phase II

Plan

Continue phase II exercises and progress as tolerated

Step-Up - side and down

Increase proprioceptive training (sport cord, body blade, plyoballs)

Treadmill as tolerated

Continue Stairmaster

½ wall sits as tolerated

Plan (16-20 weeks)

Light jogging on trampoline

¼ to 1/2 squats (painfree)

Progress with closed chain activity

Isotonic terminal knee extension (30-0°)

Phase IV (20-36 weeks)

Goals:

Development of strength, power and endurance

Begin to prepare for return **to** recreational activity

Begin sport specific training

Plan:

Continue Phase III exercise and conditioning activities

Continue strength training

Initiate running program

Initiate agility drills

Sport specific training and drills

Isokinetic evaluation