



PATIENT & CAREGIVER EDUCATION

Treatment for Advanced Breast Cancer

This information explains what advanced breast cancer is, the treatments that are used to manage it, and how to manage the symptoms you may experience during treatment. If you have any questions or would like more information, talk with a member of your care team.

Learning you have advanced breast cancer can lead to feelings of uncertainty. With time, information, and the support of your care team, you can become more empowered and better prepared to face this diagnosis.

What is Advanced Breast Cancer?

Advanced breast cancer is also called metastatic or stage 4 breast cancer. It's when cancer has spread from the breast to the skin, lymph nodes, or another part of the body, such as the liver, lungs, or bones.

Some people have advanced breast cancer when they're first diagnosed. More often, you get advanced breast cancer when the disease comes back somewhere else in the body, even after you had treatment.

Advanced breast cancer is a chronic condition. This means that it requires care for the rest of your life. The goal of treatment is to control it for as long as possible so that you can carry on most of your usual activities.

Planning Your Care

There are many treatments for advanced breast cancer. Choosing a treatment that's right for you depends on many factors.

To create your care plan, your doctor will review your medical history, examine you, and review your test results. They may also refer you to specialists for certain treatments, such as radiation therapy or surgery. Your doctor will discuss your care plan with you in detail. Don't compare your care plan to someone else's. The same plan may not be right for everyone.

You may have tests done to see how the cancer is responding to treatment. Sometimes the cancer may continue to grow even with treatment. If this happens, your doctor will talk with you about changing your care plan. New treatments are developed all the time, increasing your options for therapy.

Treatment Options for Advanced Breast Cancer

Chemotherapy

Most people with advanced breast cancer will get chemotherapy at some point during their treatment. Chemotherapy can kill cells in many ways by stopping their ability to multiply. Some chemotherapies are available as a pill, but most are given through an intravenous (IV) catheter (a thin, flexible tube).

Chemotherapy works by killing cells that divide quickly. This includes cancer cells, but it also kills some healthy cells that divide quickly, such as:

- Blood cells.
- Hair.
- Nails.
- Cells that line your mouth, throat, stomach, and intestines.

You may have side effects such as:

- Lower blood counts
- Hair thinning or hair loss.
- Changes in your nails.

- Nausea (feeling like you're going to throw up).
- Vomiting (throwing up).
- Diarrhea (loose or water bowel movements).

The side effects of chemotherapy depend on which medication you're getting and how much is given. For example, not all chemotherapy causes nausea, vomiting, or hair loss. Your healthcare providers will talk with you about the side effects you can expect.

Hormone therapy

Estrogen and progesterone are hormones. Some cancers grow when exposed to these hormones. When this is the case, antihormonal medications may be used to treat the cancer. We often refer to this as "hormone therapy."

Hormone therapy blocks natural hormones in the body that might help cancer cells grow. Some hormone therapies are taken orally (by mouth) and some given by injection (shot).

Hormone therapy can cause changes in your hormone levels. For women, this can change or stop menstrual periods, make you unable to get pregnant (infertile), or cause side effects related to menopause. Men might experience hot flashes and difficulty maintaining an erection (get hard for sex). You may also notice a decrease in your sexual desire.

Targeted therapy

Targeted therapy works by attacking specific genes or proteins that are common in cancer cells, without harming normal cells. Antibody therapy is an example of targeted therapy.

Whether or not your doctor suggests targeted therapy depends on the type of breast cancer you have. You may have targeted therapy alone or in combination with chemotherapy. . Your healthcare providers will talk with you about what side effects you can expect.

Implanted Ports

You may need an implanted port (also known as a “port”) at some time during your treatment for advanced breast cancer. A port is like an artificial vein. It will make it easier for your healthcare team to access your blood vessels for medications and tests. A port may be referred to by a brand name, such as BardPort[®], Mediport[®], PowerPort[®], or Port-A-Cath[®].

A port has many uses. It may be used to:

- Give you IV medication.
- Give you IV fluids.
- Draw blood for tests.
- Give you chemotherapy continuously for several days. Sometimes, chemotherapy must be given in a vein larger than the ones in your arms. The port allows the medication to be delivered into your bloodstream through a large vein near your heart.

There are many benefits to having a port, including fewer needle sticks when trying to find a good vein for treatment. With ports, there is also less of a risk that chemotherapy will leak out of your veins and cause damage to the surrounding tissue.

A port is placed during a short procedure, and can be used that same day if needed. Once your incision (surgical cut) from the procedure is healed, you can swim, bathe, and resume all of your normal activities even with a port.

If you would like to learn more about ports, you can read the resource *About Your Implanted Port* (www.mskcc.org/pe/implanted-port). If you have any questions about ports, talk with your healthcare provider.

Clinical Trials (Research Studies)

You may also have a clinical trial be part of your care plan for advanced breast cancer. A clinical trial is a research study that tests a new treatment to see how well it works. This may include studying a new medication or combination of medications to treat breast cancer, a new dose or schedule of a medication, new tests to measure your response to a treatment, or new types of supportive care.

Clinical trials may also include surveys to help us better understand your needs. Clinical trials may involve studying your tumor or normal tissues and cells. The information we learn from clinical trials helps us learn how to provide better care for people with cancer.

Below are some commonly asked questions about clinical trials. For more information, or to learn if there are any clinical trials that are right for you, talk with your doctor. You can also visit our website at www.mskcc.org/cancer-care/clinical-trials.

You may change your mind about being on a clinical trial at any time.

Frequently asked questions about clinical trials

How much does it cost to be on a clinical trial?

You generally don't have to pay extra out-of-pocket costs for treatments studied as part of a trial. Every trial is different, but the clinical trial's sponsor usually pays for all research-related costs and any special testing.

You or your insurance company will need to pay for any routine tests, treatments, or procedures that you'd need as part of standard cancer treatment. But, some health plans don't pay for these costs once you join a clinical trial. Before you join a clinical trial, you'll get an informed consent document that spells out exactly what you'll have to pay for and what you won't.

If you have any questions regarding what your plan covers, call your insurance company. Memorial Sloan Kettering (MSK) also has financial

counselors available to help you. You can reach a financial counselor by calling 646-227-9978.

What are the benefits of going on a clinical trial?

Clinical trials may offer you access to new medications and other treatments, sometimes years before they are widely available. But, not all new treatments are better. For example, you aren't guaranteed that the trial medication is more effective or safer than other options. Clinical trials are designed to get answers to research questions in the safest way possible.

What do the different phases of clinical trials mean?

New treatments must pass through different phases before they can be released to the general public. If the treatment is successful in one phase, it will move to the next one. You would participate in only 1 phase of a trial.

- Phase I: These trials are testing new medication in people for the first time. The goals of these studies are to find the safest doses, the best ways to give the medication, and how often to give them. You would be closely monitored for side effects. Phase I clinical trials enroll only a small number of people.
- Phase II: These trials examine how safe new medications are and how well they work. These studies often focus on 1 type of cancer.
- Phase III: These trials compare how a new medication or treatment works compared to the current standard of care or another experimental treatment. People who take part in the trial are randomly assigned to receive either the new or the standard treatment. Phase III trials take place after successful phase I and II studies. These trials often include large numbers of people possibly from other hospitals or across the country.
- Phase IV: These trials aren't common and they take place after the medication is widely available. They help us learn more about how safe the treatments are and how well they work over time.

Managing Possible Side Effects

Advanced breast cancer affects the way you feel, physically and emotionally. Some side effects may be from the cancer itself, while others may be from the treatment(s). You may experience some, all, or none of these side effects. Your healthcare providers will tell you which side effects you're most likely to experience.

If you experience any side effects or have any questions, call your healthcare provider. **Don't report any symptoms through the patient portal, MyMSK.** Don't wait for your next appointment. Your doctor may be able to give you advice or a prescription to help you feel better.

Specific possible side effects of chemotherapy, hormonal therapy, and antibody therapy are described here. Each section also gives tips on how to feel better during your treatment.

Allergic reaction

Sometimes, chemotherapy may cause an allergic reaction while it's being given to you. You'll get medication to prevent this, if needed. If you get medication to take at home before your treatment, take it as instructed by your doctor and tell your healthcare team if you didn't take it. Your nurse will closely monitor you during your treatment.

Your doctor and nurse will tell you if any of the medications you're getting can cause a reaction.

Call your healthcare provider if you have:

- A rash
- Trouble breathing
- Swelling on any part of your body

Body changes and sexual intimacy

Breast cancer and breast cancer treatment may change how you look. This may be because of a tumor, radiation, surgery, or a combination of these. Changes in your body from cancer treatment may affect:

- How you feel about yourself.
- Your comfort with showing your body to another person.
- Your desire for sex. You may notice a decrease in your sexual desire during chemotherapy.
- How your body responds sexually.
- Your ability to get pregnant and have children.

What you can do:

- Talk with your partner. It's important to share with each other how you're both feeling. You may find that they're worried about causing you pain or discomfort during sex.
- Talk with a member of your healthcare team about ways to improve your sexual health.
- See a specialist in our [Female Sexual Medicine and Women's Health Program](#) or [Male Sexual and Reproductive Medicine Program](#). For more information or to make an appointment, call 646-888-5076 to reach the female program and 646-422-4359 for the male program.
- Attend Memorial Sloan Kettering's (MSK) Embodied educational program for people wanting more information on cancer and body image changes. For more information, email RLAC@mskcc.org or visit www.mskcc.org/event/embodied-coping-cancer-related-body-image-changes.
- Read the resource *Sexual Health and Intimacy* (www.mskcc.org/pe/sexual_health_intimacy) for more information.

Menstrual cycle (period) changes

Some treatments may cause your periods to change (to heavy or light), become irregular, or stop. Your treatment plan may also include medication or surgery that will stop your periods.

- **If you still have ovaries and a uterus, you can still be ovulating and can get pregnant, even if your periods stop.** If you have ovaries and a uterus, you must use a non-hormonal form of birth control such as a condom, diaphragm, or non-hormonal IUD during your treatment.
 - Read the resource *Sex and Your Cancer Treatment* (www.mskcc.org/pe/sex_cancer_treatment) for more information.
- Ask your doctor when you can stop using these methods of birth control.
- Hormonal changes caused by medication and your period may give you mood swings.
- Chemotherapy can cause early menopause. Your period is more likely to stop if you're 40 or older.

Vaginal dryness

Many women have vaginal dryness after menopause or from hormonal treatments. This can make sex painful or difficult. It can also make it easier to get urinary tract infections (UTI).

What you can do:

- Use vaginal moisturizers regularly, such as Replens[®], K-Y[®], Silk-E[®], or Vitamin E gel caps.
- Use lubricants during sexual activity to reduce discomfort.
 - Use water-based lubricants, such as Astroglide[®], K-Y[®] Jelly, or Liquid Silk.
- Make foreplay longer. This may increase your arousal.
- Talk with your partner about your vaginal dryness. Make sure they know that it's a side effect of the treatment, not your lack of desire.
- Try different sexual positions. Some may be better than others.

- See a specialist in our Female Sexual Medicine and Women’s Health Program. For more information or to make an appointment, call 646-888-5076.
- Read the resource *Improving Your Vulvovaginal Health* (www.mskcc.org/pe/improving_vulvovaginal_health) for more information.

Constipation



Please visit www.mskcc.org/pe/constipation-after-surgery to watch this video.

Constipation is having fewer bowel movements than what’s normal for you or having hard stools (poop) that aren’t passed easily. It’s a common side effect of medications used to treat pain and nausea. Some chemotherapy can also cause constipation.

What you can do if you’re constipated:

- Drink 8 to 10 (8-ounce) glasses of non-caffeinated liquids daily, if you can.
- Slowly increase the amount of fiber you eat to help prevent gas. Fiber is found in fruits, vegetables, cereals, and grains (such as bran, oats, whole wheat or whole-grain bread and cereal, brown rice, or beans). For more information on how to get more fiber in your diet, read *A Guide to High Fiber Foods* (www.mskcc.org/pe/high_fiber_foods).
- Exercise if you can. Walking is a great way to stay active, and it helps decrease constipation.
- Ask your healthcare provider if you can take medications for constipation such as docusate sodium (Colace®), senna (Senokot®), or polyethylene glycol (MiraLAX®).
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

What to avoid:

- Suppositories (medications you take through your rectum, vagina, or penis)
- Enemas (liquid you put into your anus to cause a bowel movement)

Call your healthcare provider if you:

- Haven't had a bowel movement for more than 3 days.
- Have hard stools or trouble having a bowel movement for more than 3 days.

For more information on constipation, read the resource *Managing Constipation* (www.mskcc.org/pe/constipation).

Diarrhea

Diarrhea is loose or watery bowel movements. This is caused by irritation of the lining of the stomach and intestines.

What you can do if you have diarrhea:

- Drink 8 to 10 (8-ounce) glasses of non-caffeinated liquids daily so that you don't get dehydrated. Water, juices diluted with water, or liquids with electrolytes, such as Pedialyte[®], Gatorade[®], Powerade[®], and other sports drinks are good choices.
- Eat bland foods such as bananas, rice, applesauce, and white toast.
- Ask your healthcare provider if you can take medication to help, such as bismuth subsalicylate (Kaopectate[®]) or loperamide (Imodium A-D[®]).
- Keep your rectal area clean and dry to help decrease skin irritation.
- For rectal irritation, try warm sitz baths. A sitz bath is when you sit in warm water up to your hips to soothe your rectal area. You can also apply a soothing cream such as A&D[®], petroleum jelly (Vaseline[®]), or hemorrhoidal cream.
 - Don't use suppositories until you have checked with your doctor first.

- Apply a warm cloth to your stomach, which may soothe cramping. Be careful not to burn yourself.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

What to avoid:

- Foods that have high amounts of fiber (such as bran, oats, whole wheat or whole-grain bread and cereal, brown rice, and beans).
- Foods and drinks with caffeine or high amounts of artificial sweeteners or sugar (such as coffee, tea, colas, and other soft drinks). They may stimulate your bowel, which can make you have more bowel movements.
- Dairy products.
- Foods that make you bloated or gassy (such as cabbage and beans).
- Stool softeners.
- Rectal suppositories.

Call your healthcare provider if you have:

- 3 or more loose, watery bowel movements in 1 day.
- Diarrhea, even after eating bananas, rice, applesauce, and white toast for 2 days.
- Rectal irritation that doesn't go away.
- Blood in your stool.

For more information on managing diarrhea, read the resource *Managing Diarrhea* (www.mskcc.org/pe/diarrhea).

Emotional changes

It's very common to have new, upsetting feelings during your treatment. These feelings are different for everyone, but some common ones include:

- Feeling sad, lonely, anxious, or angry.

- Feeling exhausted or restless.
- Changes in your mood throughout the day.

What you can do to help manage these emotions:

- Talk with people you're close with about your feelings and the changes you're going through. Open communication will help you understand each other better. Friends and family can support and comfort you.
- Ask for help with anything if you need it. Accept the help that others may offer you.
- Share your concerns with your healthcare providers. They can tell you more about the emotional changes you might have. They can also refer you to other resources.
- Make an appointment with MSK's Counseling Center. Many people find that counseling helps them deal with emotions during cancer treatment. Our counselors provide counseling for individuals, couples, families, and groups. Talk with your healthcare provider for more information or call 646-888-0200.
- Our [Integrative Medicine Service](#) offers services such as massages, acupuncture, yoga classes, reflexology, meditation, and nutritional consults. For more information, call 646-449-1010 or visit www.mskcc.org/cancer-care/integrative-medicine.
- You can also talk with a social worker who can provide counseling, connect you with support groups, and refer you to resources in your community. For more information or to schedule an appointment, call 646-888-5203 or 646-888-5271.
- Read the following resources for more information on managing anxiety and depression:
 - *Managing Anxiety* (www.mskcc.org/pe/anxiety)
 - *Managing Depression During Your Cancer Treatment* (www.mskcc.org/pe/depression)

Eye and vision changes

Some chemotherapy medications may cause you to have dry eyes or watery eyes (tearing). If this happens, you can use wetting drops or allergy eye drops. If you have blurry vision during your treatment, see your eye doctor. It may be because your eyes are dry or tearing.

Some chemotherapy medications may cause your eyelashes and eyebrows to fall out. If this happens, it won't last. They will grow back in after your chemotherapy treatment with that medication is over.

Fatigue



Please visit www.mskcc.org/pe/manage_fatigue_video to watch this video.

Many people describe fatigue as feeling weak or having no energy. Fatigue from treatment can range from a mild to an extreme feeling of being tired.

What you can do:

- Eat a well-balanced diet, including good sources of protein such as chicken, fish, eggs, lentils, or peanut butter. Also include grains such as pasta, rice, bread and cereals, and fruits and vegetables. For more information, read the resource *Eat Your Way to Better Health* (www.mskcc.org/pe/eat_better_health).
- Do activities and exercise when you have the energy. Walking is a good way to get some exercise even when you're feeling fatigued.
- Make time to rest.
- Ask others to help you with your household chores and other tasks.
- Talk with your healthcare provider for more ways to manage your fatigue. You can also read the resource *Managing Cancer-Related Fatigue* (www.mskcc.org/pe/managing-fatigue) for more information.

Don't start taking any vitamins or supplements for your fatigue until you

talk with your healthcare provider.

Hair loss or thinning (alopecia)

Some chemotherapy medications cause hair loss. Hair loss usually starts about 2 to 4 weeks after your first chemotherapy treatment. If you do lose your hair, it will start to grow back once you're no longer getting chemotherapy. Some hormonal therapies can thin your hair, as well. For more information, read *Hair Loss and Your Cancer Treatment* (www.mskcc.org/pe/hair_loss_cancer_treatment).

Hair loss can be affected by:

- The type, dose, and length of time you take the medication(s).
- The amount of hair you have before treatment.
- The amount of chemical processing (such as perm and dye) you had before treatment.

What you can do:

- Sign up for a free, virtual Look Good Feel Better class to learn about wigs, make-up, and skincare techniques. To register for an online class, visit lookgoodfeelbetter.org/virtual-workshops.
- Use a mild shampoo, such as Johnson's Baby Shampoo®.
- Talk with your healthcare provider about getting a prescription for a wig before you start treatment. People who lose their hair from cancer treatment may have insurance coverage for a wig. Check with your insurance provider for more information. For more information on where you can find wigs and hairpieces, read the resource *Where to Buy Wigs and Hairpieces* (www.mskcc.org/pe/wigs-hairpieces).
- Wear scarves and soft terry cloth turbans on your head, if you would like. They're very comfortable and add variety.
- Use a low-heat setting when blow-drying your hair.
- Speak with your doctor about trying a cold cap. A cold cap is a cap filled with cold gel that is worn on your head during chemotherapy to reduce

the amount of chemotherapy that reaches your hair follicles. This can help minimize hair loss. For more information, read *Managing Hair Loss with Scalp Cooling During Chemotherapy for Solid Tumors* (www.mskcc.org/pe/scalp_cooling). Cold-capping is usually not covered by insurance.

What to avoid:

- Bleaching or perming your hair.
- Using hot curlers.

Heart problems

Some chemotherapy treatments can affect the way your heart functions. They may cause you to have a fast heartbeat, feel fatigued, or have trouble breathing. Your doctor will tell you if you need to have any heart tests before you start your treatment and throughout your treatment.

Tell your healthcare provider if you have:

- Fast or irregular heartbeats.
- Trouble breathing after physical activity or exercise.
- Chest pain or heaviness in your chest.

Hot flashes

Cancer treatment may sometimes cause hot flashes or sweating that can affect your daily routine or your sleep.

What you can do to manage hot flashes:

- Check with your doctor before taking any herbs or over-the-counter supplements for hot flashes. **Don't use herbal remedies, such as oil of evening primrose, cohosh, turmeric, or red clover.** These herbs can work like estrogen, which might cause breast tumors to grow.
- Wear comfortable, loose-fitting cotton clothing and dress in layers.
- Ask your healthcare provider how to manage or treat signs of

menopause.

- Keep a log of when your hot flashes happen to try to figure out what your triggers might be. Common triggers include hot foods and drinks, spicy food, caffeine, and alcohol. Avoiding these triggers can decrease your hot flashes.

For more information on how to manage hot flashes, read *Managing Your Hot Flashes Without Hormones* (www.mskcc.org/pe/managing_hot_flashes).

Low red blood cell count (anemia)

Anemia is when your body doesn't make enough red blood cells. Red blood cells carry oxygen through your body. When you don't have enough red blood cells, you may feel very tired or have trouble breathing. Anemia is more likely to happen after you've been getting chemotherapy for some time.

What you can do if you have a low red blood cell count or to prevent it:

- Eat foods that have iron, which may lower your chance of becoming anemic.
 - Iron-rich foods include lean meat, chicken, fish, dried apricots, raisins, beans, and lentils. For more information on how to get your daily dose of iron, read *Iron in Your Diet* (www.mskcc.org/pe/iron_diet). You may also talk with our registered dietitian nutritionist at 646-888-4880 or 212-639-7312.
- Cut back on work and social activities that you don't need to do and on household chores.

What to avoid:

- Anything that makes you feel tired.
- Heights or elevations, which may make you very dizzy.

Call your healthcare provider if you have:

- Dizziness.
- Intense fatigue (feeling more tired or weak than usual).
- Trouble breathing.
- Chest pain or pressure.

Low platelet count (thrombocytopenia)

A low platelet count lowers your body's ability to stop bleeding if you have a cut or an injury. This side effect isn't as common as having low red or white blood cell counts. You may have a low platelet count 10 to 14 days after chemotherapy, but this is more likely to happen after months of chemotherapy.

If you have a low platelet count, ask your doctor before taking an anti-inflammatory medication such as ibuprofen (Advil[®], Motrin[®]) or naproxen (Aleve[®], Naprosyn[®]), since these medications can also increase bleeding. Tell your doctor if you take aspirin or blood thinners for other health conditions.

What you can do:

- Use a soft toothbrush for your teeth and gums to prevent sores from forming in your mouth.
- If you currently floss your teeth, you may keep doing it, but gently. If you don't floss regularly, don't start now.
- Be careful not to cut or bump yourself.
- Look for any unexplained bruises or red spots on your skin.

What to avoid:

- Sharp objects (such as cuticle scissors, straight razors, and sharp knives).
- Using rectal thermometers or suppositories.

- Dental work or surgery.
- Contact sports or anything that may result in bumping or banging.
- Avoid having more than 3 alcoholic drinks per week.

Call your healthcare provider if you have:

- Blood in your urine (pee), stool, vomit (throw up), or if you cough up blood.
- Unexplained bruising or bleeding from your nose or gums.
- Changes in your vision, such as watery eyes, or blurry vision.
- Headaches or any signs of a stroke, such as weakness or numbness on 1 side.

For more information about ways to lower your risk of bleeding, read the resource *About Your Low Platelet Count* (www.mskcc.org/pe/low_platelet_count).

Low white blood cell count (leukopenia)

Your white blood cells help your body fight off infections. Having a low white blood cell count can raise your risk of getting an infection. You may start having low white blood cell counts 7 to 14 days after each treatment. There are medications that may be used to raise your white blood cell count or prevent it from falling. These medications come in the form of injections (shots) or devices that you wear on your arm.

What you can do if you have a low white blood cell count:

- Take your temperature by mouth every 4 hours if you think you have a fever, body aches, or chills, or notice an increased temperature of your skin. **Call your healthcare provider if it's above 100.4° F (38° C).** This is very important. If you have a fever after hours, you should call your doctor's office and ask to talk to the doctor on call.
- Ask your healthcare provider if you can take acetaminophen (Tylenol®).
- Always wash your hands after using the toilet and before eating.

- Protect your hands from cuts and burns:
 - Don't cut your cuticles. Push them back gently instead.
 - Wear gloves when you wash the dishes, cook, or garden.
 - Keep your skin moisturized to avoid skin cracking.
- If you have a cut, wash it with soap and water right away. You can also use an antibacterial ointment or spray on the cut.
- Watch for any signs of infection such as redness, swelling, or pus. If you notice any of these signs, call your doctor.

What to avoid if you have a low white blood cell count:

- Being around people who are sick or have been exposed to anything that could make you sick, such as chickenpox, strep throat, tuberculosis (TB), the flu, measles, or the common cold.
- Dental work or surgery. Check with your healthcare provider first.
- Using suppositories, rectal thermometers, and enemas.
- Live virus vaccines, such as the shingles vaccine, MMR, chickenpox vaccine, and the nasal spray flu vaccine.
- Being around anyone who has gotten a live virus vaccine or nasal spray vaccine. You should wait 7 to 10 days after they got it before being around them again.

Call your healthcare provider:

- If you have redness, swelling, or pus leaking from a wound.
- If you have a fever of 100.4 °F (38 °C) or higher.
- If you have chills or body aches, with or without a fever.
- Before you get any vaccines.

Memory changes

Cancer treatment can sometimes affect your mind. This might mean that you won't be able to think clearly or as quickly as you did before starting treatment. You may also notice that you:

- Have trouble focusing.
- Have trouble doing more than 1 thing at a time.
- Have trouble remembering things.

Many things can cause these changes. Fatigue, mood changes, stress, anxiety, normal aging, hormonal changes, cancer itself, and anesthesia (medication to make you sleep during surgery) can affect your thinking for some period of time.

Many people don't experience any of these problems. It's hard to tell who might have them, but they often go away over time. If this is something you're worried about, talk with your doctor. If you do have any of these problems, an occupational therapist can help you with your everyday activities. They can also help you improve your attention, concentration, and memory.

Other things you can do:

- Make sure you get enough sleep.
- Eat a well-balanced diet.
- Read and talk with others to keep your mind active.
- Talk with your healthcare provider about trying counseling if you have anxiety or depression. These conditions can add to memory problems. Read the following resources for more information on managing anxiety and depression:
 - *Managing Anxiety* (www.mskcc.org/pe/anxiety)
 - *Managing Depression During Your Cancer Treatment* (www.mskcc.org/pe/depression)

- Read the resource *Improving Your Memory* (www.mskcc.org/pe/improving_memory) for other helpful tips.

Call your healthcare provider if:

- The changes in memory are preventing you from doing your normal daily activities.
- You also have headaches.
- You also have trouble with your vision or balance.

Mouth Sores (Mucositis)



Please visit www.mskcc.org/pe/mouth_care_video to watch this video.

Chemotherapy can cause painful areas or sores in your mouth or throat. These usually last a few days to a week.

What you can do if you have mouth sores:

- Rinse your mouth 4 times a day using either a mixture of 1 to 2 teaspoons of salt in 1 quart of water or an alcohol-free mouthwash. Don't swallow the solution.
 - Gargle with the salt solution or using mouthwash in the morning, after each meal, and at bedtime. If you vomit, clean your mouth well and gargle afterward.
- Keep your lips moist with lip balm or ointments to prevent them from drying out.
- If you have dentures, remove them during your mouth rinses and before bedtime.
- Eat soft foods.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist if you're not able to eat because of your mouth sores.

What to avoid:

- Mouthwashes that may have alcohol or hydrogen peroxide. These can make your sores worse.
- Acidic, salty, coarse, sharp, or spicy foods.
- Foods that are hot to touch.

Call your healthcare provider if you:

- Get mouth sores often.
- Have pain when eating or swallowing.
- Can't drink enough liquids to keep yourself hydrated.

For more information on mouth care, read the resource *Mouth Care During Your Cancer Treatment* (www.mskcc.org/pe/mouth_care).

Muscle, bone, and joint problems

Some treatments can affect your muscles, bones, or joints. You may have:

- Bone pain
- Joint stiffness or pain
- Decreased bone density

What you can do:

- Exercise, if you can. Walking is an excellent form of exercise.
- Ask your doctor if you can take anti-inflammatory medication such as ibuprofen (Advil[®], Motrin[®]) or naproxen (Aleve[®], Naprosyn[®]).
- Ask your doctor if you should take vitamin D.

Contact your healthcare provider if:

- You're very uncomfortable
- You've developed new pain

- Your legs are weak or you have trouble walking
- Your hands or fingers feel stiff

For more information, read *Osteoporosis, Osteopenia, and How to Improve Your Bone Health* (www.mskcc.org/pe/osteo_bone_health).

Nausea and vomiting



Please visit www.mskcc.org/pe/chemo_nausea to watch this video.

Chemotherapy may cause nausea and vomiting. Nausea and vomiting happen because chemotherapy irritates the areas of your brain that control nausea or the cells lining your mouth, throat, stomach, and intestines.

There are medications that are very good at preventing or controlling nausea. If the chemotherapy you'll be getting causes nausea and vomiting, you'll get anti-nausea medication before, after, or both for each chemotherapy treatment. This will reduce the chance that you'll have nausea. You'll also get a prescription for anti-nausea medication to take home with you. Your nurse will tell you how to take the medication. Taking it the right way will give it the best chance to work.

Nausea can make you want to stop eating. Not eating and drinking won't allow your body to get the energy it needs to repair itself from the effects of your chemotherapy. Below are some tips to help you lessen your nausea. You can also read the resource *Eating Well During Your Cancer Treatment* (www.mskcc.org/pe/eating_cancer_treatment) for more information.

The following are tips to help with your nausea:

- Take your anti-nausea medication as instructed by your healthcare provider. Don't try to hold off on taking the medication to see if the nausea will go away. Anti-nausea medications are most effective when you take them at the first sign of nausea.

- Eat dry, starchy foods (such as crackers or pretzels) or suck on hard candy to help prevent nausea.
- Eat small meals often. Stop eating before you feel too full.
- Drink 8 to 10 glasses of non-caffeinated liquids every day. This will prevent dehydration. Take small sips to avoid feeling more nauseous.
- Practice relaxing. Listen to soft music, breathe deeply, do yoga, or meditate. You might also try to think of pleasant things to distract yourself.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

Things to avoid:

- Eating fried, greasy, creamy, or spicy foods.
- Eating or cooking foods that have a strong odor (smell).

Call your healthcare provider if you:

- Are vomiting or have diarrhea often.
- Have nausea that doesn't go away even if you take your anti-nausea medication.
- Can't drink or keep anything in your stomach.
- Feel light-headed or dizzy.
- Have heartburn or stomach pain.

For more information on nausea and vomiting during chemotherapy, read the resource *Managing Nausea and Vomiting* (www.mskcc.org/pe/nausea_vomiting).

You can also do acupressure to help with your nausea and vomiting. For more information read *Acupressure for Nausea and Vomiting* (www.mskcc.org/pe/acupressure_nausea_vomiting) and watch *How to Perform Acupressure for Nausea and Vomiting*

(www.mskcc.org/pe/acupressure_nausea_video).

Neuropathy

Some types of chemotherapy can affect the nerves in your hands and feet. You may develop some numbness or tingling in your fingers, toes, or both. This is known as neuropathy. This may not last or might be permanent depending on how long you're taking the chemotherapy. Your doctor may be able to help your neuropathy by using medications or changing the dose of your chemotherapy. For more information on neuropathy, read *Neuropathic Pain* (www.mskcc.org/pe/neuropathic_pain).

What you can do:

- Talk with your doctor about putting ice on your hands and feet during your treatment, which may help prevent neuropathy. For more information, read *About Peripheral Neuropathy* (www.mskcc.org/pe/about_peripheral_neuropathy).
- Be extra careful to avoid burning yourself when using the stove, oven, or iron. You may not be able to feel heat as much as you used to.

What to avoid:

- Using heating pads or hot packs because you could burn yourself.

Call your healthcare provider if you have:

- Problems holding a pencil or pen
- Buttoning your buttons on your shirt
- Removing a credit card out of your wallet
- Pain, burning, or tingling in your fingers or toes.
- Trouble walking or feeling the ground when you walk.
- Trouble balancing resulting in falls.

Pain

Getting chemotherapy isn't painful. But some chemotherapy or the medications given to prevent low blood counts can cause aches and pains between treatments. Some hormonal therapies can cause achy joints. Tell your healthcare provider if you have pain. Your doctor can adjust your medication or prescribe you another medication to make you more comfortable. Ask if it's safe to use over-the-counter anti-inflammatory pain medications, such as ibuprofen (Advil[®] or Motrin[®]).

Skin and nail changes

Chemotherapy can cause changes to your skin. You may have darkening of your skin, nails, tongue, and the veins that were used to give you the chemotherapy. You may also have general skin changes, including:

- Dryness
- Itchiness
- Cracking
- Sensitivity to sunlight
- Rash

What you can do if you have any signs of skin changes:

- Put on fragrance-free body lotion and hand creams while your skin is still moist, such as after a shower.
- Use a sunscreen with an SPF of 30 or higher every day.
- Wear broad-brimmed hats.
- Wear long-sleeved clothes.
- Talk with your healthcare provider about using ice on your fingers and toes during chemotherapy to decrease your chance of having nail changes. For more information, read *Nail Cooling During Treatment with Taxane-based Chemotherapy* (www.mskcc.org/pe/nail_cooling_taxane_chemotherapy).

What to avoid if you have skin changes:

- Long, hot baths or showers.
- Long periods of time in direct sunlight.

Call your healthcare provider if:

- Your skin is peeling or blistering.
- You have a rash.
- You have any new bumps or nodules (lumps) on your skin.

Taste changes

Having a metallic taste in your mouth is common during treatment. Some foods may taste bland or unpleasant. This won't last forever and will go away after your chemotherapy treatment finishes.

What you can do:

- Chew flavored gum.
- Suck on hard candy to lessen the metallic taste.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

What to avoid:

- Eating foods that cause an unpleasant taste.

Weight changes

Some people will gain weight during treatment, and others may lose weight.

Weight gain can be due to:

- Fatigue, which decreases your activity level and causes you to burn fewer calories.
- Eating a lot of carbohydrates. Eating carbohydrates may help relieve

nausea in some people.

- Overeating.
- Drinking more juices and drinks high in sugar.
- Starting menopause during or after treatment. This can cause some women's metabolism to change, so they may be more likely to gain weight.

What you can do to avoid gaining weight:

- Eat a well-balanced diet and avoid extra calories. Read the resource *Eat Your Way to Better Health* (www.mskcc.org/pe/eat_better_health) for more information.
- Exercise regularly.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

Weight loss can be due to:

- Nausea from medications.
- Mouth sores, which can make it hard to eat.
- Lack of appetite (not feeling hungry).
- Loss of appetite from medication, constipation, or depression.

What you can do to avoid losing too much weight:

- Eat a well-balanced diet.
- Eat small meals often if you can't finish a large meal.
- Add extra calories to your meals and by snacking in between.
- Ask your doctor if there are medications that can increase your appetite.
- Ask your healthcare provider to refer you to a clinical dietitian nutritionist for more suggestions.

Fertility and Pregnancy

Preventing pregnancy: Information for females

It's important to prevent pregnancy while you're getting cancer treatment. If you become pregnant with an egg damaged by exposure to radiation, chemotherapy, or other anticancer medications, you may have an increased risk for miscarriage or birth defects. Becoming pregnant can also prevent you from getting the best diagnostic tests and treatments for your cancer, as these may harm a fetus.

- Don't use birth control pills or other forms of birth control (contraception) that have hormones. These contain the hormones estrogen and progesterone. These hormones may support the growth of tumors.
- Use barrier methods of birth control (such as condoms or dental dams). You may also talk with your gynecologist about having a non-hormonal copper-based IUD placed in your uterus.
- Don't rely on your partner withdrawing before ejaculation ("pulling out") or on avoiding sex during fertile times of your menstrual cycle (the "rhythm method"). These methods aren't effective in preventing pregnancy.

You might still be at risk of getting pregnant for some time after your periods stop so continue to use non-hormonal birth control (such as a copper intrauterine device (IUD) and male condoms) until your doctor tells you that you can stop.

If you're hoping to have (more) children in the future, ask your doctor if fertility preservation with egg or embryo freezing before treatment would be safe for you. While it wouldn't be safe for you to carry a pregnancy yourself, another woman could possibly carry a pregnancy for you in the future. If you would like more information about your future family building options, ask your doctor for a referral to one of our Fertility Nurse Specialists.

For more information, read *Fertility Preservation Before Cancer Treatment*:

Options for People Born with Ovaries and a Uterus

(www.mskcc.org/pe/fertility_starting_treatment) and *Building Your Family After Cancer Treatment: For People Born With Ovaries and a Uterus* (www.mskcc.org/pe/building_family_ovaries_uterus).

Preventing pregnancy: Information for males

It's important to prevent pregnancy while you're getting cancer treatment. If a female becomes pregnant from sperm damaged by exposure to radiation, chemotherapy, or other anticancer medications, there could be an increased risk for miscarriage or birth defects. If your female partner(s) is able to get pregnant and isn't using a form of birth control, use a condom each time you have sex.

If you're hoping to have (more) children in the future, you could consider sperm banking before treatment. If you would like more information about your future family building options, ask your doctor for a referral to one of our Fertility Nurse Specialists.

For more information, read *Sperm Banking*

(www.mskcc.org/pe/sperm_banking) and *Building Your Family After Cancer Treatment: For People Born With Testicles* (www.mskcc.org/pe/building_family_born_testicles).

Advance Care Planning

Advance care planning involves protecting your right to make decisions about your healthcare. Advance care planning allows you to think about important health issues when you're healthy and don't need to make these decisions right away.

Planning your care when you aren't under too much emotional stress will help you get the care you would want if you're not able to make decisions on your own. Planning in advance helps put your loved ones at ease because they don't have to guess what you would want and worry whether they've made the right decision.

We recommend that you talk with a member of your healthcare team about

your wishes early in your treatment and anytime you feel like things have changed. They can help you make sure your choices are documented in a way that is recognized by the law.

Advance directives are written instructions on how you want medical decisions to be made if you're unable to communicate or make the decisions yourself. The 2 most common types of advance directives are a Health Care Proxy and a living will.

- A Health Care Proxy is a legal document that identifies the person you want to make medical decisions on your behalf if you're unable to make them for yourself.
- A living will is a document that states your wishes about your medical care. It goes into effect if you develop an irreversible condition that prevents you from making your own medical decisions, such as if you become terminally ill or permanently unconscious. In the document, you specify which treatments you do or don't want to receive if you're in this situation.

Talk with your healthcare provider if you're interested in completing a health care proxy. You can also read the resources *Advance Care Planning for People With Cancer and Their Loved Ones* (www.mskcc.org/pe/advance_care_planning) and *How to Be a Health Care Agent* (www.mskcc.org/pe/health_care_agent) for information about health care proxies, other advance directives, and being a health care agent.

Frequently Asked Questions

Here are answers to some frequently asked questions.

Does someone need to come with me each time I have treatment?

During your treatments you may receive medications that can make you very drowsy. If so, it wouldn't be safe for you to drive a car or travel alone. It may be more convenient for a friend or family member to pick you up at the end

of your treatment.

After your first treatment, you'll have a better idea of how you feel and what works best for you. You can also ask your healthcare provider if you should expect to feel drowsy after getting your medications.

What can I eat before and after chemotherapy? Are there any foods to avoid?

It's best to eat small regular meals before chemotherapy to prevent a heavy and full feeling. Food safety is important during treatment. Avoid raw or undercooked meat, fish, and poultry and unpasteurized products. Ask your healthcare provider if you should review the resource *Food Safety During Cancer Treatment* (www.mskcc.org/pe/food_safety).

Drink plenty of non-caffeinated liquids before and after your chemotherapy appointment to stay well hydrated.

Do I still need to take my anti-nausea medication if I'm not nauseous?

Always take your anti-nausea medication as instructed. You may have nausea and vomiting on the same day or as late as the second or third day after chemotherapy.

Some medication works best if you take it before you become nauseous. If you're still nauseous while taking your medication as instructed, call your healthcare provider.

Why wasn't I able to get my chemotherapy when it was scheduled?

Chemotherapy works on cancer cells and normal cells. Your chemotherapy is scheduled so that your body has time to recover between treatments. This allows normal cells to be replaced.

Your body may need more time to reverse the effects of chemotherapy (such as to allow mouth sores to heal or blood counts to rise to normal). Your doctor will decide if your chemotherapy should be delayed.

My chemotherapy treatment was delayed because my ANC was low. What is an ANC?

An ANC is an absolute neutrophil count. A neutrophil is a white blood cell that helps fight bacteria.

Your ANC is expected to fall 7 to 14 days after chemotherapy. If your ANC is low, your doctor may delay your treatment until it's back to normal.

Can I do something to increase my blood counts?

Your blood counts will recover over time. Your doctor may prescribe medication to help you maintain or raise your white blood cell count. These are usually shots given between treatments. Sometimes treatment will be delayed to allow time for your blood counts to recover.

There is no evidence that vitamins or a special diet will speed the recovery of your blood counts. However, if your iron levels are low, you may be more likely to have anemia and may be advised to take iron supplements.

I have chills or a fever of 100.4 °F (38 °C), but the doctor's office is closed. How can I reach a doctor?

You can always reach a doctor. During evenings, weekends, or holidays, call the hospital operator at 212-639-2000. Ask for the doctor covering for your doctor.

I haven't lost my hair yet and my counts haven't dropped. Does this mean that the chemotherapy isn't working?

Not having side effects such as hair loss, lowered blood counts, or nausea doesn't mean that the chemotherapy isn't working. Different therapies cause different side effects, to varying degrees. Also, different people can react differently to the same treatment. Your healthcare providers will monitor your progress and response to treatment.

What can I take for a headache?

You may take acetaminophen (Tylenol® or Extra Strength Tylenol®) for a headache.

If you feel that you have a fever or chills, check your temperature before you take acetaminophen. The acetaminophen may lower your temperature and hide a fever, which is usually the first sign of infection. Call your healthcare provider if you have chills or a fever of 100.4 °F (38 °C) or higher.

Ask your healthcare provider if you can take medications containing aspirin or ibuprofen, since they may increase the chance for bleeding with some chemotherapy. Your healthcare provider can give you a list of medications to avoid.

I've been having problems urinating (peeing). Is this normal?

Some chemotherapy can irritate the bladder. Side effects can be urgency, burning, or blood in the urine. These may be signs of an infection or irritation.

Call your doctor if you have any of these symptoms. You may need to give a urine sample to see what's causing the symptoms.

Make sure that you drink 8 to 10 (8-ounce) glasses of liquids each day and empty your bladder frequently.

Can I still take my other prescription medications?

In most cases, you can continue to take your prescription medications. Tell your doctor the names of all the medications that you take, including patches and creams. Also tell your doctor about any herbs and supplements you take. These include the ones you need a prescription for and the ones you buy over the counter.

Some medications, herbs, or supplements change the way the chemotherapy works. Don't start any new medications before checking with your doctor.

Can I take vitamins or mineral supplements?

Avoid most vitamins, mineral, herbal, or other dietary supplements. They might interfere with your treatment or affect your cancer. They might also increase the side effects of your treatment.

Talk with your doctor or dietitian about any vitamin, mineral, herbal, or other dietary supplements you're taking or may be interested in taking.

Can I drink alcohol?

Alcohol and many chemotherapy and other medications are processed by your liver. Drinking alcohol can:

- Limit your liver's ability to process the chemotherapy, causing more side effects.
- Interact with some medications and make them less effective.
- Cause your body to lose too much water.
- Cause too much drowsiness.

For these reasons, we recommend you limit alcohol during chemotherapy. If you feel you must drink, speak with your healthcare provider.

Can I have dental work?

Don't have any dental procedure that can cause bleeding as this may allow bacteria to enter your bloodstream. If your blood counts are low, you're at a higher risk for a serious infection.

Check with your doctor before you schedule any dental work, including cleanings or surgery.

Can I color or perm my hair?

We recommend not coloring or perming your hair. Chemicals are irritating to the hair follicles, which can speed up how fast your hair falls out during chemotherapy. If you must dye your hair, use a vegetable-based dye or talk with your doctor.

Is a wig or hair piece covered by insurance?

People who lose their hair from cancer treatment may have insurance coverage for a wig or hair piece. In this case, your doctor should write a prescription for a “total cranial prosthesis for chemotherapy-induced alopecia” and include the breast cancer diagnosis code (C50.919) on the prescription. Check with your insurance company for details. For more information on where you can find wigs and hairpieces, read the resource *Where to Buy Wigs and Hairpieces* (www.mskcc.org/pe/wigs-hairpieces).

Can I travel while I get chemotherapy?

You may be able to travel, but this depends on your treatment and where you’re going. Before you make any plans, discuss them with your doctor. Your doctor will advise you on precautions to take depending on where you’re going.

It may also be necessary for you and your doctor to plan a treatment holiday or break week from your treatment so you can take extended trips. Consider getting travel insurance in case you have to cancel your trip for any reason.

Will I be able to continue working?

Many people with advanced breast cancer continue to work. Whether you can work depends on the type of work, side effects of treatment, and symptoms of your breast cancer. Speak with your healthcare provider if you’re struggling to continue working or would like to take a leave of absence from work.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

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

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