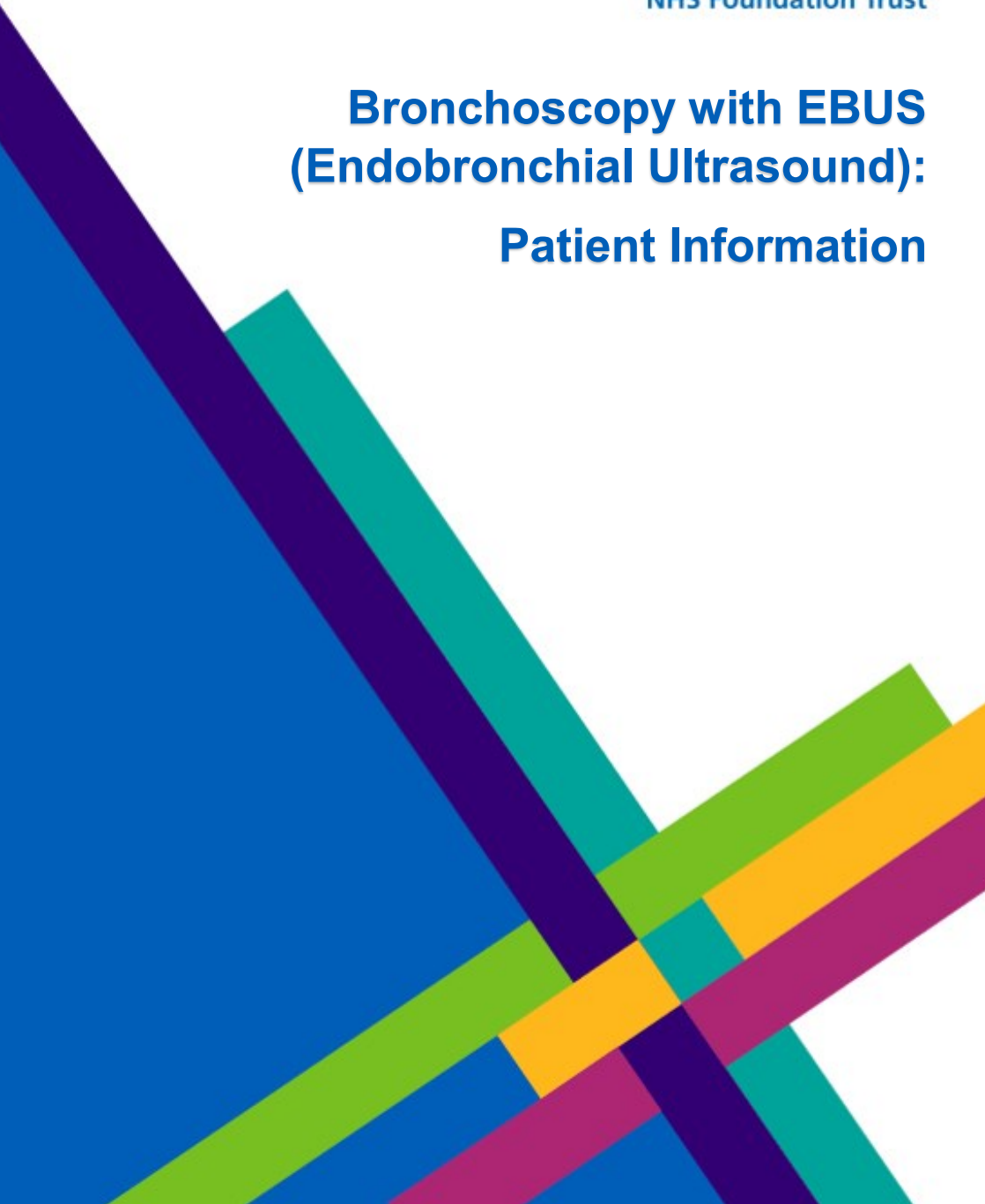




Salisbury
NHS Foundation Trust

Bronchoscopy with EBUS (Endobronchial Ultrasound): Patient Information



What is it, when will it be done?

One of the tests that you need to sort out your chest problem is called an “EBUS” (endobronchial ultrasound). The purpose of this test is to take samples from lymph glands inside the lungs. By doing an EBUS we may be able to avoid the need for a more complicated surgical procedure (called a mediastinoscopy).

In the EBUS test a telescope is used which has a small ultrasound probe at its tip. It is passed gently through the mouth into the lungs. Using the ultrasound probe, we can identify any abnormal lymph glands and take small needle samples from them. The test is similar to the standard bronchoscopy that you may have already had – it does however take longer (around 40 minutes) and so we tend to use more sedation.. There is no need to bring overnight clothes as this is usually a day case procedure.

Please do **not** bring **any** valuables or jewellery with you (apart from a wedding ring). If you do, all such items must be placed in the hospital safe, otherwise we cannot guarantee their security and we cannot accept responsibility if they were to be lost.

A needle is put in your arm through which, immediately before the procedure, a sedative is given. You will be asleep or extremely drowsy throughout the examination. You may have some minor recollection of the procedure but this is usually hazy and most patients remember little of what went on.

Is there an alternative test that I can have?

The alternative to an EBUS is usually an operation called a mediastinoscopy, which involves a cut (surgical incision) in the neck, a

general anaesthetic and an overnight stay in hospital.

The mediastinoscopy is carried out in Southampton. The EBUS procedure can be done under a sedative as a day case with a shorter recovery time.

Deeper sedation

Carefully selected patients may be suitable for a new technique which combines High Flow Oxygen with deep sedation, administered by an anaesthetist. This is equivalent to a general anaesthetic - this will be discussed with you in detail if we think this may be an option for you.

How to prepare for the procedure

- **You must not eat within 6 hours of your appointment time.**
- **You can have sips of plain water up to two hours before your appointment time.**
- You should take all of your morning medications unless advised otherwise by your doctor or ourselves (you can have sips of water to take your medication). You need not stop any of your sprays or inhalers, eye drops or skin preparations.

If you are diabetic and take Insulin or diabetic tablets, you will have received advice from the doctor who arranged your bronchoscopy so that appropriate arrangements can be made and advice given about your preparations. Some patients with diabetes will not be suitable for the bronchoscopy to be done as a day case. If you have not received advice about your diabetes please ring the respiratory secretaries on 01722 429228 or 01722 429224 to ensure there has been no oversight.

If you are on Warfarin, Rivaroxaban, Apixaban, Clopidogrel, Aspirin or other blood thinners (anticoagulants) then there are risks associated with stopping them. In some patients (eg those with metal heart valves) we need to change to an injectable anti-coagulant to cover the procedure. Please make sure you understand the plan for any blood thinners clearly when you are discussing your procedure with your doctor in clinic. You should have been told exactly when to stop them and when to have a check blood test prior to the EBUS. If not could you ring the respiratory secretaries on the above number? **Important**, please let the EBUS team know if:

- You are taking any blood thinning medication such as aspirin, Clopidogrel, Warfarin, Rivaroxaban, Apixaban or others (please ask your doctor if you are unsure about any of your tablets)
- You have had a heart attack in the last 6 weeks
- You need oxygen for at least 16 hours per day
- You have recently been exposed to tuberculosis
- You are diabetic and have concerns.

What to expect when you get to hospital

You will be seen by a nurse on the admitting ward who will ask some basic questions about your health. If you have had a recent heart attack we may need to postpone the test. We may check your clotting ability with a blood test to confirm it is safe to proceed. The doctor will talk you through what will happen and you will have the opportunity to ask questions before signing the consent form. Providing you are happy to proceed, we will place a small needle in your arm through which we can

administer the sedative.

We can let you know on the day roughly at what time your test will be done. However, the timing is not precise and depends on a number of different factors such as the number and type of cases to be done. Be prepared for a variably lengthed wait as some unexpected events on the day are beyond our control (equipment issues, emergency cases etc)

We will take you into the bronchoscopy room where the doctor will make sure you have signed your consent form and will answer any questions that you have about the test.

A little torch will be placed on your finger to measure the oxygen level in your blood. Extra oxygen will be given to you through a fine tube placed at the entrance to your nose.

You will be lying flat during the procedure.

Just before (or just after) we give you the sedative, your mouth will be sprayed with a local anaesthetic. This tastes awful and may make your eyes water. It will deaden the delicate linings of your mouth and throat so that you will not find the passage of the instrument too uncomfortable. Sometimes we may also inject a small amount of local anaesthetic beneath the skin near your “Adam’s Apple” which helps to numb the voice-box.

Do not worry about coughing, choking or even “not being able to stand things near your throat” – we are quite used to patients who have anxieties about these things.

A flexible telescope (bronchoscope) about the thickness of a little finger is passed into your lungs through the mouth (you will have a mouth

guard).

Anaesthetic is sprayed through the telescope to numb the vocal cords and lungs to reduce coughing (although a certain amount of coughing is expected and normal, particularly at the beginning before the areas are numbed). If may feel that you cannot swallow, but you can – the back of your throat is just temporarily numbed.

Then as the sedation starts to work you will go off to sleep and remember little of the procedure.

When you wake up you will have a hoarse voice and a mild sore throat. If we have taken specimens of if there has been a little bruising during the telescope examination you are very likely to cough up a small amount of blood, but you need not worry about this at all. This may occur during the first 24-48 hours after the bronchoscopy, particularly if you were already coughing a little blood before the test.

If (and this would be extremely rare) you cough up a large amount (by which we mean half a tea-cup or more at a time) please come to the Hospital's Emergency Department bringing any evidence of the bleeding with you.

Before discharge you will have recovered from the sedation and be allowed to eat and drink.

You may be drowsy following the procedure and will be unable to drive. Your judgement may be impaired as a result of the sedation for 24 hours after the procedure during which time you must not drive and you must not operate any potentially dangerous machinery. It will be necessary for someone to collect you from the Day Case Unit and stay with you for 24 hours following the procedure. Let us know if this is

going to be an issue.

It is likely you will cough up a small amount of blood during and after the EBUS procedure. This should subside within a day or so. If it doesn't or if a large amount of blood comes up either at once or over a

period of time, you should contact us on the numbers below or attend your local emergency department. If you develop discomfort in the chest or increased difficulty breathing, you should attend your local emergency department.

Allergies

You will be asked about allergies when you are first seen on the day of the EBUS. It is important that you tell us if you are allergic to latex (rubber compounds). We use a small rubber balloon on the tip of the EBUS telescope and if you have an allergy to it we would not be able to use the balloon. We also use lignocaine, midazolam and fentanyl.

The risks of EBUS

- 1. Bleeding:** Like all biopsy procedures there is a small risk of bleeding – however this complication is rare as the ultrasound shows us where the main arteries and veins are running and we can therefore avoid puncturing them with the needle.
- 2. Infection:** if you start to cough up green phlegm or feel especially 'chesty' in the few days following the test this may be a sign of a chest infection. Your GP can advise you about the need for antibiotics.
- 3. Puncture of the lung (pneumothorax):** Very rarely the needle can puncture and collapse the lung, allowing air to enter around the outside of the lungs.. This is called a pneumothorax. It can be easily treated

once recognised, either by simply observing you overnight in hospital or, very occasionally, by putting a small tube between the ribs to allow the air to escape and the lung to re-expand. If there is a small air leak from your lung you can sometimes feel crackling under the skin of your throat and neck - this is not dangerous and will clear in 24 to 48 hours.

4. Longer stay in hospital: Occasionally patients take a longer time than usual to recover after the procedure and may need to be admitted to hospital for observation.

If you are at all worried about anything the day or so following the EBUS you should contact us on the number at the end of this document. In an emergency or out of hours you should contact your usual source of emergency care.

The following information is from the consent form which you will be asked to sign – **PLEASE READ THIS CAREFULLY AS IT DESCRIBES IN MORE DETAIL THE RISKS OF EBUS**

Significant, unavoidable or frequently occurring risks:

- **Sore throat and hoarse voice**
- **Cough:** minimised by use of local anaesthesia and medications to suppress the cough before and during the procedure. Very rarely the cough can result in a small bleed behind the conjunctiva, which is a thin membrane covering your eye. It is harmless and does not affect your eyesight
- **Damage to existing teeth or any dental work:** this is rare and minimised by the removal of any dentures before the test and the use of a mouthguard

- **Breathing problems:** rarely, the airways can be irritated by the test and develop narrowing. This is more likely in patients with pre-existing lung disease such as asthma or COPD. You may require a nebuliser. Some patients may take a longer time to recover after the procedure and may need to be admitted to hospital for observation or further treatment
- **Heart problems:** in 1 - 5% (1 - 5 in 100 patients) a brief minor strain may be put on the heart. This can cause abnormal beating of the heart. It rarely causes fluid to collect in the lungs or a heart attack
- **Infection:** less than 1 in 500 patients develop infection. This can be treated with antibiotics. If you develop 'shivering' or sudden flu-like symptoms, especially if associated with infected-looking phlegm you should start anti-biotics without delay (through your GP or the hospital emergency department).
- **Bleeding complications:** usually bleeding is minor and settles quickly. About 1 in 1000 patients may develop significant bleeding and may require the instillation of drug in your airways to control the bleeding. Very rarely this can be life-threatening
- **Adverse reactions to the sedative drugs and local anaesthetic agent**
- **Failure to achieve a diagnosis.** In 1 in 10 cases, the test does not give us an answer and we may need to repeat it or suggest an alternative procedure.
- **Death:** less than 0.1% (less than 1 in 1000 patients), however risks are higher in patients with severe breathing and heart problems

When will you get the results?

If you are a Salisbury District Hospital patient you may be informed about your follow up arrangements before you go home. Please do not leave the ward without a clear understanding of the arrangements for when and where you will next be seen to discuss the results. You will not be given the results on the day of the EBUS because we take specimens for examination in the laboratory and definite answers cannot be given until all these are available. This generally takes 7 to 10 days (and occasionally longer). If samples are sent off by the laboratory for molecular genetic studies it will take at least 2 weeks to obtain all the results.

If you have come from another hospital you will receive the results from your own team back at your hospital. If you are worried about lack of follow up arrangements please let us know.

If the test results were unhelpful/uncertain or if the EBUS was unsuccessful

We will offer to repeat the procedure on the next available list or refer you for an alternative form of sampling such as a mediastinoscopy. If you have a particular anxiety about this procedure before it is done please let us know and we will do our best to reassure you.

Contact details for enquiries

If you have a problem with follow up please contact the Respiratory Unit on 01722 429220. For enquiries regarding the time and place of the procedure: Please ring the hospital on 01722 336262 and ask for the Central Booking Office.



Author: Richard Harrison
Role: Consultant in Respiratory Medicine
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Salisbury NHS Foundation Trust, Salisbury District Hospital, Salisbury, Wiltshire, SP2 8BJ
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