

## **Navigational Bronchoscopy**

### **Information for patients**

**This document contains important information about your upcoming investigation and should be read immediately, giving you time to think of any questions.**

**PLEASE READ NOW**

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This leaflet explains the procedure called a **Navigational Bronchoscopy**. It explains why we do this test and what you can expect if you are having the procedure done. It also gives you general information about what to expect from the time of your admission to your discharge home from hospital. If you have any further questions, please do not hesitate to ask a member of your medical team.

### **What is a navigational bronchoscopy?**

A navigational bronchoscopy is an examination of the airways (breathing tubes) of your lungs. It is similar to a conventional bronchoscopy but is able to target smaller lesions that reside towards the edge of the lungs. The navigational bronchoscopy is done with a thin flexible instrument with a mini-camera at its tip, called a bronchoscope. A thin steerable catheter is then passed down the bronchoscope which can be navigated to any small change in the lung that we would like to investigate.

### **Why do I need a navigational bronchoscopy?**

There are a number of reasons why a patient may need a navigational bronchoscopy. Most commonly it is because there is a change in part of your lung that we feel needs investigated further. Your doctor will explain why you need the bronchoscopy.

### **What samples might be taken?**

Samples are taken in a variety of ways, depending upon the circumstances, and can be used to test for lung infections, tumours and other sorts of lung conditions:

- **Lung washings:** saline (salt water) is passed into the airways, and the sucked out again, providing a sample of the cells from the lining of the lung.
- **Brushings:** a thin brush on the end of a wire can be passed down the bronchoscope to brush cells from the lining of the airways.
- **Biopsies:** a tiny pair of forceps can be passed down the bronchoscopy to take little samples of lung tissue. This is painless.
- **Needle aspiration:** a tiny needle is passed down the bronchoscope and attached to a syringe so that we can take small samples of lung tissue. This is painless.

In each case, the sample taken is put into preservative fluid and sent to the laboratory for testing.

### **How do I prepare for my navigational bronchoscopy?**

You will need to provide an up-to-date list of all your medications, allergies and any medical conditions – your doctor will review this with you. You should take your usual medicines (with a small amount of water) if they are for high blood pressure, angina, or epilepsy. **You cannot eat or drink for 6 hours before the procedure.**

Please tell your doctor if:

- You have any allergies
- You have had a previous bronchoscopy
- You suffer from asthma
- There have been any changes in your condition since you were last seen in clinic
- You are taking any blood thinning medication
- You don't have somebody to take you home after the procedure

- You have a pacemaker (we cannot do a navigational bronchoscopy if you have a pacemaker).

### **What will happen before the procedure?**

A doctor will explain the procedure to you, and you will be asked to sign a consent form. This is to confirm that you understand the reasons for the test, and what is going to happen to you during the procedure. If you have any queries, please don't hesitate to ask the medical staff. A cannula (tiny plastic tube) will be inserted into your arm.

### **What happens during a navigational bronchoscopy?**

In the room where you will have the bronchoscopy, you will be made comfortable on a bed, usually lying flat. A plastic clip will be placed over your finger to monitor your oxygen levels throughout the procedure. You will be given oxygen to breathe through a soft plastic tube placed just inside your nostrils. A plastic board will be placed under the mattress and three stickers placed on your chest. This allows us to locate and steer the navigation catheter during the procedure to accurately get to the right place – much like satellite navigation in your car. A local anaesthetic will be applied to your nose and the back of your throat. This can taste bitter, and you may have the sensation of a numb “blocking” in the back of your throat. This will wear off after the procedure. Your doctor will then give you a sedative injection into a vein in your arm, which will make you feel sleepy and relaxed.

Once you are relaxed and your throat is numb, the doctor will pass the bronchoscope gently into your mouth. As the bronchoscope is passed to the back of your throat, more local anaesthetic is applied – this may make you cough, however, this usually settles down as the local anaesthetic takes effect. The doctor will inspect all the airways and take any samples that are needed. You may be offered more local anaesthetic or sedation during the procedure to help address any discomfort you may have.

### **What are the potential risks of having a navigational bronchoscopy?**

Bronchoscopy is a safe procedure and complications are relatively rare. It is usually performed as a day procedure, however, occasionally patients take longer to recover after the procedure and need to be admitted to hospital overnight.

#### **Mild complications:**

- Sore throat
- Voice hoarseness
- Fever: 30% (1 in 3) develop fever and sweating within the first 12 hours after bronchoscopy. This goes away by itself and is not usually a sign of infection.
- Cough with blood stained phlegm
- Sleepiness.

These symptoms are very common in the first 24 hours following the bronchoscopy and will usually go away without any treatment.

#### **More serious complications:**

- **Infection:** 6–8% (6–8 people in 100) risk of developing infection following bronchoscopy. If you start coughing up yellow/green phlegm or develop a fever

more than 24 hours after bronchoscopy, please contact your GP or attend the A&E Department of the local hospital - you may need antibiotics.

- **Collapsed lung (pneumothorax):** 2-3% (2-3 people in 100) risk of the lung collapsing and air leaking into the space surrounding your lung. If an air leak does occur, 50% of cases heal by themselves. In some cases, a chest drain (plastic tube) needs to be inserted under local anaesthetic to remove any air leaking from the lung.
- **Bleeding:** 0.2% (2 people in 1000) risk of severe bleeding during bronchoscopy. This can usually be stopped by administering medications down the bronchoscope, and very rarely may require blood transfusion.
- **Death:** 0.01% (1 person in 10,000) risk of death following bronchoscopy. However, the people who have died following bronchoscopy have often been very unwell beforehand.
- **Air embolism:** Extremely rare complication where air from your lung can end up in your blood vessels and cause a blockage (such as a stroke). There is no reliable statistics on the frequency of this complication as it is so rare.

#### **Other complications:**

- **Non-diagnostic procedure:** 25% (1 person in 4) chance of not being able to provide a diagnosis following the procedure. This will vary depending on the location and characteristics of the change in your lung.

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

You will return to the ward and be looked after by a nurse until you are well enough to leave. Your breathing rate, pulse and blood pressure will be checked. You should not eat or drink for 2 hours, until the feeling in the back of your throat has returned. After this time, you will be offered water and encouraged to move around. You will have a chest X-ray 3 hours after the procedure to make sure you have not had a collapsed lung (pneumothorax). After this, if you are well, you will be able to go home.

It is common to experience a mild sore throat, hoarseness and cough after the procedure – this should settle over the next 24 hours. You may cough up small amounts of blood: please inform the nurse if you cough up more than a tablespoon of blood, have chest pain or difficulty breathing.

Your doctor may give you some initial results of your bronchoscopy when you are awake, before you leave. However, if samples were taken for testing in the laboratory, it may be several days before all the results are known. You will be told when you need to come back to the clinic to discuss details of the results and any treatment.

#### **Going home**

As you will have had sedation, it is essential that somebody comes to pick you up after the procedure and stay with you overnight. Once home, rest quietly for the remainder of the day. **If no one is able to stay with you overnight, please let the department know in advance.**

Over the next 24 hours, it is important that you do not:

- Drive a car, motorcycle or bicycle

- Operate any machinery
- Drink alcohol or take sleeping tablets
- Sign any legally binding documents.

The effects of the sedation should have worn off by the following day, so you can resume all your normal activities.

If you experience symptoms following the procedure, including coughing up blood, chest pain and/or shortness of breath, please contact your GP as soon as possible or go straight to the nearest Accident and Emergency Department. Dial **999** if you have no one to take you.

## Contact Details

### St John's Hospital

Respiratory secretaries: **01506 523830**

Endoscopy department: **01506 523938**

### Royal Infirmary of Edinburgh

Respiratory secretaries: **0131 2421867**

Endoscopy department: **0131 2421777** or **0131 2421839**

### Western General Hospital

Respiratory secretaries: **0131 5372348**

Endoscopy department: **0131 5371695**

For out of hours advice, phone NHS 24 on **111**.

For emergencies, go directly to your local A&E department or phone **999**.