TROPICAL
MEDICAL GROUP

Dx: ☐ Right ☐ Left

Patient Name: _____

Date of Surgery: _____

PT/OT: Evaluate and treat. Follow the following protocol.

Signature/Date: _____

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Bone-Patellar Tendon-Bone Autograft ACL Reconstruction

GENERAL GUIDELINES

- Use the cryotherapy cuff : continuously for the first 72 hours, then as-needed thereafter.
  - Ensure that the cuff never contacts the skin directly.
  - Apply to the knee after performing rehabilitation exercises for first **12 weeks.**
  - If no cryotherapy cuff is provided, use a bag of ice for 20 minutes each hour while awake, separating the bag of ice from skin with a cloth or T-shirt.
- You may shower and get incisions wet after the first postoperative visit .
- **DO NOT** submerge the knee underwater for 4 weeks.
- Sleep with brace locked in extension for 2 weeks.
- Brace locked in extension for 1 week for ambulation.
- Use brace and crutches for ambulation for 6 weeks.
- Take precautions not to fall, as a fall could result in fracture or graft failure.
- Schedule a follow-up appointment for 10-14 days after surgery.

PHYSICAL THERAPY ATTENDANCE

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

Phase I (0-2 weeks):	1 visit/week
Phase II (2-6 weeks):	2-3 visits/week
Phase III (6 weeks – 3 months):	2-3 visits/week
Phase IV (3-6 months):	1-2 visits/week
Phase V (> 6 months):	Discharge with home program

REHABILITATION PROGRESSION

The following are guidelines for rehabilitation. Please consult the physician with any concerns or questions about advancement to the next phase of rehabilitation. Visits are routinely scheduled at 2, 6, 14, 26, and 52 weeks postoperatively.

PHASE I : Begins immediately post-op through the first postoperative visit (2 weeks)

Goals:
- Protect graft fixation and minimize inflammation
- Ensure wound healing and prevent blood pooling/blood clot
- Maintain full extension, initiate early range of motion

Brace:
0 – 1 week: Locked in full extension for ambulation and sleeping
1 – 2 weeks: Unlocked 0-90 deg for ambulation, lock in extension for sleeping

Weight-Bearing Status:
0 – 2 weeks: Weightbearing as tolerated with two crutches

Therapeutic Exercises (3 times per day):
- *Ankle pumps*
- Knee extension/hamstring stretching with *heel prop* or *towel roll* when supine
- *Heel slides* with assistance from unaffected leg
- Sitting *leg dangle* to 90 degrees using unaffected leg for support
- *Patellar mobilizations* (medial, lateral, proximal, distal)
- Quad isometrics (hold for 10 seconds, with 5 repetitions)

PHASE II : Begins 2 weeks postoperatively and extends to 6 weeks postoperatively

Criteria for advancement to Phase II:
- No signs of active inflammation, flexion to >70 degrees

Goals:
- Maintain full extension, progress flexion
- Restore normal gait
- Protect graft fixation

Brace/Weight-Bearing Status:
- Brace may be unlocked at all times; may remove for exercises and sleeping.
- Weight bearing as tolerated with two crutches for a minimum of 2 weeks; Transition to 1 crutch, then discontinue when comfortable

Therapeutic Exercises (3 times per day):
- All exercises from Phase I
- Aggressive *patellar mobilizations* (medial, lateral, proximal, distal)
- Stationary bike (no tension; begin with high seat & progress to lower seat for ROM)
- *Prone hangs* to promote knee extension
- *Straight-leg raises* (10 repetitions; start with brace locked, then unlocked as tolerated)
- *Hip abduction* (leg raises to the side while lying on your side)

PHASE III : Begins 6 weeks postoperatively and extends to 3 months postoperatively

Criteria for advancement to Phase III:
- No difficulty with straight-leg raise and flexion to at least 120 degrees

Goals:
- Maximize range of motion
- Improve functional strength while protecting the graft and patellofemoral joint
- Wean the postoperative brace and discard when comfortable

Therapeutic Exercises (perform strengthening exercises every other day):
- All exercises from Phase II (perform 3 times per day)
- Stationary bike (increase tension as tolerated)
- *Wall slides* and *leg press* from 0-45 degrees of knee flexion
- 3-way hip motion with progressive resistance (flexion, abduction, adduction)
- Step-up/Step-down beginning at 2", gradually progress height as tolerated
- *Hamstring curls* with progressive resistance
- Toe raises
- Treadmill walking with emphasis on normalization of gait pattern
- Aquatic program to include pool running and flutter kick (NO breaststroke)

PHASE IV : Begins 3 months postoperatively and extends to 6 months postoperatively

Criteria for advancement to Phase IV:
- Full range of motion and normal gait
- No difficulty with wall slide to 45 degrees

Goals:
- Improve strength and endurance in preparation for functional activities
- Initiate proprioceptive training while protecting the graft and patellofemoral joint

Brace:
- Well-fitting ACL Sports brace prior to jogging or proprioception exercises

Therapeutic Exercises (perform every other day):
- All exercises from Phase III
- Progress to single leg wall slides and leg press to 90 degrees of flexion
- Elliptical trainer (transition to jogging when comfortable and has Sports brace)
- Treadmill or track jogging, gradually increasing distance and speed
    - Avoid uneven terrain or concrete surfaces such as sidewalks and streets
- Balance/Proprioceptive training (single leg stance, balance board)
- Plyometric training (see following page for guidelines)

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Plyometric training (should be performed on dedicated soft, level surface with good traction).

12-16 weeks postop:	Double limb hops (advance to 30 reps)
16-20 weeks postop:	Add alternating single leg hop (advance to 15 reps each foot)
	Add double limb forward, side, and back hops (advance to 10 reps each)
	(distance should be 6 to 12 inches)
20-26 weeks postop:	Add single leg hop (advance to 10 reps)
	Increase distance of double limb forward hop as tolerated, add triple hop
26-36 weeks postop:	If appropriate for desired sports or activities,
	Add double leg rotational hops (90 degree turn midair, advance to 5 reps)
	Add double leg rotational hops (180 deg turn midair, advance to 5 reps)

PHASE V : Begins 6 months postoperatively up to 1 year postoperatively

Criteria for advancement to Phase V:
- Surgeon clearance
- Symmetric thigh musculature and performance within 10% of uninvolved limb

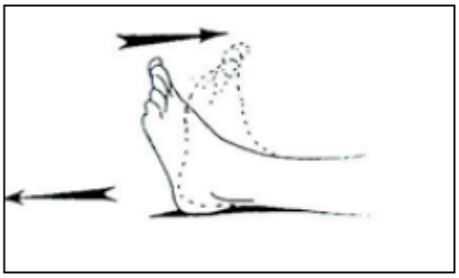
Goals:
- Maximize strength, endurance, and proprioception
- Gradual return to sport (wearing ACL Sports brace for the first year)

Therapeutic Exercises (perform every other day with brace):
- All exercises from Phase IV
- May jog on any surface as tolerated, gradually increasing distance and speed
- Non-linear running (zig-zag run, backwards run, Carioca each side for 50 yards each)
    - Start with 'walk-through' at < 1% of maximum effort
    - Increase 10% effort each session as tolerated
- Agility drills added after non-linear running mastered (shuttle run, box drill, weaves)
    - Start with 'walk-through' at < 1% of maximum effort
    - Increase 10% effort each session as tolerated
- Sport specific training/practice once agility drills mastered
    - Start with 'walk-through' at < 1% of maximum effort
    - Increase 10% effort each session as tolerated

General timeframe for typical return to sports

Jogging:	14 weeks postoperatively
Golf:	5 months postoperatively
Skiing:	7 months postoperatively
Return to practice for all other sports:	7 months postoperatively
Full return to sports:	9 months postoperatively

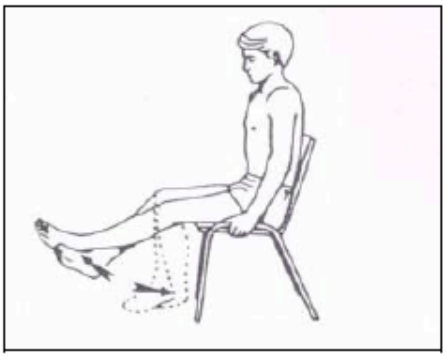
Exercise Diagrams (Phase I)



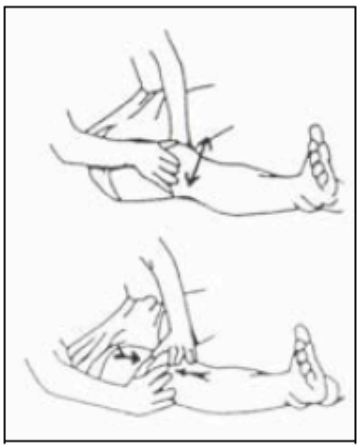
Ankle Pumps



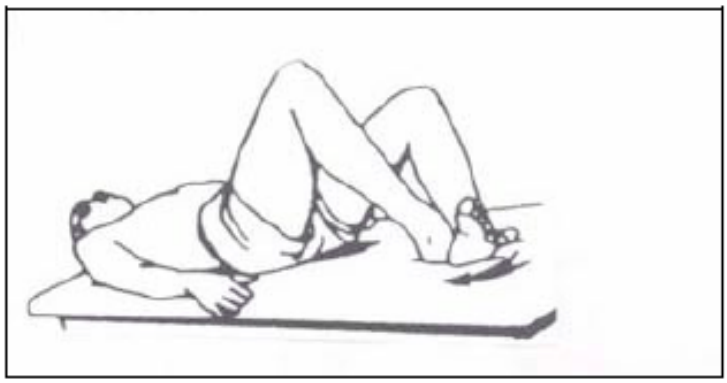
Sitting extension/hamstring stretch with *heel prop*
May also be performed recumbent (lying down)



Sitting *leg dangle* to 90 degrees
using unaffected leg for support

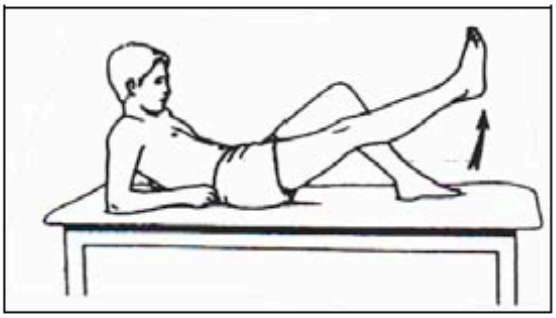


Patella mobilizations
stretch in 4 directions (side to side, up and down)

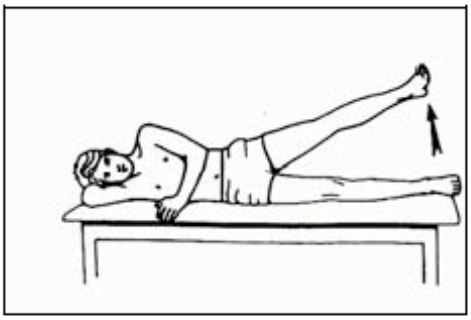


Recumbent *heel slides* with assistance

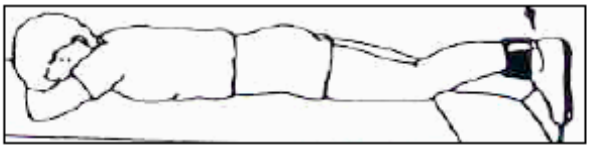
Exercise Diagrams (Phase 2)



Straight-leg raises



Hip abduction **(both legs)**

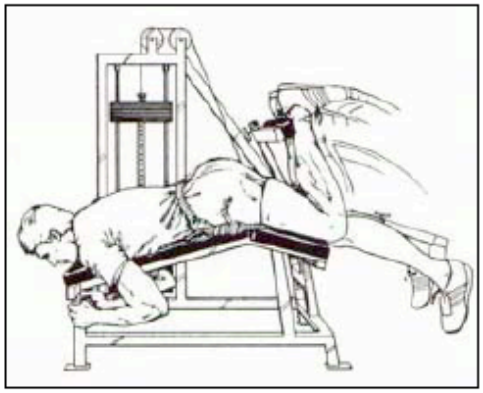


Prone hangs to promote full knee extension

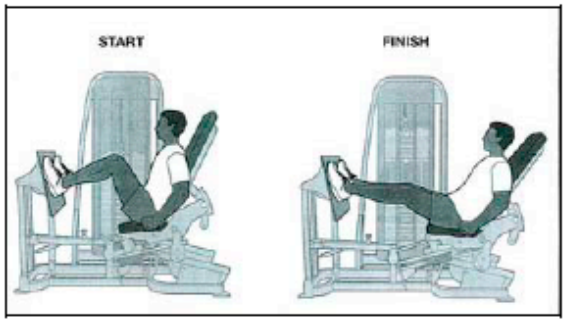
Selected Exercise Diagrams (Phase 3)



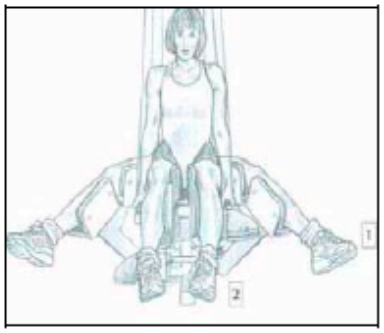
Wall slides (0-45 degrees of knee flexion)



Hamstring curls



Leg Press (0-45 degrees of knee flexion)



Hip abduction and adduction