

1. Phased Achilles Tendon Loading Program

(As per Silbernagel et al. **Continued sports activity using a pain monitoring model during rehabilitation in patients with Achilles tendinopathy.** Am J Sports Med. 2007;35(6):897-905.)

Phase 1: Weeks 1-2

Patient status: Pain and difficulty with all activities, difficulty performing ten 1-legged heel raises

Goal: Start to exercise, gain understanding of their injury and of pain-monitoring model

Treatment program: Perform exercises every day

- Pain-monitoring model information and advice on exercise activity
- Circulation exercises (moving foot up/down)
- Two-legged heel raises standing on the floor (3 sets of 10-15 repetitions/set)
- One-legged heel raises standing on the floor (3 sets of 10)
- Sitting heel raises (3 sets of 10)
- Eccentric heel raises standing on the floor (3 sets of 10)

Phase 2: Weeks 2-5

Patient status: Pain with exercise, morning stiffness, pain when performing heel raises

Goal: Start strengthening

Treatment program: Perform exercises every day

- Two-legged heel raises standing on edge of stair (3 sets of 15)
- One-legged heel raises standing on edge of stair (3 sets of 15)
- Sitting heel raises (3 sets of 15)
- Eccentric heel raises standing on edge of stair (3 sets of 15)
- Quick-rebounding heel raises (3 sets of 20)

Phase 3: Weeks 3-12 (longer if needed)

Patient status: Handled the phase 2 exercise program, no pain distally in tendon insertion, possibly decreased or increased morning stiffness

Goal: Heavier strength training, increase or start running and/or jumping activity

Treatment program: Perform exercises every day and with heavier load 2-3 times/week

- One-legged heel raises standing on edge of stair with added weight (3 sets of 15)
- Sitting heel raises (3 sets of 15)
- Eccentric heel raises standing on edge of stair with added weight (3 sets of 15)
- Quick-rebounding heel raises (3 sets of 20)
- Plyometric training

Phase 4: Week 12-6 months (longer if needed)

Patient status: Minimal symptoms, morning stiffness not every day, can participate in sports without difficulty

Goal: Maintenance exercise, no symptoms

Treatment program: Perform exercises 2-3 times/week

- One-legged heel raises standing on edge of stair with added weight (3 sets of 15)
- Eccentric heel raises standing on edge of stair with added weight (3 sets of 15)
- Quick-rebounding heel raises (3 sets of 20)

2. 12 Week Eccentric Loading Program

(As per Alfredson H, Pietila T, Jonsson P, Lorentzon R. **Heavy-load eccentric calf muscle training for the treatment of chronic Achilles tendinosis.** Am J Sports Med. 1998; 26(3): 360-66.)

3 x 15 repetitions twice per day with extended knee, and another 3 x 15 repetitions twice per day with a flexed knee. All exercises were 7 days per week. Patients were told to continue to exercise with pain unless it became disabling. Patients were allowed to jog during their 12-week rehabilitation so long as it caused only mild discomfort.

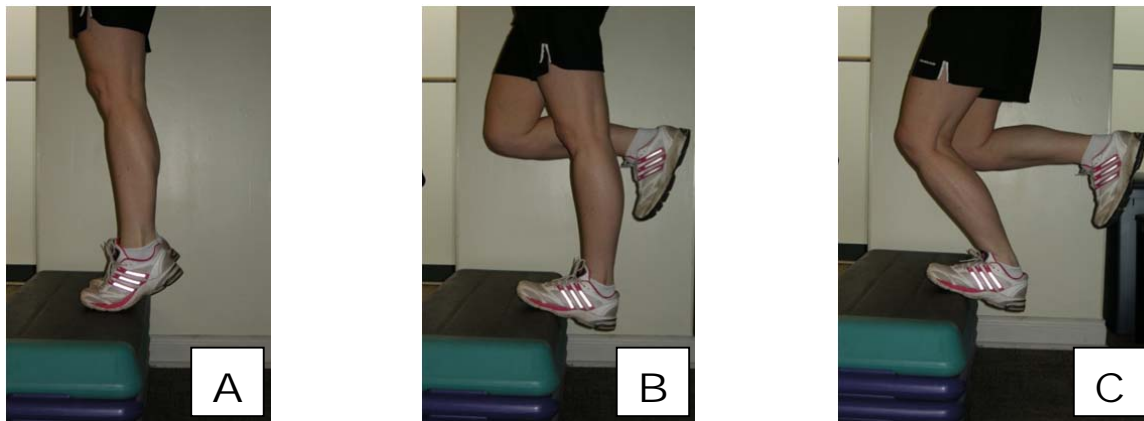


Figure 1. From an upright body position and standing with all body weight on the forefoot and the ankle joint in plantar flexion lifted by the non-injured leg (A), the calf muscle was loaded eccentrically by having the patient lower the heel with the knee straight (B) and with the knee bent (C).



Figure 2. Once the eccentric loads were performed at body weight without any discomfort, subjects were given a backpack that was successively loaded with weight. In this way their eccentric loading was gradually increased. If very high weights ended up becoming needed then the subject used a weight machine.