

# Lung Investigations

## A guide to various lung tests

### Introduction

Your lung specialist thinks you may have a lung condition that needs urgent investigation.

This booklet describes some tests that might be necessary over the next few days and weeks. Your doctor will be able to explain which have been booked already, and which may happen in the future. You may not need to have all of these tests.

### My consultant is:

.....

### My nurse specialist/keyworker is:

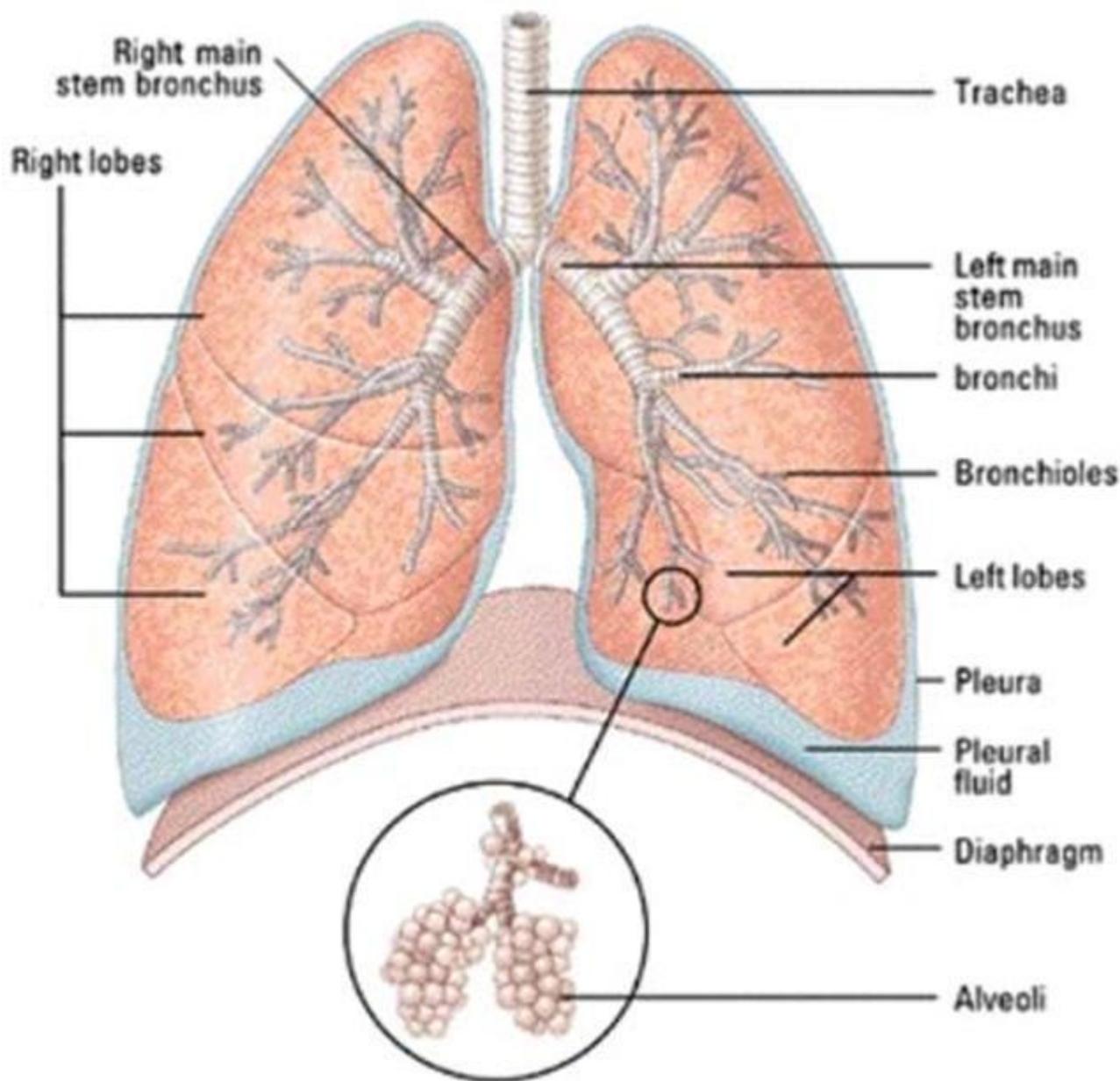
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If you need to get in touch with one of the doctors or nurses, their contact numbers are below.

<b>Cumberland Infirmary secretaries</b>	01228 814142/814063
<b>West Cumberland secretaries</b>	01946 523007
<b>Lung Nurse Specialists/ Keyworkers</b>	01228 814391 (Carlisle) 01946 693181 Ext 3020 (Whitehaven)
<b>Transport number (if required)</b>	<b>0800 0323240</b>

## Patient's Notes

Use these pages to write down any questions you may have and to make notes after seeing your Doctor/Nurse.



## CT scan of your chest

A CT scan is a type of X-ray test that takes detailed pictures of your body's organs.

The clinic staff will tell you where and when you will be having your scan.

The person carrying out the scan is called a radiographer. They will explain the test and answer any questions that you have. You will have a cannula (small plastic tube) inserted into your vein before getting onto the scanner. You will also be asked whether you have ever had an allergic reaction to X-ray dye (also called contrast), and you should discuss this with the radiographer if you are worried.

You will be asked to lie on a flat couch which will move you through the scanner. You may need an injection during the scan. Once you are on the couch, the test only takes about five minutes. You will not get the result straight away as the scan has to be reviewed by a specialist doctor. Your doctor will discuss the result of the scan with you the next time you are seen in outpatient clinic.

Your CT scan is booked for:

**Date:** ..... **Time:** .....

**Hospital:** .....

<b>CT Telephone numbers:</b>	Carlisle	01228 814682
	Whitehaven	01946 523361

### **PET-CT scan**

You may need a PET-CT scan as part of your lung tests. Your doctor or nurse specialist will let you know if you need this test. PET stands for Positron Emission Tomography. It is very similar to the CT scan that you will have already had, although during a PET-CT scan you are given a special injection that may cause some areas of your body to light up on the scan. This will help the team of doctors decide what the best treatment for your lung condition is.

The PET-CT scanner is a mobile unit which visits the Cumberland Infirmary

It is provided for the NHS by a company called Alliance Medical. The test will be performed by a Radiographer who will be able to explain the test and answer any questions that you may have.

You will be contacted by telephone by Alliance Medical they will discuss a convenient date and time for you to have the test. They will inform you what you need to do before the scan. Generally, you can drink water only and should avoid food or sugary drinks for 4-6 hours before the scan and continue to take your medications as normal.

**However, if you are diabetic, you will receive a letter detailing what you need to do before the scan. The radiographers will check your blood glucose level prior to the test, and if it is too high the test may have to be rearranged.**

You will not get the result of the test the same day. The result will be available for your doctor to discuss with you when you come back to the clinic.

Your PET-CT scan is booked for:

**Date:** .....

**Time:** .....

Alliance Medical Cumberland Infirmary Tel: 01772 524932

## **Bronchoscopic Procedures**

You may need a bronchoscopic procedure as part of your investigations. There are two different types of this procedure and you will be informed by your doctor or Lung Nurse Specialist which one is required.

**1) Bronchoscopy:** your doctor will pass a long flexible telescope (thinner than a pencil) through your nose or mouth into the air passages in your lungs and will examine the airways. It is also likely that a biopsy will be taken.

**2) Endobronchial Ultrasound (EBUS):** your doctor will perform the same test as a bronchoscopy (see above) but will also undertake an assessment of the lymph nodes using an ultrasound probe and will take biopsies from these nodes.

## **What happens during the test?**

The test happens under light sedation. This means that you will be given a relaxing injection to make you sleepy, but you will not lose consciousness. Your doctor will also spray a local anaesthetic in the back of your throat. This tastes bitter and makes your throat numb. A nurse will be with you during the test. The doctor will then perform the test as described above. The test will take between 15-45 minutes.

## **What do I need to do before the test?**

You should have nothing to eat or drink for four hours before the procedure. You should take your normal tablets, although if you take warfarin, aspirin or

Clopidogrel you should stop these five days before the test. If you are diabetic then you should be given advice about this by your doctor or Lung Nurse Specialist.

Both tests are generally very safe, and many hundreds are performed each year. There can, however be rare complications and very occasionally a patient may die as a result of the test. This happens about one time in three thousand patients. Your doctor will be able to discuss the possible risks with you and answer any questions before starting the test and will ask you to sign a consent form.

## **What happens after the test?**

Following the test you will be taken to a recovery room where a nurse will look after you for about 1 hour. You will not be allowed to eat or drink for 2 hours. You may occasionally cough up small amounts of blood after the test. Sometimes you may need an X-ray following the test.

You can go home the same day provided there is someone to pick you up and stay with you overnight. You should not drive a car, operate machinery or drink alcohol for 24 hours. If there is no one to stay with you overnight then we will arrange for you to stay in hospital overnight and go home the following morning.

### **When will I find out the result?**

You will not be told the results on the day of the test. Your doctor will discuss the findings and any biopsy results when they next see you in clinic.

### **Your test is booked for:**

**Date:** ..... **Time:** .....

**Hospital:** Cumberland Infirmary: 01228 814289

### **Lung biopsy**

You may need a lung biopsy. This is a way of getting a very small piece of lung tissue by passing a needle through the skin into your chest.

### **What happens before the test?**

You can eat and drink before the test, and should take your tablets as usual. You should not have this test whilst taking warfarin, aspirin or clopidogrel tablets and you will be informed by your doctor or Nurse Specialist when you need to stop them, which is usually around five days before the procedure.

### **What happens during the test?**

You will be awake during the test. You will be given a small injection of local anaesthetic to numb the skin before the biopsy is taken. The test should not hurt and if you have any pain or discomfort then tell the doctor who is performing the test.

Lung biopsies are done in the CT scanning department at the Cumberland Infirmary. Another CT scan will be taken just like the original CT scan you had. The doctor will use the pictures to decide where to place the needle. Sometimes lung biopsies are taken using ultrasound rather than CT. Ultrasound is a test where a plastic probe is put on your chest which then displays pictures of your chest on a computer screen.

### **What are the risks?**

Commonly, a little air leaks into the space around the lung during the biopsy. This is called a pneumothorax. This happens about 1 time in every 5 tests, but usually the leak is so small that it doesn't cause a problem and no extra treatment is needed.

Occasionally, air leaks occur and the doctors may need to put a small vent into the lining of your lung. A vent is inserted into the front or side of the chest under local anaesthetic. The doctor will discuss this further with you when you sign the consent form before having the test done. If you need a vent, you may go home with the vent in and return in a couple of days for a chest x-ray and removal of vent. Written instructions will be given.

## What happens after the test?

Once the biopsy procedure has been completed, you will need to lie flat in bed for a few hours. You should be able to go home the same day provided there is someone to pick you up and stay with you overnight. If you do not have someone who can stay with you overnight following the procedure, you may need to stay overnight in hospital. If you become breathless once you have gone home you should attend Accident and Emergency straight away. You should not drive a car, operate machinery or drink alcohol for twenty four hours and you should avoid flying for six weeks following a biopsy.

You will not be given results the same day. Your doctor will be able to discuss the results with you when you next return to clinic.

## Your lung biopsy is booked for:

**Date:** ..... **Time:** .....

Cumberland Infirmary, Radiology Dept.:

01228 814 528

## Fine Needle Aspiration

You may need a fine needle aspiration as part of your investigations. This procedure involves using a thin needle to remove samples of tissue (biopsy) or fluid from an organ of the body or a lump found under the skin.

If you require a biopsy of a neck lymph node, this is a minor procedure where you can go home on the same day. You may also drive after this test.

If you require a biopsy of an organ, such as the liver or adrenal gland, then you will need to have someone to stay with you overnight and are not allowed to drive home. You may need to be admitted overnight for an organ biopsy if there is no-one to stay with you.

Usually, the test can be done without the need to make a cut in the skin. If the lump being tested is very small it might be necessary to use a scanning machine to help guide the needle to the right place. This may be done by using an ultrasound machine or CT scan (see page 6).

Usually, there is very little preparation necessary. However, if you take an anticoagulant (blood-thinning drug) such as Warfarin, Aspirin or Clopidogrel you may be asked to stop taking this for a few days before the biopsy.

## What happens after the test?

Most fine needle aspirations are carried out without any problems. Commonly, you may feel a little sore for a couple of days after the test.

You may develop a bruise at the site where the needle was inserted. Complications are uncommon but can include:

- bleeding
- infection
- other complications specific to the site of the needle insertion

In addition, there can be rare complications from a biopsy of the liver and very occasionally a patient may die as a result of this. This happens in around 1 in 1000 patients.

### **When will I find out the result?**

You will not be told the results on the day of the test. Your doctor will discuss the results when they see you next in the clinic.

Your fine needle aspiration is booked for:

**Date:** .....

**Time:** .....

**Hospital:** Cumberland Infirmary, Radiology Dept: 01228 814 528

West Cumberland Hospital, Ultrasound Dept: 01946 523 355

### **Removal of pleural fluid**

Sometimes fluid builds up in the lining of the lung - this is called pleural fluid. If this is seen on your CT scan, the doctors may arrange for you to have some of this fluid removed. This fluid can then be sent to the laboratory to help doctors find out why it has accumulated. If large amounts of plural fluid build- up, this can make patients feel breathless. If this happens, doctors can remove large volumes (sometimes 2 or 3 pints) to relieve some of this breathlessness.

If you are just having fluid removed, you can eat and drink normally before the procedure. The doctors will locate the fluid using an ultrasound machine, and the fluid is then removed using a small needle. Local anaesthetic is used to numb the area before the fluid is removed. You will be awake during the procedure. You should not have this test whilst taking Warfarin tablets and your doctor will go through this with you in clinic.

After the fluid removal, you will sometimes need an X-ray. You will not be given results the same day. Your doctor will be able to discuss the results with you when you next return to clinic.

Your pleural fluid removal is booked for:

**Date:** .....

**Time:** .....

**Hospital:**

Cumberland Infirmary, Outpatient Dept:

Tel: 01228 814 722

West Cumberland Hospital, Medical Physics Dept:

Tel: 01946 523 456

**Lung function tests**

You will have probably done a blowing test when you first came to your appointment. You may also need some further lung tests.

The tests are performed by a physiologist. They will be able to explain exactly what you need to do during these tests. You do not need any special preparation before these tests. If you normally take inhalers, you should take these as usual before coming for the test.

**Exercise test**

Occasionally your doctor may want you to do an exercise test. This will involve riding an exercise bike whilst measurements are taken of your breathing, heart rate and blood pressure.

The Physiologist who performs the test will be able to explain exactly what the test involves before it starts. The test can stop at any time if you become too tired or feel unwell.

**Consent**

Before a doctor or other health professional examines or treats you, they need your consent. Sometimes you can simply tell them whether you agree with their suggestions. However, sometimes a written record of your decision is helpful. For example if your treatment involves sedation or general anaesthesia. You will then be asked to sign a consent form. If you later change your mind, you are entitled to withdraw your consent - even after signing.

**What should I know before deciding?**

Health professionals must ensure you know enough to enable you to decide about treatment. They will write information on the consent form and offer you a copy to keep as well as discussing the choices of treatment with you. Although they may well recommend a particular option, you are free to choose another. People's attitudes vary on things such as the amount of risk or pain they are prepared to accept. That goes for the amount of information too. If you would rather not know about certain aspects, discuss your worries with whoever is treating you.

**Should I ask questions?**

Always ask anything you want. The person you ask should do their best to answer, but if they don't know they should find someone else who is able to discuss your concerns. To support you and prompt questions, you may like to bring a friend or relative. Ask if you would like someone independent to speak up for you.

## **Is there anything I should tell people?**

If there is any procedure you don't want to happen, you should tell the people treating you. It is also important for them to know about any illnesses or allergies which you have or have suffered from in the past.

## **Can I find out more about giving consent?**

The Department of Health leaflet entitled 'Consent - What You Have A Right To Expect' is a detailed guide on consent in versions for adults, children, parents, carers/relatives and people with learning disabilities.

Ask for one from your clinic or hospital, order one from the NHS Response line (08701 555 455) or read it online at [www.doh.gov.uk/consent](http://www.doh.gov.uk/consent).

## **Who is treating me?**

Amongst the health professionals treating you may be a 'doctor in training', medically qualified but now doing more specialist training. They range from recently qualified doctors to doctors almost ready to be consultants. They will only carry out procedures for which they have been appropriately trained. Someone senior will supervise, either in person accompanying a less experienced doctor in training or available to advise someone less experienced.

## **If cancer is confirmed as a diagnosis.**

The Macmillan Cancer Information and Support Centres at the Cumberland Infirmary and the West Cumberland Hospital can provide help and support or even a listening ear. They can provide you with a list of support groups in the Cumbria Area and information about other useful local and national services which may be able to offer you the help you need.

## **What about Anaesthesia?**

If your treatment involves general or regional anaesthesia (where more than a small part of your body is being anaesthetised), you'll be given general information about it in advance. You will also have an opportunity to talk with the anaesthetist when he or she assesses your state of health shortly before treatment. Hospitals sometimes have pre-assessment clinics which provide patients with the chance to discuss things a few weeks earlier.

## **Further clinic appointments**

Once you have the tests, your doctors will want to see you back in clinic to discuss the results.

Following these appointments, you may get referred on to other doctors for further stages of your treatment. Your doctor or Nurse Specialist will be able to explain about this when you come for your follow-up appointment.

Your next outpatient appointment is at:

Dr..... clinic

Date:

Time:

Cumberland Infirmary, Main Outpatients Dept, Ground Floor  
Workington hospital

Further outpatient appointments are:

Date:.....

Time:

Hospital:

Date:

Time:

Hospital:

If you need to get in touch with one of the doctors or nurses, their contact numbers are:

Cumberland Infirmary Secretary: 01228 814063

West Cumberland Hospital Secretary: 01946 523007

Lung Nurse Specialists:

Carlisle 01228 814391

Whitehaven 01946 693181 ext. 3020

(Answerphone - please leave your name and telephone number)

## Confidentiality

**'The Trust's vision is to keep your information safe in our hands.'**

We promise to use your information fairly and legally, and in-line with local and national policies. You have a right to understand how your information is used and you can request a copy of the information we hold about you at any time.

For further information contact the [Subject Access Coordinators](#)  
[SACCIC@ncuh.nhs.uk](mailto:SACCIC@ncuh.nhs.uk) or [SACWCH@ncuh.nhs.uk](mailto:SACWCH@ncuh.nhs.uk)

## Feedback

We appreciate and encourage feedback, which helps us to improve our services. If you have any comments, compliments or complaints to make about your care, please contact the PALS team (Patient Advice and Liaison Service) on 01228 814008 between 10.30 and 4.30 Monday to Friday or email [PALSCIC@ncuh.nhs.uk](mailto:PALSCIC@ncuh.nhs.uk).

If you would like this factsheet in another language or format, for example Braille, large print or audio the PALS team will be able to assist you (contact details above)

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