

Cardiothoracic Surgery Department

Endobronchial Valve (EBV) Procedure for treatment of Emphysema

Introduction

This leaflet provides information about the Endobronchial Valve (EBV) procedure and explains what care you will need before and after the operation. The care and treatment that you will receive will be specific to your needs. Please read this material and discuss any concerns with your doctor.

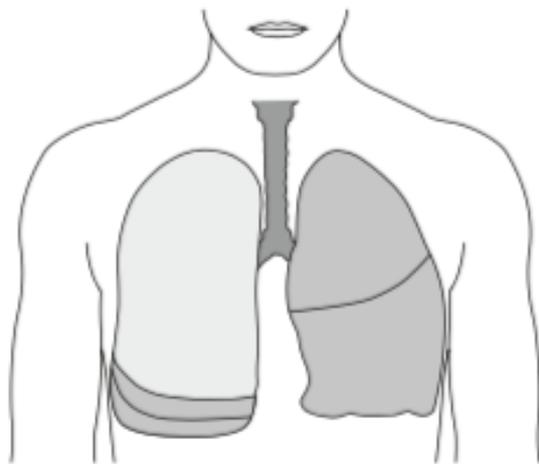
What is Emphysema?

Emphysema is a form of **Chronic Obstructive Pulmonary Disease** or **COPD**. This type of lung disease is caused by smoking in most people. This disease causes people to become more breathless and become more prone to chest infections. As the disease develops, everyday activities such as climbing a flight of stairs, shopping or even eating can become a struggle.

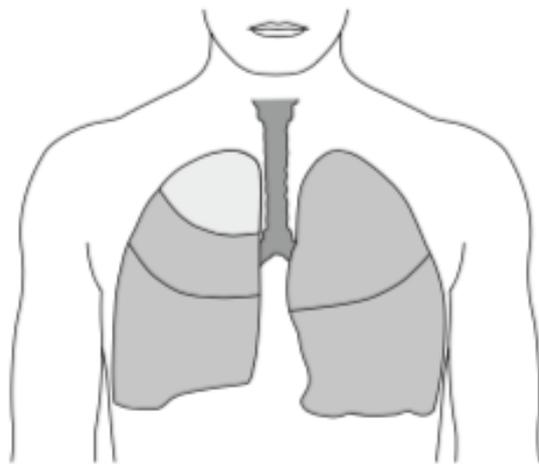
In healthy lungs, millions of tiny air sacs called **alveoli** allow oxygen to enter the blood and carbon dioxide (waste gas) to be removed. Emphysema causes destruction of the walls separating the **alveoli**. This causes the lungs to gain volume, lose elasticity and to not deflate properly due to “trapped air”. Endobronchial valves help reduce the volume of the lungs and improve your breathing.



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Before volume reduction. The diseased part of the lung is enlarged and compresses the healthy part of the lung.



After lung volume reduction. The diseased part of the lung is reduced in volume allowing the healthy part of the lung to expand and function better.

Endobronchial valves

Endobronchial Valves (EBV) are one-way valves inserted in the airways of the lung. The valve blocks inhaled air from overinflating the diseased part of the lung and at the same time opens to allow “trapped air” escape. As a result, the lung volume decreases in the lung area treated by the valves.

The Endobronchial Valve is implanted in the airways via a **Bronchoscope**.



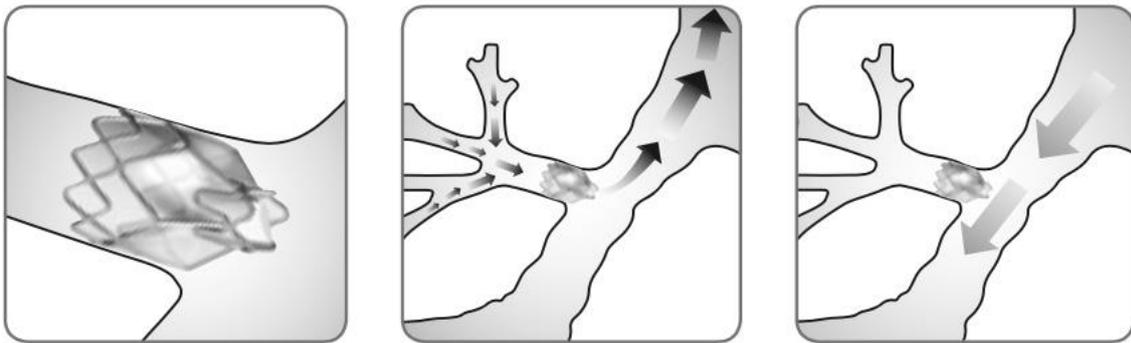
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What is a Bronchoscopy?

A bronchoscopy is an examination of the trachea (windpipe) and bronchi (airways) in which a bronchoscope (camera) is passed through the mouth into the breathing passages of your lungs. This provides your doctor with a clear view of the lining of the bronchi, allowing your doctor to place the Endobronchial Valves safely.

What happens during an Endobronchial Valve Procedure?

You will usually lie flat during this procedure. A bronchoscope will be passed through your mouth and you will be asleep for this procedure. Using the bronchoscope, the Doctor will assess which areas (segments) in your lungs need to be reduced in volume and decide where the valves will need to be placed.



What are the associated risks with EBV Procedure?

All surgical procedures and treatments have risks, and your Surgeon will discuss the associated risks with you.

- **Pneumothorax (punctured lung)** - treated by the insertion of a chest drain, a thin plastic tube placed inside of your chest to release the air gathered there.
- **COPD exacerbation (worsening)** - is treated with steroid tablets or antibiotics if an infection is suspected.
- **Cough**
- **Hoarse voice**
- **Sore throat**
- **Mild fever**

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- **Bleeding in the airways**
- **Low oxygen levels**

Serious, but rarely encountered problems

- Other risks involved with general anaesthesia (these will be discussed with you).

You should contact your Doctor if you become unwell after a Bronchoscopy. Especially if you have one of the following problems: high temperature (fever), chest pain, coughing up blood, shortness of breath.

What happens if I choose not to have the EBV Procedure? Are there any other options?

Emphysema cannot be cured, and it slowly worsens in time. It will worsen much faster if you continue to smoke, so **stopping smoking** is very important. We encourage you to be fully involved in your decision regarding your treatment. You can choose not to have the Endobronchial Valve Procedure; however, this was thought to be the best approach at the time you were seen by your Doctor.

If you have any reasons why you do not wish to proceed with the Endobronchial Valve Procedure, your chest Doctor and chest Surgeon will respect your decision and support you in every way they can.

How should I prepare for an EBV Procedure?

Pre-assessment: An appointment will be given to you to attend the outpatient pre-assessment clinic to have the following tests:

- Blood tests
- ECG (Electrocardiogram - a simple test that traces the electrical activity of your heart)
- Recent Chest X-ray
- Pulmonary function tests (breathing tests) if indicated
- MRSA screening (a simple nose swab to test for Methicillin-Resistant Staphylococcus Aureus. This helps reduce the chance of patients

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acquiring a MRSA infection or passing an existing infection on to other patients)

- A full set of observations (blood pressure, pulse, respiratory rate, oxygen levels, temperature, height and weight)
- You may need other tests that are specific to you (these will be explained).

During the outpatient appointment please tell the Doctor if you need any help after the investigation. We kindly advise you to make arrangements for a relative or friend to accompany you to the hospital and take you home after the procedure.

Fast: You will need to not eat or drink for a certain length of time before the procedure. You can have sips of water only up to 2 hours before the procedure. Further information will be provided to you by the Anaesthetists, Surgeons and Nurses.

Smoking: It is very much better if you do not smoke before the procedure as this can reduce the amount of oxygen that your blood can carry.

Are you taking anticoagulants/antiplatelets? If you are taking anticoagulants/antiplatelets such as Warfarin, Dabigatran, Rivaroxaban, Apixaban, Aspirin, Clopidogrel please check with the Doctor or Surgeon if they **need to be stopped and for how long**. Depending on the reason you are taking these medications, the period of time to stop will vary and in some instances, we will need to support you with alternative medications to take before surgery.

Support at home: Before you come to the hospital, please make arrangements for a relative or friend to support you during the recovery time. You will need help with shopping, cooking and housework.

Admission to hospital

On the day of your admission you will be given information about fasting. You will receive a letter from the Surgeon's Secretary with clear instruction for you to follow.

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When you arrive, the Surgeons, the Anaesthetist and the Nurses will complete the final pre-operative checklist. If you have not been pre-assessed you will need to have investigations such as blood tests, MRSA screening, ECG, chest X-ray. If you do not have these investigations, your surgery may be delayed.

On the day of your operation you will have a shower or full wash in an antiseptic solution and will be asked to put on a hospital gown.

Before going to Theatre: You will be given Thrombo-Embolic stockings, which help prevent you from developing blood clots (DVT) in your legs, due to you not moving around for a length of time during and after the operation. You will need to wear them until you are discharged home.

Asking for your consent

We encourage you to be fully involved in the decisions regarding your care and treatment. If you decide to go ahead with the procedure, we will ask you to sign a consent form. This is a legal requirement which confirms you agree to have VATS and understand all the information given to you.

What happens after the EBV Procedure?

Recovery: You will wake up in theatre and be transferred to the High Dependency Unit or the Ward, depending on the complexity of your procedure. The Nurses will inform you relative that you have arrived and when they can visit you. You may feel unsteady, thirsty or cold after waking up from general anaesthesia.

Oxygen: After the operation, you will be given oxygen via a mask to help maintain your oxygen levels.

Eating and drinking: When you feel ready, you can start eating and drinking. Start with small nutritious snacks and build up to a normal healthy diet. If you have lost weight before your operation, a Dietician will come and see you.

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Bowels: Regular bowel habits may be affected by surgery. To encourage bowel movement, drink plenty of fluids and take short walks whenever possible. Pain relief medication often causes constipation, so your Doctor will prescribe laxatives to help with your bowel movements.

Hospital stay: The average hospital stay after an EBV procedure is roughly three days, but it may shorter or longer depending on your recovery.

Medications: We will supply you with any **new** medication that you might need, such as painkillers and laxatives. Please make sure you have your own supply of regular medications. Further required medication will be supplied by the GP if required.

Please tell us about your experience from your stay

We are committed to improving our services and would like to hear your experiences about your stay with us.

The Trust has access to interpreting and translation services. If you need this Information in another language or format please contact 024 7696 4000 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

If you would like to offer any comments, compliments or complaints, regarding our services at the hospital please use this web link: www.uhcw.nhs.uk/contact-us. You can also write to us or telephone us on 024 7696 4000.

To give feedback on this leaflet please email feedback@uhcw.nhs.uk

Document History

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