Having a CT scan

Information for patients
This leaflet answers common questions about having a computed tomography (CT) scan. If you would like further information, or have any particular worries, please do not hesitate to ask your radiographer, nurse or doctor.

You may bring a friend or relative with you but, for reasons of safety, they will not be able to accompany you into the examination room, except in very special circumstances. Please speak to your radiographer.

**What is a CT scan?**
A CT scan is carried out using 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 (gantry) about two feet thick with a hole at its centre through which you pass while lying on a couch (see Figure 1).

![Figure 1](image.png)

It takes less than a second to produce each cross-sectional image, which can vary in thickness from one millimetre to one centimetre depending on how much of the body is being scanned.
How is a CT scan performed?
You will be taken into the special x-ray room where we will ask you to lie down comfortably on the couch. Straps and pillows may be used to keep you still during the examination and to help you maintain the correct position. The couch will be moved slowly to position the part of your body under investigation within the ‘doughnut’.

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. This information passes to a computer which produces a picture of the internal structure of the body. The pictures are displayed on a screen for examination by the radiologist (a doctor who specialises in using imaging methods to diagnose medical conditions).

The benefits of having a CT scan
Despite the risks associated with a CT scan, before suggesting the procedure, your referring doctor will have considered that the benefits of the procedure outweigh any disadvantages. The procedure will help your healthcare team to diagnose the symptoms you have been experiencing. You should bear in mind that not having a scan could mean a diagnosis is missed and this could have serious consequences.

Risks and side effects
CT scanning involves the use of x-rays. Women who are or might be pregnant must inform a member of staff in advance. The amount of radiation used is more than an ordinary x-ray of the chest or body and is equal to the natural radiation that we receive from the atmosphere over a period of approximately three years.

A dye called contrast medium may be used to make your tissues show up more clearly on the images produced by the scan.
Please let us know if you have previously experienced an allergic reaction to contrast medium.

**Before your procedure**
Please arrive **20 minutes prior** to your appointment to enable the team to perform the administration duties needed and prepare you for the scan. The time allocated to the appointment is the time required for the procedure. **For this reason we will be unable to perform your scan if you arrive after the appointment start time.**

The scan will be explained to you and any questions you may have will be answered.

You may be given or sent instructions which will relate to the part of the body to be scanned, for example, some abdominal scan patients are asked not to eat anything for a few hours before the scan. Unless you have been told otherwise, you may eat and drink normally before and after your scan.

**What will happen at your CT scan?**
You will see a radiographer and may also see an assistant. The procedure will be explained to you. If you have to undress for it, you will be shown to a private cubicle where you will be asked to put on the gown provided.

Please let the radiographer know if you have diabetes, asthma, allergies or kidney problems.

You may be given an injection of a dye called ‘contrast medium’ into a vein in your arm a few seconds before the scan starts. This will be given by the radiologist, another doctor or the radiographer. The injection usually causes nothing more than a warm feeling passing around your body.
Depending on which area of your body needs to be scanned, you may be asked to drink fluid called ‘oral contrast’ before the procedure is performed. This should be taken slowly over a period of one hour; that is, you should drink approximately one cup every ten minutes.

If you are given fluid to drink on arrival, you may have to wait an hour before entering the scanning room. The scanning process will then take about 20 minutes.

When you enter the CT scanner, special lights may be used to ensure that you are properly positioned. You will hear slight buzzing, clicking and whirring sounds as the CT scanners revolve during the course of the procedure.

The radiographers will move to the control room but you will be able to talk to them via an intercom and they will be watching you and listening all the time.

During the scan, you may be asked to hold your breath or not swallow while images are being produced. If you feel any discomfort or apprehension please tell the radiographer immediately.

Once the scan is complete you may be asked to wait until it is determined that the images are of high enough quality for the radiologist to read. Unless you are delayed by having to wait, such as for an emergency patient, the total time you will spend in the department will be around 90 minutes.

Although you will not feel any pain during the procedure, you might feel slight discomfort arising from having to lie still and of having a full bladder or rectum.
After your CT scan
Usually patients do not experience any side effects after the scan, although you might need to visit the toilet. You can drive home afterwards and may return to work as necessary. If you have had a contrast injection you should wait at least one hour before driving. You can eat and drink as normal.

When will you receive your results?
After your visit your scan will be examined and a written report on the findings will be sent to your referring doctor – it will usually be available in 14 days.

Further information
Please contact the CT scanning department on 020 7794 0500 if you have any problems or queries.

Alternatively, more information can be found on the NHS Choices website: nhs.uk/conditions/CT-scan/Pages/Introduction.aspx

Parking
Please be aware that a very limited number of parking spaces are available at the hospital. Please visit the Royal Free London website for further information at: royalfree.nhs.uk/contact-us/parking-at-our-hospitals

Do you have any further questions? Use this section to make notes.
More information
For more information about radiology services at the Royal Free London, please visit our website: www.royalfree.nhs.uk/services/services-a-z/radiology.

Your feedback
If you have any feedback on this leaflet or for a list of references for it, please email: rf.communications@nhs.net

Alternative formats
This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

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