

Rehabilitation Protocol: Patellar Tendinopathy – Non-Operative

Goal: manage excessive tendon load **without prolonged complete unloading**, restore quadriceps and patellar tendon capacity, then rebuild energy-storage (plyometric) and sport-specific loading. **Progressive tendon-loading exercise is the central treatment**; passive treatments alone do not change tendon capacity. Progress based on symptoms and function, not time. Please contact our office with any questions or concerns.

☐ Phase I – Reduce Irritability, Maintain Capacity (Isometric Loading): 1–2 weeks

- **Load modification:** Reduce jumping, sprinting, cutting and other high-load energy-storage activity to a tolerable level (pain $\leq 3/10$ during activity, settling within 24 hours). Maintain conditioning with bike, swimming, upper body.
- **Isometrics:** Spanish squat or leg-extension hold at 60° knee flexion – 5 reps $\times$ 45 seconds at 70% maximal effort, 2–3 $\times$ daily
- **Kinetic chain:** Begin hip (gluteal) and calf strengthening; address ankle dorsiflexion and hamstring/quadriceps flexibility deficits
- **Criteria to Progress:** Baseline symptoms and response to loading stable (pain stable or improving day to day)

☐ Phase II – Restore Quadriceps and Tendon Strength (Isotonic Loading): 4–8+ weeks

- **Slow isotonic:** Squat, leg press, knee extension, split squat, decline squat – 3 seconds up, 3 seconds down; 3–4 sets of 6–15 reps, every other day (moderate or heavy slow resistance both effective)
- **Progression (24-hour rule):** Pain up to 3–5/10 during exercise acceptable if back to baseline by the next morning
- **Eccentrics:** Decline-board single-leg squats are useful but should not be the only loading strategy
- **Isometrics:** Continue on days between isotonic sessions for pain relief
- **Criteria to Progress:** Resistance well tolerated; e.g., pain-free single-leg decline squat and single-leg press $\geq$ body weight

☐ Phase III – Restore Energy-Storage Capacity (Plyometric Loading): 4–6+ weeks

- **Graded plyometrics:** Bilateral to unilateral, low to high intensity, landing to jumping to hopping; 2–3 sessions/week with 2–3 days between energy-storage sessions
- **Running:** Progress running, acceleration/deceleration and change of direction to sport demands
- **Strength:** Continue Phase II strength work 2–3 $\times$ per week
- **Criteria to Progress:** Repeated energy-storage loading tolerated without a clinically important next-day flare

☐ Phase IV – Return to Sport: typically 3–6 months from start

- **Sport-specific progression:** Progress jump count, sprint volume, cutting and repeated-effort drills; full practice before unrestricted competition
- **Load monitoring:** Increase training volume $\leq 10\%$ per week; morning single-leg decline squat as a pain-provocation check
- **Maintenance:** Heavy slow resistance 1–2 $\times$ per week and isometrics as needed in-season and off-season

Throughout All Phases

- **Throughout:** Track pain/function (VISA-P), strength, training volume and sport tolerance. Imaging need not normalize before clinical recovery. A patellar tendon strap may reduce symptoms during activity. Injections are not a substitute for loading.
- **Contact our office:** Sudden pop, acute extensor weakness, inability to straight leg raise, or concern for a partial/high-grade tear. Persistent next-day worsening means load progression should be reduced.



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