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## Chemo Brain

Sometimes people with cancer worry about, joke about, or become frustrated by what they describe as mental cloudiness or changes they might notice before, during, and after cancer treatment. This cloudiness or mental change is commonly referred to as chemo brain. Doctors and researchers may call chemo brain many things, such as **cancer treatment-related cognitive impairment**, **cancer-related cognitive change**, or **post-chemotherapy cognitive impairment**. The word "cognitive" refers to the way your brain works to help you communicate, think, learn, solve problems, and remember.

### What is chemo brain?

Most define it as a decrease in mental “sharpness” and describe it as being unable to remember certain things and having trouble finishing tasks, concentrating on something, or learning new skills. Even though its exact cause isn’t known, it can happen at any time when you have cancer.

These mental changes can make people unable to perform usual activities like school, work, or social activities. Or it can seem like it takes a lot of mental effort to do them. Many people don't tell their cancer care team about their problems until it affects their everyday life. It's important to get help and support, so be sure to let your cancer care team know if you notice any mental changes, no matter how small.

Here are some examples of what patients with chemo brain may experience:

- Forgetting things that they usually have no trouble remembering (memory lapses)
- Trouble concentrating (they can't focus on what they're doing, have a short attention span, may easily “space out”)
- Trouble remembering details like names, dates, and sometimes larger events
- Trouble multi-tasking, like answering the phone while cooking, without losing track

- of one task (they're less able to do more than one thing at a time)
- Trouble learning new things
- Taking longer to finish things (disorganized, slower thinking and processing)
- Trouble remembering common words (unable to find the right words to finish a sentence)

For most people, these mental changes only last a short time. Others can have long-term or delayed mental changes. How long chemo brain lasts is a major factor in how much it affects a person's life. When it starts, how long it lasts, and how much trouble it causes may be different for every patient. Usually the changes that patients notice are subtle, and others around them might not even notice any changes at all. Still, the people who are having problems are aware of the differences in their thinking.

## **What causes chemo brain?**

Chemo brain is most commonly connected with chemotherapy, but other treatments, such as hormone therapy, radiation, and surgery may be associated with it also. These treatments can cause short-term, long-term, or delayed mental changes or cognitive problems. Beyond the chemo brain symptoms that start during and just after treatment, there are some cases where chemo brain symptoms start and continue after treatment is over. Some people with cancer have very real brain problems even though they haven't had chemo.

Certain things can increase the risk of developing chemo brain or worsening brain function problems. These include:

- The cancer itself, for example brain tumors
- Other drugs used as part of treatment, such as steroids, anti-nausea, or pain medicines
- Other conditions or illnesses, such as diabetes or high blood pressure
- Having other symptoms like tiredness, pain, or sleep problems
- Emotional distress such as depression or anxiety
- Older age
- Being weak or frail
- Surgery and the drugs used during surgery (anesthesia)
- Infection
- Hormone changes or hormone treatments
- Being postmenopausal
- Nutritional deficiencies

- Using alcohol or other substances that can change your mental state

Most of these cause short-term problems, and get better as the underlying problem is treated or goes away. Others can lead to long-lasting brain problems unless the cause is treated.

## Treatment of chemo brain

Treatments for chemo brain may include:

- **Cognitive rehabilitation:** This might be part of a cancer rehabilitation (rehab) program. It includes activities to improve brain function such as learning how the brain works and ways to take in new information and performing new tasks; doing some activities over and over that become harder with time; and using tools to help stay organized such as planners or diaries.
- **Exercise:** Exercise can improve your thinking and ability to focus. Activities such as gardening, caring for pets, or walking, can help improve your attention and concentration levels.
- **Meditation:** Meditation can help improve brain function by increasing your focus and awareness.

Talk to your cancer care team about these treatment suggestions and other options they may recommend to help you cope with any cognitive problems.

## Day-to-day coping with chemo brain

There are some things that you can do to help you sharpen your mental abilities and manage chemo brain. Some examples are:

- **Use a detailed daily planner, notebooks, reminder notes, or your smart phone.** Keeping everything in one place makes it easier to find the reminders you may need. You might want to keep track of appointments and schedules, “to do” lists, important dates, websites, phone numbers and addresses, meeting notes, and even movies you’d like to see or books you’d like to read.
- **Do the most demanding tasks** at the time of the day when you feel your energy levels are the highest.
- **Exercise your brain.** Take a class, do word puzzles, or learn a new language.
- **Get enough rest and sleep.**

- **Keep moving.** Regular physical activity is not only good for your body, but also improves your mood, makes you feel more alert, and decreases tiredness (fatigue).
- **Eat veggies.** Studies have shown that eating more vegetables is linked to keeping brain power as people age.
- **Set up and follow routines.** Try to keep the same daily schedule.
- **Pick a certain place for commonly lost objects** (like keys) and put them there each time.
- **Try not to multi-task.** Focus on one thing at a time.
- **Avoid alcohol and other agents** that might change your mental state and sleeping patterns
- **Ask for help when you need it.** Friends and loved ones can help with daily tasks to cut down on distractions and help you save mental energy.
- **Track your memory problems.** Keep a diary of when you notice problems and what's going on at the time. Medicines taken, time of day, and the situation you're in might help you figure out what affects your memory. Keeping track of when the problems are most noticeable can also help you prepare. You'll know to avoid planning important conversations or appointments during those times. This record will also be useful when you talk with your doctor about these problems.
- **Try not to focus on how much these symptoms bother you.** Accepting the problem will help you deal with it. As many patients have noted, being able to laugh about things you can't control can help you cope. And remember, you probably notice your problems much more than others do.

## Tell others what is happening

Another thing you can do to better manage chemo brain is tell family, friends, and your cancer care team about it. Finding and getting support is important. Let them know what you're going through. You may feel relieved once you tell people about the problems you sometimes have with your memory or thinking.

Chemo brain is a side effect you can learn to manage. Even though this might be a change that's not easy to see, like other changes such as hair loss or skin changes, your family and friends might have noticed some things and may even have some helpful suggestions. For instance, your partner might notice that when you're rushed, you have more trouble finding things.

Tell your friends and family members what they can do to help. Their support and understanding can help you relax and make it easier for you to focus and process

information.

### **Talk with your doctor or cancer care team**

If brain problems cause trouble at work or school, or interfere with your usual activities, talk with your doctor to try and pinpoint what's causing your brain fog and what can be done about it. This is especially important for people with chemo brain that lasts longer than the treatment period and keeps causing trouble in their daily lives.

It helps a lot if you have a diary or log of the situations you have trouble with. It also helps to let your doctor know some of the things that make the problem worse or better. For instance, are they worse in the morning or evening? Do you have more trouble when you are hungry or tired? Does it help to nap, walk, or have a snack? Your doctor will want to know when the problems started and how they affect your daily life.

- Write down questions about the problems you have. Take them to your appointment along with your memory tracking log to talk over with your doctor. Ask what may be causing the problems, and find out if there's anything the doctor can offer to help you.
- Bring a list of all the medicines you take, including herbs, vitamins, supplements, and those you take on an "as needed" basis.
- Take a friend or family member with you to help you keep track of what's said during the visit. They can also describe the changes they see if the doctor wants a different viewpoint of how your brain problems are affecting you.
- If your memory and thinking problems keep causing trouble in your daily life, ask your doctor if you might be helped by a specialist such as a neuropsychologist, speech language pathologist, occupation therapist, or vocational therapist. These professionals can test you and may recommend ways to help you better handle the cognitive problems or changes that you are experiencing. (You may hear this called **cognitive rehabilitation**.)

You may need to visit a larger hospital or cancer care center to find experts on testing brain function, including chemo brain. Ask if you can get a referral to one of these specialists who can help you learn the scope of your problem and work with you on ways to manage it. You'll want to find out what your insurance will cover before you start.

### **Questions to ask about chemo brain**

These are just some of the questions you may want to ask your doctor:

- Based on my treatment, am I at increased risk for brain changes?
- When might these changes happen and how long will they last?
- Are there other medical problems that could be causing my symptoms?
- Is there treatment for my symptoms?
- What can I do to manage chemo brain?
- Is there anything I can do to help prevent or decrease chemo brain symptoms?
- Should I see a specialist? Can you recommend one?

## Can chemo brain be prevented?

So far, there is no known way to prevent the cognitive changes that cause chemo brain. This is because the causes are still being studied. For some people, treating their cancer will mean they might have trouble with thinking, memory, planning, and finding the right words. Chemo brain seems to happen more often in people who get high doses of chemo, and is more likely to happen if the brain is also treated with radiation therapy.

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