



Patellar Fracture (Non-operative)

Rehabilitation Protocol

0-4 weeks

- WBAT with knee locked in extension
- Knee immobilizer on at all times
- Begin formal PT at 4 weeks out from injury

4-6 weeks

- Continue WBAT maintain knee in full extension at all times, may remove for PT
- Begin formal physical therapy
- AROM/PROM/AAROM
 - Week 4: 0-15°
 - Week 5: 0-30°
- Isometric quadriceps/hamstring/abductor/abductor strengthening
- Ankle Thera-Band exercises
- AROM/AAROM/PROM: Add 15° of flexion each week, goal is 90° by postop week 8-10
- Initiate SLR

6-10 weeks

- Full WB by 6 weeks, brace unlocked WB activities
- Progress to full ROM by postop week 10
- Progress active strengthening
- Start stationary bike

10-12 weeks

- Discontinue brace
- Full ROM

3-6 months

- Return to full activities as tolerated

Weight Bearing Status

WBAT

Brace Settings

Knee Immobilizer for 6 weeks

ROM Restrictions

ROM 0-15° beginning Week 4 add 15° each week



Exercise	Week														
	1	2	3	4	5	6	7	8	9	10	12	16	20	24	
Initial Exercises:															
ROM Goals	Locked in Extension			Progress 15 degrees each week					Progress to Full						
Flexion/extension, heel slides															
Flexion/extension- seated															
Patella/Tendon mobilization															
Quad Series															
Hamstring Sets															
Sit and Reach for Hamstrings															
Crutch weaning															
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)															
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															
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 at 6 months post-op															

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



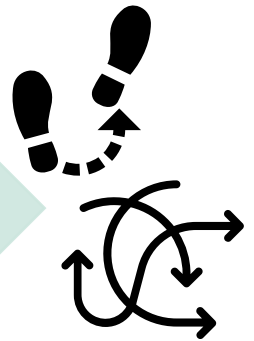
Return to Running Criteria

- 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 (< 2cm 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

