

Recurrent Unremitting Patellar Tendinitis Rehabilitation Program

Phase I

Goals: Diminish pain and inflammation
 Promote tendon healing
 Improve quadriceps strength
 Enhance flexibility
 Control functional stresses

Treatment Regimen:

- Hot packs applied to knee
- Phonophoresis to patellar tendon
- Transverse friction massage
- Warm-up bicycle (10-12 min.)
- Stretch (hamstrings quadriceps, gastroc)
- Application of pain stimulation to PT x 10 minutes
 - Electrical stimulation parameters
 - Waveform: Russian
 - Frequency: 2500 Hz pulse; width: 200 MS;
Rate: 50/sec
 - 60 pulses per second (pps)
 - duty cycle 10 on/10 off; ramp of 1 second
 - pad placement- 1"x1" electrodes placed on each side of inflamed/painful tendon (After 3 minutes, palpate tendon, should be less painful and becoming numb, if not, move electrodes)
- Quadriceps strengthening program (Level I)
 - E-stim to quadriceps*
 - Quad sets*
 - SLR flexion*
 - Hip adduction/abduction*
 - Vertical squats (tilt board)
 - Hip flexion/extension

- Toe-calf raises
- Bicycle (15-20 min.)
- *Monitor subjective pain level response (goal level 5-7)
- Pool program
- Stretch (aggressive stretching)
- Cryotherapy

Phase II

Goals: Gradual increase stress to patellar tendon
 Enhance quadriceps strength
 Improve flexibility
 Gradual increase functional activities

Treatment Regimen:

- Hot packs or warm whirlpool
- Phonophoresis to patellar tendon
- Transverse massage to patellar tendon
- Active warm-up bicycle (10-12 min.)
- Stretch (hamstrings, quadriceps, gastroc)
- Application of pain stimulation
 - (use for 3-4 times in this phase)
 - (discontinue as soon as possible)
- Strengthening program (Level II)
 - Leg press (90-0°) and (45-100°)
 - Hip add/abduction
 - Hip flex/extension
 - Wall squats (0-70°)
 - Lateral step-up (foam)
 - Front lunges
 - Knee extension (progress from concentric to eccentric)
 - Leg press (progress from concentric to eccentric)
 - Hamstring curls
 - Toe-calf raises
 - Bicycle/stairmaster
 - Control forces to knee
 - Enhance hip & ankle strength & stability
 - Core stability
- *Monitor subjective pain level response (goal 5-7)
 - Aggressive stretching

- Cryotherapy

Phase III

Goals: Gradually increase applied loads
 Functional training
 Enhance lower extremity strength
 Improve flexibility

Treatment Regimen:

1. Hot packs to knee
 2. Phonophoresis to patellar tendon
 3. Transverse massage
 4. Active warm-up
 5. Stretch
 6. Strengthening program (Level III)
 7. Continue previous exercises
 8. Continue eccentric progression
 9. Leg press
 10. Hip machine
 11. Wall squats
 12. Tilt board squats
 13. Lateral step-ups
 14. Front step-downs
 15. Agility drills
 16. Lunges onto unstable surface
 17. Step-ups on unstable surface
 18. Single leg balance on unstable surface
 19. Plyometric program
 20. Initiate two-legged jumps
 21. Progress to one-legged jumps
- *Monitor pain level (goal level 5-7)
- Progress to running program
 - Backward running
 - Lateral movements
 - Forward running
 - Stretching

Phase IV

Goals: Sport specific training
Continue stretching/flexibility program
Continue strengthening program

Treatment Regimen:

- Heat and ultrasound (if needed)
- Active warm-up
- Stretching
- Continue strengthening program
- Initiate sport specific drills and training
- Progress to practice situation
- Stretch
- Ice (if needed)