

ACL Reconstruction with Meniscus Repair Rehabilitation Protocol

PHASE I: Generally post-operative weeks 1 - 8	
PRECAUTIONS:	<p>*Wear long-legged ROM brace at all times for 8 weeks, except during rehabilitation*</p> <p>*NO running until 4 months post-op*</p> <p>*NO bending knee with load applied for 6 weeks after surgery (i.e., squat, leg press, etc.) (Note: bending knee & partial weight bearing are allowed, <u>BUT</u> not at the same time)</p>
CRUTCHES:	<p>Begin with touch weight-bearing</p> <ul style="list-style-type: none"> o Weeks 1-2: Foot-flat (touch) weight-bearing @ 0-25% body weight o Weeks 3-6: partial weight-bearing @ 25-75% body weight o Weeks 7-8: weight-bearing as tolerated @ 75-100% body weight
BRACE & ROM:	<p>Brace locked at 0° extension for ambulation for 6 weeks; then, open to current ROM</p> <p>ROM: Diligently work to obtain full extension by 1 week post-op and ~90° flexion by 3 weeks post-op; after 3 weeks post-op, gently increase flexion 5-10° per week</p>
WOUND:	<p>Post-op dressing remains intact until post-op day #3 (~72 hours after surgery)</p> <p>May begin showering after post-op day #3 (no need to cover incision site)</p> <p>*Do NOT submerge knee in tub or pool for 4 weeks*</p> <p>Bilateral compression stockings for 3-7 days: unilateral use thereafter as needed</p> <p>Suture/staple removal @ 10-14 days with Dr. Zacchilli</p>
REHABILITATION:	<p>Frequent use of cryocuff and/or ice with lower extremity elevated</p> <p>Exercises should be done as part of a home exercise program 2-3 x per day</p>
~Weeks 1-2	<p>Calf pumping (using theraband)</p> <p>Assisted heel slides (0-90°)</p> <p>Quad sets (with e-stim)</p>
~Weeks 3-4	<p>Supine passive extension with ice on knee and towel under heel</p> <p>Gentle hamstring stretching</p> <p>SLRs: front direction – progressively add weight Discontinue e-stim when quality SLRs are performed</p> <p>Hip Abduction wall slides - (hip abduction strengthening)</p>

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<p>~Weeks 5-6 ~Weeks 7-8</p> <p>FOLLOW-UP:</p> <p>DOCUMENTATION:</p>	<p>Stationary bike for ROM ∩∪ half circles - progress to biking for conditioning</p> <p>Heel raise progression: begin bilateral heel raises - progress to unilateral</p> <p>Double leg mini-squats (0-45°) - progress to single leg</p> <p>Gait training (cone walking, marching, retrowalking, cariocas, shuffles, etc.)</p> <p>Forward, lateral, and retro step-ups (start with 4", progress as tolerated)</p> <p>Physical Therapy: Bimonthly; Ortho: ~8 weeks post-op; Supervised rehabilitation: 2-3 x per week as needed</p> <p>Precautions, pain level, medications and modalities</p> <p>Observation: (incision sites) - Signs/symptoms of infection? Site healing well? Effusion? Neurovascular status: Distal pulses, motor and sensation intact? Presence of calf pain? Knee ROM, & quadriceps function</p>
<p>PHASE I GOALS:</p>	<p>Normal gait and stair ambulation; ROM: full knee extension, ~120° knee flexion (If goals are not met, consider remaining on phase I for 2 additional weeks)</p>

PHASE II:	Generally post-operative months 3 - 4
<p>PRECAUTIONS:</p> <p>BRACE:</p> <p>REHABILITATION:</p> <p>~Month 3</p>	<p>*Continue to wear brace in compromising environments (i.e., crowds, bad weather, etc.)* *NO running until ~4 months post-op*</p> <p>Optional - fit with an off-the-shelf ACL sports brace or a hinged sleeve knee brace when effusion is minimal (typically between 8-10 weeks post-op)</p> <p>Continue phase I exercises as needed</p> <p>Progress to the following exercises and increase intensity gradually when patient is ready (i.e., no increase in knee pain or effusion since the previous exercise session)</p> <p>*Note: all strengthening should be done starting with low weights, high repetitions, and in a painless ROM*</p> <p>Stationary biking for conditioning (~80-100 RPMs) - may add elliptical gradually</p> <p>General LE stretching (calf, HS, quads, HF, hip adductors)</p> <p>Progressive standing balance exercises (body blade, plyoball, platform training, etc.) (progress in duration, intensity, double leg to single leg, etc.)</p> <p>Progressive strengthening (calf & leg press, squats (0-45°), lunges, HS curls, hip abd/add) (first set: 20 repetitions, then 2 additional sets at the same weight to muscle failure)</p> <p>Progressive aquatics program (optional)</p>

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~Month 4	<p>Elliptical and/or stairmaster</p> <p>Progressive functional training (2 legged plyometrics, jump roping, etc.)</p> <p>Progressive strengthening (calf & leg press, squats (0-60°), lunges, HS curls, hip abd/add) (first set: 15 repetitions, then 2 additional sets at the same weight to muscle failure)</p>
FOLLOW-UP:	<p>PT: ~every 3-4 weeks; Ortho: ~4 months post-op</p> <p>Supervised rehabilitation: 2-3 x per week as needed</p>
DOCUMENTATION:	<p>Precautions, pain level, medications, modalities</p> <p>Effusion, knee ROM, quadriceps function, lachman/pivot shift, & gait</p>
PHASE II GOALS:	<p>Full knee ROM with minimal or no effusion</p> <p>Hop without pain using good form</p> <p>(If goals are not met, consider remaining on phase II for 2-4 additional weeks)</p>

PHASE III:	Generally post-operative months 5 - 7
PRECAUTIONS:	* NO participation in sports or advanced military schools*
BRACE:	Off-the-shelf ACL sports brace or a hinged sleeve knee brace
REHABILITATION:	Continue other phase II exercises as needed, progress in duration and intensity of exercise only if there is no increase in knee pain or effusion since the previous exercise session.
~Month 5	<p>Warm-up: 5-10 minutes (bike, elliptical, stairmaster)</p> <p>General LE stretching: 5-10 minutes (calf, HS, quads, HF, hip adductors)</p> <p>Progressive strengthening (calf & leg press, squats (0-90°), lunges, HS curls, hip abd/add) (first set: 10 repetitions, then 2 additional sets at the same weight to muscle failure)</p> <p>Progressive balance training</p> <p>Progressive functional training: Begin at 25-50% intensity and progress gradually (jumping, hopping, directional jogging, cariocas, shuffles, agility ladders, etc.)</p>
~Months 6-7	<p>Walk to run progression program (on a treadmill)</p> <p>Warm-up: 5-10 minutes (bike, elliptical, stairmaster)</p> <p>General LE stretching: 5-10 minutes (calf, HS, quads, HF, hip adductors)</p>

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	<p>Progressive strengthening (calf & leg press, squats (0-90°), lunges, HS curls, hip abd/add) (first set: 6-8 repetitions, then 2 additional sets at the same weight to muscle failure)</p> <p>Progressive balance training as needed</p> <p>Continue running progression</p> <p>Progressive functional training: Begin at 50-75% intensity and progress gradually (jumping, hopping, directional jogging, cariocas, shuffles, agility ladders, etc.)</p> <p>Functional knee program I & II (optional)</p>
FOLLOW-UP:	<p>PT: Monthly; Ortho: ~6 months post-op;</p> <p>Supervised rehab: 1-2 x per week as needed</p>
DOCUMENTATION:	<p>Pain level, medications, modalities</p> <p>Effusion, knee ROM, quadriceps function, lachman/pivot shift, hop for distance</p>
PHASE III GOALS:	<p>Agility running and cutting at 50-75% intensity without pain,</p> <p>Hop for distance > 90% compared to uninvolved side</p> <p>Strength return of > 90% for quadriceps and hamstring compared to uninvolved side (If goals are not met, consider remaining on phase III for 1-3 additional months)</p>
MISCELLANEOUS:	<p>After 7 months post-op: Exercises in phase III are continued, gradually increasing intensity & duration as tolerated. Individual sport specific drills are initiated as applicable.</p> <p>The recommendation is to wait until 10-12 months post-op to return to contact/collision sports or aggressive training (i.e. crossfit, etc.). This time period may be adjusted slightly by the surgeon and therapist according to patient progress.</p>