

# Ankle fracture fixation with or without a tourniquet

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<b>Registration date</b> 14/05/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 10/03/2026	<b>Condition category</b> Surgery	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Ankle fracture fixation surgery is common. Some surgeons perform this operation with the use of a tourniquet. This is a cuff device placed around the patient's thigh during surgery. Benefits of tourniquet use may include less bleeding, better visibility, and shorter procedure time. However, tourniquets may cause pain and increase the risks of complications, e.g. infection. A definitive randomised controlled trial (RCT) is needed to compare outcomes on this topic and address clinical uncertainties. In preparation, a two-centre feasibility RCT and qualitative interviews will be carried out to improve the quality of the future trial and determine key study parameters. These include recruitment rate, reasons for non-participation, equipoise, effectiveness and views on blinding processes, protocol non-adherence, data incompleteness, and required sample size. This study aims to determine whether a full RCT evaluating outcomes of ankle fracture fixation surgery performed with or without a tourniquet is feasible.

### Who can participate?

Feasibility RCT: patients over the age of 18 years undergoing primary fracture fixation surgery from either University Hospital Coventry & Warwickshire (UHCW) or Royal London Hospital (RLH).  
Qualitative interviews: patients over the age of 18 years undergoing primary fracture fixation surgery and Consultant Trauma & Orthopaedic Surgeons from either UHCW or RLH.

### What does the study involve?

Consented RCT patients will be randomly allocated to the intervention (tourniquet to be used) or control (tourniquet not to be used). After the surgery, they will get the same care as if they hadn't joined the study, however they will be asked to fill out short questionnaires at 1 day, 3 weeks, and 3 months after the operation and will be followed up 3 months past their ankle fracture fixation surgery. Consented interview participants will take part in a 30–60-minute interview.

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

There will not be any direct benefit from taking part but the participants will help to improve the quality of any future trial.

The RCT study risks are similar whether the surgery is carried out with or without a tourniquet and are the same if patients choose not to participate in this research (risks of pain, bleeding,

blood clots, damage to nerves and blood vessels, and risks related to the anaesthetic). There may be different risks depending on whether or not the tourniquet is used. Some surgeons think that using a tourniquet might cause problems such as more pain after the operation or a higher chance of wound problems, or having a blood clot. On the other hand, there may be more bleeding during the operation if a tourniquet is not used, which may make the operation more challenging for the surgeon to do.

The interview study has no anticipated risks.

Where is the study run from?

The study is run from the University of Warwick in collaboration with University Hospitals Coventry and Warwickshire's Trial Management Unit (UK)

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

March 2025 to May 2026

Who is funding the study?

The National Institute for Health and Care Research (NIHR) (UK)

Who is the main contact?

1. Muhamed Farhan-Alanie (Research Fellow), [muhamed.alanie@doctors.org.uk](mailto:muhamed.alanie@doctors.org.uk)
2. For trial management-specific queries: Cristiana Huhulea (Trial Coordinator), [cristiana.huhulea@uhcw.nhs.uk](mailto:cristiana.huhulea@uhcw.nhs.uk)

## Contact information

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**Type(s)**  
Scientific

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## **Additional identifiers**

**Clinical Trials Information System (CTIS)**  
Nil known

**Integrated Research Application System (IRAS)**  
331292

**Protocol serial number**  
SOC.05/24-25

**Central Portfolio Management System (CPMS)**  
67205

## **Study information**

**Scientific Title**  
Tourniquet use in ankle fracture fixation surgery: a feasibility randomised controlled trial

**Acronym**  
AFFixT

**Study objectives**  
To determine the feasibility of conducting a randomised controlled trial examining the benefits and risks of using a tourniquet in ankle fracture fixation surgery.

**Ethics approval required**  
Ethics approval required

**Ethics approval(s)**

approved 08/05/2025, East of England - Essex Research Ethics Committee (2 Redman Place, London, EC20 1 JQ, United Kingdom; +44 (0)207 104 8106; Essex.REC@hra.nhs.uk), ref: 25/EE/0051

**Study design**

Feasibility randomized controlled trial and integrated qualitative interview study

**Primary study design**

Interventional

**Study type(s)**

Treatment, Other

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

Primary fracture fixation surgery

**Interventions**

Current interventions as of 11/02/2026:

This is a multi-centre feasibility RCT recruiting ankle fracture patients from University Hospitals Coventry and Warwickshire and Royal London Hospital with an embedded qualitative element (interviews) for both patients and staff. Consented RCT patients will be randomised 1:1 by block randomisation to the intervention (tourniquet to be used) or control (tourniquet not to be used) and will be followed-up 3 months past their ankle fracture fixation surgery. Patients and surgeons will be blinded to the randomization allocation. Up to 50 participants will be randomised to the RCT element of the trial.

The embedded qualitative interviews will be conducted with both patients and consultant trauma and orthopaedic surgeons who participated or declined to participate in the feasibility randomised controlled trial. We endeavour to conduct interviews with 24 participants (12 surgeons and 12 patients).

Previous interventions:

This is a multi-centre feasibility RCT recruiting ankle fracture patients from University Hospitals Coventry and Warwickshire and Royal London Hospital with an embedded qualitative element (interviews) for both patients and staff. Consented RCT patients will be randomised 1:1 by block randomisation to the intervention (tourniquet to be used) or control (tourniquet not to be used) and will be followed-up 3 months past their ankle fracture fixation surgery. Patients and surgeons will be blinded to the randomization allocation.

The embedded qualitative interviews will be conducted with both patients and consultant trauma and orthopaedic surgeons who participated or declined to participate in the feasibility randomised controlled trial.

**Intervention Type**

Device

**Phase**

Not Applicable

## **Drug/device/biological/vaccine name(s)**

Tourniquet

## **Primary outcome(s)**

1. Recruitment rates measured throughout the recruitment period using a study site tracker
2. Retention rates will be assessed at the end of the study by comparing the number of participants recruited and those who have completed the study
3. Data completeness will be assessed periodically using reports from the database
4. Blinding feasibility will be assessed based on reports of unblinding (up to 3 months post patient ankle fracture fixation) and explored during the surgeon qualitative interviews
5. Intervention adherence will be measured throughout the study recruitment and follow-up period, based on reported protocol deviations/violations

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

1. Post-operative pain measured at baseline, 24 hours, 3 weeks and 3 months post-operatively using the painDETECT questionnaire and 11-point pain Numerical Rating Scale
2. Surgical field of view measured on the day of the procedure using a 5-point Likert scale
3. Blood loss and blood transfusions measured on the day of the procedure and up to 2 weeks post-procedure by measuring the weight of the surgical swabs, volume of blood collected and number of intraoperative and post-operative blood transfusions
4. Length of procedure measured on the day of the procedure
5. Skin assessment will be assessed pre-operatively and on the day of the procedure and collected from medical notes
6. Awareness of tourniquet use will be measured post-operatively using a self-completed questionnaire
7. Health-related quality of life will be measured at baseline, 3 weeks and 3 months post-operatively using a modified EQ5D5L questionnaire
8. Functional recovery after the ankle injury will be assessed using the Olerud-Molander Ankle Score at baseline, 3 weeks and 3 months post-operatively
9. Post-operative complications measured 3 months post-procedure will be captured using a patient self-reported questionnaire
10. Intra-operative complications will be captured on the day of the procedure through a surgeon-completed questionnaire

## **Completion date**

31/05/2026

## **Eligibility**

### **Key inclusion criteria**

Feasibility RCT:

1. Aged 18 years and over
2. Patients undergoing primary fracture fixation surgery for a closed ankle fracture within 2 weeks of date of injury under general and/or regional anaesthetic
3. Capacity to give informed consent

Embedded Qualitative Interview Study:

1. Aged 18 years and over
  - 2.1. Consultant Trauma & Orthopaedic Surgeons who participated or declined to participate in the feasibility randomised controlled trial
- OR

2.2. Patients who participated or declined to participate in the feasibility randomised controlled trial

3. Ability to provide informed consent

**Participant type(s)**

Health professional, Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

18 years

**Upper age limit**

100 years

**Sex**

All

**Total final enrolment**

0

**Key exclusion criteria**

Feasibility RCT:

1. Patients with a pilon fracture
2. Unable to understand and speak English (or does not have relative willing to translate)
3. Patients with a chronic musculoskeletal or neurological condition (excluding diabetes mellitus) affecting the operative limb, or a history of prior surgery on the affected limb

Embedded Qualitative Interview Study:

1. Unable to understand and speak English (or does not have relative willing to translate)

**Date of first enrolment**

07/07/2025

**Date of final enrolment**

31/05/2026

**Locations**

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

**University Hospitals Coventry and Warwickshire NHS Trust**  
Walsgrave General Hospital  
Clifford Bridge Road  
Coventry  
England  
CV2 2DX

**Study participating centre**  
**Barts Health NHS Trust**  
The Royal London Hospital  
80 Newark Street  
London  
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E1 2ES

## Sponsor information

**Organisation**  
University of Warwick

**ROR**  
<https://ror.org/01a77tt86>

## Funder(s)

**Funder type**  
Government

**Funder Name**  
National Institute for Health and Care 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 and/or analysed during the current study will be available upon request from the chief investigator, Prof. Julie Bruce (Julie.Bruce@warwick.ac.uk) or clinical research fellow, Mr. Muhamed Farhan-Alanie (muhamed.farhan-alanie@nhs.net) by written application that will need to also be approved by the sponsor. Only anonymised data will be shared with external researchers. Consent from participants is being obtained to allow the researchers to share their data anonymously.

### **IPD sharing plan summary**

Available on request