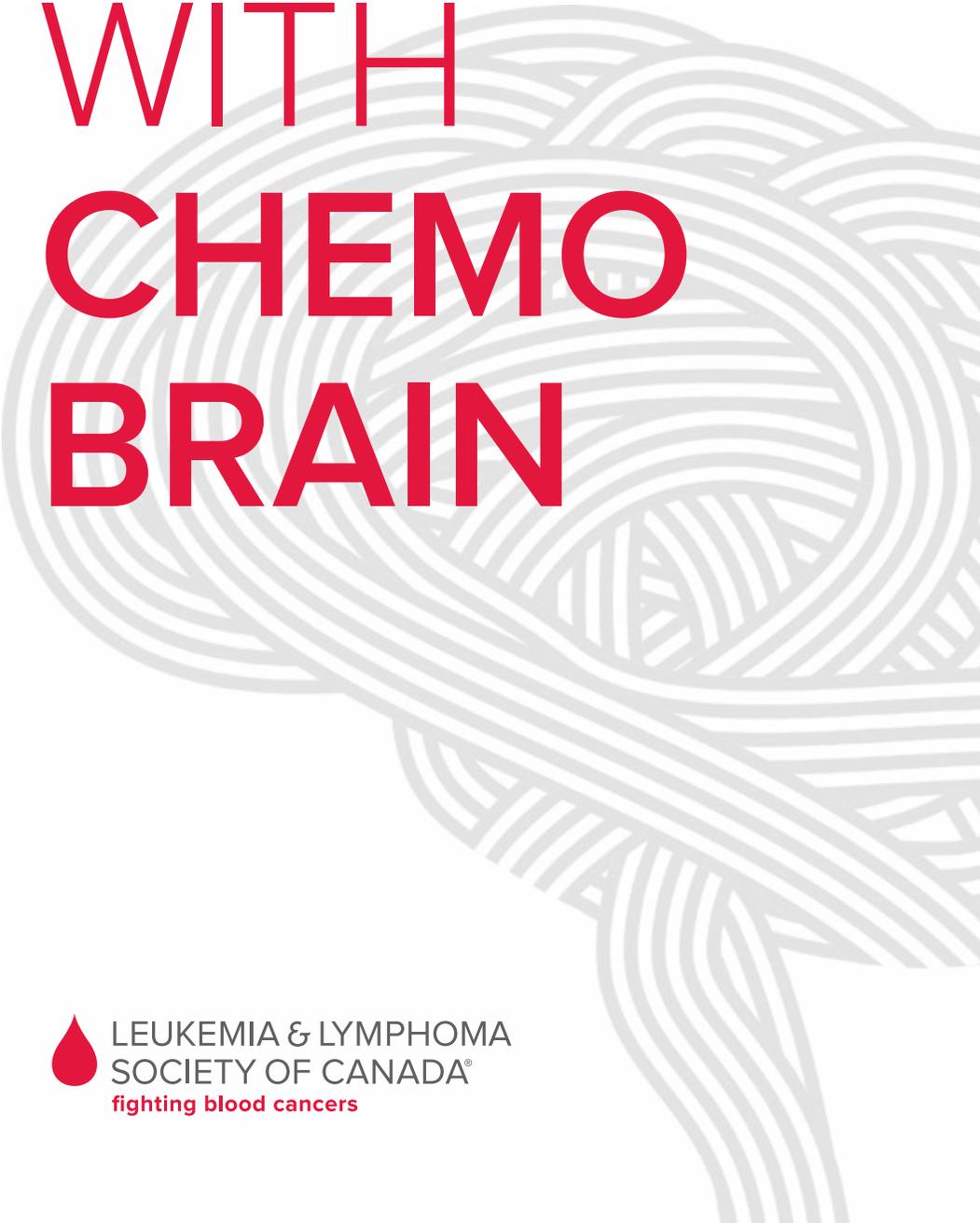




COPING WITH CHEMO BRAIN



LEUKEMIA & LYMPHOMA
SOCIETY OF CANADA®
fighting blood cancers

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Introduction to Chemo Brain

Some cancers and treatments can result in cognitive changes that affect thinking, learning, processing or remembering information. These changes can affect many aspects of life such as the ability to work or even to do everyday tasks.

Most chemotherapy patients experience these effects to some degree. The effects are sometimes referred to as “chemo brain” or brain fog. Its exact cause isn’t always known.

It must be noted that while these cognitive changes are commonly called “Chemo Brain”, it is unlikely that chemotherapy is the only cause of these problems.

Cognitive changes can happen suddenly (acute onset) or slowly over time (gradual onset).

Some changes after cancer are very minor and will go away. Other cognitive changes may be more noticeable and may not be reversible.

If you suspect chemo brain, talk to your doctor to develop a plan to manage your symptoms.

The effects are sometimes referred to as “chemo brain” or brain fog. Its exact cause isn’t always known.



Causes of Chemo Brain

Cognitive changes can occur at any point during your experience with cancer. These changes may also happen after completing cancer treatment or after taking certain medications.

The causes of cognitive problems related to cancer and its treatment are still being studied, and at this time there's no known way to prevent them. Chemo brain is hard to study and clearly, we need to know more about this side effect.

Some **possible causes of chemo brain** may include:

- High dose chemotherapy and/or the use of immunotherapy to boost the immune system
- Radiation treatment to the head and neck
- Hormone therapy and other medications
- Cancer involving the brain as a result of the tumor or the treatment of the tumor

- Other conditions or symptoms related to cancer or cancer treatments
- Stress, anxiety, or depression
- Vitamin deficiencies

These changes may also happen after completing cancer treatment or after taking certain medications.





Symptoms and Signs of Chemo Brain

The severity of the symptoms of chemo brain often depends on the person's age, stress level, history of depression or anxiety, coping abilities, and access to emotional and psychological resources. Some signs are acute and occur suddenly, while others may come about slowly over time.

Acute onset cognitive changes

Acute onset cognitive changes are those that occur suddenly. This can happen during treatment with certain medications and chemotherapy agents, and may be reversible.

Symptoms of some acute changes include:

- Fluctuating alertness and orientation
- Difficulty concentrating
- Reduced level of consciousness
- Problems with comprehension or understanding
- Unusual sleep patterns
- Agitation

- Confusion
- Memory loss
- Quiet, inactive behavior, including sedation

Gradual onset cognitive changes

Gradual onset cognitive changes, or chronic changes, come about slowly over time and may be long lasting. Symptoms might not appear until active treatment for cancer is finished.

Symptoms include:

- Poor memory
- Difficulty with abstract thinking and/or multi-tasking
- Poor judgment and poor decision making
- Changes in personality
- Difficulty with problem solving and following directions
- Disorientation
- Difficulty setting priorities and completing tasks

Treatments for Chemo Brain

Whether cognitive changes will improve or be permanent depends on their cause. Acute cognitive changes that occur because of certain medicines often improve when you stop taking the medicine. Chronic changes are often not reversible but certain steps can be taken to help mitigate their effect on you.

Management of long-term cognitive problems may include:

- **Cognitive rehabilitation** and cognitive training, to help improve cognitive skills and find ways to cope with cognitive problems
- **Occupational therapy and vocational rehabilitation**, to help with the activities of daily living and job-related skills
- **Medications, including stimulants, cognition-enhancing drugs** commonly used to treat Alzheimer's disease, antidepressants, and opiate antagonists



Coping with Chemo Brain

Tell others

Help manage chemo brain by telling family, friends, and your health care team about it. Let them know what you are going through. You may feel relieved once you tell people about the problems you sometimes have with your memory or thinking.

Tell your doctor

If brain problems cause trouble at work or at home, 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 more than a year and keeps causing trouble in their daily lives.

Tips to Cope

Plan and Organize

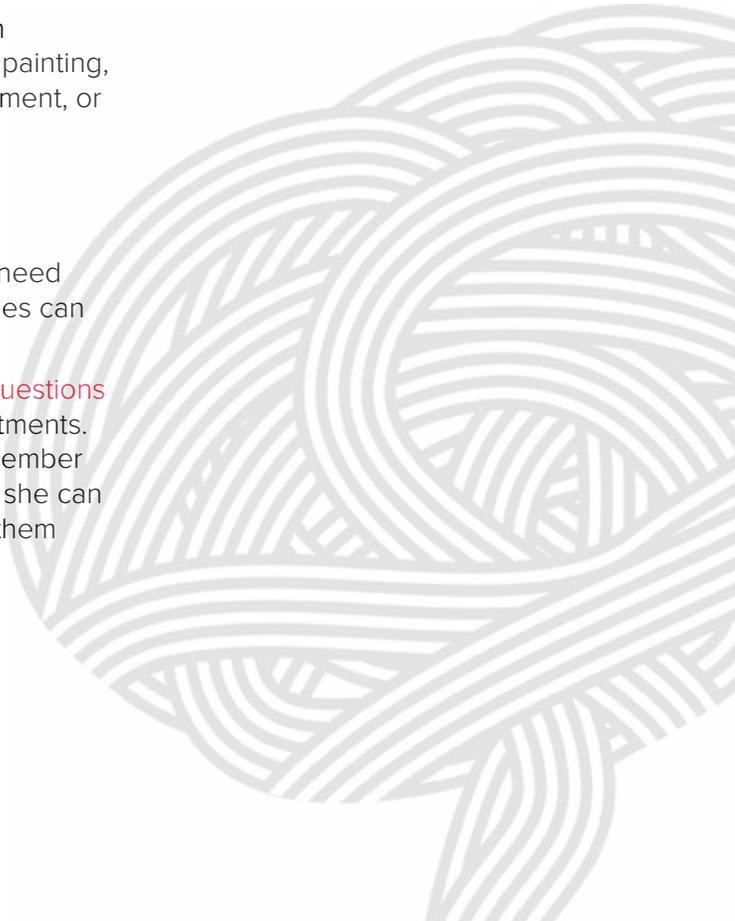
- **Keep a checklist** of daily reminders and to-dos.
- **Use a pen and paper, calendar or your smartphone** to jot down reminders and keep track of important dates.
- Place **reminders around the house and workplace** to jog your memory of important tasks.
- **Prepare for the next day** by setting out the things you will need the night before.
- **Eliminate clutter and keep popular items**, such as your phone, in a designated place.
- **Store important information and emergency contacts** in a notebook or smartphone to have on you at all times.
- **Follow routines and don't try to multitask.** Focusing on one thing at a time and keeping a schedule will help you feel more in control.

Mind and Body

- Use tricks such as **rhyming** or **singing** to help you remember things.
 - Get **plenty of rest**.
 - Make **physical activity** a part of your daily routine. Yoga, swimming, walking can all help increase mental alertness.
 - **Eat veggies**. Studies have shown that eating more vegetables is linked to keeping brain power as people age.
 - **Exercise your brain** with crosswords or puzzles, painting, playing a musical instrument, or learning a new hobby.
- **Talk with your employer** if you are having problems at work. Discuss potential ways your employer could support you, such as modifying your workload and deadlines.
 - **Join a support group**. Remember you are not alone! Share your experience with others who have been through it too.

Talk

- **Ask for help** when you need it. Friends and loved ones can help with daily tasks.
- Don't be afraid to **ask questions** at your doctors' appointments. Ask a friend or family member to go with you so he or she can take notes and review them with you after the visit.



CITATIONS

Cognitive Changes After Cancer Treatment. Livestrong Foundation website

<http://www.livestrong.org/we-can-help/finishing-treatment/cognitive-changes-after-cancer-treatment/>

For more information on chemo brain please visit livestrong.org

Long Term and Late Effects of Treatment in Adults. The Leukemia & Lymphoma Society website

<http://www.lls.org/managing-your-cancer/long-term-and-late-effects-for-cancer-survivors>

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