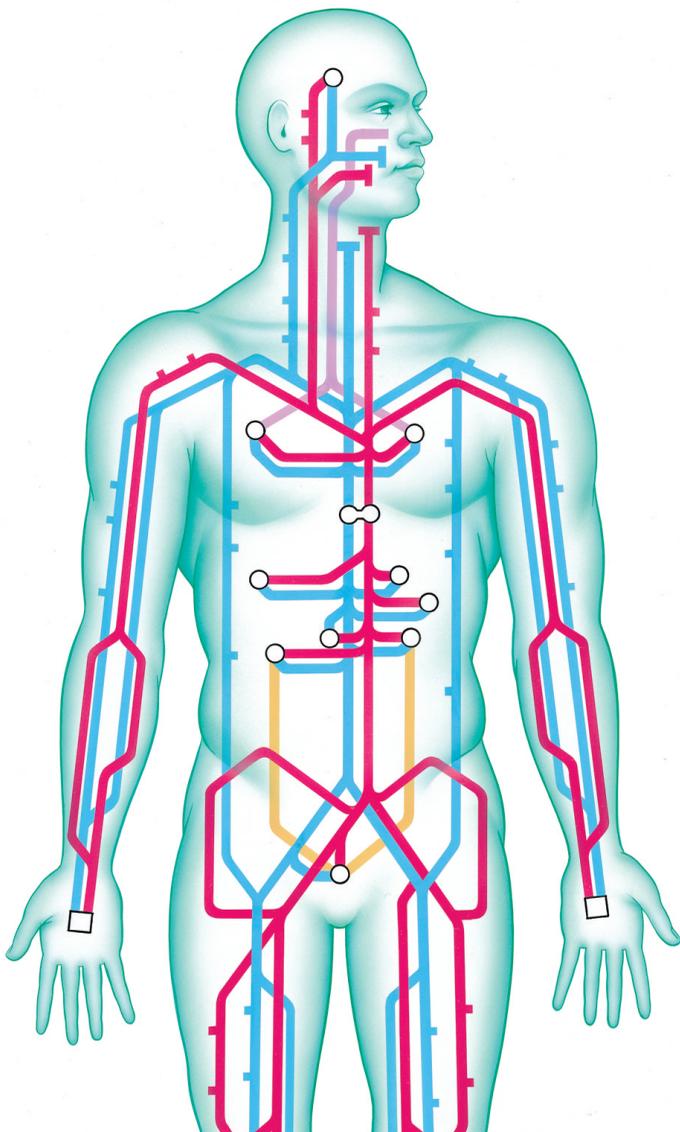


## YOUR COMPUTED TOMOGRAPHY (CT) EXAMINATION



DIRECTORATE OF  
MEDICAL IMAGING  
*INFORMATION FOR PATIENTS*

## **The Radiology Department**

The Radiology Department, X-ray or Imaging Department, is the facility in the hospital which carries out the radiological examination of patients, using a range of X-ray equipment, together with computed tomography (CT scan) as well as ultrasound and magnetic resonance imaging (MRI).

The radiologists are doctors specially trained to interpret the results and carry out some of the more complex examinations. They are supported by radiographers who are highly trained to carry out many of the X-ray and other imaging procedures.

## **What is a CT scan?**

A CT (Computed Tomography) scanner is a special X-ray machine which produces an image of a cross-section, or slice, of the body. The scanner consists of a 'doughnut' shaped structure, or gantry, about two feet thick, through which you pass on a couch. A narrow fan-shaped beam of X-rays is produced from inside the gantry, and rotates in a complete circle around you. The X-rays pass through your body and are detected by electronic sensors on the other side of the gantry. The information passes to a computer which then produces a picture of the internal structure of the body. The pictures are displayed on a TV screen and can be examined by the radiologist.

It takes less than a second to produce each slice, which can vary in thickness from one millimetre to one centimetre. Depending on how much of the body is being scanned, it will be necessary to produce images of up to 30 or 40 slices, or even much higher numbers with some scanners. Most modern CT scanners can do this in less than a minute, so the actual scanning time is actually fairly short.

## **Are there any risks?**

CT scanning does involve X-rays, and so has the usual risks associated with ionising radiation. Female patients who are or might be pregnant must inform a member of staff in advance. The amount of radiation is more than is used for an ordinary X-ray of the chest or body, and is equal to the natural radiation we all receive from the atmosphere over a period of approximately 3 years. This adds very slightly to the risk of, for example, developing a cancer. However, as one in three of us will develop a cancer at some stage during our lives, the added risk is very small, and also the risks from missing a serious disorder by not having a CT scan are considerably greater.

Many CT examinations involve you having a contrast medium injected into a vein in order to increase the amount of information obtained from the scan. The injection usually causes nothing more than a warm feeling passing around your body. There is a slight risk of an allergic reaction to the injection, such as a skin rash, but it may lead to an asthmatic attack or other significant complication. The doctors in the radiology department are trained to deal with any complications and again the risk involved is very small. If you had a reaction to a previous injection of contrast material given for a kidney X-ray (IVP/IVU) or a previous CT scan you should tell the radiographer at the time of your examination.

Despite these slight risks, your doctor believes it is advisable that you should have this examination, and do bear in mind there are greater risks from missing a serious disorder by not having it.

### **Are you required to make any special preparations?**

You should follow any accompanying instructions which relate to the part of the body to be scanned. The radiographer will explain what will happen, but to help the scan to display different organs within your body, some preparation may be necessary.

For all scans you will be asked not to eat for about two hours before the appointment, but you can continue to drink normally. For most scans of the brain, neck and chest no special preparation is required. For scans of the abdomen and pelvis you may be asked to drink up to a litre of fluid to fill the bowel.

### **Can you bring a relative / friend?**

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

### **When you arrive**

Please report to the reception desk in the relevant part of the Radiology Department, after which you will be shown where to wait until collected by a radiographer or other member of staff.

### **Upon collection**

You may be required to remove some clothing, in which case you will be shown to a

private cubicle where you may undress and remove jewellery. It is important to inform the department if you are pregnant, or even if there is a chance that you might be pregnant. Similarly, you should point out if you have diabetes, asthma or any allergies.

### **Who will you see?**

You will be cared for by a small team including a radiologist and radiographer. The radiographer will carry out the scan. The radiologist may be looking at the results on the screen during the procedure. It is the radiologist who will look later at the recording of the images, before writing a report on his/her findings.

### **What happens during the CT scan?**

You will be taken to the special X-ray room and made comfortable lying on the couch. You may be given an injection of a contrast medium into a vein in your arm, which sometimes causes a warm feeling for a short while. The couch will be moved slowly to position the part of your body under investigation within the 'doughnut'. The radiographers will retire to the control room but you will be able to talk to them via an intercom, and they will be watching you all the time.

During the scan you may be asked to hold your breath or not swallow while each image is being produced. However, if you feel any discomfort or apprehension do mention it immediately to the radiographer.

### **Will it be uncomfortable?**

No. You will not feel any pain, although you might feel a slight discomfort arising from having to lie still. Most patients do not mind lying with part of their body within the 'doughnut', but if this makes you feel apprehensive do tell the radiographer straight away.

### **How long will it take?**

If you are given fluid to drink on arrival, you might have to wait for between half an hour and an hour before entering the scanning room. Once in the scan room the scanning process will then take between 10 and 20 minutes. Unless you are delayed by having to wait, such as for an emergency patient, your total time in the Department will be about 90 minutes.

### **Are there any side-effects?**

Not usually. You can drive home afterwards and may return to work as necessary.

### **Can you eat and drink afterwards?**

Yes, do so normally.

### **When will you get the results?**

The radiologist will examine your CT scan shortly after your visit and prepare a report on the findings. This result should reach your referring doctor within 7 days.

### **If you have a query**

If you have a query about having the CT scan, please ring the CT Department between 9.00am and 5.00pm, Monday to Friday, on:

Doncaster 01302 366666 ext 6318

Bassetlaw 01909 500990 ext 2499

This leaflet is based on one produced by:

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