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MENISCUS ALLOGRAFT TRANSPLANTATION PT PROTOCOL

GENERAL GUIDELINES

- No open kinetic chain hamstring work for 3 months
- No terminal knee extension exercises for 3 months
- Brace locked at 0 for walking x 4 weeks, FWB
- No flexion > 90 X 4 weeks
- Meniscal transplant performed with ACL reconstruction follows ACL post-op protocol, with the above exceptions
- Supervised physical therapy takes place for 3-9 months post-op

GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING

Patients may begin the following activities at the dates indicated (unless otherwise specified by the physician):

- Bathing/Showering without brace after suture removal
- Sleep with brace locked in extension for 6 weeks
- Driving at 8 weeks post-op
- Brace locked in extension for 6 weeks for ambulation
- Use of crutches continued for 8-12 weeks
- Weight-bearing as tolerated until 8-12 weeks post-op

PHYSICAL THERAPY ATTENDANCE

The following is an approximate schedule for supervised physical therapy visits:

- | | |
|-------------------------|--|
| Phase I (0-8 weeks): | 1 visit/week |
| Phase II (8-12 weeks): | 2-3 visits/week |
| Phase III (3-9 months): | 2-3 visits/week first month, reduce to
One visit/1-2 weeks based on patient |

Phase IV (9 months+):

Goals and access to equipment
Discontinue PT on completion of
Functional progression

REHABILITATION PROGRESSION

The following is a general guideline for progression of rehabilitation following meniscal transplant surgery. Progression through each phase should take into consideration patient status (e.g. healing, function) and physician advisement. Please consult the physician if there is any uncertainty concerning advancement of a patient to the next phase of rehabilitation.

PHASE I

Begins immediately post-op through approximately 8 weeks.

Goals:

- Protect allograft fixation and surrounding soft tissues
- Control inflammation
- Minimize the effects of immobilization through ROM exercises (heel slides)
- Educate patient regarding limitations and the rehabilitation process.

Brace:

- 0-6 weeks: Brace locked in full extension for gait and sleeping, unlock for therapeutic exercises.
- 6-8 weeks: Unlocked for controlled gait training in physical therapy or at home, discontinue use at night.

Weightbearing Status

- 0-8 weeks: Weightbearing as tolerated with two crutches

Therapeutic Exercises:

- Quad sets
- Ankle pump, progress to resistive theraband exercises
- Heel slides from 0-90° of knee flexion
- Non-weightbearing calf, hamstring stretches
- SLR in flexion, abduction, flexion, adduction, extension with brace in full extension until quadriceps strength is sufficient to prevent extension lag
- Patellar mobilizations as needed
- Begin aquatic therapy at 4 weeks with emphasis on normalization of gait

PHASE II

Begins at approximately 8 weeks post-op and extends to approximately 3 months. Criteria for advancement to Phase II:

- Good quad set, SLR without extension lag
- Approximately 90° of flexion
- Full extension
- No signs of active inflammation

Goals:

- Increase flexion range of motion
- Increase quadriceps strength
- Restore normal gait
- Avoid over stressing the graft

Brace:

Discontinue use of brace at 8 weeks post-op as allowed by physician

Weightbearing status:

At 8 weeks may discontinue use of crutches if following criteria are met:

- No extension lase with SLR
- Full extension
- Flexion 90°
- Nonantalgic gait pattern (may use one crutch or cane until gait is normalized)

Therapeutic Exercises:

- Wall slides 0-45-degrees, progressing to mini-squats
- 4-way hip for flexion, extension, abduction, adduction
- Stationary bike (No toe clips to minimize hamstring activity)
- Leg press 0-60° flexion
- Step-ups (Begin at 2" and progress towards 8")
- Knee extensions 50°-90°
- Toe raises
- Balance exercises (e.g. single-leg balance)

PHASE III

Begins at approximately 3 months post-op and extends through approximately 9 months.

Criteria for advancement to Phase III

- Full knee extension, at least 100° of flexion
- Good quadriceps strength
- No patellarfemoral or soft tissue complaints
- No signs of active inflammation

Goals:

- Restore full range of motion
- Continue improvement of quadriceps strength
- Initiate isolated hamstring strengthening
- Improve functional strength and proprioception

Therapeutic Exercises:

- Progression of closed kinetic chain and balance activities
- Closed kinetic chain terminal knee extension with resistive tubing or weight machine
- Hamstring curls 0-60° of flexion

- Swimming-no breaststroke
- Jogging in pool with wet vest or belt
- Stairmaster (small steps initially)

PHASE IV:

Begins approximately 9 months post-op and extends until the patient has returned to work or desired activity. Criteria for advancement to Phase IV:

- Physician clearance to initiate functional progression
- No patellarfemoral or soft tissue complaints
- Necessary joint range of motion, strength, endurance, and proprioception to safely return to work or athletics.

Goals:

- Sport-specific training or work hardening program as appropriate.
- Maintenance of strength, endurance, and proprioception
- Patient education with regards to any possible limitations

Therapeutic Exercises:

- Continue strength, endurance, proprioception program
- Functional progression including but not limited to:
 - Slide board
 - Walk/jog progression
 - Forward, backward, running, cutting, carioca, etc.
 - Sport specific drills
- Work hardening program as prescribed by physician

Return to full activity:

The patient may resume full activity level including sports participation when he/she completes an appropriate functional progression and has clearance from the physician. This usually occurs at approximately 9 months post-op.

MENISCAL ALLOGRAFT TRANSPLANTATION REHABILITATION PROTOCOL

	WEIGHT BEARING	BRACE	ROM	EXERCISES
<i>PHASE I</i> 0-2 weeks	Heel touch weight bearing with crutches	<ul style="list-style-type: none"> • Locked in full extension for sleeping and all activity • Off for exercises and hygiene 	0-60°	Heel slides, quad sets, patellar mobs, SLR, SAQ No weight bearing with flexion >90°
<i>PHASE II</i> 2-8 weeks	2-6 weeks: Heel touch WB with crutches 6-8 weeks: Progress to full WB	<ul style="list-style-type: none"> • 2-8 weeks: Locked 0-90° • Off at night at 4 weeks. • Discontinue brace at 8 weeks 	0-90° from 2-6 weeks; then to 120° until 4 months	Addition of heel raises, total gym (closed chain), terminal knee extensions Activities w/ brace until 6 weeks; then w/o brace as tolerated No weight bearing with flexion >90°

<i>PHASE III</i> 8-12 weeks	Full	None	Limit flexion to 120° until 4 months	Progress closed chain activities Begin hamstring work, lunges/leg press 0-90°, proprioception exercises, balance/core/hip/glutes Begin stationary bike
<i>PHASE IV</i> 12-20 weeks	Full	None	Limit flexion to 120° until 4 months	Progress Phase III exercises and functional activities: single leg balance, core, glutes, eccentric hamstrings, elliptical, and bike Swimming okay at 3 months. No flip turns for 6 months.
<i>PHASE V</i> > 20 weeks	Full	None	Full	Advance to walking for exercise; slow advance to sport-specific drills and running/jumping by 9 months post-op

- Brace may be removed for sleeping after 4 weeks
Avoid any tibial rotation for 8 weeks to protect meniscus.

Physician's Signature: _____

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