

Cognition and brain tumours

'Cognition' refers to the mental processes that our brain is responsible for, including processing information, remembering things, solving problems and making decisions. Brain tumours and their treatments can have a negative impact on cognition ('cognitive impairment') but the exact nature of this depends on the type and location of the tumour involved.

In this fact sheet:

- What is 'cognitive impairment'?
- What is 'chemo brain'?
- Brain tumours and communication
- Brain tumours and perception
- Brain tumours and decision making
- Brain tumours and social cognition
- Answers to some common questions you may have about cognitive difficulties

What is cognitive impairment?

When you have a brain tumour, there is a possibility that the tumour may cause 'cognitive impairment'. This means that you may have difficulties with mental processes such as memory, processing information, attention, reasoning, and communication.

Cognitive impairment can impact upon daily tasks. If the impairment is mild, it may not be immediately noticeable and may only come to light when you try to do more complex tasks or if you return to work. If the impairment is more severe it may make some aspects of daily life difficult and you may require support. A neuropsychological assessment can help to identify cognitive impairments, which can then be used to build appropriate coping strategies. Neuropsychological tests involve tasks such as copying drawings or recalling lists of words. They help the neuropsychologist to build detailed information about your cognitive functioning and plan ways to help you.

Brain tumours and communication

Communication is our ability to use and understand spoken language, body language, reading, writing and numbers. There are two main areas of the brain that are associated with communication: Broca's area and Wernicke's area.

Broca's Aphasia affects language production, while Wernicke's Aphasia affects language understanding. In reality, the brain is not divided into such clear cut sections, so it is more likely that you would experience a combination of the two. *(For more information about brain tumours and communication, see the separate fact sheet: communication difficulties and brain tumours).*

Brain tumours and perception

Perception is the process of taking in information from the world, organising that information and forming an understanding or 'perception' based on it.

If you have a brain tumour, your ability to understand the world around you may be affected. Some of the difficulties you may experience could include difficulties recognising objects, judging

distances, or putting things together. Some terms you may hear in relation to brain tumours and perception are:

Agnosia

Agnosia is a rare disorder that affects a person's ability to recognise objects, people, words and sounds. Although an individual with agnosia will see or hear something, the sight or sound is 'stripped' of its meaning.

Apraxia (also known as 'Dyspraxia')

Apraxia is a disorder of the brain and nervous system where a person has difficulty carrying out a movement or task even when they have been asked to do so and understand what they need to do. Apraxia can make tasks, such as pouring water from a kettle, very difficult and can make the person appear clumsy. In the UK, apraxia means the complete loss of the ability to coordinate movements, while dyspraxia refers to partial loss of this ability. Other countries apply the terms in various ways.

Brain tumours and decision making

In order to make decisions, we have something called 'executive functioning'. This refers to our ability to make complex decisions, solve new problems and adapt our behaviour based on new information.

If you have a brain tumour, or have had treatment for a brain tumour, this can have a negative effect on executive functioning by damaging the processes involved in it. For some people, this can result in being fixated on one thing, having an inability to plan ahead, or prevent you from learning from previous experiences. If you have difficulties with decision making you may also make decisions that appear spontaneous or out of character.

Brain tumours and social cognition

Social cognition refers to our ability to understand social situations and behave appropriately for the situation. This includes knowing when to talk and when to listen and responding in an appropriate way to the views other people express. If your social cognition is affected by a brain tumour, you may not be aware of inappropriate behaviour you display.

[Continued overleaf >](#)

Other people may find it difficult to understand why you do not behave in the ways you used to or may think you are being unreasonable. You may also have difficulties understanding humour, which can be socially isolating.

What is 'chemo brain'?

'Chemo brain' or 'chemo fog' is a term used to describe the mild cognitive impairment that sometimes occurs during or after chemotherapy treatment. Some people say that this term is misleading, as similar effects have been reported in people who have not had chemotherapy.

It is not known whether the impairments seen in 'chemo brain' are a result of the treatment itself, emotions such as anxiety, or a mixture of both.

How are cognitive difficulties assessed?

Cognitive impairments are assessed by a trained health professional such as a neuropsychologist or clinical psychologist. Tests (such as asking you to copy a simple drawing), as well as observations and information provided by close friends and family members about your behaviour, help the neuropsychologist to build up detailed information about your cognitive functioning and to plan ways to help you. Information is often collected from friends and family as, if you have cognitive impairments, you may be unaware of the difficulties, or extent of difficulties, you have.

How can I cope with cognitive difficulties?

Many people worry that their cognitive functioning will be impaired by a brain tumour. It is a good idea to speak to your health team if you have such concerns as they will be familiar with your specific diagnosis and circumstances. Getting enough sleep will give you a better chance of improved cognitive functioning. There are also a number of coping strategies that you may find helpful:

- **Talk to others**

Talking to those close to you about how you are feeling and the difficulties you are experiencing can be very helpful. People will want to support you, and it can be helpful for them to have an understanding of your difficulties so that they can show you patience and provide appropriate support.

- **Making receiving information easier**

If someone is giving you information, ask them to keep it simple. You may also wish to write it down and repeat it back to them to check that you have fully understood. To make it easier to concentrate, try to remove background noise, for example, switch off the television.

- **Break tasks down in to small chunks**

If you are experiencing cognitive difficulties, it can be helpful to break a task down into manageable chunks with breaks in between. Try not to put yourself under pressure to complete a task right away if you are feeling tired. Don't be afraid to put it away and return to it later.

- **Carry a notebook**

It can be helpful to note down details about people, places and arrangements you have made in order to remember information that you need to.

- **Plan and make lists**

You may find it useful to sit down and plan your day at the start of each day. You can then make a 'to do' list to help you stay focussed and to remind you of what you should be doing.

Are there any treatments available for cognitive impairment?

While there is no simple 'cure' for cognitive impairment, your health team can work with you to help improve your cognitive functioning or develop coping strategies that will help you live an independent life. They can also identify whether your problems are made worse by other underlying factors, such as depression or anxiety and help to address these.

What if I have further questions?

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

Call: 0808 800 0004

(free from landlines and most mobiles:
3, O2, Orange, T-mobile, EE, Virgin and Vodafone)

Email: info@thebraintumourcharity.org

Join our online forums at:
thebraintumourcharity.org

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 thebraintumourcharity.org or call us on **01252 749990**

About this fact sheet

This fact sheet has been written and edited by The Brain Tumour Charity's Information and Support Team. The accuracy of medical information has been verified by a leading neuro-psychiatrist. 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.



Cognition and brain tumours

Your notes

***Saving lives through research,
information, awareness & policy***



Hartshead House
61-65 Victoria Road
Farnborough
Hampshire
GU14 7PA
01252 749990
enquiries@thebraintumourcharity.org
thebraintumourcharity.org
Registered Charity 1128354