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# CT (Computed Tomography) ablation

**If you do not believe you should have been referred for this procedure please contact the CT department immediately.**

## Introduction

This leaflet gives you information about having a Computed Tomography (CT) guided Ablation. It explains how the procedure is carried out and some of the possible complications.

## Why do I need an ablation?

Previous investigations have demonstrated a tumour that requires treatment using either heat (microwave ablation) or ice (cryoablation) to destroy it.

## What is an ablation?

Microwave ablation involves the use of heat to cause destruction of cancer cells. Small needles are used and inserted into the tumour. The needles heat the adjacent tissue and cause thermal damage and eventual destruction of the cells.

The needles used are small, 1 to 2 mm in diameter and therefore no large incision is required for their insertion. Once the needle is in the correct position, microwave energy is passed through the needle and into the surrounding tissue causing it to heat up and the cells to die. The effect is localised but very frequently, and depending on the size of the tumour, the needle is moved to a number of different positions to ensure good coverage of the tumour and its surrounding area. The dead tissue shrinks away eventually and does not need to be removed by surgery.

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Department

**Radiology**

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Cryoablation, also known more simply as 'cryo', involves the use of ice to freeze tumours. The ice used is at a temperature of less than  $-40^{\circ}\text{C}$  and provides a very efficient means of destroying tumour cells in a localised area. This is a method that is able to preserve the normal tissues of the kidney and allows increased accuracy as the ice can be seen on CT scans.

Much like microwave ablation, cryoablation involves inserting small needles into the tumour under imaging guidance. The probes used are about 1.5 mm in diameter.

### Where will the ablation be done and who will carry it out?

The ablation will be done in a CT scanner in the Radiology Department.



Figure 1: CT scanner

The CT scanner uses X-rays to produce highly detailed image slices of the body which are used to guide a fine needle into the abnormal region ready for the ablation to take place.

An interventional radiologist (a doctor who specialises in reading diagnostic images such as X-rays and CT scans to carry out operations) will carry out the procedure alongside an anaesthetist who will monitor you during the procedure. They will be assisted by a radiology nurse and a radiographer who will take the images.

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## How do I prepare for the procedure?

Before your biopsy a pre-assessment conversation is required for the procedure and any preparations needed to be discussed with you. This may take place over the telephone or you may be sent an appointment to attend a clinic in the hospital. Please have a list of all your medications available. You will need a blood test before your ablation to check that you do not have an increased risk of bleeding following the ablation, and that your renal function is satisfactory. The pre-assessment nurse will discuss this with you.

On the day of your procedure, please do not eat anything for 6 hours before your appointment.

Some blood-thinning medications may need to be stopped before the biopsy (we will let you know if this is the case for you) but please continue to take any pain or blood pressure medication as normal.

Report to the area stated on your appointment letter (this may be the Radiology/Imaging Department or a Ward), where you will be asked to change into a hospital gown. A member of the anaesthetic team will meet with you at this stage to discuss what is involved and then the radiologist will discuss the procedure with you in full.

You will need to stay in hospital overnight, so please bring an overnight bag with you.

You will not be able to drive after the procedure and will need to arrange transport home.

## Can I bring a relative/friend?

Yes, but for reasons of safety they cannot join you in the CT scanning room except in special circumstances.

## Giving your consent (permission)

We want to involve you in the decision about your care and treatment. The radiologist will explain the procedure and risks to you and give you the opportunity to ask questions. If you decide to go ahead you will be asked to sign a consent form. This states that you agree to the procedure and understand what it involves. You may withdraw your consent at any time.

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The Radiology Department plays an important role in the training of future healthcare professionals. The part patients play in this is vital in ensuring we produce the right quality of healthcare professionals for the future. If at any time you would prefer not to have students present please inform the team looking after you. This will not impact on your care in any way.

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

You will be taken into the scanning room and an anaesthetist will give you a general anaesthetic so that you will be asleep during the procedure. You will then be moved onto the CT Scanning bed and put into a position which provides the radiologist with the most accessible route to your tumour. A limited CT scan will then be performed to locate the tumour.

Using this scan, the point of entry for the needles is marked on the skin with the area of the skin to be used cleaned with antiseptic solution.

A biopsy of the area may be taken prior to the needles being inserted, and then the needles are guided into the tumour, using CT to ensure they are correctly targeted. The ablation will then begin, with possibly several areas being targeted and the needles being manipulated several times. A completion scan is then performed to assess the immediate results of the ablation therapy.

### **Will the procedure be uncomfortable?**

The ablation is performed under general anaesthetic so you will not feel anything. There is often a mild ache and occasionally more significant pain; this can be managed with pain relief given following the procedure.

### **What are the risks involved?**

The procedure is normally well tolerated and complications are rare. Most people go home the day after the procedure.

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The exact risks depend on the location of the ablation:

- Pain and bruising; this should go after a few days.
- Infection; this is rare but may present as redness, swelling, fever and chills. If this happens you will need to seek medical advice.
- Haematoma (blood clot) which may cause some swelling and pain. A cold compress and simple pain relief such as paracetamol are normally effective.
- Bleeding requiring intervention - the area being ablated or an adjacent blood vessel may rarely bleed enough to need a further procedure. This is usually a minimally invasive procedure to stop the bleeding, very rarely is a surgical procedure required.
- Damage to skin/muscle/nerves - rarely the ablation zone extends into nearby structures; this can lead to longer term issues with pain and skin healing.
- Damage to surrounding organs - whilst every care is taken to limit the area ablated, on rare occasions the bowel or adjacent organs can be damaged. Very rarely this may require an operation.
- Pneumothorax - in order to access the tumour occasionally needles are inserted intentionally or unintentionally across the space around the lung. This can lead to air leaking into this space and a deflation of the lung and is usually straightforward to treat with a small plastic tube called a chest drain. However, this may delay discharge.
- Very rarely the tumour cannot be fully treated, in this case another attempt can be made or the appointment rebooked.

CT scanning does involve X-rays and has the usual risks associated with ionising radiation. The amount of radiation is equal to the natural radiation we all receive from the atmosphere over a period of about 3 years.

There are also risks associated with an anaesthetic. These are typically very low, but will depend on other health issues. These risks will be discussed in detail at your pre-operative assessment and again on the day by the anaesthetist.

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## How long will the procedure take?

Every patient is different so it is not possible to give a definite timeframe. Following the ablation you will be looked after in the theatre recovery area by a recovery nurse who will observe you for a short while. If you feel well you will then be transferred to a ward for continued care and observation for 24 hours.

We recommend that someone picks you up and you rest at home for 48 hours to let the site of the procedure heal. You must not drive until fully recovered from the anaesthetic. Your car insurance may not be valid if you have had a medical procedure.

Dependent on the location of the procedure, we may recommend that you refrain from heavy activity for a week.

## Are there any side effects?

Most patients experience some discomfort following the procedure and this is usually managed by simple pain relief taken in a tablet form. You will be asked to continue the medication for up to a week. You may have a fever for 1 to 2 days following the procedure and a general sensation of 'feeling under the weather'. This usually resolves by itself and does not represent infection in the treated tumour. To reduce the risk of infection you will be given antibiotics at the time of the procedure.

The needles only make a very small point of entry through the skin and the dressings involved are simple plasters. These can be removed after 48 hours. If there is any continued bleeding or discharge from the needle sites, you should promptly seek medical advice from your GP or NHS 111.

## Do I have to have this procedure or is there an alternative?

You do not have to have an ablation. It is possible just to monitor the abnormality with scans but this risks the abnormality growing or spreading and may delay treatment which might lead to worse outcomes. There are sometimes also surgical options- these will be discussed with you in clinic.

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## When will I get the results?

After you have been discharged, a follow-up consultation with the interventional radiologist and/or referring doctor will be made. When you see them in clinic, the wounds will be checked and a follow-up scan will be arranged.

## Frequently asked questions

### Should I still take my regular medication?

Yes, but you may need to stop any blood thinning tablets. If you take any of the following medications please contact the radiology nurses for advice; aspirin, clopidogrel, warfarin, NOACs (apixaban, rivaroxaban, dabigatran) Fondaparinux.

### Can I eat and drink afterwards?

Yes, do so normally.

## Checklist

If you are on 'blood thinning' medication please telephone the radiology nurses for instruction on when to stop and restart them.

Ideally have someone pick you up afterwards. Alternatively get a taxi home and avoid public transport.

## Interpreters

If you need an interpreter for the day of your procedure please contact the department so we can try to arrange this.

## Cancelling your appointment

If you are unable to attend your appointment we would be grateful if you could contact us as soon as possible. We can then offer your appointment to another patient and arrange another date and time for you.

If you have had diarrhoea and/or vomiting please cancel your appointment unless you have been free of symptoms for 48 hours. Please ring the CT Appointments Officer on the number shown on your appointment letter, between 9:00am and 4:30pm, Monday to Friday.



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If you have any concerns about having the CT scan, please ring the CT Appointments Officer on the number shown on your appointment letter, between 9:00am and 5:00pm, Monday to Friday.

We are pleased that we can offer state of the art technology for diagnosis. However, radiology equipment needs constant updating and there is a charitable fund for this. If you would like to make a donation, please send a cheque to the appropriate address below. Cheques are payable to GHNHSFT.

Please send your donation to:  
Business Manager  
Dept of Radiology (Imaging 1)  
Gloucestershire Royal Hospital,  
Gloucester  
GL1 1NN

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