

REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR CARTIFORM/BIOCARTILAGE (TROCHLEA OR PATELLA)

PHASE I (0-3 WEEKS)

DATES:

Appointments	<ul style="list-style-type: none"> • Begin physical therapy 2-5 days post op • Physical therapy 2-3x/week • MD visit at 2 weeks post op
Rehabilitation Goals	<ul style="list-style-type: none"> • By 1st post op visit at 2 weeks: <ul style="list-style-type: none"> - full extension symmetrical to contralateral knee - Flexion to 120° - 20° SLR without quad lag
Precautions	<p>Brace:</p> <ul style="list-style-type: none"> • Brace locked in extension for ambulation x 6 weeks • May unlock brace at rest in sitting. <p>WB:</p> <ul style="list-style-type: none"> • WBAT with crutches
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • Prolonged extension- prone hang, supine with roll under ankle • Isometric quad set, then SLR • Hamstring isometrics • 4-way hip and ankle exercises • Initiate proprioceptive/balance exercises to include single leg stance, weight shifts forward, retro, lateral • Patellar mobilizations (especially cranially) • Ice 5x/day, 20min each time, especially after exercises
Cardiovascular Exercises	<ul style="list-style-type: none"> • Stationary bike- no resistance

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(Phase I continued) Progression Criteria	<p>Brace:</p> <ul style="list-style-type: none"> Continue brace x 6 weeks <p>WB:</p> <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 but seem unsteady in gait.
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PHASE II (3-6 WEEKS)

DATES:

Appointments	<ul style="list-style-type: none"> Continue physical therapy 2-3x/week
Rehabilitation Goals	<ul style="list-style-type: none"> Full ROM Advance strengthening Consider early neuromuscular retraining
Precautions	<ul style="list-style-type: none"> Continue to wear brace at all times except for sleeping, exercises DC brace at 6 weeks post-op if adequate quad control for gait on level surfaces
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> AVOID OPEN CHAIN RESISTIVE ESPECIALLY WITH WEIGHTS Continue to progress exercises from phase I
Cardiovascular Exercises	<ul style="list-style-type: none"> Stationary bike; no resistance
Progression Criteria	<ul style="list-style-type: none"> Full ROM Minimal Effusion Functional control for ADL's achieved

PHASE III (6 WEEKS – 3 MONTHS)

DATES:

Appointments	<ul style="list-style-type: none"> Continue physical therapy 1-2x/week HEP 5x per week
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<p>(Phase III continued)</p> <p>Rehabilitation Goals</p>	<ul style="list-style-type: none"> • Progress to closed chain exercises • Maintain full ROM • Progress neuromuscular retraining program • Core integration • Light running/hopping without pain or swelling (beginning at 12 weeks)
<p>Precautions</p>	<ul style="list-style-type: none"> • No downhill walking/running, downhill skiing, downhill biking
<p>Suggested Therapeutic Exercises</p>	<ul style="list-style-type: none"> • Closed chain exercises: <ul style="list-style-type: none"> - Bridge - mini squats/wall squats - step ups - hip extension - hip ABD/ADD • heel raises • Progress neuromuscular proprioceptive/balance exercises including single leg balance progression- varying surfaces • Pool: <ul style="list-style-type: none"> - 4 way hip - lateral movement - deep water jogging in place (no freestyle or frog/breaststroke kick) • Strengthening: <ul style="list-style-type: none"> - mini squats - lunges - bridge - calf raises - sport cord - wall squats - step up/down
<p>Cardiovascular Exercises</p>	<ul style="list-style-type: none"> • Stationary bike with resistance as tolerated • Elliptical • Stairmaster
<p>Progression Criteria</p>	<ul style="list-style-type: none"> • Neuromuscular exercises without difficulty

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PHASE IV (3 TO 5 MONTHS)

DATES:

Appointments	<ul style="list-style-type: none"> Continue physical therapy 1-2x per week HEP 5x per week
Rehabilitation Goals	<ul style="list-style-type: none"> 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"> Agility drills: <ul style="list-style-type: none"> Shuffling Hopping running patterns (Ex: figure 8) Sport specific closed-chain exercises: <ul style="list-style-type: none"> 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. Continue gait training, progress to running on treadmill or even ground (beginning at 12 weeks) Pool: <ul style="list-style-type: none"> may start freestyle swimming (avoid frog/breaststroke kick) progress to shallow water jogging
Progression Criteria	<ul style="list-style-type: none"> Running, hopping/agility drills without knee pain or effusion

PHASE IV (5 TO 8 MONTHS)

DATES:

Appointments	<ul style="list-style-type: none"> Continue physical therapy 2 visits per month to review HEP HEP 4-5x per week
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(Phase IV continued) Appointments	<ul style="list-style-type: none"> Return to sport testing at 9 months, prior to MD visit
Rehabilitation Goals	<ul style="list-style-type: none"> Jogging on treadmill or even ground to running patterns at 75% Begin plyometric program: jump rope exercises
Precautions	<ul style="list-style-type: none"> Earliest return to sport: 9 months
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> Agility drills: <ul style="list-style-type: none"> shuffling, hopping, running patterns (Ex: figure 8) Sport specific drills in controlled environment: <ul style="list-style-type: none"> plyometric program fast straight running, backward running cutting, cross-overs, carioca
Cardiovascular Exercises	<ul style="list-style-type: none"> Pool: 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

References: Mammoth Orthopedic Institute
 PT name and date: Andrea Dillon, PT, DPT 6/24/2016
 MD name and date: Approved by MD 6/24/2016

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