

Patient information factsheet

Electromagnetic navigational bronchoscopy (ENB)

We have given you this factsheet because you are due to have a procedure called an electromagnetic navigational bronchoscopy (ENB). It explains what the procedure involves, how to prepare for the procedure, and the potential risks and benefits. We hope it will answer some of the questions you may have. If you have any further questions or concerns, please contact a member of our team.

What is an electromagnetic navigational bronchoscopy (ENB)?

An electromagnetic navigational bronchoscopy (ENB) is a medical procedure that uses electromagnetic GPS-like technology to examine your lungs. It is more accurate than a normal bronchoscopy and can reach more areas of the lungs.

During an ENB, a bronchoscope (a long, flexible tube with a bright light at the end of it) is guided down a person's throat and into their lungs to examine any abnormal areas (these are called nodules). Biopsies (small samples of body tissue) can also be taken from inside the lungs during this procedure to determine whether any further treatment is needed.

Why do I need this procedure?

You may have been referred for an ENB if an area of abnormal tissue (nodule) was detected on a chest x-ray or CT scan. Most lung nodules are nothing to worry about, but some can be a sign of early lung cancer. This is why it is important to find out what the nodules are as soon as possible, so we can decide on the right treatment for you. The doctor who referred you for this procedure will explain this to you in more detail.

Before the procedure

Pre-assessment appointment

Before your procedure, you will need to come into hospital for a pre-assessment appointment. During this appointment, you will have:

- blood tests
- an electrocardiogram (a heart tracing test)
- a chest x-ray
- a full set of observations to check your blood pressure, pulse, oxygen levels, temperature and breathing rate
- swabs taken from your nose and groin to check for MRSA infection

We will also explain the procedure to you and answer any questions you may have. If you are happy to go ahead with the procedure, we will ask you to sign a consent form.

Patient information factsheet

General anaesthetic

The procedure will be performed under a general anaesthetic. This means you will be asleep for the procedure and will not feel anything. To ensure you are well enough for a general anaesthetic, an anaesthetist (a specialist doctor) will visit you before your procedure and ask you some questions about your medical history and your general health and lifestyle. This may be at your pre-assessment appointment or on the day of your procedure.

Eating and drinking

At your pre-assessment appointment, we will explain when to stop eating and drinking before your procedure.

Medications

At your pre-assessment appointment, we will explain what medications may need to be temporarily stopped before your procedure.

Antiseptic skin wash solution

Before your procedure, you will need to wash your whole body and hair using an antiseptic skin wash solution. This solution is designed to help prevent infections occurring after your procedure. We will give this solution to you at your pre-assessment appointment and explain when and how to use it.

Dentures, loose teeth or crowns

There is a slight risk that your teeth may be damaged during the procedure. To help reduce this risk, please let us know at your pre-assessment appointment if you have any dentures, loose teeth or crowns.

Arrange for someone to stay with you

General anaesthetic can affect your memory, concentration and reflexes for a day or two, so it's important you arrange for a responsible adult to accompany you home and stay with you for 24 hours after the procedure, if you're allowed to go home. If no-one is available, please let us know and we will arrange for you to be admitted to hospital.

Pack an overnight bag

An ENB is usually a day case procedure. However, if we have any concerns about your recovery, you may need to stay in hospital overnight so we can continue to monitor your condition. Please pack an overnight bag and bring it into hospital with you just in case.

On the day of the procedure

When you arrive for your procedure, we will admit you to our surgical day unit (SDU) and show you to your bed space. If a bed is not available, we may ask you to sit in our waiting area.

We recommend leaving any valuables at home. However, please let us know if you have brought any valuables into hospital with you. These will need to be locked away securely on the ward.

We will then ask you to change into a hospital gown and put on some compression stockings. These stockings will help to prevent blood clots (deep vein thrombosis, or DVT) developing in your legs.

Patient information factsheet

During the procedure

Before we begin the procedure, we will take you to a room where an anaesthetist will give you the general anaesthetic. This may be given:

- as an injection through a cannula (a thin tube that allows medication to be given into a vein) in the back of your hand
- as gas through a face mask

Once you are asleep, we will gently guide a bronchoscope (a long, flexible tube with a bright light at the end of it) down your throat and into your lung. When the bronchoscope is in your lung, we will use GPS technology to create a map of the inside of your lungs. This map will help us to carefully navigate the bronchoscope around your lungs. If we decide to take a biopsy of any nodules, we will insert biopsy tongs (forceps) through the bronchoscope into your lung.

After the procedure

After the procedure, we will move you to our recovery room where you will gradually wake up from the general anaesthetic. You will stay in the recovery room until the general anaesthetic has completely worn off. During this time, we will regularly check your:

- blood pressure
- pulse
- oxygen levels
- temperature
- breathing rate

We will then transfer you back to the surgical day unit where we will continue to monitor your:

- blood pressure
- pulse
- oxygen levels
- blood glucose (if you have diabetes)

When we think you are ready, we will:

- ask you to drink a few sips of water (you will then slowly be able to increase the amount you drink)
- ask you to get out of bed and stand up
- encourage you to walk around the ward
- offer you something to eat

Please let us know if you have any pain or feel shorter of breath than normal at any point.

Going home

Depending on your recovery, you may be able to go home the same day, or you may need to stay in hospital overnight. Most people are able to go home when they feel well and are able to pass urine and eat and drink without difficulty.

If you go home the same day as your procedure, a thoracic nurse specialist (a specialist nurse) will call you the following day. They will check how you are feeling and explain the follow-up appointments you may need. They will also answer any questions you may have.

Patient information factsheet

Advice after a general anaesthetic

For the first 48 hours after your procedure, you may feel more sleepy than usual and your judgement may be impaired. During this time, you must not:

- drive (your insurance company will have its own conditions for when you are insured to start driving again, so it is important you check your policy)
- drink alcohol
- work
- exercise
- handle machinery (including an oven or hob)
- sign any legal documents

Compression stockings

We may recommend you continue to wear the compression stockings for at least 10 days, or until you have fully recovered and are able to walk normally. If you experience any pain or discomfort in your lower legs (calves), or they become swollen, contact your GP for advice.

Potential side effects

After the procedure, it is common to experience some of the side effects below:

- tiredness
- a sore throat (this should improve over a few days, and you can take some over-the-counter pain relief medication to ease your symptoms)
- a cough which brings up a small amount of blood (this should stop after a few days)
- low blood pressure (this will usually improve after having something to drink)

When to seek medical advice

Contact the surgical day unit immediately if you are worried about the amount of blood you are coughing up or if you have any of the following symptoms:

- increased shortness of breath
- vomiting (being sick)
- a high temperature (38°C or above)

Potential complications

An ENB is usually a safe, straightforward procedure. However, as with all procedures, there are some potential complications.

Minor complications after an ENB include:

- damage to teeth
- a chest infection (moving around early on will help to prevent this)
- a temporary narrowing of your airways (this is called bronchospasm and may cause you to cough and feel wheezy)

Major complications after an ENB are rare and include:

- a collapsed lung (this is called pneumothorax and if this happens, you may need to stay in hospital longer to have a chest drain)

Results

We will not be able to give you your results on the day of the procedure, as it can take up to two weeks for biopsy results to be available. Once we have the biopsy results, we will pass them to the doctor who referred you for the procedure. They will then contact you to let you know the next steps.

Patient information factsheet

Alternative procedures

There are no alternatives to this procedure. If you choose not to have the procedure, then you will need to have more scans to look at the abnormal area of your lung. If the area becomes bigger, your doctor will talk to you about what treatment you may need.

Contact us

If you have any **urgent questions or concerns**, please contact our surgical day unit (SDU).
Telephone: **023 8120 5249**

For any **non-urgent queries**, please contact our thoracic nurse specialist team.
Telephone: **023 8079 8457**

Useful links

This is a video demonstrating an ENB procedure:

www.youtube.com/watch?v=96WqA0tg_H8

For a translation of this document, or a version in another format such as easy read, large print, Braille or audio, please telephone **0800 484 0135** or email **patientsupporthub@uhs.nhs.uk**

For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**