

# A study testing different treatments to help stop air leaks from collapsed lung

<b>Submission date</b> 08/07/2025	<b>Recruitment status</b> Recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 24/07/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 15/12/2025	<b>Condition category</b> Respiratory	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Sometimes, air can get stuck between the lung and chest wall, causing the lung to collapse. This is called a pneumothorax. When this happens to people who already have lung problems, it's called "secondary spontaneous pneumothorax" (SSP). Normally, doctors treat this problem by putting a drain in your chest to help remove the air. The drain can stay for about a week or longer.

Sometimes, the air keeps leaking for more than 2 days. This is called a "persistent air leak" (PAL), and we don't always know the best way to treat it. Right now, doctors often wait to see if the air leak stops on its own, which can take a while—sometimes even weeks.

There are a few other treatments doctors use, but we don't know which one works best or which order they should be given. This is a feasibility study that will help us to work out whether it is possible to design and conduct a larger study that will answer those question.

### Who can participate?

Patients with either a lung disease or over 50 years old with a history of smoking, who are in hospital because they have a problem where air is trapped between their lung and chest wall, causing their lung to collapse, and the lung is still leaking air after 2 days.

### What does the study involve?

In the study, half of the participants will initially get treatment using SUCTION to help remove air, and the other half will get the USUAL CARE without suction. If the air leak still doesn't stop after 3 more days, the participant will be given one of three different treatments:

**Endobronchial Valves:** Special valves are put inside your lung to block the air leak. This is done with a thin tube that goes into your mouth.

**Autologous Blood Patch:** Doctors take a little of your blood from your arm and put it into your chest to help stop the air leak.

**Usual Care:** This means just waiting for the lung to heal on its own.

If the air leak hasn't stopped 10 days after the participant started the study, the doctor may decide to try one of the other treatment options.

Participants will be asked to complete two short questionnaires after you have provided your consent, on day 7 of the study and at your day 90 visit.

What are the possible benefits and risks of participating?

There may not be any direct benefits for each participant. But the study will help doctors learn more about how to treat people with this lung problem, which can help future patients. All trial treatments, suction, endobronchial valves, autologous blood patch, as well as no additional treatments are all standard treatments that are used in the NHS. They all have some evidence to support their use, however none of the evidence is strong enough to make strong recommendations that they should be used for every patient with SSP.

Where is the study run from?

The study is being organised and run by Bristol Academic Respiratory Unit on behalf of North Bristol NHS Trust (UK)

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

It is anticipated that recruitment will start in September 2025 and the study will recruit over 24 months. Once enrolled in the study, a participant will be involved for 90 days.

Who is funding the study?

This study is funded by the National Institute for Health and Care Research (UK)

Who is the main contact?

Dr Steven Walker, [steven.walker@bristol.ac.uk](mailto:steven.walker@bristol.ac.uk)

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

Dr Steven Walker

### Contact details

Academic Respiratory Unit,  
University of Bristol  
Level 2, Learning and Research Building,  
Southmead Hospital  
Bristol  
United Kingdom  
BS10 5NB  
+44 117 414 8114  
[steven.walker@bristol.ac.uk](mailto:steven.walker@bristol.ac.uk)

## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### Integrated Research Application System (IRAS)

348034

### Protocol serial number

## Study information

### Scientific Title

Platform Randomised feasibility trial Of Suction, Endobronchial valves and Autologous blood patch on air-Leak

### Acronym

PRO-SEAL

### Study objectives

To test whether is it feasible and acceptable to conduct a multi-center randomised platform trial to evaluate the use of interventions for persistent air leak in patients with pneumothorax secondary to underlying lung disease

### Ethics approval required

Ethics approval required

### Ethics approval(s)

approved 22/07/2025, London - Central Research Ethics Committee (3rd Floor, 3 Piccadilly Place, London Road, Manchester, M1 3BN, United Kingdom; +44 207 104 8061; londoncentral.rec@hra.nhs.uk), ref: 25/LO/0483

### Study design

Interventional randomized controlled trial

### Primary study design

Interventional

### Study type(s)

Treatment

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

Persistent air-leak

### Interventions

Autologous blood patch (ABP), Patients randomised to ABP will have 1mg/kg of blood aspirated by appropriately trained clinician. This blood will be then instilled via the drain into the pleural space.

Endobronchial valve (EBV), Participants assigned Endobronchial valve (EBVs) will be referred for EBV placements. This will inserted via bronchoscopy. This can be performed under conscious sedation or general anaesthetic (GA), depending on local protocols. This will be done by an appropriately trained clinician.

Thoracic suction , Patients randomised to Thoracic suction will have suction applied to their chest drainage system by a staff nurse. The suction would continue as long as drain remains in place.

Follow up for 90 days.

Eligible patients will be randomised (1:1:1:1:1) through a randomisation server. A member of the trial team will randomise patients as soon as eligibility has been confirmed and consent obtained. Randomisation will use a commercial secure, internet-based system, Sealed Envelope. A minimisation algorithm with random element will be implemented, balancing on underlying lung disease (COPD/non-COPD) and recruiting site.

### **Intervention Type**

Procedure/Surgery

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

The proportion of the total number of patients who are eligible for trial entry who accept randomisation measured using patient records at end of study

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

Measured using patient records (unless noted otherwise):

1. Duration of air-leak in first 90 days
2. Duration of chest drain in-situ in first 90 days
3. Proportion of patients with air-leak cessation 72hours after 2nd intervention
4. Proportion of patients meeting inclusion and exclusion criteria approached by trial team
5. Proportion of patients randomised who receive the first allocated intervention
6. Proportion of patients randomised who receive the second allocated intervention
7. Proportion of patients randomised who complete trial follow-up
8. Pain (using visual analogue score, VAS) and breathlessness (VAS) measured post-intervention, day 7 and at day 90 post-randomisation ( $\pm 7$  days)
9. Patient-reported health status (EQ-5D-5L) measured post-intervention (within 24 hours), day 5 and day 90 post-randomisation ( $\pm 14$  days)
10. To assess patient views and experiences of interventions and study design
11. To assess clinician views of interventions and study design
12. Total number of pleural procedures in first 90 days
13. Length of initial hospital stay (LOHS) in first 90 days
14. Surgical referral and acceptance rates in first 90 days
15. Mortality rates in first 90 days
16. Serious adverse rates in first 90 days

### **Completion date**

25/08/2028

## **Eligibility**

### **Key inclusion criteria**

1. A secondary spontaneous pneumothorax, defined as a pneumothorax occurring in a patient with known underlying or suspected lung disease or >50 years of age with a smoking history
2. Ongoing air-leak  $\geq 48$ hours after insertion of intercostal drain

### **Participant type(s)**

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**

1. They have bilateral pneumothoraces
2. They have a traumatic or iatrogenic pneumothorax
3. They are < 18 years of age
4. Inmate of the prison systems of England and Wales, Scotland or Northern Ireland
5. Patient lacking capacity to consent for themselves

**Date of first enrolment**

15/12/2025

**Date of final enrolment**

22/09/2027

**Locations****Countries of recruitment**

United Kingdom

England

**Study participating centre****North Bristol NHS Trust**

Southmead Hospital

Southmead Road

Westbury-on-trym

Bristol

England

BS10 5NB

**Study participating centre****University Hospitals of Leicester NHS Trust**

Leicester Royal Infirmary

Infirmery Square  
Leicester  
England  
LE1 5WW

**Study participating centre**  
**South Tees Hospitals NHS Foundation Trust**  
James Cook University Hospital  
Marton Road  
Middlesbrough  
England  
TS4 3BW

**Study participating centre**  
**Guys and St Thomas' NHS Foundation Trust**  
249 Westminster Bridge Road  
London  
England  
SE1 7EH

**Study participating centre**  
**Manchester University NHS Foundation Trust**  
Wythenshawe Hospital  
Southmoor Road  
Wythenshawe  
Manchester  
England  
M23 9LT

**Study participating centre**  
**St Georges Hospital**  
Blackshaw Road  
London  
England  
SW17 0QT

**Study participating centre**  
**University Hospitals Plymouth NHS Trust**  
Derriford Hospital  
Derriford Road  
Derriford

Plymouth  
England  
PL6 8DH

## Sponsor information

### Organisation

North Bristol NHS Trust

### ROR

<https://ror.org/036x6gt55>

## 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 during and/or analysed during the current study will be stored in a publicly available repository, the University of Bristol's data repository, data.bris, where the dataset will be issued a DOI, which will then be cited in the body of the research publication.

Data will only be available for 5 years after the trial has concluded and after publication of the main study results. No identifiable data will be shared, it will be fully anonymised. Data sharing

will be in line with the University of Bristol's Open Research policy. Anonymised individual patient data will be made available for secondary research, conditional on assurance from the secondary researcher that the proposed use of the data is compliant with the University of Bristol's Open Research policy regarding information security, information governance, ethical requirements, and a data access agreement has been signed by their institution.

**IPD sharing plan summary**

Stored in publicly available repository