Information About Image Guided Lung Biopsy

This patient information leaflet is to tell you more about the lung biopsy you have been referred for.

Your doctor has asked for sampling to help decide if you have any serious disease in the lung. The sample taken may guide future treatment options for you if this is confirmed. You should be fully informed of the procedure for the biopsy itself, the benefits of having it and its risks before deciding to go ahead. This decision is best made after discussion about the benefits and risks with your doctor. The radiologist (x-ray doctor) doing the biopsy will confirm you understand these when you come to hospital.

**What is a biopsy?**

A biopsy is a tiny sample taken from the area in your lung that your doctor is concerned about. This is then put under a microscope to be examined after the biopsy.

When you arrive, you will be checked in by a nurse, and the doctor will speak to you about the procedure and confirm you are happy to have the biopsy with your written consent. You will have the opportunity to ask questions about the procedure.

**How is the biopsy taken?**

Your radiologist will use a CT scanner or ultrasound machine to guide their needle into the exact area of the chest that needs sampling. The biopsy usually lasts about 30 minutes. Sometimes it can take longer if there are any technical issues before or during the biopsy.

If you have any major mobility issues, please tell us when booking your biopsy.

Your radiologist will decide the best place to sample. The biopsy is done with you lying still. You may be asked to hold your breath when needed. You need to be awake to be able to follow these instructions, so we do not give sedation. It is important that you tell the radiologist if you are not comfortable before the scan starts. This allows us to make you are more comfortable to help you stay as still as possible.

You will have your pulse and oxygen levels monitored by the nurse looking after you, and sometimes other observations. You may be given oxygen up your nose or through a mask during or after the biopsy.

**Will it hurt?**

After cleaning the skin, local anaesthetic is injected to numb the skin and chest wall. This includes the lining of the lung (pleura), which is the most sensitive. As the anaesthetic goes in, it stings to start with but then goes numb. After that, the procedure should not be painful. You may still feel a sensation of movement or pressure as the radiologist positions the sampling needle.

**Holding your breath**

You will be asked to hold your breath for the initial scan to locate the area of the lung to biopsy. Each time you hold your breath, it should be about the same amount. It will only be for a short time. A large deep breath is not necessary. You can simply pause your breathing wherever you are in your breath once instructed to do so.

A needle is inserted into the lung through the cleaned and numbed area. The scanner is used to guide it into the right place. This is usually done with you breathing gently but may require you to hold your breath several times, a few seconds each time. The radiologist will make it clear what you need to do.

Once the needle is in position in the lung, its central core is removed. A finer needle is inserted through the middle to take the sample. Several samples may be taken this way to get as much material as is needed for testing.

**What happens afterwards?**

After the sample is taken the needle is removed, and a final scan may be done to check for any immediate complications. You will be helped to move across to your bed after your biopsy. The radiologist will advise you how to lie and for how long. For your safety, you cannot immediately sit up after a biopsy.

You will be transferred to the recovery area and cared for by the nurses for at least one hour, then will usually have a check chest x-ray to make sure you are safe to go home. Your doctor will advise you if you need to stay longer for extra time of observation. You may need more chest x-rays or treatment if there are any complications. You will be told if you need admission to hospital for complications.

Most people do not stay in hospital after a lung biopsy. You will be advised where and how to contact the hospital for help if you have any worries or complications after your biopsy.

**Do I have to stay in hospital?**

Most patients don’t have to stay in overnight and can go home the same day, however you must have someone stay with you overnight.

If you have no-one who can stay with you overnight after your biopsy, an overnight stay in hospital will be arranged but we must be made aware of this **before** you arrive.

A minority of patients have complications which will result an overnight stay if the doctors feel it is necessary.

**What can go wrong?**

Complications from lung biopsy fall into 3 categories- air leaks, bleeding and very rare complications. You can discuss these with your referring doctor. You can also ask questions to the nursing team who contact you before you come for biopsy.

If there are unanswered questions you or your relatives have about the procedure before arriving, you can contact the team on the number below. You can scan the QR code for the hospital where the biopsy is being done for more information.

Your doctor will go through your personal risk of complications on the day of the biopsy when they confirm your consent.

**Air leaks**

If air leaks out from the lung into the space around the lung it is called a pneumothorax. It is common for people having a lung biopsy to have an air leak (approximately one in three patients) but most of these leaks are small. If you are well with a small air leak nothing needs to be done to treat this, and the body later absorbs the air.

If you have chronic lung disease, such as COPD or emphysema, you have a higher chance of getting an air leak (approximately one in two patients), and of having one that is large enough to cause you symptoms that need treating.

If your air leak needs treating, your doctor will either suck the air out with a small needle (aspiration) or insert a drain. This may be attached to a valve which you go home with. If you go home with a drain, you will have an appointment made to return later to check if the leak has healed, which can take up to a week. Some people with drains are admitted to hospital and are attached to a water bottle. This can happen if the air leak lasts longer than 1 week at home.

**Bleeding**

Just as with any biopsy, lung biopsy can cause the tissue to bruise and bleed. Most patients are unaware of this, as the bleeding is only a small amount and stays in the lung.

Bleeding usually occurs at the time of taking the sample and shortly afterwards. In about one in twenty people it causes you to cough blood up (haemoptysis). This is unpleasant when it happens but usually stops within 5 to 10 minutes.

If blood tracks out through the path of the needle it can cause blood to collect around the lung in the lining (pleura). Although it is rare to be anything other than a small amount, this can be painful (pleurisy).

After a biopsy, you may cough streaks of blood up over several days, even if you did not at the time of the biopsy. It is unusual for people to cough a lot of blood up once discharged. You are advised to go to your nearest hospital if you cough any large amount of blood after going home.

**Pain**

Pain after a lung biopsy is usually due to an air leak or blood that has tracked out irritating the lining of the lung (pleurisy). This is usually worse with moving or taking deep breaths. It is normally be managed with simple pain killers. Pain may occur whether you need a drain for an air leak or not. It can hurt for a day or so afterwards, so seek advice about what pain relief to take at home.

**Very Rare complications**

Risk of serious complication from lung biopsy is very rare (less than one in a thousand people) but you need to be aware of this to give your full consent.

There is a very small chance that you will have a large amount of bleeding from the biopsy that does not stop with simple treatment. This may require an operation, which may involve a blood transfusion and general anaesthetic.

The operation may be via a tube from the groin and wires passed up inside to block the bleeding internally. Very rarely an open operation with cuts to the skin is needed to stop bleeding.

Very rarely operations are needed for a large air leak after the drain treatment described has not healed it.

At the time of taking the sample, there is a very small risk of an air bubble moving from the lung into your lung veins. If this travels back into your body and lodges in the heart or brain, there is a very small chance it could cause problems such as a stroke or heart attack, which could be potentially life changing or life threatening.

**Title**

**How soon can I…?**

You are advised to not undertake strenuous exercise or heavy lifting for 24 hours afterwards.

We advise you not to smoke or vape following your biopsy. We can offer smoking cessation help and tobacco alternatives during your recovery time if you wish.

If you have an air leak, you cannot fly until you have had confirmation from a doctor that the air leak has healed (usually 6 weeks). You are also advised not to drive. If you have a drain and valve inserted for an air leak that you go home with, you will be advised on who to contact if you have any worries when at home.

We advise not to restart blood thinning medications for at least 24 hours after the procedure. Ask your radiologist when you should restart any blood-thinning medication you normally take.

Results from your biopsy take *at least* 2 working days and can be up to 1 week. These go back to your referring doctor, so you need to speak to the team who referred you about them.

You can ask for advice before going home about any other worries you have about normal daily life after your biopsy. If you are in any way worried after your biopsy about pain, breathing or bleeding symptoms, seek urgent medical help from your nearest Emergency Department.

**Title**

**Information Leaflets About The Hospitals Where Lung Biopsies Are Perfomed**

Scan the QR code with your phone’s camera or the link below and **click on the link for the organisation** you have a confirmed appointment at for more information.

<https://gmcancer.org.uk/faster-diagnosis/single-queue-diagnostics/#patientinfo>



**Trust Names below:**

* Bolton NHS Foundation Trust – Bolton Hospital
* Manchester University NHS Foundation Trust – Wythenshawe Hospital
* Northern Care Alliance NHS Foundation Trust – The Royal Oldham Hospital
* Northern Care Alliance NHS Foundation Trust – Salford Royal Hospital
* Stockport NHS Foundation Trust – Stepping Hill Hospital
* Tameside and Glossop Integrated Care NHS Foundation Trust – Tameside General Hospital
* Wigan, Wrightington & Leigh NHS Foundation Trust – Royal Albert Edward Infirmary