



TEXAS BONE & JOINT

drjoshuapayne.com

Fort Worth/Alliance
3025 North Tarrant Parkway,
Suite 140
Fort Worth, TX 76177
Office: 817-697-3900
Fax: 817-562-8530

North Richland Hills
4300 City Point Drive,
Suite 102
North Richland Hills, TX 71680
Office: 682-253-3999
Fax: 817-590-5664

Anterior Knee pain/

Patellofemoral Syndrome/Jumper's knee Rehabilitation Protocol

The intent of this protocol is to provide the clinician with a guideline of postoperative rehabilitation course. It is not intended to be a substitute for appropriate clinical decision making regarding the progress of the patient's postoperative course. The actual post-surgical physical therapy management must be based on the surgical approach, physical exam/findings, individual progress, and/or the presence of postoperative complications. If a clinician request assistance in the progression of a patient post-surgery, they should consult Dr. Payne.

This rehabilitation protocol has been developed for the patient with general tenderness around the kneecap which may increase in intensity with daily and sports activities. The symptoms will often decrease with rest and are frequently bilateral. Sports activities, especially running, stairs, sitting with knees flexed for long periods of time, and deep squatting activities may intensify the pain. Early intervention of strengthening and stretching is recommended to decrease pain and assist in returning to activity. The protocol is divided into phases. Age phase is adaptable based on the individual patient in specific circumstances. Progressed through the phases as pain, range of motion, swelling and strength allow. The overall goals of the rehabilitation per protocol are to:

- Control pain and swelling
- Regain normal knee range of motion
- Establish appropriate stretching and strengthening exercises
- Regain normal proprioception, balance, and coordination for daily activities
- Achieve the level of function based on the orthopedic and patient goals

Physical therapy is an important intervention to assist the patient in early rehabilitation and attaining a level of fitness to return to functional activity without pain. It is extremely important for the supervised rehabilitation to be supplemented by home fitness program where the patient performs the given exercises at home or at a gym facility. Physical therapy for PF syndrome/jumper's knee varies in length on factors such as:

- Structures involved: Infrapatellar tendon, patellar cartilage plica, or patellar tracking
- Acute versus chronic condition
- Lower extremity flexibility
- Lower extremity biometrics: Pronated foot, leg lengths
- Performance or activity demands
- Muscular strength and endurance

Return to activity requires both time and clinical evaluation. To safely and most effectively return to normal or high functional activity, the patient requires adequate strength, flexibility, and endurance. Return to intense

activities may increase the possibility of repeat injury or the potential of compounding the original injury. Symptoms such as pain, swelling, or instability should be closely monitored by the patient.

Phase 1

Exercise

ROM

- Full range of motion
- Hamstring/ITB/gastroc/soleus/quad/hip flexor stretches
- Patella mobs

Strength

- Quad sets with biofeedback
- SLR in 4 planes
- Heel raise/toe raise
- S AQ (30-0 degrees)
- Leg press (0-45 degrees)
- Hamstring curls
- TKE with Thera-Band
- Bicycle with resistance with seat high

Balance training

- Single-leg balance with plyotoss
- Sport cord balance/agility work
- Wobble board balance work
- Half foam roller balance work
- Mini TRAM balance work

Modalities

- E-stim/biofeedback as needed
- Ice 15-20 minutes

Goals of phase:

- Control pain and inflammation
- Independent in HEP
- Initiate muscular strength and endurance training without pain
- Educate patient on diagnosis
- Adequate quad/VMO contraction

Phase 2

Exercise

ROM

- Continue with all strength exercises from phase 1, concentrating on muscle group with greatest deficiency

Strength

- SLR with ankle WT/tubing
- S AQ with ankle weight
- Knee extension (90-45 degrees, 90-30 degrees)-range of motion depending on pain
- Leg press-single leg eccentric
- Hamstring curl

- Reverse lunge—not to migrate knee over toe
- Mini squat (0 to 30 degrees)
- Stool crawl
- Straight leg dead lift
- Multi-hip and 4 directions
- Bicycle for endurance
- EF X for strength and endurance

Balance training

- Continue with all balance activities from phase 1
- Advance balance–neuromuscular by variance of surface

Modalities

- Ice 15-20 minutes

Goals of phase:

- Minimize pain with all exercise
- Enhance lower extremity strength and endurance
- Normalize dynamic balance, proprioception, and coordination
- Preparation for return to functional activities

Phase 3

Exercise

ROM

- Continue with all strengthening activities from previous phases

Strength

- Continue with all strengthening activities from previous phases increasing weight and repetition
- Progressively increase resisted knee range of motion within a pain-free arc
- Continue with all eccentric quad/hamstring work
- Bicycle for strength and endurance
- EFX for strength and endurance
- Advance all single-leg activity within pain-free range

Balance training

- Continue with advanced balance, proprioception, and coordination training

Running program

- Initiate running on a mini tramp, progressing to treadmill as tolerated
- Initiate drop rope for impact/endurance activity
- Backward running

Agility program

- Initiate agility drills–carioca, high knee drills, short sprints, figure eights

Functional program

- Initiate sport specific drills
- Initiate functional drills

Modalities

- Ice 15-20 minutes as needed for pain and/or swelling

Goals of phase:

- Maximize lower extremity strength and endurance

- Maximize balance, proprioception, and coordination
- Minimize pain and swelling
- Return to functional activities
- Return to sports specific activities

Patellofemoral pain/syndrome is a common problem. With recognition of the problem in early intervention, this problem can be treated and allow for return to maximal performance and participation in sport activities for a lifetime.