CT Guided Lung Biopsy Explained

Patient Information
Introduction
This leaflet tells you about the procedure known as a CT (computerised tomography) guided lung biopsy. It explains what is involved and some of the complications associated with this procedure that you need to be aware of. It does not replace the discussion between you and your doctor but helps you to understand more about what is discussed.

Why do I need to have a biopsy taken?
Other tests you have had, such as a chest X-ray or CT scan of your chest, have shown an abnormal area or shadow. From examining the result of these tests, it is not possible to say what the abnormality is. The best way to find out is to take a small piece of tissue from the abnormal area, using a special needle to examine this under the microscope. This is called a biopsy.

Who will do the biopsy and where will it be done?
The biopsy will be taken by a consultant radiologist who is a doctor who specialises in using X-ray and scanning equipment and in interpreting X-rays. The biopsy will be done using a CT scanner in the X-ray department to locate the precise area to take the sample from. A CT scanner uses special X-ray equipment to obtain many images from different angles. A specially designed computer programme then joins them together to show detailed pictures of the inside of the body.

How do I prepare for the biopsy?
When you are admitted to the hospital a blood test will be taken to check that you do not have an increased risk of bleeding, if this has not been done in clinic. If you are on anticoagulants such as Warfarin or anti-platelets such aspirin or Clopidogrel we recommend you discuss with your doctor as soon as possible the need to discontinue your treatment as you may need to stop taking the drug a few days beforehand. Some patients may need to have a different type of treatment instead. You may be admitted to hospital for this.

In the X-ray department, the consultant radiologist will explain the procedure and ask you to sign a consent form, giving your permission for the biopsy to be taken. You should tell the consultant radiologist if you have any allergies and confirm that you are not taking Warfarin/Clopidogrel. If you have any questions about the procedure, ask the consultant radiologist at this time.
What happens during a CT guided biopsy?
First you will need to remove your clothes to the waist and put on a gown instead. Then you will be asked to lie on the CT scanner table. You may need to lie on your back or front, depending on where the area being investigated is, and where the sample is going to be taken from. The consultant radiologist uses the CT scanner to decide on a suitable point to take the sample from and marks this point on your skin with a pen.

The consultant radiologist will wear sterile gloves and your skin will be cleaned with antiseptic and some of your chest covered with a sterile towel. Your skin will then be numbed with an anaesthetic at the place where the biopsy needle will be inserted. More scans will then be taken to confirm that the correct area has been marked and then the biopsy needle will be inserted.

The consultant radiologist will usually need to take several samples from the same place to be sure they have enough tissue and then a final scan of the area will be taken to check for any complications.

Will it hurt?
Most biopsies do not hurt. When the local anaesthetic is injected it stings a little to start with but then the area should become numb. Later, when the biopsy needle is inserted you may feel the sensation of something passing into your body but it is generally so quick that it is not very uncomfortable at all. When the biopsy is taken, the needle that is used makes a sharp snapping sound, which can be a shock if you are not expecting it.

How long will it take?
A biopsy usually takes about 15 to 20 minutes from start to finish. You will need to lie still for this time on the CT scanner.

Are there any risks involved in this procedure?
CT guided lung biopsy is a very safe procedure, but there are a few risks and complications that may arise, as with any medical procedure.

- The main risk is of causing an air leak (pneumothorax) into the space between the lung and the inner chest wall. A small air leak after a lung biopsy is fairly common and in most cases should not cause any problems. Usually a small leak will get better on its own. If a large air
If a leak occurs then the air will need to be drained, either with a needle, or by putting a small tube through the skin.

- There is also a risk of the needle causing some bleeding in your lung. If this happens then you will cough up some blood. If you are coughing up a lot of blood, you will need to stay in hospital for observation, until it improves. If you start coughing up a lot of blood, become short of breath or have severe chest pain when you have gone home you will need to come back to the hospital immediately.

**What are the benefits of having this procedure?**
A biopsy is the best way for us to get a tissue sample from the abnormal area that is in your lungs. Looking at this sample under a microscope will give us a lot more information about what is causing your symptoms, and the best way to deal with it.

**Are there any alternatives to having this procedure?**
Your doctor has recommended this procedure as being the best for you. If you have any concerns then please speak to your nurse or doctor.

**What happens afterwards?**
After the procedure, you will go back to the day surgery ward and the nurses will perform routine checks of your pulse, blood pressure and breathing to make sure there are no problems. Usually you will need to stay for three to four hours after the biopsy. Before you go home you will have a chest X-ray to check for any air leak.

**When will I get the results?**
The doctor who saw you in clinic will arrange an appointment for you to come back to discuss the results of your biopsy. Unfortunately, not all biopsies are successful. This may be because, despite taking every possible care, the piece of tissue obtained may be too small to make a diagnosis.

Sometimes, even with a good sample of the tissue it is not possible to make a definite diagnosis. If this is the case, your doctor will be able to discuss the next course of action.
Can I drive after the biopsy?
No. Someone else must drive you home after the test or accompany you on public transport. You should be able to drive again the next day if you feel well.

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 discuss it with your doctor.

What about returning to work?
If you work then you should be able to go back the day after your lung biopsy unless advised otherwise.

It is important that you make a list of all medicines you are taking and bring it with you to all your follow-up clinic appointments. If you have any questions at all, please ask your hospital doctor, oncologist or nurse. It may help to write down questions as you think of them so that you have them ready. It may also help to bring someone with you when you attend your outpatient appointments.

Glossary of medical terms used in this information:
Biopsy: a procedure in which a small piece of tissue is removed and examined under a microscope.

CT scan (Computerised Tomography): uses special X-ray equipment to obtain many images from different angles. Then a specially designed computer programme joins them together to show detailed pictures of the inside of the body.

Pneumothorax: a leak of air from outside the lung.

Radiologist: a doctor who specialises in using X-ray and scanning equipment and in interpreting X-rays.

It is important that you make a list of all medicines you are taking and bring it with you to all your follow-up clinic appointments. If you have any questions at all, please ask your surgeon, oncologist or clinical nurse specialist. It may help to write down questions as you think of them so that you have them ready. It may
also help to bring someone with you when you attend your outpatient appointments.

**Local support groups**
Please visit on our website for details of local support groups: [www.birminghamcancer.nhs.uk](http://www.birminghamcancer.nhs.uk)

**Local sources of further information**
You can visit any of the health/cancer information centres listed below:

**Heart of England NHS Foundation Trust**
Health Information Centre
Birmingham Heartlands Hospital
Bordesley Green
Birmingham B9 5SS
Telephone: 0121 424 2280

Cancer Information and Support Centre
Good Hope Hospital
Rectory Road
Sutton Coldfield B75 7RR
Telephone: 0121 424 9486

**Sandwell and West Birmingham Hospitals NHS Trust**
The Courtyard Centre
Sandwell General Hospital (Main Reception)
Lyndon
West Bromwich B71 4HJ
Telephone: 0121 507 3792
Fax: 0121 507 3816

**University Hospitals Birmingham NHS Foundation Trust**
The Patrick Room
Cancer Centre
Queen Elizabeth Hospital
Edgbaston
Birmingham B15 2TH
Telephone: 0121 371 3537/39
Walsall Healthcare NHS Trust
Information and Support Services
Walsall Palliative Care Centre
Goscote Lane
Walsall WS3 1SJ
Telephone: 0800 783 9050

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the quality of our information. If you have a suggestion about how this
information can be improved, please contact us via our website:
www.birminghamcancer.nhs.uk

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