

‘Chemo brain’ (cancer-related cognitive impairment)

Cancer-related cognitive impairment describes a change in thinking processes (cognitive functioning), for example memory and attention. It’s often called ‘chemo brain’ so we use this term throughout this information. However, it can affect anyone with cancer, whether or not they’ve had treatment, with chemotherapy or any other cancer treatments.

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We have separate information about the topics in bold font. Please get in touch if you’d like to request copies or if you would like further information about any aspect of lymphoma. Phone 0808 808 5555 or email information@lymphoma-action.org.uk.

What is chemo brain?

Cancer-related cognitive impairment is a change in thinking processes that affects some people with cancer. Most commonly, it affects memory, concentration, attention and complex thinking processes (sometimes called ‘executive function’) – this includes things like planning, and thinking before you do something.

I kept stumbling on the sand dunes while walking my dogs. I walked into tables and doors, which left my legs bruised and hurt my toes.

Elaine, who experienced chemo brain.

Examples of how chemo brain can affect you include:

- Forgetting names, misplacing things and finding it difficult to remember the word you want to use.
- Finding it difficult to focus on a task, activity or conversation, particularly if there are other things going on around you.
- Having a shorter attention span, making it more difficult to learn new skills and take in information.
- Taking longer to react to things, for example, stopping at a red traffic light.
- Slower movement and finding it more difficult to coordinate movements, such as balancing on one leg.

Upload video: <https://youtu.be/4kltoemocHE> (check permission for continued use).

My doctor told me to expect chemo brain with my treatment. I noticed my concentration was poor. It was like a mental fog. I couldn't focus on TV. I couldn't focus on daily life. I would just stop mid-conversation because I couldn't think of the right word.

Adam, who experienced chemo brain.

What causes chemo brain?

Scientists don't know the exact cause of chemo brain. It's likely to be due to a number of factors, including:

- **fatigue** (extreme tiredness) that can happen for various physical or **emotional reasons** linked to **living with lymphoma**, including, **stress** and anxiety
- side effects of **treatment for lymphoma**, such as **anaemia** (shortage of red blood cells), **infection**, changes to chemicals and blood flow in your brain, and damage to nerve cells in your brain.

If you have other medical conditions, the symptoms and treatments for these might also have an effect on your thinking processes (cognition).

Who gets chemo brain?

Many people are affected by cancer experience chemo brain. It can affect people who:

- are newly diagnosed with cancer
- are having any treatment for cancer, not only chemotherapy
- have been recently treated for cancer
- are in **remission** (no evidence of lymphoma on **tests and scans**) for some time.

There's no clear answer on who is most at risk of getting chemo brain. However, the following factors might play a part:

Age

Chemo brain seems to affect more older than younger people, but it's hard to be sure why. It might be because cancer is more common in older age. It might also be that the statistics reflect cognitive impairment in general, rather than being linked specifically to cancer. This is because:

- some loss of cognitive function, like lower memory and attention, is quite common as we get older, whether or not we're affected by cancer.
- older people are more likely to have other medical conditions that can affect thinking, for example **dementia** or **diabetes**.

Type and intensity of treatment

The type, intensity and how long treatment goes on for can affect your likelihood of experiencing chemo brain. For example, you might be at an increased risk if you have high-dose chemotherapy (used before a **stem cell transplant**) or from certain chemotherapy treatments used to treat **Burkitt lymphoma** or **CNS lymphoma**.

Emotional wellbeing

Living with cancer can have a significant impact on your **emotional wellbeing**. For example, some people experience low mood, **depression** and anxiety, all of which can affect thinking processes such as concentration and memory. If your emotional wellbeing is negatively affected, it can also make it harder to cope with the effects of chemo brain. Speak to your doctor or clinical nurse specialist for support if you feel low.

It might have been a mix of the chemo and fatigue, I don't know what it was but I definitely felt depressed at times.

Adam, who experienced chemo brain.

Managing chemo brain

Chemo brain can be very upsetting. Speak to your doctor or nurse for advice and support to help you cope with the symptoms and effects on your life.

Chemo brain was short-term for me, but I felt angry and frustrated when I couldn't remember words or their associations.

Mary, who experienced chemo brain

Although there isn't a standard specific medication or treatment, there are **things you could try that could help**. Hard as it can be, try to show yourself patience, particularly with tasks that need a lot of attention. It can also be helpful to **address other issues that could be affecting your cognition**. You might also be interested in **getting specialist support from a trained professional** such as a counsellor.

Addressing other issues that could be affecting your cognition

Your doctors should check for and treat any physical underlying issues such as **anaemia** or an **infection** that might be making you worse. It's also important to get support if you are experiencing **emotional difficulties**, such as low mood, stress or anxiety.

Some research suggests that **physical activity** can have a positive effect on thinking processes such as memory, attention and speech. Whether or not it has a direct impact, physical activity can have a positive effect on mood, which can in turn improve thinking processes.

There is the frustration of not being able to do things I could do before. Some of this I have put down to 'chemo brain', which causes me problems with concentration and with finding the correct word. Surprisingly though, I have become more creative and enjoy many crafts that I would not have tackled in the past.

Kathleen, who experienced chemo brain.

Practical tips to help with the symptoms of chemo brain

Below are some tips and strategies that some people find helps them to manage chemo brain.

To help with focus

- Try to do one thing at a time. It can also help to break tasks down into manageable chunks.
- Build in rest between activities and try to get enough **sleep**.
- Find somewhere quiet to focus on a task or conversation.
- Consider letting people know about your difficulties. For example, it might help to ease pressure if it's hard for you to find the words you want during conversations.
- Keep a diary to try to see if there's a pattern to when your concentration levels seem to be higher – if possible, try to do any tasks or activities that need more attention during these times.

To help with remembering

- Leave yourself written reminders or set up alerts on your phone
- Use a calendar on your wall or on your phone to keep track of appointments.
- Write down any **questions you'd like to ask your medical team** and take them with you to your appointments.
- Make visual links with pictures in your mind to help you remember things.
- Add items to the shopping list when they start to run low.
- Use maps, GPS or other navigations systems if you find it hard to remember how to get to places.

Getting specialist help from a trained professional

If you struggle with the symptoms of chemo brain, you might be interested in getting help from a trained professional. **Cognitive behavioural therapy** (CBT) is a type of talking therapy that some people find useful. It can support you to adapt the way you think about things and how you act. Memory and attention adaption training (MAAT) is a type of CBT developed specifically to help people affected by chemo brain. It focuses on finding different ways ('compensatory strategies') to manage your difficulties. Other methods of CBT use 'brain training' techniques, which focus on challenging your brain and practising skills like using your memory. Ask your medical team for more information if you're interested in such techniques.

I had chemo brain but I didn't know what it was at the time. After 2 years, I asked my haematologist about it. He said it was chemo brain and that I was unfortunate in that it was taking longer for mine to resolve than for most people, though it improved each year. I did really easy crosswords and Sudokus to help me feel was achieving something, and in time, I got back to doing harder ones.

Elaine, who experienced chemo brain.

Frequently asked questions about chemo brain and lymphoma

Below are some questions people often ask about chemo brain and lymphoma. Speak to your medical team for advice specific to your situation.

How is 'chemo brain' diagnosed?

It can be difficult to have a clear-cut diagnosis of chemo brain. Your doctor or nurse will discuss your symptoms with you. With your consent, they might also ask someone who knows you well to describe any changes they've noticed in you.

Your doctor or nurse might also ask you to:

- complete a questionnaire or rating scale
- do some pen-and-paper tasks, for example, copying a shape
- follow a set of instructions
- answer some questions to test skills such as your memory and language.

Your doctor should also talk to you about how your difficulties are affecting your day-to-day life, and how they can support you in managing these.

How long does chemo brain last?

For many people, chemo brain usually gets better over time though for some people the effects last much longer. Symptoms can vary from day-to-day, and at different times of the day. They are usually worse when you're tired or busy. If you're having treatment, the symptoms might be different at different times in your treatment cycle.

Does keeping an 'active brain' or 'brain training' help?

Research has looked at whether mental activity, for example, through puzzles such as crosswords, word searches and Sudoku, can help to protect against cognitive decline. Some evidence suggests that it could be useful but more research is needed.

Can ginkgo biloba help?

There has been interest in whether the herb ginkgo biloba could help to improve cognitive function. It can help to increase blood flow to the brain and might help protect damage to the cells that carry messages between the brain and other parts of the body (neurones). However, further research is needed before scientists can say whether ginkgo biloba can improve cognitive function. If you are thinking of taking any herbal supplements, speak to a member of your medical team first to check that they are safe for you.

Is there a link between chemo brain and dementia?

Dementia is the term used to describe a set of symptoms related to ongoing cognitive decline of cognitive functioning.

Scientists continue to research the relationship and dementia. At the moment, it seems that:

- people who have dementia might be more likely to be affected by chemo brain
- people who experience chemo brain are no more likely than other people to develop **Alzheimer dementia** in later life. Scientists continue to study this area, including the risk of developing other **types of dementia**.

References

[The full list of references for this page is available on our website. Alternatively, email publications@lymphoma-action.org.uk or call 01296 619400 if you would like a copy.]

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