



PATIENT & CAREGIVER EDUCATION

Managing Cognitive Changes for Cancer Survivors

This information explains what cognitive changes you may experience after cancer treatment and how you can manage them.

About Cognitive Changes

Many people experience cognitive changes before, during, and after cancer treatment. These changes include having trouble with:

- Paying attention
- Thinking quickly (processing speed)
- Organizing thoughts or tasks
- Short-term memory

Many people describe these changes as a “mental fog.”

These changes are sometimes called “chemo brain” because they were thought to be related to chemotherapy. Now, doctors know that other treatments besides chemotherapy can also cause these changes.

Causes of Cognitive Changes

Cognitive changes can be caused by many things, including:

- Certain chemotherapies
- Radiation treatment to the head and neck
- Total body irradiation
- Brain surgery
- Medications such as hormone therapy, immunotherapy, anti-nausea

medications, antibiotics, pain medications, immunosuppressants, antidepressants, anti-anxiety medications, heart medications, and medications to treat sleep disorders

- Infections
- Brain cancer
- Other cancers that have metastasized (spread) to the brain
- Other conditions or symptoms related to cancer or cancer treatments, including anemia (low levels of red blood cells), sleep problems, fatigue, hypercalcemia (high blood calcium), and electrolyte imbalances (when the levels of minerals in your body are too high or too low)
- Emotional responses such as stress, anxiety, or depression
- Vitamin and mineral deficiencies, such as not getting enough iron, vitamin B, or folic acid
- Other brain or nervous system disorders unrelated to cancer

Symptoms of Cognitive Changes

Symptoms of chemo brain include:

- Memory problems
- Trouble paying attention
- Trouble finding the right word
- Trouble learning new things
- Trouble managing daily activities and doing several things at once (multitasking)
- Slowed thinking speed

You may notice these problems during treatment. Within 1 year of treatment, many people find that cognitive changes have gotten much better. However, for some people, cognitive changes can last for several years.

Managing Cognitive Changes

Tell your healthcare provider if you're having trouble with your memory or notice any other changes in your thinking or abilities. They can help address some of the factors that can cause cognitive problems. For example, medication to treat nausea can make you less alert and affect your ability to think clearly. Changing your prescription may help fix these changes

These are some other ways that you can manage cognitive difficulties:

- Make lists. Carry a notepad or your smart phone around with you and write down the things you need to do. For example, keep lists of things to buy, errands to run, phone calls to return, and questions to ask at your appointments. Cross items off as you finish them.
- Use a portable planner or organizer (paper or electronic). These can help you stay on top of day-to-day tasks and keep track of appointments and special days like birthdays and anniversaries.
- Get a wall calendar. For some people this works better than a portable planner because you can hang it up in a place that's easy for you to see every day. Put it in a place where you will see it several times a day.
- Set an alarm on your smart phone or tablet for when you need to take your medications.
- Organize your environment. Keep things in familiar places so you'll remember where you put them. For example, always store your car keys in the same place.
- Avoid distractions. Work, read, and do your thinking in an uncluttered, peaceful environment to help you stay focused.
- Have conversations in quiet places. This minimizes distractions and lets you concentrate better on what the other person is saying.
- Repeat information out loud after someone gives it to you and write down important points.
- Use word play, such as rhyming, to help you remember things.
- Keep your mind active. Do crossword puzzles and word games or go to a lecture on a subject that interests you.
- Proofread. Double-check the things you write to make sure you've used the right words and spelling.

- Train yourself to focus. For example, if you keep misplacing your keys, take extra time to think about or picture what you're doing every time you put them down. Also say out loud to yourself, "I'm putting my keys on my dresser." Then look at your keys again, and repeat: "The keys are on my dresser." Auditory (hearing) cues give your memory an extra boost.
- Exercise, eat well, and get plenty of rest and sleep. Research shows that these things help keep your memory working at its best.
- Tell your loved ones what you're going through. They may be able to help and encourage you.

Steps to Improve Your Concentration

Concentration is the ability to stay focused on your work without letting people, feelings, thoughts, or activities get in the way. Here are a few strategies for establishing or improving concentration:

1. Establish concentration

- Be aware of external distractions. For example, give yourself permission to let your voicemail pick up calls when you're in the middle of a task. That way, you're not distracted by the call
- Try to recognize internal distractions, such as thoughts, emotions, physical feelings, and hunger, which can interrupt your ability to focus. Do something to reduce these internal distractions. For example, if you are hungry, have a snack before starting the task.
- Stop distracting thoughts that pop into your mind as soon as you're aware of them. You can do this by acknowledging the thought, and then consciously bringing your attention back to the task you're working on.
- Keep a notebook or pad of paper handy. If something you need to do pops into your head in the middle of the task, write it down to get it off your mind and schedule time later in the day to do it.

2. Increase concentration

- Set aside time to concentrate. Imagine how you may feel or what you may accomplish after your task is done.
- Use a pencil or highlighter when reading. Take notes or highlight

important points.

- Divide tasks into smaller, more manageable parts.
 - Plan breaks according to your concentration span. Take a walk or a lunch break to help clear your head.
 - If you find yourself losing focus, stand up. The physical act of standing brings your attention to the fact that you're losing focus.
 - Vary your activities. Change is often as good as taking a break.
3. Develop your concentration habits. Like any other skill, you must learn, develop, and practice concentration.
- Determine how long your concentration span is. Find out by recording your start time for a task like reading, and as soon as your mind begins to drift, record this time.
 - Learn when your concentration level is at its best. Find a time during the day when you know that you won't be interrupted and that your energy level matches the particular task. Try to plan your tasks accordingly.
 - Find out if there is an environment that improves your ability to concentrate. Remove yourself from distractions for set periods of time to accomplish your work. Figure out what works for you, whether it's an uncluttered desk, good lighting, or soothing music playing in the background.

Speak with a Neuropsychologist

Neuropsychologists have special training to measure and treat cognitive changes. If 1 year has passed since you finished cancer treatment and you still feel that cognitive changes are interfering with your day-to-day activities, you may want to see a neuropsychologist.

Our neuropsychologists at MSK have special training in assessing and treating cognitive changes in people with cancer. They can evaluate the things you're having trouble with and make recommendations for the right treatment for you. This treatment can help reduce the effect of cognitive changes.

After doing a complete evaluation, your neuropsychologist may suggest cognitive rehabilitation. This involves working on areas you have problems with.

You will also develop a plan that helps improve your functioning. This will help you better manage your daily life.

Some insurance companies and Medicare and Medicaid plans cover these services, but coverage varies. Call your insurance company before deciding on a treatment plan so that you can see what your company will cover.

Resources for People With Cognitive Changes

Resources at Memorial Sloan Kettering (MSK)

- To make an appointment with one of our neuropsychologists, speak with your healthcare provider about your concerns. If your healthcare provider thinks a neuropsychological evaluation is right for you, they can make a referral to our Neuropsychological Assessment Service at MSK. For more information go to www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/cognitive-testing or call 212-610-0489.
- The Sillerman Center for Rehabilitation has trained occupational therapists who do cognitive rehabilitation therapy for people experiencing memory loss and difficulty concentrating. For more information go to www.mskcc.org/cancer-care/outpatient/sillerman-rehabilitation or call 646-888-1900.
- The Resources for Life After Cancer Center (RLAC) program has support services for cancer survivors and their families. You can talk with a social worker who understands cancer issues. Social workers at RLAC can provide one-on-one support and refer you to various support groups that may be helpful. Call 646-888-8106 for more information.
- Watch a video on managing cognitive changes after cancer treatment at www.mskcc.org/cancer-care/survivorship/videos-survivors/discussion-about-post-treatment-changes-thinking-and-memory

Other resources

American Board of Professional Psychology

www.abpp.org

Has names of qualified neuropsychologists in your area.

CancerCare

www.cancercares.org

800-813-4673

275 Seventh Avenue (Between West 25th and 26th Streets)

New York, NY 10001

Provides counseling, support groups, educational workshops, publications, and financial assistance.

If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 PM, during the weekend, or on a holiday, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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