

CT Guided Chest Biopsy

Information for patients



Radiology Department

This leaflet contains important information about your scan and biopsy.

Please read all sections of the leaflet carefully and follow the important instructions.

Patient Information Leaflet: CT guided chest biopsy

This leaflet explains what happens during a computerised tomography (CT) scan and biopsy. It tells you what is involved and about the risks and benefits of having the tests.

For people with childbearing capability between the ages of 12 to 55 years it is important to ensure that you are not pregnant. If there is any possibility that you might be pregnant, please let us know immediately.

If you weigh more than 203 kg, or 32 stone, please contact us using the telephone number at the top of your appointment letter as soon as possible. We are only able to scan patients above 203 kg at one site and your appointment may need to be re-arranged.

What is a CT scan?

This is a type of scan which uses X-rays linked to a sophisticated computer to create detailed pictures of your body in 'slice sections' or 'cross sections'.

The CT scanner is an open ring-like structure, which looks a bit like a giant doughnut, rather than a tunnel as everybody expects!

A more detailed explanation of the scanning procedure is given on the following pages.

What is a CT guided chest biopsy?

A chest biopsy is a procedure where a sample of tissue is taken from the chest area.

We will use a CT scan to show us an image of your chest. This image is then used by the radiologist to guide a fine needle to the right place in your chest and collect tiny pieces of tissue.

Your biopsy will be performed by one of a team of radiology doctors who work across all the Oxford University Hospitals. Your biopsy will either take place at the Horton hospital, the Churchill hospital or the John Radcliffe hospital.

When you arrive at the Radiology department, a member of staff will bring you to the Day Case Ward where we will carry out some final checks. A radiologist will talk through the procedure with you and will check your permission to carry out the biopsy. You will be asked to sign the consent form, if you have not already done so.

When your biopsy is due to start, a member of staff will take you to the scan room. We will ask you to change into a hospital gown and to lie on the CT table, either on your front, your back or side. The scan room staff will help make you as comfortable as possible.

The radiologist will then carry out a scan to find the abnormality. When the abnormality has been found, the doctor will clean your skin over the area and use a small needle to inject local anaesthetic, which will make the area go numb.

When the area has gone numb, the biopsy procedure will begin. The radiologist uses the CT scan to guide the biopsy needle to the abnormality. During the biopsy, the radiologist may ask you to hold your breath for a few seconds. If you find this difficult, just do the best you can. When the radiologist takes the biopsy, the needle that they use makes a snapping sound. The radiologist will warn you when this is about to happen.

The tissue samples are then sent to the laboratory for testing.

The biopsy procedure takes approximately 30 minutes. You will be returned to the Day Case Ward after the biopsy.

Can I take my prescribed medicines as usual?

We will have called you to ask about any medications you are taking and advised you to stop some medications. This may include telling you to stop taking blood thinners.

Caution

Keep all tablets and medicines out of reach of children. Never give any medicines prescribed for you to anyone else.

What clothing should I wear?

You may wish to wear loose clothing that can be removed easily. You will be asked to change into a hospital gown.

Can I bring a relative or friend?

Yes, but they will not be able to go with you into the scan room, except in special circumstances. They can wait in the Day Case Ward or can leave and return later. We can telephone them to let them know when you are ready to be collected. We are unable to care for young children whilst you are having your scan.

Interpreter

If you require an interpreter please let us know.

Please be aware that it is Trust policy that family, friends and other companions cannot act as an interpreter for you.

What are the benefits?

The doctors looking after you have decided that you should have a chest biopsy to help them make a diagnosis and decide on the most suitable treatment for you.

Are there any risks?

Procedure

A chest biopsy is a routine procedure and in most cases there are no serious complications.

Most patients are likely to experience:

- Minor bleeding and bruising where the biopsy needle enters the skin.
- Minor pain after the procedure, which can normally be managed with over the counter painkillers.

As with any medical procedure there are some risks involved:

- Minor bleeding in the lung. This may show as coughing up a small quantity of blood, and can occur after approximately 1 in 20 procedures. The coughing usually stops by itself within 10 minutes.
- A small amount of air in the space around the lung (pneumothorax). This may make it painful to breathe for a day or so. Usually this does not cause any real problems and you should still be able to go home. The risk of this is about 1 in every 3 procedures.
- Occasionally, a larger amount of air can become trapped, which may make you breathless. The risk of this is about 1 in every 20 procedures. This may mean you need a further procedure to relieve the trapped air, where we insert a small plastic tube into your chest. This is called a chest drain and allows the trapped air to escape. It is a simple and effective treatment and is usually carried out by the radiologist.
- If you need a chest drain, it is usually possible to go home with the drain in place. You would then need to come back to hospital every day to be reviewed by the doctor, until the drain is removed. Sometimes, you may need to stay overnight in hospital.

Additionally, there are some more serious but rare complications:

- Severe internal bleeding. This would need to be treated with an emergency operation. The risk of this is about 1 in 1,000 procedures.
- Air embolus. This is when air enters the blood stream, which can cause a stroke or a heart attack. The risk of this is about 1 in 5,000 procedures.
- Both these complications can pose a risk to life. The overall risk of death from any complication is less than 1 in 1,000 procedures.

Exposure to radiation

During a CT scan you will be exposed to X-ray radiation. We are all exposed to background radiation from the ground, building materials and the air, every day of our lives. This is normal and natural. Medical X-rays give an additional dose and the amount of radiation you're exposed to during a CT scan varies, depending on how much of your body is scanned.

Generally, the amount of radiation you're exposed to during each scan will range from the equivalent of a few months to a few years of exposure to natural radiation from the environment. It's thought exposure to radiation during CT scans could slightly increase your chances of developing cancer many years later, although this risk is thought to be very small and less than 1 in 1,000.

The benefits and risks of having a CT scan will always be weighed up by your doctor and the specialists in Radiology before your CT scan. They will ensure that this is the best procedure for you to have to diagnose or treat your condition. The Radiographers always ensure that the radiation dose is kept as low as possible and CT scanners are designed to make sure you're not exposed to unnecessarily high levels.

For more information, read GOV.UK patient dose information.

Visit: www.gov.uk/government/publications/medical-radiation-patient-doses/patient-dose-information-guidance

Contrast injection

Some people will require a contrast injection. The contrast injection contains iodine, which can cause an allergic reaction in a few people. You should tell the Radiographers who are carrying out the scan if you have had an allergic reaction to iodine or contrast dye in the past, or if you have any other allergies.

Very rarely the dye may cause some kidney damage in people who already have kidney problems. We will ask you to complete a questionnaire on the day of the examination before the procedure takes place, to assess the risks of giving you the contrast dye. We may also take a small sample of your blood to test your kidney function.

There is a small chance that the contrast injection can leak outside the vein and cause temporary swelling and discomfort in the arm. This does not happen very often. In the unlikely event of this happening, we will provide you with further instructions and advice.

How do I prepare for the biopsy?

For safety reasons, please do not eat anything for 6 hours before your procedure. You may drink water up to 2 hours before your procedure.

We will have called you to ask about any medications you are taking. It is important that you also tell us about over the counter and herbal remedies. We may tell you to stop some medications.

If we tell you to continue taking your regular medication, please make sure that you only take it with a small amount of water on the day of your biopsy. Please bring any medication that you normally take with you.

Please leave any valuables at home. You should bring your toiletries and nightwear with you, in case you need to stay in hospital overnight after your biopsy.

We advise you not to drive after the biopsy, as your insurance may not cover you. Please arrange for someone to drive you home after the biopsy.

On the day of the examination

Please check your appointment letter carefully for your appointment date, time and location.

When you arrive in the Radiology department you will be greeted by the reception staff and directed to the Day Case waiting area. The Radiology staff will check your identity and prepare you for your scan and biopsy.

When you are to be admitted to a ward or day case unit you will first be seen by the nurses and medical staff. They may carry out assessments on you such as pulse and blood pressure checks.

They may take some blood samples if this is necessary. (Sometimes a GP will take blood samples before you come into hospital, if they are required.)

You may also be given forms to read and complete. One of these forms relates to pregnancy status, Oxford University Hospital is an inclusive organisation who recognises and accepts the diverse community that it is part of. This has resulted in the organisation reviewing many of its processes and procedures to make sure they are in line with this, with the safety and protection of individuals being at the centre of any changes or adjustments. We are now asking the childbearing capacity questions to all patients, regardless of their gender.

Your clinician has requested diagnostic imaging that requires an exposure to radiation. As radiographers, it is our professional duty and legal responsibility to ensure that we protect individuals from unnecessary exposures to radiation. This is particularly relevant when considering any potential exposure of an unborn baby to ionising radiation, as they are at greater risk from the harmful effects of radiation. If we cannot exclude that you are not pregnant, we may need to re-book your scan.

If there is any possibility that you might be pregnant, please contact the Radiology department before your appointment.

A radiologist will talk through the procedure with you and will check your permission to carry out the biopsy. You will be asked to sign the consent form, if you have not already done so.

When your biopsy is due to start, a member of staff will take you to the CT scan room.

What happens in the CT scan room?

In the scan room the radiographers will explain the CT scan and tell you what to expect.

You will have a scan first so that the radiologist can see where the biopsy needle should be put in. You will be asked to lie either on your back or your front on the scanning table. The scanning table moves the part of your body to be biopsied forwards and backwards through the centre of the scanner. The CT scanner is not noisy.

You may be asked to hold your breath whilst the scanner takes the pictures. We do understand that some people have difficulty holding their breath; please tell us if this is difficult for you.

What happens during the biopsy procedure?

For the biopsy, the radiologist will clean your skin with antiseptic and the area in question may be covered with sterile towels.

The radiologist will make your skin and deeper tissues go numb by injecting them with local anaesthetic. Once the anaesthetic has taken effect the biopsy needle will be guided into the abnormal tissue.

Several scans will be taken of the needle to make sure it is in the right place before the samples of tissue are taken (up to eight samples). There will be staff with you at all times to reassure you if you are worried.

When the radiologist takes the biopsy, the needle that they use makes a snapping sound. The radiologist will warn you when this is about to happen.

The biopsy site will be 'dressed' with a small bandage or plaster.

The procedure should take between thirty minutes to an hour.

Will it hurt?

Most biopsies do not hurt. Some people feel a scratch and stinging sensation when the local anaesthetic is injected, but the skin should then become numb.

After this you will be aware of some pushing or sensations of pressure, but not pain. If it is painful more local anaesthetic can be injected. Your skin will stay numb for between 30 minutes and a few hours. It will then wear off. This can make the area feel you like you have 'pins and needles'.

What happens after the procedure?

After the biopsy you will be transferred to a bed and taken to the ward. It is very important to rest quietly in bed for about 30 minutes, to minimise the risk of an air leak from the small hole that has been made in the lung. Please avoid speaking.

After 30 minutes we will check how you are feeling and you may be allowed out of bed to walk on the ward. We will carry out an X-ray of your chest about 1 hour after the procedure to check for any complications.

You will normally be allowed to have something to eat and drink after the X-ray. If the radiologist is happy with your X-ray and you feel well you will be allowed to go home.

What happens when I go home?

We advise you not to drive after the procedure, as your insurance may not cover you. Please arrange for someone to drive you home after the biopsy.

If you are going home on the same day as your biopsy, a relative or friend should accompany you home and stay with you overnight.

When you go home you can eat and drink normally. You should rest until the next day. This is to help the small hole that has been made in your lung to heal. You should not attempt to return to work on the day of your needle biopsy.

We advise you not to do the following activities for 24 hours following the procedure:

- drive
- heavy lifting
- drink large amounts of alcohol
- anything which requires a lot of effort or makes you strain, such as gardening, operating machinery, decorating or sexual intercourse.

We recommend that you do not book any flights until after the biopsy is complete. If you develop a pneumothorax following the biopsy you won't be allowed to fly until 10 days after this has completely healed. The length of time this takes can vary from one person to another. We will arrange regular chest X-rays to find out whether the pneumothorax has healed.

We will give you an information sheet to take home with you, which explains what to do and who to contact if you have any problems after the procedure.

Will the biopsy give an answer?

Unfortunately, not all biopsies are successful. Sometimes the sample of tissue does not provide the answer.

When and how will I know the result of the biopsy?

You will not receive the results straight away.

The results of the biopsy are sent to the doctor who referred you. The biopsy will give us a diagnosis in about 9 out of every 10 patients. The results of your biopsy will be available after about a week. The doctor who referred you will tell you the results of the biopsy and what happens next.

If you do not have another outpatient appointment and do not hear anything about the results within three weeks, please telephone the referring doctor or their secretary for advice. If you do not have their number, please telephone the hospital switchboard and ask to be put through to them:

Telephone: **0300 304 7777**

Questions or concerns

If you have any questions or concerns either before or after the biopsy, please contact the Radiology department.

Telephone: **01865 235 753**
(Monday to Friday 8am to 5pm)

Further information

Further information is available on the following websites:

The Society of Radiographers

There are short videos showing the way in which X-rays and scans are used, including CT scanning.

Visit: www.sor.org and search for 'patient information'

Impact scan

Visit: www.sor.org and search for 'impact scan CT patient guide'

NHS Choices

Visit: www.nhs.uk/conditions/ct-scan/

For further information about the Oxford University Hospitals NHS Foundation Trust:

Visit: www.ouh.nhs.uk

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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April 2024

Review: April 2027

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