



# A guide to...

## CT Guided Lung Biopsy

### Patient Information

#### How to contact us

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## **Why do I need a CT-guided lung biopsy?**

You have undergone tests such as an X-ray or CT scan which have detected an abnormality in the lungs. Your consultant has suggested that you undergo this test after discussing your case with a radiologist.

They will also have explained why they think you need this test and how it will help decide whether you need further treatment. In particular, they will feel that the benefits in having the test outweigh the risks. This decision will have been carefully considered by your Consultant.

You can decide if you want to go ahead with the procedure or not.

## **What is a CT-guided lung biopsy?**

It is a test where a small needle is inserted into the lung under local anaesthetic and a tiny sample of tissue (biopsy) is taken for analysis. This will help to diagnose the cause of the abnormality. A specialist doctor called a radiologist uses images from a computed tomography (CT) scan to guide the needle to the area where the biopsy is taken.

## **What happens if I do not have the test?**

It may affect your treatment as your consultant may not have all the information needed for a diagnosis.

## **Are there any alternatives?**

Some patients are suitable for a bronchoscopy where a long, narrow flexible camera is passed through the nose or mouth to reach the lungs or a surgical procedure to reach the lung tissue.

Please ask your consultant if you would like to know more about the alternatives.

## **How do I prepare for the test?**

Please do not eat on the morning of your appointment although small sips of water are permitted.

On the day of the test, continue taking any prescribed medication as normal except blood thinning medication.

Please inform us if you are taking antiplatelet medicines (for example, aspirin, clopidogrel) or medicines that thin the blood (for example, warfarin, rivaroxaban, apixaban), as these may need to be withheld temporarily before the procedure. The Consultant you saw in the clinic will have checked your medicines with you. Please ask if you should take them.

If you have previously reacted to intravenous contrast medium, the dye used for x-rays and CT scanning, you must tell your consultant about this.

You will need to stay in hospital after the biopsy for about four hours. Please bring an overnight bag with you to hospital as you may need to stay overnight. We will discuss this with you when your appointment is made.

**You will need to arrange for an adult to take you home by car or taxi.**

### **What happens during the procedure?**

The radiologist performing the biopsy will explain the procedure and answer any questions or concerns you may have. You will then be asked to lie on the CT scanner table on your back, front or side and staff will help make you as comfortable as possible. The CT scanner is not enclosed.

The table on which you are lying will move into the scanner and the radiologist will take a series of pictures to check the position of the area being sampled in your lung. It is important to try to remain still, breath gently and try not to cough during the test.

The radiologist will then clean your skin at the site of the biopsy and use a local anaesthetic to numb the skin before a thin needle is passed into the lung. The local anaesthetic injection may sting initially but this will soon pass. The actual biopsy may feel a little uncomfortable and you may feel a pushing sensation when the biopsy is being taken.

In order to take a good sample, this part of the test may be repeated two to three times.

### **How long does the procedure take?**

The procedure usually takes 30 to 45 minutes. This includes setting-up and the time to take the biopsy.

### **Will it hurt?**

The local anaesthetic used to numb the area may sting for a few seconds. You may also be aware of pressure from the biopsy needle as a sample is taken.

### **What happens afterwards?**

You will be taken back to the ward so you can rest, eat & drink as usual. You will probably have a chest radiograph (a picture of your chest using x-rays) three to four hours after the biopsy. If this is normal you can go home. If there are any complications, we may ask you to stay in hospital overnight.

The results of the biopsy will not be available immediately and will be sent to the consultant in charge of your care. Your consultant will discuss the results with you at your next clinic appointment or by telephone if necessary.

## **Consent**

We aim to make sure that every patient is fully informed about the risks and benefits of a procedure or treatment. The radiologist will ask for your consent (permission) before you have the biopsy.

Please make sure that you understand the risks and benefits of the procedure and that it has been explained to you before you give your consent. Please ask if you have any questions.

## **What are the risks of the procedure?**

All medical procedures carry some risk and a possibility that complications may arise although a lung biopsy is considered a relatively safe procedure.

The amount of radiation used is kept to a minimum and similar to that of other X-ray examinations posing only a very small risk.

It is possible that the results will not give your Consultant enough information to make a diagnosis. If this happens we may need to repeat the CT-guided lung biopsy or recommend an alternative procedure.

It is common to have a small amount of bruising around the site of the needle biopsy which will usually resolve within two to three days. The dressing can be removed after 24 hours.

A puncture of the lung can result in a small air leak (called a pneumothorax) when the biopsy is taken. A pneumothorax can cause a sharp pain in the chest as well as breathlessness. The risk of this is about 1 in 3 patients. In most cases the air leak is very minor and heals up itself without the need for treatment. Occasionally, in approximately 1 in 20 procedures, a larger pneumothorax occurs which can cause the lung to collapse. You may need to stay in hospital and have a thin tube (called a chest drain) inserted between two ribs using local anaesthetic to remove any air. A proportion of patients may cough up a small amount of blood after the biopsy is taken. This is not a reason to get worried.

Internal bleeding requiring an operation to stop is very rare (1 in 1000 procedures). Air embolism: very rarely air can leak into the blood circulation following a lung needle biopsy. If this occurs, it can cause chest pain or serious problems like a heart attack or stroke. The risk of this complication occurring is 1 in 3,000 procedures. Death as a result of the procedure is extremely uncommon. The risk of this complication occurring is one in 5000 procedures.

## **If I am a day patient, what do I need to do after I go home?**

You should rest for the remainder of the day, and possibly the next day, depending on your recovery.

- Have someone to stay with you overnight.
- Eat and drink normally.
- Take your usual pain relief, as prescribed, if you have any pain.
- Continue with your normal medication as prescribed.
- Keep a regular check on the biopsy site.
- Do not have a shower until 24 hours after the procedure and do not bath until 48 hours after the procedure.

## **What if I have a problem at home?**

If you experience severe chest pain, shortness of breath or if you cough up a large volume of blood, please attend your nearest Emergency Department (A&E) immediately.

## **Are there any problems flying in an aircraft after a biopsy?**

You should normally not fly for six weeks. If this is a problem, then please discuss with your consultant.

## **Female patients**

If you are pregnant, or think you may be pregnant, please tell us before the procedure.