

# Your Lung Tests Explained

Information and advice for patients

## Respiratory

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## **Introduction**

You have been referred to the Respiratory Doctors and Lung Specialist Nurses due to symptoms you reported or an abnormal area in your lungs has been found on your chest x-ray or CT scan.

There may be a suspicion that this could be a lung cancer.

We understand this may be an anxious time for you and your family, therefore we will try to get your tests done as soon as we can. We aim to do this within 2 weeks of them being requested.

The following pages of the booklet describe the different tests used to investigate your symptoms or the abnormal area. You will not need to have all of these tests and not everyone has the same tests. Your keyworker will be able to advise which tests have been requested for you.

## **Your Lung Team**

Your care will be guided by the multidisciplinary team (MDT), who meet every Tuesday to discuss scans and results. This team is made up of: Chest Consultants, Radiology Consultants (imaging specialists), Histopathologists (biopsy results specialist doctors), Oncologists (cancer specialist doctors), Thoracic Surgeons (chest surgeons), Palliative Care Consultant, MDT Co-ordinator, Lung Cancer Nurses.

**You should have a named Consultant and a named Keyworker for your care.**

**My Consultant is:**

**My Keyworker is:**

**They are based at:**

**My Keyworker's number is:**

0121 507 5121 (City)/ 0121 507 3964 (Sandwell)

**My hospital number is:**

**My plan of tests is:**

## **CT Scan**

### **What is this test?**

A Computerised Tomography (CT) scan is where a series of x-rays are taken to create a 3D image of the inside of your body. You will often need to have a scan of both your thorax (chest) and abdomen (tummy) to start off with.

### **Why have I been asked to have this test?**

The pictures produced can help the doctors to see if there are any areas that look suspicious. It can also help to decide which further tests are needed to take samples of the area.

### **Before the test:**

You should drink plenty of fluids from 6 hours before your scan. You may be asked to drink a dye before the scan and have a cannula (thin tube) inserted so that another dye can be given through your vein.

### **During the test:**

You will lie on your back on the couch and be asked to keep still while you are moved backwards and forwards through the scanner which looks like a doughnut. Once all preparations are done, the scan takes less than 5 minutes.

### **After the test:**

You can return home, go to work, and drive straight after the test. You should drink plenty of fluids for 24 hours after your scan.

### **Location of test:**

Imaging department, 1st Floor, Birmingham Treatment Centre,  
City Health Campus

Imaging Department, Ground Floor, Sandwell Health Campus

Contact details for rearranging/discussing appointments:

Imaging Booking Team: 0121 507 3339

### **More information:**

**Cancer Research UK** - Tests and scans

[www.cancerresearchuk.org/about-cancer/tests-and-scans/ct-scan](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/ct-scan)

## **PET Scan**

### **What is this test?**

A Positron Emission Tomography (PET) scan is where a very small amount of radioactive isotope is injected into your vein and this is detected in an image alongside a CT scan of your body. These two images are combined to create a detailed picture of your body with areas of activity showing up.

### **Why have I been asked to have this test?**

The pictures produced can help doctors diagnose any areas of increased activity. These areas could include cancer, and a PET scan helps to determine the stage of the lung cancer and treatment options available.

### **Before the test:**

The booking team will go through a questionnaire with you. You should not eat anything and should only drink plain water for 6 hours before your scan. If you are diabetic, this fasting period will be discussed with you. You should not exercise 24 hours before your scan. If you require oxygen, you will need to bring this with you and make sure you have enough for travel and the duration of the test.

### **During the test:**

You will need to walk up small steps to the mobile unit. You will be given the radioactive isotope through a cannula (thin tube) and you will need to sit still for an hour in a small room for the dye to be absorbed. You will lie on your back on the scanner couch which will move you through the scanner. The scan itself usually takes between 15 to 60 minutes.

### **After the test:**

You will be asked to use the designated toilet and no other toilet at the hospital due to the radioactivity. You can then return home. You should drink 4-5 glasses of water to flush the dye out of your system. You should avoid anyone who is under the age of 18 or pregnant for 8 hours after the scan.

### **Location of test:**

City Health Campus on Wednesdays.

Alternatively, can be done at Wolverhampton or QE hospitals if needed.

### **Contact details for rearranging/discussing appointments:**

PET booking team (Alliance Medical): 0330 128 1007

#### **More information:**

**Cancer Research UK**

Tests and scans

[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/pet-ct-scan](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/pet-ct-scan)



## Blood Tests

### What is this test?

A sample of your blood is taken and sent to the laboratory to be tested for different cells, proteins and chemicals.

### Why have I been asked to have this test?

This will give an idea about your general health. Specific blood tests are required before you have any further tests and biopsies. Unfortunately, blood tests are currently unable to detect lung cancer.

### Before the test:

You can eat and drink as normal fasting is not required.

### During the test:

A tight band will be put around your arm and a needle will be used to take a sample of your blood from a vein in your arm or hand.

### After the test:

You will be given a cotton wool ball to put pressure on the area, which will help to prevent bleeding and bruising. You will then be able to return home or to work.

### Location of test:

**Birmingham:** Birmingham Treatment Centre (City Health Campus), Summerfield Primary Care Centre (Winson Green), Soho Health Centre (Handsworth), or Tower Hill Medical Centre (Great Barr).

**Sandwell:** Sandwell Health Campus (West Bromwich), Lyng Health Centre (West Bromwich), Victoria Health Centre (Smethwick), Oldbury Health Centre (Oldbury), Rowley Regis Hospital (Rowley Regis), or Neptune Health Centre (Tipton).

### Contact details to book your own appointment:

To book a blood test appointment call 0121 507 6104

OR email [swbh.phlebotomy@nhs.net](mailto:swbh.phlebotomy@nhs.net) with your full name, date of birth, NHS or hospital number, contact number and the date and time you require your blood test.

#### More information:

Sandwell & West Birmingham NHS Trust  
[www.swbh.nhs.uk/services/blood-tests/](http://www.swbh.nhs.uk/services/blood-tests/)

#### Cancer Research UK

Tests and scans  
[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/blood-tests](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/blood-tests)



## Lung Function Tests

### What is this test?

A pulmonary (lung) function test (or PFT) is a series of different breathing tests which assess: how much air you can quickly force out of your lungs, the capacity and volume of air in your lungs on breathing in and out, and how well oxygen can move from your lungs and into your blood.

### Why have I been asked to have this test?

These tests show how fit and well your lungs are. These are very important to guide whether you will be able to have certain biopsy tests or treatments.

#### Before the test:

Wear loose, comfortable clothing to the appointment. Do not smoke for 24 hours beforehand, avoid alcohol for 4 hours beforehand, avoid eating a large meal for 2 hours beforehand, and avoid strenuous exercise 30 minutes before your appointment. You may be required to not have your usual inhalers before your appointment. There are limited appointments available, if you cannot attend, please re-arrange using the contact details below.

#### During the test:

You will be asked to wear a clip on your nose. You will be talked through the different tests. They will often involve breathing into and out of a mouthpiece. For one of the tests you may be asked to sit inside a transparent cubicle. If you don't like small spaces please speak to the person running your tests.

#### After the test:

You will be able to return home or to work after the tests are finished. You may be required to have further tests on an exercise bike (CPEX) if you are being considered for surgery.

#### Location of test:

Respiratory Physiology, 1st Floor, Birmingham Treatment Centre, City Health Campus.

Respiratory Physiology, Chest Clinic, Ground Floor, Sandwell Health Campus.

#### Contact details for rearranging/discussing appointments:

**BTC Respiratory Physiology:** 0121 507 4298

**Sandwell Respiratory Physiology:** 0121 507 3666

#### More information:

**British Heart Foundation**  
[www.bhf.org.uk/information-support/heart-matters-magazine/medical/what-is-a-lung-function-test](http://www.bhf.org.uk/information-support/heart-matters-magazine/medical/what-is-a-lung-function-test)



## Bronchoscopy

### What is this test?

A bronchoscopy is a camera on a flexible tube to look at your airways and the main breathing tubes in your lungs. A small biopsy sample can be taken directly from your airways or by using a small amount of fluid.

### Why have I been asked to have this test?

If you have coughed up any blood or have an area in the centre of the lungs that appears abnormal on a CT scan, a bronchoscopy may be requested to investigate this area and take samples if appropriate.

### Before the test:

You should not eat for 6 hours beforehand but can drink water up to 3 hours before your appointment. You should stop the following medication before your appointment:

- Aspirin: Stop the morning of the test
- Warfarin/Clopidogrel/Ticagrelor: Stop 7 days before
- Rivaroxaban/Apixaban/Edoxaban: Stop 2 days before
- Enoxaparin injection: Stop night before

You should liaise with your anticoagulation team if you are known to them.

### During the test:

You will be given some sedation to help you relax and a local anaesthetic spray to numb your throat and airways. A thin tube with the camera will be inserted into your nose or your mouth for the bronchoscopy. It often takes around 30 minutes for the test.

### After the test:

You will be monitored for around 2 hours after the test. You cannot drive home and should have someone with you for 24 hours after the test due to the effects of the sedation.

### Location of test:

MMUH: Medical Day Case Unit, 3rd Floor by "C" lifts, Midland Metropolitan University Hospital

### Contact details for rearranging/discussing appointments:

Endoscopy Admin Team: 0121 507 3460

**More information:**  
Cancer Research UK  
[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/bronchoscopy](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/bronchoscopy)



# EBUS

## What is this test?

An endobronchial ultrasound (EBUS) uses an ultrasound probe on a flexible tube to have a look at your airways and some lymph nodes from inside your breathing tubes. A sample of these can be taken using a fine needle.

## Why have I been asked to have this test?

If there are any enlarged lymph nodes or any abnormal areas in the centre of your chest, an EBUS might be requested to collect a sample.

## Before the test:

You should not eat for 6 hours beforehand but can drink water up to 3 hours before your appointment. You should stop the following medication before your appointment:

- Aspirin: Stop the morning of the test
- Warfarin/Clopidogrel/Ticagrelor: Stop 7 days before
- Rivaroxaban/Apixaban/Edoxaban: Stop 2 days before
- Enoxaparin injection: Stop night before

You should liaise with your anticoagulation team if you are known to them.

## During the test:

You will be given some sedation to help you relax and a local anaesthetic spray to numb your throat and airways. A thin tube will be inserted through your mouth. It often takes 30-45 minutes for the test.

## After the test:

You will be monitored for around 2 hours after the test. You cannot drive home and should have someone with you for 24 hours after the test due to the effects of the sedation.

## Location of test:

MMUH: Medical Day Case Unit, 3rd Floor by "C" lifts, Midland Metropolitan University Hospital

## Contact details for rearranging/discussing appointments:

Endoscopy Admin Team: 0121 507 3460

### More information:

Cancer Research UK

[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/endobronchial-ultrasound](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/endobronchial-ultrasound)





## CT-Guided Lung Biopsy

### What is this test?

A CT-guided lung biopsy is where a sample of your lung tissue is taken using a fine needle through the skin under a CT scanner.

### Why have I been asked to have this test?

If there is an abnormal area in your lungs, a CT-guided lung biopsy might be requested to take a sample of this.

### Before the test:

You should only have a light breakfast at 6am before your appointment. You should stop the following medication before your appointment:

- Aspirin/Warfarin/Clopidogrel/Ticagrelor: Stop 5 days before
- Rivaroxaban/Apixaban/Edoxaban: Stop 2 days before
- Enoxaparin injection: Stop night before

You should liaise with your anticoagulation team if you are known to them.

### During the test:

You will lie on the CT scanner couch in the best position for the doctor to obtain the sample; this may be lying on your front or back. A local anaesthetic will be used to numb the area and few samples of lung tissue taken using a long needle. A series of targeted CT scans focused on the area of abnormality will be done to make sure that the sample is taken from the right place. It usually takes 45-60 minutes.

### After the test:

You will be monitored for a couple of hours after the test and have a chest x-ray to ensure you have had no complications, such as a pneumothorax (air leak), before you will be able to go home. Someone should stay with you for 24 hours after the test. If you do have an air leak, you may have to stay in hospital and have a tube inserted to drain the air.

### Location of test:

MMUH: Medical Day Case Unit, 3rd Floor by "C" lifts, Midland Metropolitan University Hospital

### Contact details for rearranging/discussing appointments:

Imaging Day Unit Team: 0121 507 3714

#### More information:

Cancer Research UK

[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/needle-biopsy-through-skin](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/needle-biopsy-through-skin)



# Ultrasound-Guided Biopsy

## What is this test?

An ultrasound-guided biopsy is where a sample of tissue is taken using a needle through the skin under an ultrasound machine. A sample can be taken of your lung, liver, or lymph nodes.

## Why have I been asked to have this test?

If you have an abnormal area in your lungs, liver, or lymph nodes, an ultrasound-guided biopsy might be requested to take a sample from these.

## Before the test:

You may require another blood test 7 days before your appointment if you are having a liver biopsy. You may be required to stop medication as below; your keyworker will be able to advise you on this:

- Aspirin/Warfarin/Clopidogrel/Ticagrelor: Stop 5 days before
- Rivaroxaban/Apixaban/Edoxaban: Stop 2 days before
- Enoxaparin injection: Stop night before

You should liaise with your anticoagulation team if you are known to them.

## During the test:

An ultrasound probe and cold jelly will be used to identify the area to take the sample from. Local anaesthetic may then be used to numb the area and a needle used to take the sample. It usually takes 30-45 minutes.

## After the test:

You will be observed for a couple of hours after the test before going home and you will need someone with you for the first 24 hours after the test. For lymph node biopsies, you may be able to go straight home.

## Location of test:

**Sandwell:** Imaging Department, Ground Floor, Sandwell Health Campus.

Imaging department, 1st Floor, Birmingham Treatment Centre, City Health Campus

## Contact details for rearranging/discussing appointments:

Sandwell Imaging Day Unit: 0121 507 3714

Birmingham Treatment Centre: 0121 507 5547

### More information:

Cancer Research UK

[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/needle-biopsy-through-skin](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/needle-biopsy-through-skin)



## **Pleural Fluid Aspiration**

### **What is this test?**

A sample of the fluid between the linings of the lungs (pleura) is taken using a needle through the skin.

### **Why have I been asked to have this test?**

On your chest x-ray or CT scan, fluid in the linings outside of the lungs might have been identified. A sample of this is useful to find out the cause for this build-up of fluid, including if there are any bacteria or cancer cells present.

### **Before the test:**

You may be asked to go for a chest x-ray just before you attend your appointment, you will be informed if this is the case. You should stop the following medication before your appointment:

- Warfarin/Clopidogrel/Ticagrelor: Stop 7 days before
- Rivaroxaban/Apixaban/Edoxaban/Dabigatran: Stop 2 days before
- Enoxaparin injection: Stop night before

You should liaise with your anticoagulation team if you are known to them.

### **During the test:**

An ultrasound will be used to look at the amount of fluid at the bottom of both lungs and find the best place to take the sample from. A needle will then be used to take a sample of the fluid. If you are breathless due to the fluid, more fluid can be removed for symptom relief. It usually takes 30-45 minutes.

### **After the test:**

You may be asked to have a chest x-ray after the procedure to ensure you have had no complications and then you will be able to go home. You will be able to remove the dressing the next day.

### **Location of test:**

MMUH: Medical Day Case Unit, 3rd Floor by "C" lifts, Midland Metropolitan University Hospital

### **Contact details for rearranging/discussing appointments:**

Pleural Clinic: 0121 507 3151

Secretary: 0121 507 4586

#### **More information:**

**Cancer Research UK**

[www.cancerresearchuk.org/about-cancer/  
tests-and-scans/fluid-drainage](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/fluid-drainage)



## **Surgical Biopsy**

### **What is this test?**

A surgical biopsy is a test performed by the Cardiothoracic (chest) Surgeons to take a sample of the abnormal area. These are done under a general anaesthetic. There are different biopsies performed by the Surgeons including rigid and navigational bronchoscopy and cervical mediastinoscopy.

### **Why have I been asked to have this test?**

The abnormal area in your lungs may not be accessible to biopsy via other routes or previous biopsies done via other routes may have been unsuccessful. The Surgeons may be able to reach the area whilst you are asleep under a general anaesthetic.

### **Before the test:**

You will be seen by the Surgeons in clinic at the BTC or Sandwell hospital to go through the procedure and risks associated with the test. You may require extra tests including heart scans, to ensure that you are fit to have a general anaesthetic and surgery. You may have a pre-op assessment at the QE before the test. You will have to travel to the QE for the test.

### **During the test:**

You will have a general anaesthetic through a thin needle and go to sleep. Depending on the test, a camera may be inserted into the breathing tube or a small cut made at the base of the neck. Samples of your lungs or lymph nodes may be taken.

### **After the test:**

You may be able to go home the same day as the test or you may require a short stay in hospital, it depends on the test you have. You should be advised on this by the Surgeon in clinic before the test.

### **Location of the test:**

Queen Elizabeth (QE) Hospital, Edgbaston.

### **Contact details for rearranging/discussing appointments:**

**Secretary to Cardiothoracic Surgeons: 0121 507 3414**

#### **More information:**

**University Hospitals Birmingham**  
**[www.thoracicsurgery.co.uk](http://www.thoracicsurgery.co.uk)**



## **Next Steps**

### **What happens after I've had my tests?**

It can take around a week for scan results to come back and around 2 weeks for any biopsy results to come back. These results will be discussed by the multidisciplinary team (MDT). Meetings usually take place on a Tuesday afternoon. A plan for either monitoring or treatment will be decided.

### **How will I be told of the results of the tests?**

If you require further tests, your Keyworker will contact you to inform you of these additional tests.

If we have all the results required from your tests, we will bring you into a face-to-face clinic, which may be arranged at short notice. This may be with one of the Specialist Nurses or Consultants to discuss the results and the plan for treatment. We encourage you to bring family members with you for this appointment. Our Specialist Nurses can often see you in clinic and refer you to the appropriate teams for treatment quicker than seeing a Consultant, but if you would rather see a Consultant to be told your diagnosis please let your Keyworker know.

### **What can I do whilst waiting for these tests and the results?**

As we try to do things as quickly as possible, the teams will often try to contact you via phone to arrange appointments. It is therefore important that you keep your phone on to pick up these calls and let your Keyworker know of any changes of phone number.

We understand it may be an anxious time for you with these appointments and waiting for results. Some people may find continuing with normal day to day activities is helpful alongside talking to close family and friends or getting support from your Keyworker.

We strongly encourage you to keep as active as you are able to, including going for regular exercise, i.e. walks, while you are waiting.

We also encourage you to continue to eat a healthy balanced diet. If you are losing weight, we would encourage you to eat more snacks and add more full fat milks, creams, cheeses and yoghurts to your diet.

## Appointments

You may use the table below to keep track of your appointments.

Date	Time	Hospital	Appointment

## Sources used for information in this leaflet

National Institute for Health and Care Excellence (NICE) (2019). Lung cancer: diagnosis and management NICE guideline [NG122]. [Online] Available at: <https://www.nice.org.uk/guidance/ng122> [Accessed 16th January 2024].

Cancer Research UK (2022). CT scan. [Online] Available at: [www.cancerresearchuk.org/about-cancer/tests-and-scans/ct-scan](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/ct-scan) [Accessed 16th January 2024].

Cancer Research UK (2022). PET-CT scan. [Online] Available at: [www.cancerresearchuk.org/about-cancer/tests-and-scans/pet-ct-scan](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/pet-ct-scan) [Accessed 16th January 2024].

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British Heart Foundation (no date). What is a lung function test? [Online] Available at: [www.bhf.org.uk/information-support/heart-matters-magazine/medical/what-is-a-lung-function-test](http://www.bhf.org.uk/information-support/heart-matters-magazine/medical/what-is-a-lung-function-test) [Accessed 16th January 2024].

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Cancer Research UK (2022). Needle biopsy through the skin for lung cancer. [Online] Available at: [www.cancerresearchuk.org/about-cancer/tests-and-scans/needle-biopsy-through-skin](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/needle-biopsy-through-skin) [Accessed 16th January 2024].

Cancer Research UK (2023). Draining fluid from your chest or tummy. [Online] Available at: [www.cancerresearchuk.org/about-cancer/tests-and-scans/fluid-drainage](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/fluid-drainage) [Accessed 16th January 2024].

Cancer Research UK (2022). Surgical biopsy for lung cancer. [Online] Available at: [www.cancerresearchuk.org/about-cancer/tests-and-scans/surgical-biopsy-lung-cancer](http://www.cancerresearchuk.org/about-cancer/tests-and-scans/surgical-biopsy-lung-cancer) [Accessed 16th January 2024].

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A Teaching Trust of The University of Birmingham

Incorporating the Midland Metropolitan University Hospital, City Health Campus, Sandwell Health Campus and Rowley Regis Hospital.

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ML7420

Issue Date: February 2025

Review Date: February 2028