

MPFL-R + Tibial Tubercle Osteotomy

Name: _____

Dr: Dr. Chris LaPrade

Date: _____

●= Do exercise for that week

Week

ROM RESTRICTIONS
0-90° x 2 weeks
Then progress as tolerated (*PROM into extension x 2 weeks then AAROM until week 6)

BRACE SETTINGS
Immobilizer x 6 weeks

Weight Bearing status
NWB x 6 weeks (NO FWB until MD confirmation of TTO healing)

TIME LINES
Week 1 (1-7POD)
Week 2 (8-14POD)
Week 3 (15-21POD)
Week 4 (22-28POD)

Initial Exercises	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Knee ROM seated foot slides – PROM Extension x 2 weeks	0-90°		Goal = 120° by 6 weeks			AROM - progress to full gradually Goal = full ROM by 10 weeks													
Ankle pumps	●	●	●	●	●	●													
Patella/Tendon mobilization	●	●	●	●	●	●	●	●											
Heel prop knee extension stretch	●	●	●	●	●	●	●	●											
Calf stretch with belt/strap	●	●	●	●	●	●	●	●											
Seated hamstring stretch	●	●	●	●	●	●	●	●											
Band-resisted ankle plantarflexion			●	●	●	●	●	●	●	●									
Bridging	Knees extended over ball						Standard bridging permitted												
Quad strength progressions	0° ISOs, upright SLR		Supine SLR, TKE			60° ISO, AROM		Gradual resisted arc of motion – PRE (per confirmation of healing)											
SLR hip ABD, ABD, Ext (brace on)			●	●	●	●	●	●	●	●									
Hamstring strength progressions	ISOs			Hip & knee PRE progressions															
Cardiovascular Exercises	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Stationary Bike	WB Restriction					ROM only		Gradually progress											
Treadmill walking (no limp)										●	●	●	●	●	●	●	●	●	
Swimming – light flutter kick										●	●	●	●	●	●	●	●	●	
Elliptical trainer										●	●	●	●	●	●	●	●	●	
Stair stepper										●	●	●	●	●	●	●	●	●	
Weight Bearing Strength	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Crutch weaning – return to FWB	WB Restriction					●	●												
Calf Raises										●	●	●	●	●	●	●	●	●	
Marching into brief SLS											●	●	●	●	●	●	●	●	
SLS balance progressions												●	●	●	●	●	●	●	
Squat/Leg Press (ISO→reps, 2→1 leg)													0-45°		Gradual progression of depth & load				
Step-up/Lunge Progressions														ISOs		0-70°		>70°	
Dead lift (2→1 leg)													●	●	●	●	●	●	●
Band resisted directional stepping											●	●	●	●					
Agility Exercises	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Initial – single plane agility	WB Restriction													●	●				
Running progression						*See back side of protocol													
Advance – multi directional agility																			●
Sport Performance (TRAC) Test	Baseline test: 6 months, F/u test: 12 months																		
High Level Activities	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Outdoor recreation progression	WB Restriction														●				
Return to sport progressions						*See back side of protocol													

POST-KNEE SURGERY RETURN TO ACTIVITY GUIDELINES/CRITERIA

Return to run guidelines	≥16 weeks post-op, YBT-Anterior ≤8 cm SSD, walk ≥1 mile no limp/no pain, Quad strength ≥70% LSI, ≥60% peak torque/BW
Return to jump guidelines	≥20 weeks post-op, YBT(A) ≤4 cm SSD, Quad strength ≥80% LSI, ≥80% peak torque/BW, tolerate hopping/skipping drills with no increased soreness/swelling, tolerate lunge/squat/step single leg training progressions
Return to sport guidelines	In addition to TRAC testing goals (listed below), patient must achieve the following: >6 months post-op 16+ weeks progressive strength training 10+ weeks neuromotor training program 6+ weeks within-sport practice progression (per MD/PT team clearance) 3+ weeks graduated return to competition (per MD/PT team clearance)

POST-KNEE SURGERY “TRAC” PHYSICAL PERFORMANCE TESTING - TIMELINES & GOALS

(Will be performed at TCO/Training HAUS in Eagan, MN)

TRAC Test Activity	4 Month Goals	7 Month Goals	10 Month Goals
Knee Extension ROM	≤5° SSD	≤0° SSD	≤0° SSD
Knee Flexion ROM	≤10° SSD	≤5° SSD	≤0° SSD
YBT(A) Squat SSD	≤8 cm SSD	≤4 cm SSD	≤4 cm SSD
<i>Max YBT(A) squat depth relative to LL</i>	≥55% of LL	≥70% of LL	≥70% of LL
Repeated single leg squat (one leg rise test)	25 reps (60°)	25 reps (90°)	25 reps (90°)
2 leg squat symmetry (over force plates)	≤10% off-shift	≤5% off-shift	≤5% off-shift
Hip ABD strength LSI	≥80% LSI	≥90% LSI	≥90% LSI
<i>Hip ABD strength relative to BW</i>	≥20% of BW	≥25% of BW	≥30% of BW
Quad strength LSI	≥70% LSI	≥80% LSI	≥90% LSI
<i>Quad strength relative to BW</i>	≥70% of BW	≥80% of BW	≥90% of BW
Hamstring strength LSI		≥75% LSI	≥90% LSI
Single leg hop (SLH) test LSI		≥80% LSI	≥90% LSI
<i>SLH distance relative to LL (norm comparison)</i>		≥80% of norms	≥90% of norms
Triple hop test LSI		≥80% LSI	≥90% LSI
<i>Triple hop distance (norm comparison)</i>		≥80% of norms	≥90% of norms
2 leg jump (off shift at take-off/landing)		≤20% off shift	≤10% off shift
Peak knee flexion angle SSD with hop landing		≤20° SSD	≤10° SSD

Abbreviations for both tables above: (ABD) abduction, (BW) body weight, (ISO) isometric, (LL) leg length, (LSI) limb symmetry index, (norm) age & sex-matched normative data, (PRE) progressive resistance exercise, (ROM) range of motion, (SLR) straight leg raise, (SSD) side to side difference, (TRAC) testing to return to athletic competition, (UE) upper extremity, (YBT(A)) Y-balance test anterior reach