Clinical trials

The purpose of clinical trials for brain tumour patients is to advance understanding of tumours and to improve diagnosis and treatment. Some trials also seek to better control symptoms and improve quality of life for those living with a tumour.

By their definition, clinical trials are experimental, and while the hope is that they will be beneficial, there is no guarantee.

What is a clinical trial?

A clinical trial is an experiment that involves patients in a new way of managing a condition. This might include investigating a new treatment, a new way of giving an existing treatment, or a new approach to diagnosing an illness or assessing an outcome after treatment. Trials are vital to establish whether a new approach is better than the old one - if it isn’t, there is little point in persisting with it.

Developing a new treatment

There are normally four phases to developing a new treatment. Clinical trials can therefore be a lengthy process.

The phases are as follows:

**Phase 1**
Phase 1 sets out to answer the question of whether the treatment is safe and, if so, what is the right dose regime to use. (The dose regime, or dosage regimen, means the amount of the drug to use, how often to give it and over how long.) Drugs are tested in the laboratory before being given to people. Usually, but not always, they are tested on animals. If it seems that they could help people with brain tumours, a ‘phase 1’ (safety) study must be done. Often a very low dosage is given to the first few patients. If there are no side-effects amongst this group, the next group of patients is given a slightly higher dose, and so on until side-effects are experienced that indicate it would be unsafe to increase the dosage any further. This is known as the ‘maximum tolerated dose’ or MTD and is the last dose where there were little or no side-effects.

The MTD helps determine the dose for the next studies. Sometimes a researcher is happy to stop before an MTD is reached, and sometimes a drug is considered to be safe enough to progress with the study at, or near, the maximum treatment dose. Phase 1 trials tend to be carried out in specialised clinical research units rather than local hospitals and can last several months. Patients will receive optimum care and attention while in the unit. As well as safety, investigations may be undertaken to see how the drug is handled in the body and if the drug might be useful. If the drug is safe, it will be progressed to phase 2.

Phase 2
Not all treatments tested in phase 1 make it to phase 2. Phase 1 tells the clinical researchers what dose of the new treatment should be given using a relatively small number of people.

In phase 2, the aim is to find out more about the safety and some initial evidence about whether the new treatment does what is hoped (referred to as its ‘efficacy’):

- Is it any good?
- Does it shrink the tumour? (known as ‘response’ to the treatment)
- Does it keep the tumour away for longer? (known as ‘progression free survival’).
- Does it make the patient feel better?
- Is the treatment safe and well-tolerated?

This phase uses a larger group of patients (up to about 100) and can last for a couple of years. If the technique looks promising after phase 2, then it will proceed to phase 3.

Phase 3
Phase 3 looks at whether the new treatment works better than the existing, ‘standard’ treatment or, sometimes, whether it produces fewer side-effects. This is done by comparing two groups of patients with similar characteristics. Some of the patients receive the standard treatment and some receive the new treatment. The outcome of the two groups is compared to see whether the new treatment is better.

Which treatment patients receive (standard or new) is often decided on a random basis. That is, the treatment is allocated by chance – like tossing a coin. Neither the researcher nor the patient can influence this decision. It is the most successful way of ensuring that the results of the trial are not biased and a true comparison has been done.

In addition, a technique called ‘blinding’ may be used. In a ‘single blind’ trial the researcher, but not the patient, will know which treatment they are receiving. In a ‘double blind’ trial neither the patient nor the researcher knows the treatment allocation. Again, this technique improves the validity (certainty) of the results of the trial. So any effects seen can be more confidently attributed to the treatments themselves and not to other factors, such as placebo effects.

In this fact sheet:
- What is a clinical trial?
- Developing a new treatment
- Benefits and risks of taking part
- Answers to some common questions that you may have about clinical trials.
Before participating you should consider if taking part in the trial will affect any insurance you have and seek advice if necessary.

**How do I know if a clinical trial is safe to enter?**

The UK exercises some of the most rigorous patient protection practices in the world, including (but not limited to):

- **Medicines and Healthcare Products Regulatory Agency (MHRA)**
  A body that ensures the trial products meet international standards of good practice.

- **Research Ethics Committee**
  A board that ensures patients' well-being and rights are maintained. They also ensure that information given to patients tells them everything they need to know and is easy to understand.

- **Clinical trial committees**
  All trials are scrutinised at national or local level (often both) to ensure their design and implementation are appropriate and scientifically sound.

**How do I find out about clinical trials?**

Please speak to your clinician about trials that may be suitable for you. In addition, The Brain Tumour Charity's Information and Support Team can search online clinical databases for clinical trials for your specific tumour type. Please contact 0808 800 0004 or support@thebraintumourcharity.org

It is important to be aware that every trial has a set of 'entry criteria' that you must fit to be able to enter.

The following websites also list current clinical trials:

- **NHS National Institute for Health Research - UK Clinical Trials Gateway**
  ukctg.nihr.ac.uk/default.aspx

- **Cancer Research UK**
  cancerresearchuk.org/cancer-help/trials

**How am I selected for a clinical trial?**

Some entry criteria will be specified before you enter. Others will not, but will require trial-specific tests, which can only be carried out once you have agreed in principle to enter the trial.

**What happens if I agree in principle to enter a trial, but then don’t meet all of the criteria?**

You will not be allowed to enter a clinical trial unless you meet all of the criteria. If you cannot enter the trial, your doctor will talk through any alternative treatments available to you or suitable clinical trials.

**What happens if I agree to enter a trial, but then change my mind?**

You are free to leave a trial at any time without obligation to explain why.

**How can I get on to a trial if my hospital does not offer it?**

This may not be easy. Individuals in clinical trials often require close surveillance, which means having easy access to the trial site. It can mean travelling and staying near the site.
Sometimes a trial is geared to taking patients from other regions. The best thing is to discuss your wishes with your health team to see if particular arrangements can be made.

**How long do I stay on the trial?**

The trial will go on until one of the following:

- The trial comes to an end - as defined it its ‘protocol’ (A document detailing the design and implementation of the trial e.g. in phase 1, when the maximum tolerated dose is reached.)
- If the treatment is clearly failing or there are safety concerns, the trial will be stopped.
- If your doctors believe it is in your best interest to take you off the trial, they will do so, as they have a duty of care to you.
- You decide to withdraw. It is your right to leave the trial at any time you wish without obligation to give a reason.

**Will I be paid to take part?**

No, it would be unusual for patients to be paid for taking part in an oncology trial. You can ask your local doctor or nurse if there are any local arrangements they can offer e.g. access to hospital transport or free/reduced parking.

**Potential new ways of running clinical trials**

**Adaptive trials**

Traditional clinical trials test only one drug or different aspect of treatment at a time and take several years to produce results - positive or negative.

This lack of flexibility in clinical trials has been one factor in the historically slow progress towards more effective treatments for high-grade brain tumours.

These tumours progress very quickly and there is simply not enough time for a patient to take part in different trials, each of which tests a single potential treatment.

In an adaptive clinical trial, researchers can make changes to improve the existing trial, if early results suggest it isn’t working or that something else might work better.

These changes are planned and made in such a way that the trial, and the evidence it provides, remain reliable.

Examples of some of the changes they can make include:

- Add in new drugs, combinations of therapies or different drug doses in response to a patient’s improved or deteriorating condition.
- Make changes to the inclusion/exclusion criteria i.e. who can and cannot take part in the trial
- Make changes to the number of patients required

The Brain Tumour Charity supports the development and funding of more adaptive clinical trials for patients with high-grade brain tumours. Find out more on our website: thebraintumourcharity.org/our-research/for-researchers/funding-opportunities/glioma-clinical-trial/

**What if I have further questions or need other support?**

You can contact the Information and Support Team in the following ways:
About this information resource

The Brain Tumour Charity is proud to have been certified as a provider of high quality health and social care information by The Information Standard – an NHS standard that allows the public to identify reliable and trustworthy source of information.

Written and edited by The Brain Tumour Charity’s Support and Information Team, the accuracy of medical information in this resource has been verified by leading health professionals specialising in neuro-oncology.

Our information resources have been produced with the assistance of patient and carer representatives and up-to-date, reliable sources of evidence.

We hope that this information will complement the medical advice you have already been given. Please do continue to talk to your medical team if you are worried about any medical issues.

If you would like a list of references for any of our information resources, or would like more information about how we produce them, please contact us.

We welcome your comment on this information resource, so we can improve. Please give us your feedback via our Information and Support Team on 0808 800 0004 or support@thebraintumourcharity.org

About us

The Brain Tumour Charity is at the forefront of the fight to defeat brain tumours and is the only national charity making a difference every day to the lives of people with a brain tumour and their families. We fund pioneering research worldwide, raise awareness of the symptoms and effects of brain tumours and provide support for everyone affected to improve quality of life.

We wouldn’t be able to make the progress we have without the incredible input we receive from you, our community. Whether it’s reviewing our information resources, reviewing research proposals or attending cheque presentations, everything you do helps to make a difference.