

REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR CARTIFORM/BIOCARTILAGE (FEMORAL CONDYLE OR TIBIAL PLATEAU)

PHASE I (0-3 WEEKS)

DATES:

Appointments	Begin 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 by the first post-op visit at 2 weeks • Flexion to 120° • 20° SLR without quad lag
Precautions	<p>Brace:</p> <ul style="list-style-type: none"> • x 6 weeks, unlocked, full ROM allowed <p>WB:</p> <ul style="list-style-type: none"> • NWB x 6 weeks with crutches
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • Prolonged extension: prone hang, supine with roll under ankle • Heel slides, wall slides • Isometric quad set, then SLR • Hamstring isometrics • 4-way hip and ankle exercises including calf pumps • 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, use non-operative leg for pedaling
Progression Criteria	<ul style="list-style-type: none"> • Knee flexion to 120 degrees • 20 degree SLR without lag

PHASE II (3-6 WEEKS)

DATES:

Appointments	<ul style="list-style-type: none"> • Continue physical therapy 2-3x/week
--------------	---

**REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR
CARTIFORM/BIOCARTILAGE (FEMORAL CONDYLE OR TIBIAL PLATEAU)**

(Phase II continued) Rehabilitation Goals	<ul style="list-style-type: none"> • Full ROM • Advanced strengthening • Consider early neuromuscular retraining • Off of crutches and knee brace
Precautions	<p>Brace:</p> <ul style="list-style-type: none"> • Wear brace except for sleeping, exercises <p>WB:</p> <ul style="list-style-type: none"> • Continue NWB with crutches x 6 weeks post op
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • AVOID OPEN CHAIN RESISTIVE ESPECIALLY WITH WEIGHTS • Continue exercises from phase I
Cardiovascular Exercises	<ul style="list-style-type: none"> • Stationary bike no resistance, use non-operative leg for pedaling
Progression Criteria	<ul style="list-style-type: none"> • DC brace at 6 weeks post-op • DC crutches at 6 weeks if adequate quad control for gait on level surfaces • Full knee ROM • Minimal effusion • Functional control for ADLs achieved

PHASE III (6 WEEKS – 3 MONTHS)

DATES:

Appointments	<ul style="list-style-type: none"> • Continue physical therapy 1-2x/week • HEP 5 x/week
Rehabilitation Goals	<ul style="list-style-type: none"> • Progress to closed chain exercises • Maintain full ROM • Progress neuromuscular retraining program • Core integration
Precautions	<ul style="list-style-type: none"> • No downhill walking/running, downhill skiing, downhill biking
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • Closed chain exercises: <ul style="list-style-type: none"> - mini squat/wall squats

**REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR
CARTIFORM/BIOCARTILAGE (FEMORAL CONDYLE OR TIBIAL PLATEAU)**

(Phase III continued) Suggested Therapeutic Exercises	<ul style="list-style-type: none"> - lunges - bridges - step ups/downs - calf raises • Initiate proprioceptive/balance exercises: <ul style="list-style-type: none"> - single leg stance - weight shifts forward, retro, lateral and progress to varying surfaces - wobble board • If pool available begin: <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"> - sport cord
Cardiovascular Exercises	<ul style="list-style-type: none"> • Stationary bike, or road bike outdoors on flat roads only
Progression Criteria	<ul style="list-style-type: none"> • Neuromuscular exercises without difficulty

PHASE IV (3 TO 5 MONTHS)

DATES:

Appointments	<ul style="list-style-type: none"> • Continue physical therapy 1-2 x/week • HEP 5 x/week
Rehabilitation Goals	<ul style="list-style-type: none"> • Running patterns at 75% speed • Good jumping mechanics- NO DYNAMIC VALGUS • Hopping 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 - figure 8 • Sport specific closed-chain exercises: <ul style="list-style-type: none"> - leg press (0-60°) - step ups

**REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR
CARTIFORM/BIOCARTILAGE (FEMORAL CONDYLE OR TIBIAL PLATEAU)**

(Phase IV continued) Suggested Therapeutic Exercises	<ul style="list-style-type: none"> - mini squats (0-60°) - short arc quad (30-90°) - hamstring curls with light weight/high repetition • Light running/hopping without pain or swelling (beginning 12 weeks)
Cardiovascular Exercises	<ul style="list-style-type: none"> • Begin endurance closed-chain exercises 3-4x/week: Stairmaster, stationary bike, elliptical, NordicTrack (short stride). Focus on increasing endurance. • Continue gait training: progress from fast walking to light jogging and running on treadmill or even ground (may begin running at 12 weeks) • Pool available: 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 effusion or pain

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 • Return to sport testing prior to 9 month MD visit
Rehabilitation Goals	<ul style="list-style-type: none"> • Slow progression from fast walking to slow jogging on even ground or treadmill, or hill work. • May begin plyometric program; jump rope exercises • Return to sport
Precautions	<ul style="list-style-type: none"> • No downhill walking/running, downhill skiing, downhill biking until 4.5 months • No cutting, jumping or pivoting • Earliest return to full sports = 9 months
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> • Progress agility drills: <ul style="list-style-type: none"> - shuffling - hopping (double and single leg) - running patterns • Sport specific plyometric program: <ul style="list-style-type: none"> - fast straight running - backward running - cutting, cross-overs, carioca, etc. in controlled environment

**REHABILITATION GUIDELINES FOR ACL RECONSTRUCTION WITH MICROFRACTURE OR
CARTIFORM/BIOCARTILAGE (FEMORAL CONDYLE OR TIBIAL PLATEAU)**

(Phase V continued) Cardiovascular Exercises	<ul style="list-style-type: none"> • Pool available: may advance swimming (avoid frog/breaststroke kick)
Progression Criteria	<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 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 6/24/2016

MD name and date: Approved by MD 6/24/2016

MAMMOTH ORTHOPEDIC INSTITUTE

85 Sierra Park Road ▪ Mammoth Lakes, CA 93546 ▪ 760.924.4084
 162 South Main Street ▪ Bishop, CA 93514 ▪ 760.872.7766

SIERRA PARK PHYSICAL AND OCCUPATIONAL THERAPY

85 Sierra Park Road ▪ Mammoth Lakes, CA 93546 ▪ 760.934.7302
 162 South Main Street ▪ Bishop, CA 93514 ▪ 760.872.2942