

# Mobile drainage with high suction versus mobile drainage with low suction.

<b>Submission date</b> 26/03/2018	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 13/04/2018	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 09/01/2020	<b>Condition category</b> Surgery	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

When a section (lobe) of the lung has been removed by surgery from the chest, it is necessary to insert a chest drain (a plastic tube), so that air and fluid can be removed safely, and the remaining lung tissue can expand. Removing the air and fluid is routinely done by either applying suction, or passively with no suction.

The aim of this study is to see if there is a difference in the duration of air-leak when applying a high external suction to the chest drain versus a low external suction.

### Who can participate?

Adults over the age of 18 years undergoing lung lobe surgery

### What does the study involve?

Following surgery for removal of lobes of the lung participants are randomly assigned to one of two groups. Those in the first group receive low external suction whilst those in the second group receive high external suction, via a plastic tube (chest drain). Participants are followed up in the outpatient clinic two weeks after discharge from hospital.

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

Participants benefit from helping define new guidelines for postoperative care. There are no risks involved that are beyond what to expect after undergoing usual lung surgery.

### Where is the study run from?

Odense University Hospital (Denmark)

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

March 2015 – April 2016

### Who is funding the study?

Odense University Hospital (Denmark)

Who is the main contact?  
Dr Marike Lijkendijk (Scientific)  
elle.lijkendijk@rsyd.dk

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Marike Lijkendijk

**Contact details**  
Department of Cardiothoracic and Vascular Surgery  
Odense University Hospital  
J.B. Winsløws Vej 4  
Odense  
Denmark  
5000

## Additional identifiers

**EudraCT/CTIS number**

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**  
Thopaz 2.0

## Study information

**Scientific Title**  
The influence of suction on chest drain duration and fluid output after lobectomy using only electronic chest drainage systems – a randomized clinical trial

**Study objectives**  
External suction on the chest drain after lobectomy has no influence on the duration of the chest drain.

The general theory is that application of high suction maintains alveo-pleural leakage and prolongs air-leak. On the other hand it is believed in the literature that external suction has to be applied in order for the residual lung to be fully expanded after lobectomy.

**Ethics approval required**  
Old ethics approval format

**Ethics approval(s)**

Ethics approval not required: Letter received 15/01/2015 from The Regional Ethics Committee (Southern Region of Denmark) deciding the study as a quality securing - or quality developing project, which falls out of the scope of the committees law given definition of a health scientific research project.

### **Study design**

Single-center randomized study

### **Primary study design**

Interventional

### **Secondary study design**

Randomised parallel trial

### **Study setting(s)**

Hospital

### **Study type(s)**

Other

### **Participant information sheet**

Not available in web format, please use contact details to request participant information sheet

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

Pulmonary lobectomy

### **Interventions**

Following pulmonary lobectomy (lower or upper lobes) patients are randomly assigned (1:1) by sequentially numbered, opaque, and sealed envelopes to one of two groups. Participants receive either low external suction (−5 cm H<sub>2</sub>O) or high external suction (−20 cm H<sub>2</sub>O) via a size 24 French silicone chest drain connected to an electronic drainage device. All other postoperative care is the same in both groups.

Treatment ends when the chest drains are removed. Both arms use a chest drainage removal algorithm; patients have to be well pain managed and mobilized. There is no upper limit on fluid output (providing it is serous and no chylous). Air leak is < 20 ml/min with no spikes for 6 hours or < 50 ml/min with no spikes for 12 hours.

Participants are followed up in the outpatient clinic two weeks after discharge from hospital.

### **Intervention Type**

Procedure/Surgery

### **Primary outcome measure**

Duration of air leakage is measured using the time of end of surgery and the time when the chest drain was removed (information from electronic patient charts).

### **Secondary outcome measures**

1. Fluid output is measured by recording measurements from the drainage device cannister on the patient chart.
2. Length of stay is recorded from hospital records.
3. Re-insertion of chest drains (complications) is recorded using the information from the patient chart.

**Overall study start date**

01/03/2015

**Completion date**

30/04/2016

## Eligibility

**Key inclusion criteria**

1. Admitted for lobectomy (by thoracotomy or video-assisted thoracoscopic surgery [VATS] as decided by the surgeon)
2. Aged over 18 years
3. Ability to give informed consent

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Both

**Target number of participants**

100

**Total final enrolment**

106

**Key exclusion criteria**

1. Previous history of pulmonary or cardiac surgery
2. Expected difficulties with postoperative mobilization
3. Participation in concomitant research studies in our department in which a different chest drainage protocol could influence these results
4. Anticipation of a need for postoperative mechanical ventilation
5. Insertion of more than one chest drain
6. Bilobectomy or middle lobectomy

**Date of first enrolment**

03/03/2015

**Date of final enrolment**

01/04/2016

## Locations

**Countries of recruitment**

Denmark

**Study participating centre****Department of Cardiothoracic and Vascular Surgery**

Odense University Hospital

J. B. Winsløws Vej 4

Odense

Denmark

5000

**Sponsor information****Organisation**

Department of Cardiothoracic and Vascular Surgery

**Sponsor details**

Odense University Hospital

J. B. Winsløws Vej 4

Odense

Denmark

5000

**Sponsor type**

Hospital/treatment centre

**ROR**

<https://ror.org/00ey0ed83>

**Funder(s)****Funder type**

University/education

**Funder Name**

Odense Universitetshospital

**Alternative Name(s)**

Svendborg Sygehus, Odense University Hospital, OUH

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Local government

**Location**

Denmark

## Results and Publications

**Publication and dissemination plan**

The authors are intending to publish the air-leakage results on chest drain duration.

09/04/2018: Results presented at Society of Thoracic Surgeons 53rd Annual meeting 2017 ([https://www.sts.org/sites/default/files/documents/53AM\\_AbstractBook.pdf](https://www.sts.org/sites/default/files/documents/53AM_AbstractBook.pdf))

**Intention to publish date**

01/01/2018

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are/will be available upon request from Marike Lijkendijk ([elle.lijkendijk@rsyd.dk](mailto:elle.lijkendijk@rsyd.dk))

**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>	results	01/02/2018		Yes	No
<a href="#">Results article</a>	results	01/06/2019	09/01/2020	Yes	No