Supplementary files:

1S. Eligibility criteria

Inclusion Criteria:

1. Current diagnosis of Achilles tendinopathy
2. Subjects must be able and willing to give written informed consent and to comply with the requirements of this study protocol
3. Subjects must be male or female, aged 18 years or above at Baseline
4. Achilles pain of >3 months or more
5. Mid-portion Achilles tenderness and thickening on palpation
6. Confirmation of the diagnosis upon Ultra-sound assessment, and ruling out of other pathologies (eg: ruptures)

Exclusion Criteria:

1. Previous corticosteroid injection to the affected tendon in the past 3 months
2. Symptoms of less than 3 months duration
3. Previous use of topical GTN
4. Current use of nitrates, eg: GTN spray, tablet, transdermal patch.
5. Contra-indication to GTN therapy (see section 12.2.3)
6. Current pregnancy, breastfeeding or planning pregnancy
7. VISA-A score > 80
8. Previous surgery to the affected Achilles tendon
9. Seronegative spondyloarthropathy with Achilles enthesitis
10. Previous performance of a heavy load eccentric exercise program of the Achilles in the last 2 years
11. Severe migraines which fail to respond to over the counter medication and require specific migraine management
12. Inability to perform the exercise program due to serious illness, such as unstable angina/blood pressure, myocardial infarction in past three months, cardiomyopathy, uncontrolled metabolic disease, recent ECG changes, advanced respiratory disease or third degree heart block.
13. Any medical or psychiatric condition that the investigator deems appropriate for exclusion
14. Staff or students of Connolly Hospital Physiotherapy Department, Blanchardstown.

2S. Secondary outcome measures

- Quadruple Numerical Rating Scale (NRS) for pain severity, which includes four components: current pain, average pain, pain at its best and pain at its worst, scored on a 0-10 scale
- Lower Extremity Functional scale (LEFS), is a self-report valid and reliable measure of functional ability suitable for use in lower extremity musculoskeletal conditions, including Achilles tendinopathy. Scores range from 0-80, with higher scores indicating better function.
- Pressure pain threshold (PPT), the first point at which pressure applied to the tendon becomes pain, was measured using a Wagner pressure algometer with a 1cm^2 rubber tip (Wagner Instruments, Greenwich, Connecticut, USA). The mean result of the three readings was used for analysis.
- Tendon thickness, indicative of tendon pathology, was measured using grey-scale ultrasound. The thickest point (Anterior to Posterior (A-P) distance), of the tendon was measured using previously described methods (Fredberg et al, 2007). The mean score of three thickness measures was used for analysis
- Calf muscle function was assessed using two tests, which have demonstrated reliability for use in Achilles tendinopathy. The heel raise test for endurance entails, in a single-leg-stance position, rising into plantarflexion with the knee straight at a set pace for as many repetitions as possible. The number of heel raises completed and any pain associated with the test was recorded using a pain NRS. The hopping test entails hopping on one leg for as many repetitions as possible, with termination of the test if there was an increase in pain severity.
- The Y-balance test (YBT) is a reliable measure of dynamic balance, suitable for use in lower limb pathologies (ref). Results were normalised to limb length and the mean of the three trials used for analysis.

Table 3S. Total adverse reactions and events among trial participants for the reporting period.

Participants (n=76)	Number	Percentage
Serious adverse reactions	**0**	0%
Serious adverse events	**1**	1%
Adverse reactions	**8**	11%
Headache	4	5%
Nausea	1	1%
#Skin irritation	3	4%
Adverse events	**6**	8%
Calf muscle soreness	1	1%
Ankle swelling	1	1%
Injuries to other body parts (unrelated to the trial)	3	4%
Other	1	1%
Total number of participants who withdrew	**2**	3%
Serious adverse event (Achilles Rupture)	1	1%
Adverse reaction (skin irritation)	1	1%

Skin irritation may have been as a result of the ointment, the adhesive tape or the paper applicator.

Table 4S. Adverse reactions/undesirable side effects in the GTN and placebo group [a]

Side Effects/Adverse Reactions	GTN (n=37)	Placebo (n=39)
Headache	2 (5%)	2 (5%)
Skin irritation/Rash	3 (8%) *	0
Nausea	1 (3%)	0
Other	0	0
Total Side effects (%)	6 (16%)	2 (5%)
No side effects experienced	31 (84%)	37 (95%)

GTN, glyceryl trinitrate.
*One participant was withdrawn from the trial due to persistent skin irritation. All other side effects were monitored, short-lived, reversible and resolved with no action required and did not require withdrawal of any participant.
[a]The data given is number of patients with percentages in parentheses.

Table 5S. Adverse events, unrelated to the medication, in the GTN and placebo group.

Adverse events, number (%)	GTN (n=37)	Placebo (n=39)
Other injury to other body part unrelated to trial	2 (5%)	1 (3%)
Muscle soreness	0	1 (3%)
Ankle swelling	1 (3%)	0
Eye swelling (unrelated)	1 (3%)	0

GTN, glyceryl trinitrate