

## REHABILITATION GUIDELINES FOR ACL WITH QUAD TENDON GRAFT WITH MENISCAL REPAIR

PHASE I (0-3 WEEKS)

DATES:

Appointments	Physical therapy 2-3x/week, beginning 2-5 days post-op
Rehabilitation Goals	<ul style="list-style-type: none"> <li>• Full extension symmetrical to contralateral knee before the first post-op visit at 2 weeks</li> <li>• PROM 0-90°</li> <li>• 20° SLR without quad lag</li> </ul>
Precautions	<p><b>ROM:</b> Flexion limited to 90 degrees x 6 weeks</p> <p><b>Brace:</b></p> <ul style="list-style-type: none"> <li>• Brace locked 0° for ambulation, brace open 0-90° at rest in sitting</li> <li>• May remove brace for sleep and exercises after 1 week</li> </ul> <p><b>WB:</b></p> <ul style="list-style-type: none"> <li>• WBAT with crutches, brace locked in 0° extension x6 weeks post-op</li> </ul>
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> <li>• Prolonged extension- prone hang, supine with roll under ankle</li> <li>• Heel slide, wall slide</li> <li>• Isometric quad set, then SLR</li> <li>• Hamstring isometrics</li> <li>• 4-way hip and ankle exercises</li> <li>• Initiate proprioceptive/balance exercises: weight shifts forward, retro, lateral with brace locked in extension</li> <li>• Patellar mobilizations (especially cranially)</li> <li>• Ice 5x/day, 20min each time. Especially after exercises</li> </ul>
Cardiovascular Exercises	<ul style="list-style-type: none"> <li>• UBE</li> </ul>
Progression Criteria	<ul style="list-style-type: none"> <li>• DC crutches when quad control returns, full extension achieved, stable with low fall risk, in brace locked to 0° extension only</li> </ul>

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### PHASE II (3-6 WEEKS)

DATES:

Appointments	Continue physical therapy 2-3x/week
Rehabilitation Goals	<ul style="list-style-type: none"> <li>• AROM 0-90°</li> <li>• Advanced strengthening</li> <li>• Consider early neuromuscular retraining</li> <li>• DC brace at 6 weeks post-op, continue brace if patient does not have full extension and/or cannot perform SLR without extension lag.</li> </ul>
Precautions	<p><b>ROM:</b> Flexion limited to 90 degrees x 6 weeks</p> <p><b>Brace:</b></p> <ul style="list-style-type: none"> <li>• Wear brace locked in extension for ambulation x 6 weeks except for sleeping, exercises</li> <li>• AVOID OPEN CHAIN RESISTIVE ESPECIALLY WITH WEIGHTS</li> </ul>
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> <li>• Thera band resistance ok for quad, hamstring</li> <li>• Quad: quad set, SAQ, LAQ</li> <li>• Hamstring: hamstring set, prone knee flexion</li> <li>• Calf, hip: extension, hip ABD, hip ADD</li> </ul>
Cardiovascular Exercises	<ul style="list-style-type: none"> <li>• UBE</li> </ul>
Progression Criteria	<ul style="list-style-type: none"> <li>• Minimal Effusion</li> <li>• Functional control for ADLs achieved</li> </ul>

### PHASE III (6 WEEKS – 3 MONTHS) DATES:

Appointments	Continue physical therapy to 1-2x/week
Rehabilitation Goals	<ul style="list-style-type: none"> <li>• Full ROM</li> <li>• Progress neuromuscular retraining program</li> <li>• Core integration</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>• May DC brace locked in extension for gait at 6 weeks</li> <li>• No downhill walking/running, downhill skiing/biking x 4.5 months</li> </ul>

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Suggested Therapeutic Exercises (Phase III continued)	<ul style="list-style-type: none"> <li>• HEP 5x per week</li> <li>• Strengthening: begin closed kinetic chain exercises with knee flexion</li> <li>• Mini squat, lunges, bridges, sport cord, wall squats, step up/down</li> <li>• Progress neuromuscular proprioceptive/balance exercises including single leg balance progression- varying surfaces</li> <li>• Pool available: begin 4 way hip, lateral movement, deep water jogging in place (no freestyle or frog/breaststroke kick)</li> </ul>
Cardiovascular Exercises	<ul style="list-style-type: none"> <li>• Stationary bike with resistance and operative leg pedaling, may begin road biking outdoor on flat roads only</li> <li>• Elliptical, Stair master, Treadmill walking</li> </ul>
Progression Criteria	<ul style="list-style-type: none"> <li>• Neuromuscular exercises without difficulty</li> <li>• No dynamic valgus with exercises</li> </ul>

### PHASE IV (3 TO 5 MONTHS)

DATES:

Appointments	Continue physical therapy 1-2x per week
Rehabilitation Goals	<ul style="list-style-type: none"> <li>• Running patterns at 75% speed</li> <li>• Good jumping mechanics- NO DYNAMIC VALGUS</li> <li>• Hop drills without difficulty</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>• No downhill walking/running, downhill skiing, downhill biking until 4.5 months</li> </ul>
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> <li>• HEP 5x per week</li> <li>• Agility drills: shuffling, hopping, running patterns (Ex: figure 8)</li> <li>• Some sport specific: closed-chain exercises including leg press (0-60°), step ups, mini squats (0-60°), short arc quad (30-90°), hamstring curls with light weight/high repetition</li> </ul>
Cardiovascular Exercises	<ul style="list-style-type: none"> <li>• Begin endurance closed-chain exercises 3-4x/week:             <ul style="list-style-type: none"> <li>- Stairmaster, stationary bike, elliptical, NordicTrack (short stride)</li> </ul> </li> <li>• Gait training: jogging on treadmill or even ground at 12 weeks, progress to running patterns at 75%</li> <li>• Pool available: may start freestyle swimming (avoid frog/breaststroke kick), progress to shallow water jogging</li> </ul>

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Progression Criteria	<ul style="list-style-type: none"> <li>• Running without knee pain or effusion</li> <li>• Hopping/agility drills without knee pain or effusion</li> </ul>
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PHASE IV (5 TO 8 MONTHS)      DATES:

Appointments	Continue physical therapy 2 visits per month to review HEP
Rehabilitation Goals	<ul style="list-style-type: none"> <li>• Slow progression from jogging on even ground or treadmill to running patterns, hill work, cutting, jumping, pivoting</li> <li>• May begin plyometric program: jump rope exercises</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>• Earliest return to sport = 9 months</li> <li>• Must pass return to sport test</li> </ul>
Suggested Therapeutic Exercises	<ul style="list-style-type: none"> <li>• HEP 4-5x per week</li> <li>• Return to sport testing at 9 months post-op, prior to MD visit</li> <li>• Agility drills: shuffling, hopping, running patterns (Ex: figure 8)</li> <li>• Sport Specific: plyometric program, fast straight running, backward running, cutting, cross-overs, carioca, etc. in controlled environment</li> </ul>
Cardiovascular Exercises	<ul style="list-style-type: none"> <li>• Pool available: may advance swimming (avoid frog/breaststroke kick)</li> </ul>
Progression Criteria (Return to Sport)	<ul style="list-style-type: none"> <li>• quadriceps and hamstring strength at least 90% of opposite leg</li> <li>• Single leg hop test and vertical jump at least 90% of opposite leg</li> <li>• Jog, full speed run, shuttle run, and figure of 8 running without a limp</li> <li>• Full controlled acceleration and deceleration</li> <li>• Squat and rise from a full squat</li> <li>• No effusion or quadriceps atrophy</li> </ul>

**References:**

Mammoth Orthopedic Institute

PT name and date: Andrea Dillon 6/21/16

MD name and date: Approved June 21, 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