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Hip, Knee, Shoulder &amp; Sports Medicine Surgery

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**ACL RECONSTRUCTION WITH MEDIAL MENISCUS TRANSPLANT (ALLOGRAFT) REHABILITATION PROTOCOL**

| Phase  | Restrictions  | Therapeutic Exercises   |
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| Phase 1: Weeks 0-2<br><br>Goals: Reduce swelling and edema, minimize pain, retard muscle atrophy, protect the surgical repair, range of motion restoration | -Flat Foot Touch Down Weight Bearing x6 weeks<br>-Brace locked at 0 degrees during ambulation<br>-Passive range of motion 0-90 degrees<br>-T-Scope and Crutches x6 weeks<br>-Focus on knee extension to equal 0 degrees by 2 weeks s/p  | -PROM, AROM, AAROM 0-90 degrees<br>-Edema Control<br>-Pain management<br>-Patellar glides in all directions<br>-Scar tissue mobilization<br>-Quad sets, straight leg raises, hip ab/adduction strengthening, hamstring isometrics<br>- Modalities PRN   |
| Phase 2: Weeks 3-6<br><br>Goals: Reduce swelling and edema, minimize pain, retard muscle atrophy, protect the surgical repair, range of motion restoration | -Flat Foot Touch Down Weight Bearing x6 weeks<br>-Brace locked at 0 degrees during ambulation<br>-Passive range of motion 0-90 degrees<br>-T-Scope and Crutches x6 weeks<br>-Focus on knee flexion to equal 90 degrees by 4 weeks s/p<br><br><b>Criteria for progression:</b><br><b>-Must perform a SLR without extension lag</b><br><b>-ROM 0-90 degrees</b><br><b>-No change in pain or effusion</b><br><b>-Quadriceps control (MMT 4-/5)</b> | -PROM, AROM, AAROM 0-90 degrees<br>-Continue phase 1 treatments and exercises<br>-Soft tissue mobilization, patellar glides<br>-Quad sets, straight leg raises, hip ab/adduction strengthening, gluteal strengthening, core strengthening<br>-Core strengthening program<br>-Home exercise program<br>-Progressive resistance exercises 1-5lbs<br>-UBE for cardio<br>-Modalities PRN  |
| Phase 3: Weeks 7-12<br><br>Goals: Full range of motion, minimal pain, increase resistance exercises, restore normal gait pattern, protect graft fixation   | -Return to normal ACL rehabilitation protocol<br>-Discontinue T-Scope & perform crutch wean<br>-Progress to Full ROM & Full WB<br>-Focus on full range of motion 0-120 degrees by week 10<br><br><b>Criteria for progression:</b><br><b>-Full, pain free ROM</b><br><b>-No pain or tenderness</b><br><b>-Normal gait pattern without device assistance</b>  | -Progress to full passive, active, and active assisted range of motion<br>-Progressive resistance exercises<br>-Initiate closed chain exercises<br>-Toe Raises, Mini Squats to 90 degrees, PNF with resistance, lower extremity stretching<br>-Balance exercises<br>-Hamstring curls<br>-Aquatic therapy with emphasis on gait normalization<br>-Hamstring stretches<br>-Stationary biking without resistance until week 10 |

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| <p>Phase 4: Weeks 13-24 (3-6 months)</p> <p>Goals: Proper gait mechanics, improve lower extremity strength, full range of motion, neuromuscular control</p>                         | <ul style="list-style-type: none"> <li>-Functional ACL brace to be worn during high-risk recreational/sports activity</li> <li>-May begin road cycling in the brace</li> <li>-Discourage functional and sports specific activities</li> </ul> <p><b>Criteria for progression:</b></p> <ul style="list-style-type: none"> <li>-Full, pain free ROM</li> <li>-No evidence of patellofemoral joint irritation</li> <li>-Adequate proprioceptive control</li> <li>-Quadriceps control (MMT 4+/5)</li> <li>-Patient must complete 6-month sports test prior to 6-month recheck with surgeon</li> </ul> | <ul style="list-style-type: none"> <li>-Progress flexibility and strengthening</li> <li>-Elliptical begin at week 13</li> <li>-Stairstepper begin at week 16</li> <li>-Eccentric strengthening</li> <li>-Advanced closed chain activities (leg press, single leg squats, step up progression)</li> <li>-Progress proprioceptive activities (slide board, challenging balance activities, etc.)</li> <li>-Progress aquatic program to include pool running, and swimming (NO breaststroke)</li> <li>-Jogging to start at week 16 (inline on flat ground, NO cutting, NO sprinting)</li> <li>-Functional walk/jog/run progression (Please refer to Dr. Lee's protocol (If you need this, please contact 970-456-2798)</li> </ul>  |
| <p>Phase 5: Months 7-8</p> <p>Goals: Full pain-free range of motion, no evidence of patellofemoral joint irritation, strength and proprioception restoration, power progression</p> | <ul style="list-style-type: none"> <li>-Functional ACL brace to be work during high-risk recreational/sports activity x1 year at least</li> </ul> <p><b>Criteria for progression:</b></p> <ul style="list-style-type: none"> <li>-Completion of jog/run program without pain, effusion, or swelling</li> <li>-No valgus collapse</li> <li>-No femoral adduction/IR pelvic drop or excessive trunk lean when performing single leg endurance tasks</li> <li>-Physician clearance to initiate functional activity progression</li> </ul>  | <ul style="list-style-type: none"> <li>-Continue and progress previous flexibility and strengthening activities</li> <li>-Agility testing, cone drills, slalom test, etc.</li> <li>-Vertical jump test, Figure-8 Hop test, Up-Down test, Single-leg squat test</li> <li>-Achieve maximal strength</li> <li>-Advanced core strengthening program with HEP: Segmental multifidus test, Trunk curl up test, Double-leg lowering test, Side bridge test, Prone bridge test, Supine single-leg bridge test, extensor endurance test</li> <li>-Forward and backward running progression (<math>\frac{1}{2}</math>, <math>\frac{3}{4}</math>, full speed)</li> <li>-Please refer to Dr. Lee's running progression (if you need this, please contact 970-456-2798)</li> </ul> <p><b>-With surgeon clearance and PT guidance: patient may begin more strenuous hiking, road biking, golf chipping and putting, rafting, paddle boarding, etc. Please inquire about the specific recreational or sports activity.</b></p> |

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| <p>Phase 6: Months 9+</p> <p>Goals: Completion of appropriate functional progression, strength maintenance, patient education</p> | <p>-Functional ACL brace to be worn during high-risk recreational/sports activity x1 year at least</p> <p>-Physician clearance to resume partial or full activity</p> <p><b>Criteria for discharge:</b></p> <p>-Physician clearance</p> <p>-Hamstring strength index &gt;90% as compared to the contralateral limb</p> <p>-Quadriceps strength index &gt;90% as compared to contralateral limb</p> <p>-Y Balance anterior reach within 4cm of contralateral limb</p> <p>-No complaints of pain or instability</p> <p>-Patient must complete 9-month sports test prior to 9-month recheck with surgeon.</p> | <p>-Functional progression including but not limited to:</p> <ul style="list-style-type: none"> <li>•Plyometric exercises as appropriate to patient's Goals</li> <li>•Sport-specific drills</li> </ul> <p>-Safe, gradual return to sports after successful completion of function progression and sports test</p> <p>-Maintenance program for continued strength and endurance</p> <p><b>-With surgeon clearance and PT guidance: Patient may begin skiing, mountain biking, golfing, rafting, high-risk sports, tennis, etc. Please inquire about the specific recreational or sports activity.</b></p> |
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