

PATELLAR INSTABILITY: NONOPERATIVE MANAGEMENT

Physical Therapy Protocol



SCAN FOR THE
ONLINE VERSION



Stanford
MEDICINE

Dear Colleague,

I appreciate your partnership in the rehabilitation of this very special patient of ours. I have instructed the patient that you will be using this protocol. My belief is that the biggest predictor of success is what the patient does at home and consistently. **They should view you not just as a therapist but as a highly educated and skilled teacher** and the patient *must* be an active participant in the rehab process.

To facilitate this, I have included a copy of the rehab protocols I would like the patient to focus on at each time point in the rehab process. Please assist me by encouraging and teaching our mutual patient their home exercises as well.

With your help and the active participation of our patient, I know we can have another fantastic knee.

Please do not hesitate to reach out directly to me and my team with any questions at any time.

Respectfully,



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	WEEKS 0-2	WEEKS 3-6	WEEKS 6-12	RETURN TO SPORT
PT visits	2x/week	2x/week <i>Home program focus</i>	1-2x/week <i>Home program focus</i>	1-2x/week <i>Home program focus</i>
Weight bearing	WBAT <i>Crutches for comfort</i>	Full <i>Normalize gait</i>	Full	Full
Brace	Patellar brace or sleeve <i>No rigid locking</i>	Wean by 3-4 wks <i>Optional for exercise</i>	Optional <i>Exercise and sport</i>	Optional <i>Sport, up to 1 year</i>
Range of motion	Early progressive <i>Emphasize extension</i>	Full <i>By about 6 wks</i>	Full	Full
Quadriceps	Quad sets, SLR <i>Full extension, NMES</i>	CKC 0-50° <i>OKC 90-45°</i>	Deeper and single leg <i>Step-downs, lunges</i>	Power <i>Sport-specific</i>
Hip and core	Hip abduction, core <i>As tolerated</i>	Clamshells, hip extension <i>Band side steps</i>	Dynamic valgus control <i>Advanced balance</i>	Maintain
Impact and sport	None <i>No pivoting or contact</i>	Bike, elliptical <i>Balance work</i>	Running program <i>Quad strength 70-80%</i>	Agility, cutting last <i>Per RTS criteria</i>

CRITERIA FOR RETURN TO SPORT

- Full or near-full ROM.
- No effusion, pain or instability.
- Quadriceps strength 85 to 90% of the other leg.
- Hop tests greater than 85% of the other leg.
- Satisfactory core strength and endurance.
- Sport-specific drills completed with the therapist.

PHASE	TYPICAL TIMING	FOCUS	CRITERIA TO ADVANCE
I Protection	0-2 weeks	- Control pain and swelling and protect the healing medial structures. Weight bearing as tolerated with crutches for comfort and a patellar stabilizing brace or sleeve without rigid locking. - Early progressive ROM with emphasis on full extension. - Immediate quadriceps activation in full extension, with NMES as needed.	- Swelling controlled. - Straight leg raise without a quadriceps lag. - Walking without crutches.
II Recovery	3-6 weeks	- Full ROM by about 6 weeks and a normal gait. - Wean the brace by 3-4 weeks. - Progressive quadriceps strengthening in low patellofemoral stress arcs (closed chain 0-50°, open chain 90-45°). - Hip abductor, external rotator, hamstring and core strengthening. - Balance and proprioception.	- Full symmetric ROM. - Trace to no effusion. - Quadriceps strength at least 70-80% of the other leg. - Good single leg squat control without dynamic valgus.
III Function	6-12 weeks	- Progress depth and load toward single leg strength. - Neuromuscular control of dynamic valgus. - Walk-to-jog program, then plyometrics, then agility. - Cutting, change of direction and uneven ground come last.	All criteria for return to sport.
IV Return to sport	Usually 6 weeks to 3 months	- Sport-specific drills with the therapist. - A patellar stabilizing brace can be used for sport for up to a year after the injury.	Return when all criteria for return to sport are met.

WHY THE PROTOCOL LOOKS LIKE THIS

- Early motion beats rigid immobilization.
- Quadriceps work starts in full extension where patellofemoral loading is lowest.
- Strengthening stays in low stress arcs early. Closed chain 0-50° and open chain 90-45° to keep patellofemoral joint forces low while the medial restraints heal.
- The hip controls the patella. Hip abductor and external rotator strength limit femoral internal rotation and dynamic valgus, which pull the patella laterally.

WHEN TO CONTACT US

- Another dislocation or subluxation.
- Recurrent effusion, catching or locking.
- Persistent apprehension or giving way despite progressing strength.
- ROM or strength that plateaus or regresses.

WEEKS 0-2

 PRECAUTIONS

- Avoid lateral patellar glides. Gentle medial glides only if the patella is hypomobile.
- No closed chain loading in deep flexion and no open chain knee extension through the 0-60° arc.
- No pivoting, cutting or contact sport.

 WEIGHT BEARING AND BRACE

- **Weight bearing as tolerated** with crutches for comfort.
- **Patellar stabilizing brace or sleeve.** Avoid rigid locking.

 RANGE OF MOTION

- **Early progressive ROM** with emphasis on full extension.
- Towel roll extensions and prone hangs as needed.

 EXERCISES

- **Quad sets and straight leg raises** in full extension. NMES for the quadriceps as needed.
- Multi-angle isometrics and adductor squeezes as tolerated.
- Ankle pumps, gastrocnemius and soleus strengthening.
- Core and upper body strengthening.

 MODALITIES

- **Cryotherapy** for 15 minutes 3 times a day, with compression.

WEEKS 3-6

 PRECAUTIONS

- Closed chain 0-50° and open chain 90-45° only. No deep squats beyond 85°.
- Avoid dynamic valgus during strengthening and functional activities.
- No pivoting, cutting or contact sport.

 WEIGHT BEARING AND BRACE

- **Full weight bearing** and normalize gait.
- **Wean the brace by 3-4 weeks.** It can still be used for exercise and longer walks.

 RANGE OF MOTION

- **Full ROM by about 6 weeks.**

 EXERCISES

- **Active warm-up:** bike, elliptical or treadmill walking.
- Leg press, mini squats and wall slides from 0-50°. Seated knee extension from 90° to 45°.
- Step-ups, partial lunges and lateral step-overs.
- **Hip:** side-lying abduction, clamshells, prone hip extension and side steps with a band.
- Hamstring strengthening.
- Balance and proprioception, double leg progressing to single leg. Core stability.

WEEKS 6-12

 EXERCISES

- **Continue Weeks 3-6 exercises** and progress the load.
- Step-ups, eccentric step-downs, lunges, and progressively deeper and single leg squats.
- Lateral band walks and Trendelenburg work.
- Neuromuscular control drills for dynamic valgus. Advanced balance: single leg eyes closed and perturbation.

 RUNNING AND AGILITY

- Walk-to-jog program once **quadriceps strength is 70-80%** of the other leg.
- Then double leg, then single leg plyometrics.
- Then agility. **Cutting, change of direction and uneven ground come last.**

RETURN TO SPORT

RETURN TO SPORT

- Sport-specific drills with the therapist.
- **Return to sport** when the criteria for return to sport are met, usually about 6 weeks to 3 months after the injury.
- A **patellar stabilizing brace can be used** for sport for up to a year after the injury.

WEEK-BY-WEEK PROGRESSION

EXERCISE	1	2	3	4 (1 mo)	5	6	7	8 (2 mo)	9	10	11	12 (3 mo)	14	16 (4 mo)
Weight Bearing and Brace														
Weight bearing as tolerated, crutches for comfort														
Full weight bearing, normalize gait														
Patellar stabilizing brace or sleeve														
Brace optional for exercise and sport														
Range of Motion														
Early progressive ROM, emphasize extension														
Progress to full ROM (by about 6 weeks)														
Full ROM														
Early Strengthening														
Quad sets, SLR in full extension, NMES														
Multi-angle isometrics, adductor squeezes														
Calf, core and hip abduction														
Progressive Strengthening														
Closed chain 0-50° (leg press, mini squat, wall slide)														
Open chain knee extension 90-45°														
Clamshells, prone hip extension, band side steps														
Step-ups, lunges, deeper and single leg squats														
Balance and Neuromuscular Control														
Double leg progressing to single leg balance														
Dynamic valgus control, perturbation														
Cardiovascular Exercises														
Bike, elliptical, treadmill walking														
High-Level Activities														
Walk-to-jog program (quad strength 70-80%)														
Plyometrics, double then single leg														
Agility, then cutting and pivoting														
Return to sport (criteria met)														

Based on Honkonen EE, et al. Am J Sports Med. 2022;50(7):1867-1875 and Lampros RE, Tanaka MJ. Return to play considerations after patellar instability. Curr Rev Musculoskelet Med. 2022;15(6):597-605. This protocol is a general guideline and does not replace the clinical judgment of the treating therapist and surgeon. Please contact our office with any questions.