

# Having a bronchoscopy with ultrasound (EBUS) to examine your lungs

Respiratory Medicine

Information for Patients

Produced: March 2022

Review: March 2025

Leaflet number: 254 Version: 3

## Introduction

You have been advised to have an EBUS (bronchoscopy with endobronchial ultrasound) to further investigate the cause of your symptoms. This booklet will explain what an EBUS is and help you to prepare for the test. **Please read this leaflet** and bring it with you on the day of your test.

If you have any concerns that you wish to discuss before your appointment our contact telephone numbers are on page 7. On admission the endoscopy team will ensure that you are prepared for your procedure. At this time you will be able to talk about any concerns or worries you may still have.

## What is an endobronchial ultrasound (EBUS)?

For an EBUS a special flexible tube (bronchoscope) is put down your throat. A small ultrasound and a camera at the end of the bronchoscope allows the doctor to look into your windpipe (trachea), breathing tubes (bronchi) and examine any enlarged glands (lymph nodes) in the centre of your chest (mediastinum). The ultrasound probe produces sound waves that are converted into pictures by a computer

A needle is passed along the bronchoscope and samples (biopsies) are taken from the lung or enlarged glands.

## Why am I having this procedure?

EBUS is most commonly done to take tissue samples from lymph glands in the center of the chest, which may be enlarged due to a variety of reasons.

**Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice**

Visit [www.leicestershospitals.nhs.uk](http://www.leicestershospitals.nhs.uk) for maps and information about visiting Leicester's Hospitals  
To give feedback about this information sheet, contact [InformationForPatients@uhl-tr.nhs.uk](mailto:InformationForPatients@uhl-tr.nhs.uk)

EBUS is normally done to investigate:

- Inflammatory diseases that affect the lungs, such as sarcoidosis.
- Possible cancer.
- Infections such as tuberculosis.

## What are the risks?

EBUS is generally a safe procedure and serious complications are rare:

- You may have a sore nose, sore throat, hoarse voice or cough after the procedure.
- You may have a high temperature for 24 to 48 hours afterwards. If needed you can take paracetamol.
- Rarely, some people develop a chest infection with a cough, breathlessness, phlegm and fever. If you have any of these problems, then please ring the endoscopy contact number, go to the clinical decisions unit in Glenfield Hospital or see your GP.
- Bleeding may happen during the EBUS and after a biopsy is taken. This is usually minor, and may cause you to have small amounts of blood from the nose or in your phlegm for a few days. Significant bleeding needing blood transfusion or admission to hospital for further treatment is uncommon.
- There is a small risk of a biopsy (1 in 1000) causing a small puncture in the lung, leading to an air leak around the lung (pneumothorax). If an air leak does happen, you may need to come to hospital for observation and possibly to remove the air using a small plastic tube (chest drain).

## How do I prepare for the procedure?

- **If your test is in the morning, you should not eat or drink after 2am.**
- **If your test is in the afternoon, you should not eat or drink after 8am.**
- You can have water up to 2 hours before the test.
- Before your procedure date, you should tell your hospital doctor or ring the endoscopy contact number if you take any medicines which thin the blood, as we normally stop them for a few days before the procedure. These include clopidrogel, ticagrelor, enoxaparin, dalteparin, warfarin, rivaroxaban, apixaban, dabigatran and edoxaban.
- If you are on aspirin, this does not usually need to be stopped for the procedure. Please ask if you are unsure.
- **If you have diabetes and are on insulin, injections or tablet diabetic medication then please read the next section on “Preparing for a bronchoscopy with diabetes”**
- Take your usual medicines with a small sip of water unless you are told otherwise.

- There is no need to bring nightwear - just wear clothing that's comfortable and not too tight fitting.
- **You will normally be given a sedative medication for the test.** You may feel sleepy from the medication after your procedure. It is not safe to travel or drive home alone. **You must have an adult that can take you home and stay with you for 12 hours after the test.**

## Preparing for an EBUS with diabetes

Before your EBUS, you should not have anything to eat or drink for 6 hours before the test. This section is to advise you on how to manage your diabetes before the test so you can avoid having a "hypo" (low blood glucose) on the day of your test.

The symptoms of a "hypo" can be feeling shaky, dizzy, sweaty or weak. If you have any of these symptoms and/or your blood sugar drops below 4mmol/L while waiting for your test, you can have a sugary drink such as Lucozade, orange juice, or 4 teaspoons of sugar dissolved in 250ml of water. Please let the endoscopy team know if you have had to do this when you arrive for your test.

## If you take diabetes tablets or non-insulin injections

If you are on diabetes tablets or non-insulin injections please read the following:

- If you are on metformin and are not known to have any kidney disease - take your metformin as usual in the morning and evening. If you are on a lunchtime dose, please do not take this.
- If you are on metformin and have chronic kidney disease - do not take your metformin on the day of your test.
- If you are on dapagliflozin, canagliflozin or empagliflozin - do not take these tablets on the day of your test.
- If you are on acarbose, repaglitinide, nateglinide and **have a morning appointment** - do not take these tablets **on the morning of your test**.
- If you are on acarbose, repaglitinide, nateglinide and **have an afternoon appointment** - take your morning dose as usual, then do not take any more doses until you have had your test and are allowed to eat and drink.
- If you are on gliclazide, glimepiride, gliclazide and glibenclamide and **have a morning appointment** - do not take these tablets **on the morning of your test**.
- If you are on gliclazide, glimepiride, gliclazide and glibenclamide and **have an afternoon appointment** - do not take these tablets **on the day of your test**.
- If you are on pioglitazone, sitagliptin, vildagliptin, saxagliptin, alogliptin, linagliptin, exenatide, liraglutide, lixisenatide, dulaglutide, albiglutide - you can take these tablets as normal on the day of your test.

Once you are eating and drinking you can restart your tablets/injections as normal. If you are unsure or have any questions, please contact your usual diabetes care provider.

If you are on insulin for your diabetes then please see the following sections which will explain how to manage your insulin depending on if your appointment is in the morning or afternoon.

## If you take insulin

### Morning appointments

**If you have a morning appointment and are on insulin please read the following:**

If you are on **a once a day insulin in the evening** such as Lantus, Abasaglar, Toujeo, Tresiba, Levemir, Insulatard, Humulin I or Insuman Basal:

- Reduce your insulin dose by 20% or a 1/5 (fifth) on the evening before your test e.g. if you normally take 20 units, take 16 units instead.

If you are on a **once a day insulin in the morning** of any of the above injections:

- Reduce your insulin dose by 20% or a 1/5 (fifth) **on the day before your test and also on the morning of your test** e.g. if you normally take 20 units, take 16 units on the day before and on the morning of your test.

If you are on a **2 times a day “intermediate-acting” insulin** such as Novomix 30, Humulin M3, Humalog Mix 25, Humalog Mix 50, Insuman Comb 25, Insuman Comb 50, 2 times a day Levemir, Abasaglar or Lantus:

- Reduce your insulin dose by 50% or 1/2 (half) on the morning of your test e.g. if you normally take 20 units, take 10 units instead.

If you are on a **basal-bolus regime** e.g. a long acting insulin 1 or 2 times a day with short acting insulin at meal times:

- Take your long acting insulin as normal but do not take your short acting insulin on the morning or afternoon of your test.

If you are on both **“short-acting” insulin** such as Animal Neutral, Novorapid, Humalog, Humulin S, Apidra **and intermediate acting insulin** such as Animal Isophane, Insulatard, Humulin I or Insuman Basal:

- Add up the total number of units you take in the morning of both the short acting and intermediate acting insulin.
- Divide this by 2.
- **Take this number of units with your intermediate acting insulin only** on the morning of your test.

## Afternoon appointments

If you have an afternoon appointment and are on insulin please read the following:

If you are on a **once a day insulin in the evening** such as Lantus, Abasaglar, Toujeo, Tresiba, Levemir, Insulatard, Humulin I or Insuman Basal:

- Reduce your insulin dose by 20% or a 1/5 (fifth) on the evening before your test e.g. if you normally take 20 units, take 16 units instead.

If you are on a **once a day insulin in the morning** of any of the above injections:

- Reduce your insulin dose by 20% or a 1/5 (fifth) **on the day before your test and also on the morning of your test** e.g. if you normally take 20 units, take 16 units on the day before and on the morning of your test.

If you are on a **2 times a day “intermediate-acting” insulin** such as Novomix 30, Humulin M3, Humalog Mix 25, Humalog Mix 50, Insuman Comb 25, Insuman Comb 50, 2 times a day Levemir, Abasaglar or Lantus:

- Reduce your insulin dose by half on the morning of your test e.g. if you normally take 20 units, take 10 units instead.

If you are on a **basal-bolus regime** e.g. a long acting insulin 1 or 2 times a day with short acting insulin at meal times:

- Take your long acting insulin as normal, and your short acting insulin in the morning. Please do not take your short acting insulin at lunchtime

If you are on both **“short-acting” insulin** such as Animal Neutral, Novorapid, Humalog, Humulin S, Apidra **and intermediate acting insulin** such as Animal Isophane, Insulatard, Humulin I or Insuman Basal:

- Add up the total number of units you take in the morning of both the short acting and intermediate acting insulin.
- Divide this by 2.
- **Take this number of units with your intermediate acting insulin only** on the morning of your test.

Once you are eating and drinking after the test, you can take your next dose of insulin as usual.

If you are on any diabetes medications which have not been mentioned in the booklet or you are not sure what to do, then please contact your usual diabetes care provider for further advice.

## **What happens during the procedure?**

- Please go to the reception area of ward 25 (endoscopy unit), which is on the first floor of Glenfield Hospital.
- Before the procedure an assessment nurse will ask you some questions about your medications, allergies and any medical conditions you may have.
- A doctor will explain the procedure, and you can ask any questions before you sign a consent form.
- A small plastic tube (cannula) will be inserted into a vein in your hand or arm for the sedative medicine. This is to make you feel sleepy and relaxed. You can choose whether or not to have the sedative medicine but it is generally advised to have it.
- The bronchoscopy will be done under local anaesthetic with you either sitting up or lying down.
- The EBUS will be done under local anaesthetic. This is a numbing spray given to the back of the throat. This can make you cough. It can have a bitter taste and the back of the tongue and throat will feel numb afterwards.
- Nurses will attach a blood pressure cuff and a clip to your finger to measure your oxygen levels. You will also receive extra oxygen through a small plastic tube fitted under your nose. A small plastic mouthpiece will also be placed into your mouth in between your teeth. If you have glasses and dentures these will be removed for the test.
- Just before the test, you will be given a sedative medicine as an injection into a vein. Once you have had the sedative medicine, the bronchoscope will be passed through your mouth into the airways.
- More local anaesthetic will be given to you through the tube to numb the airways. You may also be given further sedation as the procedure continues. The doctor will examine the airways and take samples from the enlarged glands or lung as needed. An EBUS will normally last for 60 minutes.

## **What happens after the procedure?**

Afterwards our nurses will look after you in our recovery area for 2 hours. Your blood pressure and oxygen levels will be checked and you may have a chest X-ray. You may continue to receive oxygen for a short while. As your throat has been numbed, you may feel that you cannot swallow properly but this normally wears off after 2 hours.

If you are well after 2 hours you can go home. You can eat and drink 3 hours after the procedure has finished.

**For 24 hours after the procedure you must not**

- drive,
- operate dangerous machinery,
- drink alcohol
- or sign legally binding documents.

**When will I know the results?**

The results of the biopsies can take up to 7 days. These will be sent to the doctor who referred you for the procedure. You will receive an appointment to see a doctor to discuss the results. Please contact your hospital doctor's secretary or your GP if you do not receive a follow up appointment.

**Feedback**

We are keen to make your EBUS as straightforward and comfortable as possible. Please let us know if you have any suggestions as to how we can improve your experience. Please do not hesitate to contact us if you have any queries or concerns.

**Contact details**

- **Endoscopy unit:** 0116 258 3130 (Monday to Friday, 9am to 5pm)
- **Bronchoscopy appointments:** 0116 258 7777 (ext 2259) (Monday to Thursday, 8.30 to 2pm)

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email [equality@uhl-tr.nhs.uk](mailto:equality@uhl-tr.nhs.uk)