ADVANZ HEALTH

SPORTS MEDICINE | PHYSIOTHERAPY

LOWER LIMB TENDINOPATHY

REHABILITATION PROTOCOL

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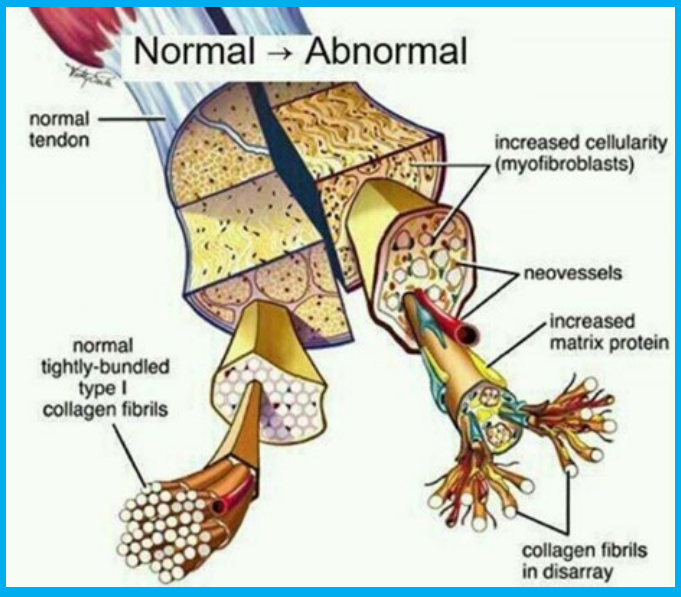
LOWER LIMB TENDINOPATHY

Tendinopathy is a condition where a tendon (structure connecting muscle to bone) becomes painful and weakened due to excessive forces being placed on it.

Causes

- Overtraining
- Sudden or rapid increase in activity
- Poor movement technique
- Strength/mobility imbalances



Stages

1. Reactive – early stage acute injury
2. Dysrepair – mid-stage changes to tendon
3. Degenerative – chronic tendon damage

EXPECTED PROGNOSIS

Due to poor blood supply, tendinopathy can take a long time to resolve. Secondary to this, they are quite irritable (can be easily aggravated). Recovery times are usually dictated by severity and length of time the injury has been present for, often taking up to 3 months to resolve.

PRINCIPLES OF "LOADING"

Tendons are designed to take "load" or force. Increases in the amount of load a tendon can take should be incremental and slow to ensure the tendon is not overloaded. If increases in load occur too quickly, the tendon will again become aggravated. It is important to avoid progressing through the below rehab program too quickly as this is likely to result in relapse. E.g. If your pain has resolved after just 2 weeks, you should avoid trying to return to your pre-injury training intensity immediately – you must slowly build back up.

PHASE 1 – EARLY REHAB (TAKES 2-4 WEEKS DEPENDING ON SEVERITY)

GOALS	PRECAUTIONS	RECOMMENDED PROGRAM	CRITERIA TO PROGRESS TO NEXT PHASE *(TICK WHEN COMPLETE)*
• Stabilise pain • Identify underlying causes • Patient understands principles of "load" • Improve biomechanics (movement technique) • Maintain fitness whilst offloading tendon	• Avoid any activities that cause pain levels greater than 2/10 (on a scale of 0=no-pain to 10=max-pain). • Avoid stretching the area. • Avoid poor footwear (high-heels, non-supportive shoes).	1. Static holds off step (no movement): - 5 sets of 60sec hold (with 60sec rest between each set), 3 x per day. - Commence with bodyweight and add weight as able. **Important:** pain must not increase above 2/10 during/ after the exercise or with the first few steps the next morning. 2. **Ice** therapy for pain relief (GameReady in clinic or ice-bath at home) 3. **Comprehensive assessment** from physiotherapist to identify areas of weakness, technique error and poor mobility that caused injury 4. **Pilates reformer** program (individualised program to address weakness and movement errors) 5. **Temporary orthotic** or taping may be required to off-load tendon (heel wedges, arch lift)	☐ Level 1-5 of the static hold exercises ☐ No pain above 2/10 with daily activities, during/after the above exercise or with the first few steps in the morning. ☐ Full range of motion (knee to wall test)

PHASE 2 – STRENGTH PHASE (TYPICALLY TAKES BETWEEN 2-4 WEEKS)

GOALS	PRECAUTIONS	RECOMMENDED PROGRAM	CRITERIA TO PROGRESS TO NEXT PHASE *(TICK WHEN COMPLETE)*
• Maintain pain control • Increase tendon capacity • Improve whole-body strength • Maintain fitness whilst offloading tendon	• Avoid any activities that cause pain levels greater than 2/10 (on a scale of 0=no-pain to 10=max-pain). • Avoid stretching the area. • Avoid poor footwear (high-heels, non-supportive shoes).	1. Continue **Static ankle holds off step** (with weight) from Phase 1 once per day. **2. Ankle raises:** - choose which version based on injured tendon (see videos) - 3 sets of 10 repetitions (60sec rest between sets), 2 x per day. **Important:** pain must not increase above 2/10 during/ after the exercise or with the first few steps the next morning. 3. Continue **individualised exercise program** (e.g. reformer Pilates) that target areas of weakness, technique error and poor mobility that caused injury. **4. Fitness maintenance:** swimming, boxing, upper-body weight training, cross-trainer 5. Use of **temporary orthotic** or **taping** should start to be gradually reduced as strength improves.	☐ Single leg ankle raises with load ☐ No pain above 2/10 with daily activities, during/after the above exercise or with the first few steps in the morning. ☐ Full range of motion (knee to wall test) ☐ Target areas of weakness, technique error and poor mobility improving as determined by your physiotherapist

PHASE 2 – POWER PHASE (TYPICALLY TAKES BETWEEN 2-4 WEEKS)

GOALS

- Return to sport/activity
- Restore full tendon strength/ power
- Resolve all pain
- Improve whole-body strength
- Maintain fitness whilst offloading tendon
- Prevent recurrence

PRECAUTIONS

- Avoid any activities that cause pain levels greater than 2/10 (on a scale of 0=no-pain to 10=max-pain).
- Avoid plyometric exercises (e.g. jumping, hopping) on consecutive days.

RECOMMENDED PROGRAM

1. Continue **Static ankle holds off step** (with weight) from Phase 1 once per day.
2. Continue **Ankle raises:** (from phase 2) 3 days per week: - 3 sets of 10 repetitions (60sec rest) **with heavy weight.**
3. Plyometric exercises: (See videos)
   - Start with 5 sets of 5 reps, 2-3 days per week.

   Progress through levels:

- L1: double leg (jumping)
- L2: single leg (hopping)
- L3: increase speed
- L4: increase duration

Important:
- Have a "rest day" every 3rd day (continue static holds)
- Pain must not increase above 2/10 during/after the exercise or with first few steps the next morning.

4. Progress individualised exercises to sports/activity specific.
5. **Fitness maintenance:** swimming, boxing, upper-body weight training, cross-trainer
6. Use of **temporary orthotic** or **taping** should start to be gradually reduced as strength improves.

CRITERIA TO PROGRESS TO NEXT PHASE *(TICK WHEN COMPLETE)*

- ☐ Strength and power >95% of non-injured leg
- ☐ No pain with daily activities, sports, during/ after rehab exercises or with first few steps in the morning
- ☐ Full range of motion (knee to wall test)
- ☐ Pre-injury fitness/load restored (or enhanced)
- ☐ Biomechanical errors resolved

NB: It is recommended to continue your phase 3 program for 6 weeks after full resolution of pain/symptoms and returning to your normal activities/ sport.

PHASE 1 - (ISOMETRIC)

REFORMER	HEP
• Achilles • Hamstring	• Clams, theraband arms • 4-pt kneeling series (foundation plank, supermans, deep neck flexor series) • Supine core work (toe taps, bent knee fall outs, knee rotations) • Mobility on roller/ball

PHASE 2 - (CONC/ECC)

REFORMER	HEP
• Double leg supine • Skater • Scooter • Squats • Seated arm work (or kneeling) • Core: arms in straps, planking	• Squats • Bridges • Crab walks • Balance • Foot intrinsics • Lunges • Step ups • Clams, theraband arms • 4-pt kneeling • Spine core work • Mobility on roller/ball

PHASE 3- (PLYO):

REFORMER	HEP
• Jump board • TRX jumps • Bosu jumps • Squats • Kneeling arm work (or kneeling) • Core: arms in straps, planking	• Running rehab • Hops • Bosu • Strength/resistance work

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