

ASK THE RESEARCHER 2019

- YOUR QUESTIONS

Q. Are there any clinical trials out there for inoperable brain tumours? / Are there any clinical trials open for low grade gliomas?

- A. Clinical trials take place globally and look at many different aspects of brain tumours and their treatment. There are several databases which can be searched for clinical trials that may be suitable for you. It's important to be aware that clinical trials often have very specific eligibility criteria of who can take part. For example, many trials require you to have, either not yet started any treatment, or to be at the stage when a tumour has come back after standard treatment.

For this reason, we encourage you to talk to your medical team about clinical trials as, being aware of your individual situation, they are best placed to advise on this criteria and whether there are trials that may be suitable for you. They may also be aware of other trials that are open or coming up and may be able to help you to access a trial. To aid this conversation, and if you feel confident to, you might like to search for some clinical trials before speaking to them, then print these off and take them with you to your consultation.

You can find a list of clinical trials databases, and what information you'll need when searching for a clinical trial [here](#). It is important to pay particular attention to who can and can't take part (the inclusion and exclusion criteria).

If you have any difficulties doing this, give our Information and Support Team a call on 0808 800 0004 or email support@thebraintumourcharity.org who will be able to help you.

Q. Is there any research that I could be part of? - I have a meningioma that is re growing. Is there a trial to join? Is it common for this type of tumour to regrow following surgery and removal?

Meningiomas can regrow following surgery - the likelihood of this depends partly on whether all of the tumour was removed and on the grade of the tumour. For example, it may be that not all of the tumour could be safely removed - any tumour cells left can regrow. However, some meningiomas also regrow following complete removal. For further details on clinical trials, please see the above question.

Q. I've put my details into BRIAN - when will I be able to use it?

- A. We're working hard to develop BRIAN and aim to launch later in 2019. The consent you have provided has given us permission to securely add your healthcare records into BRIAN so that you, and others affected, will have enough useful information to review when it launches. We will keep you updated on our progress, but at this stage we can't provide a more specific date for the launch.

Q. How is Our Brain Bank by Jessica Morris being incorporated into research being done in the UK?

- A. The Brain Tumour Charity periodically meets with the Our Brain Bank team to discuss areas of mutual interest and future developments. The focus to date for Our Brain Bank has been capturing only the quality of life data for GBM patients in the US, but we understand that it's now going to be extended to cover quality of life from both the UK and a wider range of brain tumours types. BRIAN does collect quality of life data, however, it will also be collecting a wider range of data for the purpose of analysis by researchers and clinicians. The additional data items collected by BRIAN are official healthcare records from a range of NHS datasets. BRIAN will combine these with patient inputted quality of life data, giving a wider picture of the brain tumour landscape.

Q. What new treatments are available for brain tumours? I'm hearing about people living longer and better recently.

- A. There are several emerging treatments that have shown promise in treating brain tumours. Examples of emerging treatments include immunotherapy, convection enhanced delivery (CED), as well as cannabis derivatives. You can find out more information about the respective treatments on our website [here](#).

Q. I've heard there's a new treatment called visualase which is a laser treatment under MRI conditions for inoperable brain tumours. Can you give more information?

- A. Visualase is a technology that uses real-time MRI guided lasers to target and treat brain tumour or epilepsy producing cells with pinpoint accuracy without the need to undertake open brain surgery. It's minimally invasive and will allow surgeons to operate on tumours which were previously located in 'no-go areas'. Find more information about the technology [here](#).

Q. How to deal with stress at work when having a brain tumour? Are there any regulations that could be passed to the company to make them more aware and understanding?

- A. Staying in, returning to, or looking for work after a brain tumour diagnosis can be quite a challenge. It can have a far-reaching effect on employment and career prospects. Side-effects of the tumour or its treatment, such as fatigue or thinking difficulties, or time off for appointments, treatment and recovery, can all cause problems, leading to much stress. We have created a suite of employment resources to help you work with your employer to ease the situation. You can find these on [our website](#).

Your place of work may have an occupational health team who can also help, or if you are a member of a trade union or professional body – they may also have services to help you with this.

There are also some other general sources about dealing with stress at work that may be helpful to you:

Beat stress at work

How to be mentally healthy at work

Dealing with stress in the workplace

Common adjustments for staff experiencing mental ill health

Q. Are there any type of exercise that person with a brain tumour should not do, for example hand stand etc.?

A. This will depend on a variety of factors:

- Whether you are pre- or post-surgery
- Size, location and type of your tumour
- Medications you are taking
- Whether you are experiencing side-effects of the tumour or treatment, such as nausea and vomiting.

For this reason, it's important to speak to your healthcare team, as they will be able to advise you, based on your circumstances – particularly if it is an unusual sport. We asked several healthcare professionals, who gave the following advice:

In generic terms, pre-op most things in moderation may be possible, but you need to think about what would happen if you now had a seizure. Contact sports are a definite no.

In generic terms, post-op it's advised not to do anything other than very gentle exercise for about six weeks. Once recovered, you can move onto other exercise, but it's recommended not to do any contact sports for at least six months, and after that, it's at your own risk. If you have had a craniotomy (removal of part of your skull), you need to be mindful of any possible head injuries from any form of exercise.

Scuba diving and sky-diving often get asked about. This will depend on all of the above, but again, speak to your healthcare team, as this will also depend on your seizure risk.

Fitness is to be encouraged, so as long as you feel able and willing to do it. Light exercise can promote wellness and help to counteract the side-effects of your tumour and its treatments, including fatigue. It can also help with your mental health, improve your sleep and reduce your stress level.

Q. What potential benefits can cannabinoids combined with or without Temodar (temozolomide) chemotherapy have on treating gliomas & controlling epilepsy? / Could you please give an opinion on alternative therapies, primarily THC oil from Cannabis?

A. There is good evidence showing that cannabinoids may be beneficial in managing the side effects of cancer treatment, such as pain, nausea, vomiting, loss of appetite and wasting. Drugs called dronabinol and nabilone, which are synthetic (man-made) THC are approved for use to help reduce nausea and vomiting caused by chemotherapy. These drugs were used quite a bit back in the 1980s, but there are now safer and more effective alternatives so these drugs tend to only be used where other approaches fail.

In terms of actually being able to treat the cancer itself, the best results have come from using highly purified THC and CBD, or synthetic (manmade) versions of them. There have been studies looking at the use of cannabinoids across a range of different cancers and some have shown cannabinoids can: cause cancer cells to die, stop cancer cells dividing, and stop the growth of blood vessels that supply the tumour with essential oxygen and nutrients.

However, adverse effects such as damage to important blood vessels and encouraging cancer cells to grow have been observed. Different effects depend on the dose used and levels of receptors on the cancer cells. It is best to speak with a clinical team about incorporating cannabis in your treatment regime. For more information, please visit [**our website**](#).

Q. Can cannabinoids combined with temozolomide improve low grade glioma shrinkage? Are there any US or UK trials starting soon? / What are the current views on the use of cannabis oil. I saw an interesting research paper out of Heidelberg and have heard some positive anecdotes but is there much going on in research in this space?

A. There have been a handful of clinical trials testing whether cannabinoids can treat cancer. One of which was an early phase trial funded by Cancer Research UK. This trial tested a drug called Sativex in 21 people with recurrent glioblastoma. Sativex is an oral solution that contains a highly purified combination of THC and CBD. Patients were randomised to receive either: Sativex and temozolomide or Placebo and temozolomide. This was a double blind study, meaning that during the trial neither the doctor nor the patient knew what they were getting. This was a small trial with 21 patients taking part, so larger clinical trials are needed to confirm what the benefits of Sativex might be, and which patients are most likely to respond to this combination of treatments.

Q. Does the NHS do trials with CBD oil to fight growth of brain tumours and who can qualify for it?

A. There are currently no known clinical trials testing CBD oil as a treatment for brain tumours. You can find out more information on cannabis and its access on [**our website**](#).

Q. Can you explain why my son's consultant is reluctant to prescribe him cannabis? Will any wider education be done with clinicians on prescribing it?

A. The regulation change of medicinal cannabis shifted the drug from a Schedule 1 drug – assessed by having no medical value – to a Schedule 2 drug – a drug that has medicinal properties but available only through a specialist prescription. As such, up until now, the scheduling of the drug has made it difficult to carry out experiments on its properties. This means specialists are reluctant to value the current scope (or lack) of data available as they may risk their licenses by facilitating access to the medicine. Due to this lack of evidence base, there are projected difficulties around the definitions of medicinal cannabis products and what products are available, meaning clinicians do not know which products to prescribe for what conditions. The Brain Tumour Charity has called for clinicians to receive peer support or educational products that would help assist them in having the confidence to prescribe appropriate medicines for the appropriate conditions.

As well as this, NICE have noted the issue in the scope of their guidelines on medicinal cannabis and we have called on the organisation to make concerted efforts to provide support and education for prescribers in coalition with NHS England, other professional bodies and patient groups.

Q. Does funding go towards alternative therapies i.e. trials like the ketogenic diet?

A. Currently, there are no research grants focusing on alternative therapies, such as; ketogenic diets. However, we welcome quality research proposals to further our understanding of alternative therapies.

Q. What is the success rate of Avastin for recurrence of glioblastoma tumour?

A. Multiple studies using Avastin (also known as Bevacizumab) in combination with Temozolomide include two phase 2 clinical trials using Bevacizumab alone, have demonstrated increased progression-free survival in people with recurrent glioblastoma, relative to historical data.

However, these responses were transient and other recent comparisons of Bevacizumab with other chemotherapy treatments have shown no significant increase in overall survival.

In the Bevacizumab-alone and the Bevacizumab-plus-irinotecan groups, estimated 6-month progression-free survival rates were 42.6% and 50.3%, respectively; objective response rates were 28.2% and 37.8%, respectively; and median overall survival times were 9.2 months and 8.7 months, respectively. You can read more about the study [here](#).

Q. Has any research been done on linkages between two primary cancers? Eg. Primary glioma with subsequent skin cancer?

- A. The frequency of multiple primary cancers is approximately 2-17% ([source](#)). There has been an increase in the number of individuals diagnosed with multiple primary cancers, which can be attributed to improved diagnostic techniques ([source](#)).

Q. Can you comment on the benefits of Hyperbaric Oxygen Therapy for brain cancer?

- A. There still needs to be a lot of research into the effect of Hyperbaric Oxygen Therapy (HBO) on brain tumours and their treatments; however, early studies show that there could be a positive impact on treatments such as radiotherapy and chemotherapy: "Limited clinical trials and preclinical studies suggest that radiotherapy immediately after HBO enhances the effects of radiotherapy in some aspects. HBO also is able to strengthen the anti-tumour effect of chemotherapy when applied together." However, as it states within the article, there is limited research or evidence into this at the moment. You can [read this article here](#).

Macmillan also have a lot of information about HBO, which can be found [here](#).

Q. What are your views on repurposed drugs?

- A. Repurposing drugs is a great way to treat brain tumours. If the drugs are found to be effective in laboratory tests, the findings of the research can be accelerated into clinical trials as the drugs are already approved and being used in a clinical setting. The Charity is actually funding research that aims to repurpose drugs and find combination therapies to treat glioblastomas. The project is called WINDOW and is led by Professor Wurdinger in the Netherlands. [Find out more about the project](#).

Q. How long do you think it will be before we have new and effective drugs, can you give a prediction of timescale?

- A. We're unable to give timescales, but things are moving faster than ever and continuing to progress.

Q. There are private clinics in Germany that treat high grade gliomas and promise much on their websites but publish very little on their results. Can you comment?

- A. It's difficult to comment without data. In general, clinics that promise much, but don't present data that can be reproduced cannot be recommended since there is no way of judging results appropriately.

Q. What does the panel think about intravenous Vitamin C for brain cancer?

- A. There's currently no evidence of intravenous vitamin C being effective and it's unlikely to be effective.

Q. Does using contraception cause growth of brain tumours?

- A. Previous research has observed that meningiomas are hormone sensitive, with approximately 70% of meningiomas expressing progesterone receptors and approximately 30% expressing oestrogen receptors. Retrospective research has confirmed that an association does exist between a diagnosis of meningioma and hormone replacement therapy (HRT). Furthermore, there have been case studies denoting the use of progesterone agonists and meningioma occurrence. An association does exist between progesterone use and meningioma diagnosis but more research is being conducted, as this topic is still controversial.

Q. Will all participants in BRAIN-MATRIX have research treatment? Because the standard of care / control arm data will be available through BRIAN?

- A. BRAIN-MATRIX is an adaptive clinical trial and what that means is that as new, possibly better, treatments become available they can be added to new 'arms' of the study and patients can have access to them immediately. This trial will essentially pave the way for future drug treatments to be tested faster. The new drug treatments will probably only be effective against a subset of tumours, with particular molecular profiles. All the tumours in this trial will have had a molecular diagnosis at the outset, so there won't be any need for further surgery, and participants can move straight on to the new treatment arm. These new arms can then be tested more quickly and compared with the control arm, meaning more people will get a therapy we think might work better than the current standard of care.

Q. BRAIN-MATRIX. Has anything come out of this? How is it being used?

- A. The clinical trial is currently being set-up and will officially start in 2020. You can read more about the clinical trial [here](#).

Q. Dr Chang - what is the new imaging technology that you're interested in? More powerful MRI scanners?

- A. A magnetic resonance imaging (MRI) scan is a common procedure around the world. MRI uses a strong magnetic field and radio waves to create detailed images of the organs and tissues within the body. However, these images are static, meaning they don't change. Dr Chang is working with bioengineering scientists (imaging scientists) to move from using static scans to use imaging technology that allows them to see the dynamic changes in the brain.

Q. What is your opinion of immunotherapy?

- A. This is a very interesting and exciting area, but there are challenges in the brain. However, there's lots of research happening in this space to make it applicable to brain tumours.

Q. Does immunotherapy work for brain cancer? Are there specific types of brain cancer that are more likely to be cured by immunotherapy?

Secondly, treatments like this that need patients tissue, how is that tissue being stored to be there if immunotherapy could become a possibility? (E.g. how best to store & share tissue to be used in the future, especially as now 80% are having biopsies...)"

- A. When it comes to the brain, immune-based treatments face a number of obstacles before they can even reach the tumour. One of the most significant challenges is the blood-brain barrier which protects the brain from harmful substances. Some brain tumours are also very good masters of

disguise and can use a 'cloak' of molecules to make them look like normal cells to the immune system. This prevents immune cells from attacking them.

However, there is currently ongoing research testing immunotherapy. Further details of the clinical trials can be found on our website [here](#).

In the event that immunotherapy does become a possibility, the issue of tissue storage is explored in further detail in our [FAQ sheet](#).

Q. Is there a possibility to make the support for caregivers international as a resource?

- A. The UCSF Gordon Murray Caregiver Program resources are available on line and can be accessed by anyone free of charge. More information can be found [here](#).

Q. I was wondering about the app Susan was talking about that they use in their institution. Is that and the family/carer based work that she's doing going to be available in the UK? If so, when?

- A. The app is being evaluated in a research setting at UCSF and is not available widely yet. The family/carer based work will be integrated into the Tessa Jowell Brain Cancer Mission in the UK, so hopefully this will be available soon.

Q. Is there any quality of life research happening in the UK, like the work being done by Susan Chang in the US? If not, is this likely to be put in place or funded by The Charity anytime soon?

- A. Dr Susan Chang is working towards improving survivorship for patients affected by brain tumours. The Charity recognises the need for similar programmes to be put in place within the UK and are working hard to work with researchers to implement them.

Q. Which countries set the gold standard in treatment and management of brain tumours and what do we have to learn from them? Susan Chang clearly indicated that we are way behind in the management of patients and their carers but I suspect that there are many other areas where we have much to learn.

- A. Treatment is pretty uniform across the world, in part because of a lack of new treatments. Some places give slight differences in things like radiotherapy or choice of second/third line treatment. Resources are a big issue around the question of managing patients and their carers. These aren't such an issue in places like the USA where the healthcare system is private. We are working towards improving the support for patients and their carers within the health system with things like clinical nurse specialists for low grade tumour patients.

Q. What are the effects of radiotherapy & chemotherapy on patients?

- A. Radiotherapy and chemotherapy are common treatments for people with brain tumours. As with any treatment, there can be side-effects. Your healthcare team will discuss with you the likely side-effects. Side-effects will vary from person to person, but most are generally short-term and will gradually disappear some weeks or months after treatment has finished, though occasionally they may be longer lasting or even permanent. If you are worried about any side-effects or how long they are lasting, speak to your healthcare team. More information on [radiotherapy](#) and [chemotherapy](#) can be found on our website.

Q. If you don't already have one, it would be interesting for you to host a closed online forum of practitioners, patients and carers.

- A. Whilst the idea of a closed group in theory is a good idea, the concern would be that questions could be asked of the health professionals who don't know the clinical background of the individual and therefore ethically would not be able to give any clinical advice.

The closed Facebook groups give good peer to peer advice & if an individual needs more clinical information then they will always be signposted to their clinical team.

Q. How do global developments get recognised and assessed in UK? Is there a global, centralised research hub where new developments are shared for use? This seems fundamental that as a race, we work together. It's unclear how much in other countries (or vice versa) is shared and usable without violating intellectual property rights or the like. How does my care team (for example) know what's available to them, even if experimental?

- A. By the time there is an evidence base behind therapies they are often being developed by commercial companies. They have an interest in making those developments available to as many people as possible. Advances are generally shared through presentations at scientific conference and publications in the scientific press. Most clinicians try to keep up to date, so should be aware of what is coming through. Access to these developments can be challenging though. Regulators in the UK need to assess whether a treatment works and whether it offers value for money to the NHS before it is made available. It can sometimes be possible to access therapies by paying for them but this is usually before they have the evidence to support their use or because they were not deemed to be value for money.

Q. Are there better approaches to administer treatment (e.g. directly into tumour areas)?

- A. Convection Enhanced Delivery (CED) is a relatively new technique for delivering chemotherapy drugs directly into brain (and other) tumours. You can find more information on [our website](#).

Q. I read about a "tumour monorail" that lures out tumours via a tube (the monorail). Is this a viable treatment?

- A. This device is a fantastic use of technology to help prevent tumour growth without damaging healthy tissue and potentially improve outcomes for affected individuals. It is also important to note however, that these are early results and further research has to be conducted before this device is safe to use in people. You can read more about it [here](#).

Q. Artificial intelligence and machine learning. Buzz words everywhere but how can we make use of that processing power to perhaps speed up the search for a cure?

- A. Artificial intelligence (AI) programmes can help provide a step change towards the next generation of diagnostic tools. The Charity are funding research that is optimising this technology. You can read more [here](#).

Q. What are the prospects for low grade glioma is over the next 10 year? What's your "sense/intuition" of where the solution is coming from?

- A. Undoubtedly, a better understanding of biology, especially on the normal brain, since we may be able to cause these tumours to differentiate into more normal cell types.

- Q. My son has had significant deficits, especially doing daily tasks, following resective surgery. How would these deficits be recognised and assessed? Is there a systematic procedure to follow after surgery?**
- A. This is age dependent. In the paediatric group, most centres have excellent follow up in educational and psychology space as needed.
- Q. Why is Optune pulling support out of the UK? The skull to cap with electromagnetic field. The one Tessa Jowell used.**
- Q. Do you think Yervoy ,Parp, or Keytruda trials are going to do it for Glioblastoma?**
- Q. Are there any advances/UK clinical trials for immunotherapy treatment for non-operable glioblastoma?**
- Q. There has been several molecules trialled for GBM in the clinic but it still remains a high unmet need. What do you think is the biggest challenge we are facing?**
- Q. Is it potentially more effective to use a low dose of an alkaline chemotherapy drug like Temodar if you have un-methylated MGMT glioma versus the standard dosage?**
- Q. Please could you advise on what options are available to patients who have inoperable brain tumours, and in particular in relation to the clinical trial on adult glioblastoma - which is why few patients who are operable - and also please could you comment on whether there is any progress on the late diagnoses which is such a common problem for brain tumour patients.**
- Q. Are there active research streams in low grade gliomas, specifically oligodendroglioma? Seems a lot are aimed at GBM or high grade (which of course is also very necessary, but if the thinking is that tumours tend to come back and progress to higher grade ones, then we need to cure the low grade ones!)**
- Q. I recently read that administering a drug (forgot name, may have been keytruda from Merck) before surgery to remove a tumour has almost doubled survival time in GBM. That being said, it's still only additional months given GBM poor survival times. It's this sort of thing being investigated for low grade tumours to teach our immune systems to basically (throw away word in brain tumours!) tackle the cancer?**
- Q. How do we support Sarah in the Sahara?**
- A. This event has now passed, but anyone wishing to support Sarah Lindsell's Sahara Trek can make a donation via The Brain Tumour Charity website, with the reference 'Sarah Lindsell - Sahara 2019'. All support is greatly appreciated!