ScansA red line under the title of this fact sheet.

Scans provide a detailed image of the brain. They allow doctors to see whether a tumour is present, its size and position. Scans are used during diagnosis, as well as for monitoring during and after treatment. The two scans that are most commonly used are CT scans and MRI scans.

# In this fact sheet:

* CT scans: what they are and the scan procedure
* Answers to some common question you may have about CT scans
* MRI scans: what they are and the scan procedure
* Answers to some common questions you may have about MRI scans

## CT scans

CT stands for [Computerised Tomography.](http://www.thebraintumourcharity.org/NR/exeres/05EFEFD0-1D42-4972-BF9A-3F7FB7C3012F,frameless.htm?NRMODE=Published#MainControl_Glossary_ZoneMain_GlossaryPlaceholderControl1_ctl00_PresentationModeControlsContainer_SECTION_C) You may also sometimes hear doctors referring to CT scans as CAT scans, these are the same thing. CT scans use x-rays to build up a three-dimensional image of the inside of your head by taking several pictures from various angles.

### ****The CT scan procedure****

* You are likely to be given a ‘contrast medium’ (either an injection or a drink) that enables a clearer image to be given from the scan. This may make you feel warm all over.
* The scanner is shaped like a doughnut or ring, with a round hole in the middle – this is where your head will go. It will take a bit of time to get you into the right position.
* The scan takes around 5-10 minutes. During the scan, you’ll need to lie very still. Staff will leave the room, but will be nearby and able to see and hear you should you need them. You will be able to hear them as well.
* During the scan, you will hear a soft humming from the scanner and clicks when it is taking pictures.
* After the scan, you will usually be allowed to go straight home.

## Is the scan painful?

No, but the contrast medium may make you feel hot. Less commonly, some people have reported feeling cold after having the contrast medium.

## How long does the CT scan take?

It takes around 5-10 minutes for a CT scan of the head, although more time will be spent beforehand to get you into the correct position ready for the scan.

## How long will I have to wait for the results?

This varies, but you should be given a time frame if you ask your doctor or Clinical Nurse Specialist.

## If my child is having a CT scan can I stay with them during it?

Yes, as long as you are not pregnant. If you are, you could ask a friend or relative to stay with your child while you wait outside the room. You might also like to think about how to help put your child at ease with having a scan. This could include talking through with them what to expect before their first scan and perhaps showing them a picture of a scanner. If your child is very young, you could consider telling them an adventure story where they are a lead character, with the scan being part of the story. If your child is very anxious, it is a good idea to speak to the doctors before the scan to ask whether they can give your child any medication to help calm them.

## Are CT scans dangerous?

CT scans are used only when they are considered necessary, with the benefits outweighing the risks. Although radiation is used, it is kept at a very low dose.

## I get claustrophobic - what can you suggest?

It’s a good idea to let staff know before the day of your scan. If necessary, you may be given a sedative to help calm you before the scan, but you’ll need to ask in advance if you think you will require one.

## Can I breathe normally during the CT scan?

Yes, it’s fine to carry on breathing quietly during the scan. You may be asked to hold your breath a few times during the scan though to prevent the image from blurring, but you will be told about this beforehand.

## MRI Scans

Magnetic Resonance Imaging, or [MRI](http://www.thebraintumourcharity.org/NR/exeres/05EFEFD0-1D42-4972-BF9A-3F7FB7C3012F,frameless.htm?NRMODE=Published#MainControl_Glossary_ZoneMain_GlossaryPlaceholderControl1_ctl00_PresentationModeControlsContainer_SECTION_M), uses magnetic fields to build up a three-dimensional image. Like the CT scan, it takes pictures from several angles and builds up a detailed picture of the brain. Due to its use of powerful magnets, you will be asked beforehand whether you have a pacemaker or any implants. You should also tell your doctor if you have ever worked in the metal or steel industry, as you may have very small fragments of metal lodged in your body.

## The MRI scan procedure

* You may be given a ‘contrast medium’ (an injection or a drink) that enables a clearer scan image. This may make you feel warm all over. The contrast medium may be given to you before, or part way through, the scan.
* Metal items, such as hair clips and jewellery will need to be removed. During your scan, staff will leave the room, but you can hear them and they can hear you.
* The scan is very noisy, so you may be given headphones or earplugs to wear during it.
* The scanner is a cylinder with a hole through the centre. Your head and shoulders fit inside it. To some people, it can feel claustrophobic.
* The scan can typically take between 30 minutes to one hour.

## Is the scan painful?

No, the scan is painless but it is very noisy. You’ll probably be given headphones or earplugs though. If you have headphones, you can usually take some music with you if you like, although it can be difficult to hear it clearly over the noise of the scanner.

## How long will I have to wait for the results?

This varies, but you should be given a time frame if you ask your doctor or Clinical Nurse Specialist.

## I get claustrophobic - what can you suggest?

It’s a good idea to let staff know before the day. If necessary, you may be given a sedative to help calm you before the scan, but you’ll need to ask in advance if you think you need one.

## What is the difference between an MRI and CT scan?

MRI scans and CT scans are similar; both build up detailed images of the brain. While CT scans use a small amount of radiation to do this though, MRI scans use magnetic fields.

## Are MRI scans dangerous?

The MRI scan procedure is harmless. It does not expose your brain to radiation.

## Can I have an MRI scan if I have fillings or wear braces on my teeth?

If you have any fillings, or you wear braces on your teeth, the quality of the MRI scan image could be affected. It is, however, completely safe to have an MRI scan with both of these. Let your radiographer know about any fillings or braces before your scan. He or she may ask you to take out any easily removable items.

## What if my baby or young child need an MRI scan?

If your baby or young child needs to have an MRI scan, it may be necessary for them to have a general anaesthetic. This is to ensure that they remain still and therefore a clear scan image is given. If you go in to the scanning room with your child, you will need to remove your watch and any items in your pocket such as cards with a magnetic strip such as credit cards.

## What other types of scans might I have?

MRI scans and CT scans are the most common type of scan you are likely to have, but there are some other types of scan that may be used to diagnose a brain tumour, or to find out more about a diagnosed tumour. These include:

* [**PET (positron emission tomography)**](http://www.thebraintumourcharity.org/NR/exeres/05EFEFD0-1D42-4972-BF9A-3F7FB7C3012F,frameless.htm?NRMODE=Published#MainControl_Glossary_ZoneMain_GlossaryPlaceholderControl1_ctl00_PresentationModeControlsContainer_SECTION_P) **scans**These are often used to help detect whether a brain tumour is benign or malignant.
* **Advanced MRI scans**  
  These can help doctors to decide how and when they will treat your tumour.
* **SPECT (single photon emission computerised tomography) scans**  
  These are similar to PET scans. They can be used to help doctors find out more about the tumour and about chemicals within your brain.
* **fMRI (functional MRI scan)** When an area of the brain is active during a ‘function’, such as speech, it uses more oxygen and has more blood flowing to it than other areas. Functional MRI scans show movement of blood through the brain, highlighting which areas are active. This helps doctors to plan surgery so that they aim to avoid these functional, active areas of the brain.

# What if I have further questions?

If you require further information, any clarification of information, or wish to discuss any concerns, please contact our Support and Information Team.

* Call 0808 800 0004 (free from landlines and most mobiles including 3, O2, Orange, T-mobile, EE, Virgin and Vodafone)
* Email [support@thebraintumourcharity.org](mailto:support@thebraintumourcharity.org)
* Join our online forums at [www.thebraintumourcharity.org/forums](http://www.thebraintumourcharity.org/forums)

# About us

The Brain Tumour Charity makes every effort to ensure that we provide accurate, up-to-date and unbiased facts about brain tumours. We hope that these will add to the medical advice you have already been given.

Please do continue to talk to your doctor if you are worried about any medical issues. We are the UK’s leading brain tumour charity. We fund scientific and clinical research into brain tumours and offer information and support to those affected, whilst raising awareness and influencing policy.

We rely 100% on charitable donations to fund our vital work. If you would   
like to make a donation, or want to find out about other ways to support us including fundraising, leaving a gift in your will or giving in memory, please visit us at [www.thebraintumourcharity.org](http://www.thebraintumourcharity.org) or call 01252 749043.

# About this fact sheet

This fact sheet has been written and edited by The Brain Tumour Charity’s Support and Information Team. The accuracy of medical information has been verified by a leading neuro-oncologist. Our fact sheets have been produced with the assistance of patient and carer representatives and up-to-date, reliable sources of evidence. If you would like a list of references for any of the fact sheets, or would like more information about how we produce them, please contact us.

# Scans

# Your notes



Hartshead House

61-65 Victoria Road

Farnborough

Hampshire

GU14 7PA

01252 749990

enquiries@thebraintumourcharity.org

<www.thebraintumourcharity.org>

© The Brain Tumour Charity 2014. Registered Charity Number 1150054 (England and Wales) and SC042096 (Scotland).

Version 1 (clear print), first produced in standard print format April 2013. Review date, by April 2015.