

# The TREADON study: Treatments of exercise and orthotic devices for plantar heel pain

<b>Submission date</b>	<b>Recruitment status</b>	<input checked="" type="checkbox"/> Prospectively registered
08/06/2016	No longer recruiting	<input type="checkbox"/> Protocol
<b>Registration date</b>	<b>Overall study status</b>	<input type="checkbox"/> Statistical analysis plan
05/07/2016	Completed	<input checked="" type="checkbox"/> Results
<b>Last Edited</b>	<b>Condition category</b>	<input type="checkbox"/> Individual participant data
04/03/2022	Signs and Symptoms	

## Plain English summary of protocol

### Background and study aims

Pain under the heel, known as planter heel pain (PHP) is a relatively common condition with up to 1 in 10 adults affected at some point in their lives. PHP can restrict the ability to walk and to complete everyday tasks including work. Only four of every ten patients are referred by GPs to other NHS health professionals, such as physiotherapists or podiatrists, for treatments of adjustable shoe insoles (called prefabricated foot orthoses) and/or exercise. The reason that patients are not routinely referred for these treatments may be because evidence is lacking as to whether exercise or shoe insoles or a combination of both, are the best possible treatment options. This study will investigate the clinical and cost-effectiveness of individualised exercise or adjustable shoe insoles delivered by physiotherapists and podiatrists compared with self-management advice for patients with PHP. In order to determine this, a large scale trial is needed and so the aim of this study is to conduct an initial study looking at how best to recruit patients, how acceptable the treatments are to patients and how well patients are able to follow the different treatment programs.

### Who can participate?

Adults with heel pain which is made worse by putting weight on it.

### What does the study involve?

Participants are randomly allocated to one of four groups. Those in the self-management group receive an advice booklet about PHP, which includes information about stretching exercise, pain relief, suitable footwear, and weight loss to help lower pain levels. Those in the exercise and self-management group also receive the advice booklet as well as up to six appointments over 12 weeks with a physiotherapist or podiatrist (person qualified to treat disorders of the foot, ankle or lower leg) to learn individualised exercises to help lower pain. Those in the orthoses and self-management group receive the advice booklet as well as up to six appointments over 12 weeks with a physiotherapist or podiatrist who will prescribe them special insoles to wear in their shoes to help reduce pain. Those in the exercise, orthotics and self-management advice group receive the advice booklet, exercise sessions and insoles. Participants in all groups are sent a weekly text message or phone call so they can rate their current level of pain. At the start of the study and then after 12 weeks, participants complete a number of questionnaires to measure foot pain and function, as well as their quality of life. At the end of the study, the amount of patients who

took part and the acceptability of the treatments to participants is also measured using questionnaires.

**What are the possible benefits and risks of participating?**

There are no direct benefits and there are no risks over and above those already known as these are interventions commonly used in routine clinical care.

**Where is the study run from?**

Arthritis Research UK Primary Care Centre, Keele University (UK)

**When is the study starting and how long is it expected to run for?**

November 2015 to November 2017

**Who is funding the study?**

National Institute for Health Research (UK)

**Who is the main contact?**

1. Dr Linda Chesterton (scientific)

[l.s.chesterton@keele.ac.uk](mailto:l.s.chesterton@keele.ac.uk)

2. Dr Nicola Halliday (scientific)

[n.halliday@keele.ac.uk](mailto:n.halliday@keele.ac.uk)

## Contact information

**Type(s)**

Scientific

**Contact name**

Dr Linda Chesterton

**Contact details**

Arthritis Research UK Primary Care Centre

Research Institute for Primary Care & Health Sciences

Keele University

Keele

United Kingdom

ST5 5BG

+44 1782 734888

[l.s.chesterton@keele.ac.uk](mailto:l.s.chesterton@keele.ac.uk)

**Type(s)**

Scientific

**Contact name**

Dr Nicola Halliday

**Contact details**

Arthritis Research UK Primary Care Centre

Primary Care Sciences

Keele University

Keele

United Kingdom  
ST5 5BG  
+44 1782 733899  
n.halliday@keele.ac.uk

## Additional identifiers

**Protocol serial number**  
N/A

## Study information

### Scientific Title

The TREADON (TReatments of Exercise AnD Orthotic devices for plaNtar heel pain) Pilot and Feasibility Trial

### Acronym

TREADON

### Study objectives

The aim of this study is to inform the robust design of a future, main, randomised controlled trial of advice, exercise and foot orthoses as interventions for adults with plantar heel pain (PHP).

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Not provided at time of registration

### Study design

Four-arm multi-centre randomised pragmatic pilot and feasibility trial

### Primary study design

Interventional

### Study type(s)

Treatment

### Health condition(s) or problem(s) studied

Plantar heel pain

### Interventions

Participants will be randomised to one of four intervention arms. Randomisation will be conducted at Keele CTU using block randomisation (block size of 4) to ensure parity in allocation from each of the three invitation methods and for each treating centre.

#### Self-Management Advice:

Participants will receive an advice booklet about plantar heel pain. The booklet provides information on stretching exercises and self-help messages about pain relief, suitable footwear, rest and weight loss that can all help to reduce pain in the heel.

### **Exercise and Self-Management Advice:**

Participants will receive an advice booklet about plantar heel pain and attend up to six clinical appointments over a 12 week period with a treating clinician (physiotherapist or podiatrist). During an initial appointment participants will be taught how to perform and progress prescribed exercises and will be given an individualised and detailed exercise sheet describing the regimen and showing pictures of the exercises.

### **Orthoses and Self-Management Advice:**

Participants will receive an advice booklet about plantar heel pain and attend up to six clinical appointments over a 12 week period with a treating clinician (physiotherapist or podiatrist). During an initial appointment participants will be prescribed foot orthoses and instructed on their use.

### **Exercise, Orthotics and Self-Management Advice:**

Participants will receive an advice booklet about plantar heel pain and attend up to six clinical appointments over a 12 week period with a treating clinician (physiotherapist or podiatrist). During an initial appointment participants will be prescribed foot orthoses and instructed on their use.

Participants in all groups will be required to reply to a weekly text message or take a phone call regarding their current heel pain measured using the Numerical Rating Scale.

Twelve weeks following randomisation all participants will be mailed a follow-up pack containing a cover letter, a 12-week questionnaire and a pre-paid return envelope. Participants will be asked to complete the questionnaire and return it in the pre-paid envelope.

For non-responders, minimum data collection (MDC) to capture the primary outcome measures (NRS, MFPDI-PS and FFI-PS) will be undertaken by telephone approximately 3 weeks after the initial mailing. During this phone call if a participant declines to provide MDC over the phone they can be offered the choice to receive a postal MDC questionnaire.

All patients randomised to an exercise or foot orthoses intervention will be asked to keep a single page (5 questions) weekly paper diary over the 12 weeks of the intervention. This will capture adherence and general patient engagement with the intervention. Participants will be asked to return the diary to Keele CTU using a pre-paid envelope provided at 12 weeks.

### **Intervention Type**

Mixed

### **Primary outcome(s)**

Identification of primary outcome measure for the main trial, using the following options:

1. Average plantar heel pain over the last 7 days is measured using the Numerical Rating Scale (NRS 0-10) of plantar heel pain collected at baseline in the self report questionnaire, weekly via text messaging for 12 weeks and at the 12 week follow up via self report questionnaire
2. Foot pain is measured using the Manchester Foot Pain and Disability Index (MFPDI) pain subscale at baseline and 12 weeks via self report questionnaire
3. Foot pain is measured using the Foot Function Index Pain Subscale (FFI-PS) at baseline and 12 weeks via self report questionnaire

### **Key secondary outcome(s)**

Process outcomes:

1. Adherence to treatment is measured using adherence with interventions (variable number according to intervention) adapted from previous research at 12 weeks via self report questionnaires and through weekly self report diaries

2. Satisfaction with treatment is measured using a 3 x Likert scale adapted from previous research at 12 weeks via self report questionnaires
3. Credibility of treatment is measured using a 5 x Likert scale adapted from previous research at 12 weeks via self report questionnaires
4. Adverse events are measured at 12 weeks via self report questionnaires and through weekly self report diaries
5. Patient views on treatment adherence, satisfaction and credibility are measured using free text at 12 weeks via self report questionnaires

**Clinical outcomes:**

1. Presence of pain in the heel is measured with a yes/no question at baseline via self report questionnaires weekly via text messaging for 12 weeks and at 12 week follow-up via self report questionnaires
2. First step pain is measured using a Numerical Rating Scale 0-10 at baseline and 12 weeks via self report questionnaires
3. Plantar heel pain at 12 weeks relative to the pain at baseline is measured using the Global Impression of change score at 12 weeks via self report questionnaires
4. Presence of pain in the heel is measured with a yes/no question at baseline via self report questionnaires, weekly via text messaging for 12 weeks and at 12 week follow-up via self report questionnaires
5. Foot Function is measured using the Foot Function Index disability (9 items), activity limitation subscale (5 items) and a 10 point Likert scale at baseline and 12 weeks via self report questionnaires
6. Foot function and appearance is measured using the Manchester Foot Pain and Disability Index (MFPDI) functional subscale (10 items) and personal appearance (2 items) at baseline and 12 weeks via self report questionnaires
7. Health related quality of life is measured using the EQ5D-5L at baseline and 12 weeks via self report questionnaires

**Healthcare cost outcomes:**

1. Employment status is measured using Current Employment Status questions at baseline and 12 weeks via self report questionnaires
2. Performance at work is measured using a Numerical Rating Scale 0-10 at baseline and 12 weeks via self report questionnaires
3. Work loss (absenteeism) is measured with a number of days lost question at baseline and 12 weeks via self report questionnaires
4. Plantar heel pain health care utilisation is measured using questions to capture the use of prescribed or over-the-counter medications or interventions e.g. foot orthoses, heel pads, hospital investigations and use of private healthcare at 12-week follow-up

**Completion date**

01/11/2017

## **Eligibility**

**Key inclusion criteria**

1. Adults aged  $\geq$  18 years
2. Self-reported localised pain under the heel which is aggravated by weight bearing activities, worst when first standing or after a period of rest, especially on getting out of bed in the morning, or following periods of prolonged sitting
3. Symptom duration of episode of at least 4 weeks with a minimum pain score of 2 on a

**Numerical Rating Scale (NRS 0-10)**

4. Owns or has access to a mobile phone that receives text messages or a landline telephone
5. Able and willing to participate and provide written informed consent

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Total final enrolment**

82

**Key exclusion criteria**

1. Inflammatory arthritis (e.g. rheumatoid arthritis, ankylosing spondylitis, reactive arthritis, systemic lupus erythematosus, gout, psoriatic arthritis), fibromyalgia
2. Serious pathologies or serious suspected pathologies (e.g. malignancy, trauma, infection)
3. Current treatment for plantar heel pain or treatment in the last 3 months by a physiotherapist or podiatrist
4. Previous surgery or on waiting list for surgery on the affected foot
5. Corticosteroid injection into the affected foot in last 3 months
6. Unwilling or unable to participate with the interventions or unable to attend clinics for treatment
7. Unable (even with telephone support) to complete follow-up questionnaires written in English or unable to receive text messages or phone calls
8. Known skin allergies to common orthotic device materials (e.g. adhesives, latex, sock dyes, certain shoe types)

**Date of first enrolment**

01/11/2016

**Date of final enrolment**

15/08/2017

## Locations

**Countries of recruitment**

United Kingdom

England

## **Study participating centre**

**Keele University**

Arthritis Research UK Primary Care Centre

Primary Care Sciences

Keele University

Staffordshire

Keele

United Kingdom

ST5 5BG

## **Sponsor information**

### **Organisation**

Keele University

### **ROR**

<https://ror.org/00340yn33>

## **Funder(s)**

### **Funder type**

Government

### **Funder Name**

National Institute for Health Research

### **Alternative Name(s)**

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

### **Funding Body Type**

Government organisation

### **Funding Body Subtype**

National government

### **Location**

United Kingdom

## **Results and Publications**

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request

## IPD sharing plan summary

Available on request

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		01/04/2021	04/03/2022	Yes	No
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes