



Patellofemoral Arthroplasty

Post-Operative Rehabilitation Protocol

0-3 weeks

- WBAT with knee locked in extension
- Gentle PROM
- ROM goal by week 2: 0 degrees of extension and 110 degrees of flexion
- Progression off use of assistive device to unassisted ambulation beginning POD 0, guided by PT
- Heel slides
- Light strengthening of abductor group
- SLR supine with brace locked at 0 degrees
- Quad Sets with brace locked at 0 degrees
- Ankle Pumps

3-6 weeks

- Unlock brace for ambulating, wean off brace once good quad control
- WBAT without assistive device
- Progress to full ROM
- Advance quad and abductor strengthening
- Double knee bends
- Double leg bridges
- Begin cord exercises and balance squats
- May begin deadlift and leg press progression
- Can begin elliptical, swimming and rowing at 5 weeks

>6 weeks

- Continue advancing previous exercises
- May begin sports test exercises
- Initiate running progression
- Single plane activities and progress to multidirectional at 8 weeks

Weight Bearing Status

WBAT

Brace Settings

Locked straight x 3 weeks when ambulating or sleeping. Otherwise open brace once good quad control

ROM Restrictions

Full PROM beginning POD 1



Exercise	Week														
	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Initial Exercises:															
ROM Goals	0-110°			Progress to full											
Flexion/extension, heel slides	█														
Flexion/extension- seated	█														
Patella/Tendon mobilization	█														
Quad Series	█														
Hamstring Sets	█														
Sit and Reach for Hamstrings	█														
Ankle Pumps	█														
Crutch weaning	WBAT														
SLR (w/ brace until quad control restored)	█														
Toe and Heel Raises		█													
Balance Series		█													
Weight-bearing Strength Exercises:	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Double Knee Bends			█												
Double Leg Bridges			█												
Reverse Lunge, static holds			█												
Beginning cord exercises			█												
Balance Squats			█												
Dead Lift (2 → 1 leg)			█												
Leg Press (ISO → reps, 2 → 1 leg) (80-0° arc)			█												
Sports Test Exercises			█												
Cardiovascular Exercises:	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Bike with both legs-no resistance		█													
Bike with both legs- resistance		█													
Aqua jogging		█													
Treadmill-walking 7% incline		█													
Swimming with fins-light flutter kick (pending incision healing)		█													
Elliptical Trainer		█													
Rowing		█													
Stair stepper		█													
Agility Exercises:	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Running Progression						█									
Initial-Single Plane						█									
Advance-Multi Directional									█						
Functional Sports Test		█													
High Level Activities:	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Golf Progression		█													
Outdoor biking, hiking, running									█						
Return to Full Sport		█													

Adapted from post-operative protocol created by Howard Head Physical Therapy, Jill Monson, PT, OCS and Jon Schoenecker, PT, OCS, CSCS



Quad Series:

- Quad sets (5 sec hold) also quick contractions (NMES to supplement)
- Prone quad sets
- SLR with no extension leg
- Progression of Quad Strengthening
 - LAQ in safe range -no added resistance to begin
 - Once weight bearing tandem stance TKE with 5 sec hold
 - Isometric wall sit
 - SLR with resistance
 - Step up progression
 - Squat progression
 - Leg press progression
 - Lunge progression

Hamstring Series:

- Hamstring stretching (supine/prone)
- Hamstring set (heel dig)- contract hamstring with knee flexed pressing heel into the floor (5 sec hold)
- Hamstring curls
- Progress to resisted hamstring curl

Sport Test Exercises:

- Goals: impact training and introduction of directional drills
- Double leg squat jumps
- Box jumps
- Speed skaters
- Double leg jumps for height and distance progress to single leg as tolerated
- Blaze pod change of direction drills

Further Clarifications and Considerations.

- Double Knee Bends: feet shoulder width apart, bend knees to 30°, keeping knees behind the toes.
- Cord exercises (resistance band/cord): resisted double knee bends, resisted hamstring curls
- May begin to implement BFR as early as 1 week into post-op period



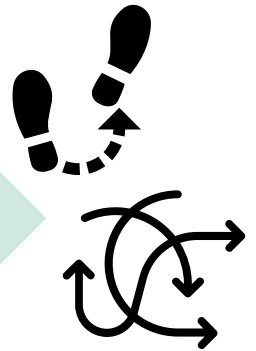
Return to Running Criteria

- Trace effusion, flexion within 5 degrees of contralateral side
- LSI on anterior reach Y balance test $\geq 90\%$
- LSI on quadriceps torque output on isometric measurement $\geq 75\%$
- 12" SL squat tolerance
- Able to walk > 1 mile with no limping or pain
- Able to "hop" with UE assist on operative leg 5 times without pain or compensation
- SL balance with eyes closed 30 seconds without loss of balance



Return to Agility/Change of Direction Criteria

- Return to running criteria listed above met
- No effusion
- Full ROM
- Quad LSI on isokinetic $\geq 85\%$
- Hamstring LSI on isokinetic $\geq 85\%$
- LSI on anterior reach Y-balance $\geq 95\%$
- SL hopping pain-free and effusion free



Return to Sport Criteria

- In order to test must demonstrate full AROM, no pain, no/trace effusion, 5/5 strength, negative lachman and pivot shift, LSI $\geq 95\%$ hamstring curl and leg press
- Quadricep strength $\geq 95\%$ of contralateral side (< 2 cm of atrophy)
- Able to perform single leg squat with correct form
- LSI SL hop $\geq 95\%$
- Y-Balance $\geq 95\%$ (mean of 3 trials in anterior, posterolateral, posteromedial /100)
- Vertical jump test, single leg hop distance, and timed single leg hop over 20 -feet $\geq 90\%$ of contralateral side

