



# Understanding Chemotherapy





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At Kaiser Permanente we're committed to providing you with the best possible care. Starting chemotherapy can feel overwhelming, so we've created this resource to help you understand how chemotherapy works. We also share tips that can make treatment more comfortable, such as managing side effects. Your care team will use the most current and advanced treatments available and will help you maintain your chemotherapy schedule. We may also ask if you would like to participate in a clinical trial.

We recommend you review this resource and bring it to your first treatment. It may also be helpful to share it with family members or close friends.

There's a lot of information in this resource, but not all of it will apply to you. Likewise, there may be a part of your treatment that isn't discussed here. If you have any questions, your care team is always available to answer them.



# Chemotherapy

Chemotherapy is a type of treatment for cancer that uses drugs to destroy cancer cells. All of the cells in your body grow by splitting into more cells. Cancer develops when abnormal cells quickly divide and grow out of control. As they continue to grow, a cancerous growth (tumor) may form.

Cancer can appear in many different areas of the body. The type of cancer you have depends on where the cancer first develops. For example, cancer that starts in the breast is called breast cancer. Cancer cells can also spread (metastasize) to other parts of the body.

Chemotherapy works by destroying the quickly dividing cancer cells. It usually circulates throughout your entire body (systemic). This means it can destroy cancer cells that spread outside the area where your cancer first develops.

The kind of chemotherapy you have depends on the type and stage of your cancer. You may be treated with a combination of different types of chemotherapy drugs. Newer treatments such as targeted therapy and immunotherapy may be used along with chemotherapy.

Your Kaiser Permanente care team includes doctors, nurses, pharmacists, dietitians, counselors, care coordinators, rehabilitation specialists, and social workers. This team creates a specific treatment plan just for you.

We welcome your questions and encourage you and your family to talk with your care team about any concerns. We're here to help.



## Treatment goals and what to expect

Chemotherapy may be given to:

- **Cure the cancer**, so there are no signs of cancer in your body when treatment ends and the cancer doesn't return.
- **Control the growth of cancer**, so it grows more slowly.
- **Manage symptoms**, such as relieving pain and other symptoms caused by cancer.

You may have chemotherapy alone or along with other treatments, such as surgery and radiation therapy. Chemotherapy that's given:

- **Before surgery** can shrink a tumor.
- **After surgery** can destroy cancerous cells that spread or remain after surgery. It also helps prevent the cancer from returning in certain types of cancer.

Remember, your treatment plan is developed by your care team specifically for you. You may have well-meaning friends and family who share information or tell you about treatment they received. However, your treatment plan may be different, even if you have the same kind of cancer.



### Questions to ask your care team

- What type(s) of chemotherapy will I have?
- What are the risks and possible side effects?
- What can I do to prepare for treatment?
- What is my treatment schedule?

## Clinical Trials

Clinical trials are research studies that involve cancer patients. The studies test new ways to prevent, detect, diagnose, or treat cancer. People who take part in clinical trials have an opportunity to contribute to scientists' knowledge about cancer and to help in the development of improved cancer prevention and treatments.

Kaiser Permanente has received national recognition for participating in numerous clinical trials with national and international clinical trial organizations. All of our medical and radiation oncologists are investigators on our cancer research team.

We believe that you should understand all of your treatment options, including participation in a clinical trial. Feel free to talk about this option with your care team.



# Cancer Treatments Used with Chemotherapy

There are many chemotherapy drugs used to treat cancer. You may be given one type or a combination of chemotherapy drugs to treat your specific cancer. Each type attacks cancer cells in a different way.

The kind of chemotherapy depends on:

- The type of cancer you have.
- If the cancer has spread (metastasized).
- Your age and overall health.
- The possible side effects.
- The most current and best treatment option (standard of care) for the cancer.

Other anticancer drugs might be considered for your treatment plan. While they generally aren't considered chemotherapy drugs, they may be given along with chemotherapy or used alone. The most common types of these treatments include:

- Targeted therapies
- Immunotherapy
- Hormone therapy

## Targeted therapy

Targeted therapy works differently from chemotherapy and radiation therapy.

The drugs work by targeting specific proteins in cancer cells that allow them to survive and grow. By blocking them, cancer growth slows or may even shrink. There are several targeted therapy drugs. These drugs can only be used under certain conditions, such as when your doctor detects a specific genetic mutation.

Your doctor can explain which drugs, or a clinical trial using them, are best for you.

## Immunotherapy

Another treatment that can be used alone or in combination with chemotherapy is immunotherapy. This treatment uses a group of medicines that help activate the body's own immune system to find and destroy cancer cells.

Generally, the side effects of immunotherapy are not as severe as chemotherapy. Common symptoms are similar to a cold. But side effects from immunotherapy can still be severe. It's important to let your care team know what side effects you're experiencing, even if it feels like they're mild.

Immunotherapy is not a treatment option for every cancer.



## Hormone therapy

### *Male hormone therapy*

Male hormone therapy, also called androgen deprivation therapy or ADT, prevents the production and activity of testosterone in the body. Testosterone is the male hormone primarily made in the testicles.

Testosterone fuels the growth of prostate cancer cells. The suppression of testosterone slows down the growth of prostate cancer cells. While ADT can slow the growth, it's not a cure for prostate cancer.

ADT is mainly used to treat recurrent and advanced prostate cancer. It's also sometimes used along with radiation therapy for early-stage prostate cancer.

### *Female hormone therapy*

Most breast cancers test positive for female hormones (estrogen or progesterone receptor). Hormone therapy can greatly reduce the risk of this type of breast cancer returning (relapse).

Hormone therapy is usually given for 5 years or longer. Clinical trials are testing to see if taking hormone therapy more than 5 years is helpful.

- **Before menopause**, we may prescribe a drug (tamoxifen) that blocks the production of estrogen from your ovaries.
- **After menopause**, we may prescribe a drug (aromatase inhibitor) to lower the risk of tumor growth. It decreases estrogen (estradiol) production.

Hormonal therapy can cause side effects, such as hot flashes, vaginal dryness, and hair thinning.



# Chemotherapy Delivery

The way you receive chemotherapy is based on the type of cancer and the drugs used for treatment. Chemotherapy can be given in different ways, including:

- Intravenous (IV) infusion
- Continuous pump
- Pill or liquid that you swallow (oral)
- Injection into the skin or muscle

## Intravenous (IV) infusion

The most common way to receive chemotherapy drugs is by an IV infusion directly into your bloodstream. This is usually done at an infusion center, but may be done at the hospital. You'll sit in a large chair while the drugs are slowly dripped into an IV line. You'll be able to move around during the treatment in case you need to use the bathroom or get a drink of water.

The length of time your infusion center appointments take depends on your specific treatment. Your care team will help you plan for how long you'll need to be at the infusion center. You can usually go home immediately after your appointment.



It's best to bring something to read, listen to, or watch during your infusion center appointments. You're also welcome to bring a family member or friend to keep you company.

## Continuous pump

Some chemotherapy drugs can be given using a portable pump called a chemotherapy pump or infusion pump. These pumps are carried in a fanny pack or backpack. They deliver a slow, steady drip of medication through an IV line. These devices allow you to receive IV drugs outside of the infusion center. Not all drugs can be given this way. Your doctor will inform you if a continuous pump is an option for you.

There are a several types of pumps. Some are electronic, while others are called continuous-pressure or gravity-fed pumps. Follow the instructions carefully, and report any problems with the devices to your care team as soon as possible. Pumps can be changed at the infusion center or hospital. You may also receive instructions on how to change or disconnect your pump at home.

In general, the following guidelines apply to all devices:

- Do not expose the device to extreme heat or cold.
- Protect the device from water (which can block air valves), especially when bathing.
- Carry devices as instructed in their carry cases. Many need to be carried at a certain height for them to work properly.
- Keep the device at your level when sleeping rather than hanging on a bedpost or placing on the floor.
- Take care not to drop or knock your pump.

## Pill or liquid

Some chemotherapy drugs can be taken orally in pill or liquid form. These types of drugs require special handling, storage, and disposal.

Chemotherapy drugs should only be handled by you or your caregiver. Children, pregnant women, and women of childbearing age should never handle chemotherapy drugs. Simple precautions, such as storing them in a separate, designated cabinet can prevent accidental handling. Follow the instructions carefully.

If you have unused chemotherapy medications, ask your local pharmacy or care team about how to dispose of them. They should not be thrown out in your trash or flushed down the toilet or sink. Likewise, they should never be kept if they're no longer needed.

Kaiser Permanente pharmacies have the following options available for disposing of medications:

- Drop them off at a kiosk in your local Kaiser Permanente (KP) pharmacy.
- Use a prepaid envelope (available at your Kaiser Permanente pharmacy) to mail the medications. Be sure to cross out your personal information on the medication container.

## PICC and port lines

A central venous catheter line (CVC or central line) is sometimes used to make chemotherapy infusions and blood draws easier and more comfortable. There are 2 types, including:

- **A port**, which is a small disc placed under your skin during minor surgery. A catheter connects the port to a large vein in your chest or neck.
- **A peripherally inserted central catheter (PICC) line**, which is a thin, flexible tube (catheter) inserted into a vein in your arm.

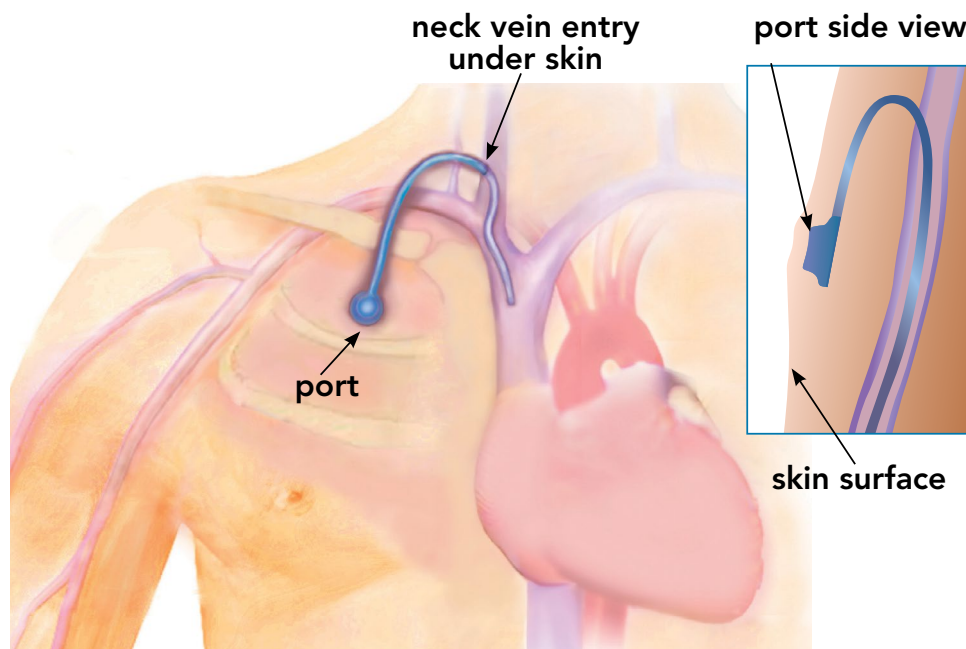
Both types of lines stay in place between treatment visits. Ports are more commonly used if you will have frequent infusions or will use a pump device. PICC lines are used less frequently.

Once the port or PICC is placed, you may:

- Receive medicine directly into your bloodstream.
- Have chemotherapy over several days during a treatment cycle.
- Reduce the need to reinsert intravenous (IV) line needles into your vein for each treatment session or blood test.

These devices may sound unpleasant or even scary, but most patients find they make treatment more comfortable and allow greater freedom of movement. They are usually placed before chemotherapy begins.

Your Kaiser Permanente care team will teach you how to keep your port or PICC line clean to avoid serious infection. After treatment is complete, the port or PICC line is usually removed.



# Chemotherapy Schedules

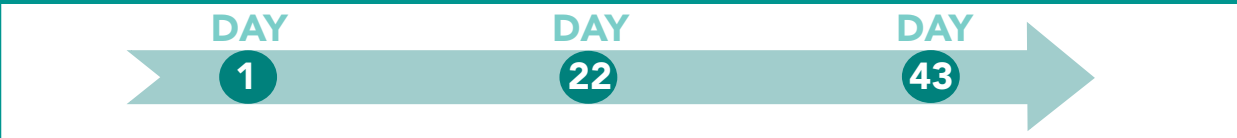
Chemotherapy is given in cycles. A cycle is a certain number of treatment days, followed by a rest period. After this, the same cycle repeats. Each time you start chemotherapy, a new cycle begins.

The rest period allows your body time to recover between treatments. The number of cycles you have depends on the type and stage of your cancer.

For example, you may have 3 days of chemotherapy, followed by 3 weeks of rest until the next cycle begins. You may have a total of 5 cycles of chemotherapy. This is only an example. Your actual treatment plan is created specifically for you.

## Chemotherapy treatment cycle examples.

### Plan 1: Chemotherapy every 3 weeks



### Plan 2: Chemotherapy each week



## Helpful tips during chemotherapy

- Use a calendar to keep track of all your treatment and test dates.
- Store important documents and papers in a single binder.
- Make a list of your chemotherapy types and doses and all drugs you're taking.
- Put the phone numbers for your doctors, hospital, and insurance contact in your binder.
- Bring a family member or friend with you to appointments to help you keep track of details.
- Write down your questions for your cancer care team.
- Tell your cancer care team about any side effects so we can respond to them right away.

## Safety precautions after treatments

When you have chemotherapy, it's important to protect yourself and those who live with you. After each treatment, it takes 48 hours for chemotherapy to leave your body. Most is removed through body fluids, such as urine.

During the 48 hours after treatment, we recommend that you:

- Flush the toilet twice and keep the lid down after each use. Consider using a separate toilet, if possible.
- Regularly wash your hands with soap and warm water, especially after using the toilet or contact with your body fluids.
- Wear nitrile gloves when emptying or cleaning bedpans, urinals, or vomit. Remove gloves afterwards and wash your hands with soap and water.
- Have your caregiver wear nitrile gloves when handling your clothing or coming into contact with your bodily fluids or vomit.
- Wash soiled clothing and sheets separate from other laundry and twice in hot water. Wear gloves when taking off any clothing soiled by drugs or bodily fluids. Take clothing off immediately and wash as soon as possible.
- Wear nitrile gloves to place used diapers in a sealable plastic bag for disposal.
- Avoid sharing eating utensils, cups, food, and drinks.
- Use a condom during sex.

It's important to use birth control during treatment with chemotherapy.

- Don't become pregnant. Chemotherapy can harm the developing fetus, especially during the first 3 months of pregnancy.
- Avoid getting a woman pregnant. Chemotherapy can damage sperm, resulting in possible birth defects to the developing baby.

Be sure to follow all instructions given by your cancer care team.

# Infusion Center Appointments

Chemotherapy treatments given by IV are usually done at a Kaiser Permanente infusion center. If you have a pump device, you may also go to the infusion center to pick up your pump.

Infusion treatments are separate from appointments with your oncologist. The oncology nurse will administer your treatment and explain the process. If you have any questions or concerns, or feel ill during your treatment, please speak with your nurse.

At the end of each treatment session, the staff will give you your next appointment time. If you're also receiving radiation therapy, your infusions are coordinated with the Radiation Oncology Department.

## Your first treatment

It's common to feel anxious before your first treatment. There are lots of "firsts" during this appointment. Our goal is to keep your treatment safe and comfortable. Be sure to let the clinic staff know what you're feeling. They can help you through fear and anxiety. Think of ways you have successfully faced stressful situations in the past. Future visits will feel more familiar.

Your treatment sessions may last several hours. You can relax in a large comfortable chair or lie on a bed, if appropriate. You'll remain in your own clothes.

The infusion center has Wi-Fi access, so you can use the Internet during treatment. You may listen to your own music or meditation recordings on your own phone or player and headphones.

## Before infusion center appointments

You'll need to have blood tests done at the laboratory 1 to 2 days before each chemotherapy appointment.

If you have a central line, such as a port line or PICC line, the Laboratory Department will not be able to draw blood from these IV sites. However, infusion center nurses can draw blood from these special IV sites. An appointment is required for blood draws at the infusion center.

Drink plenty (64 ounces) of noncaffeinated, nonalcoholic beverages the day before treatment, the day of treatment, and during the 3 days after treatment.

Your chemotherapy will be given by an oncology nurse who has special training.

You can also bring with you:

- A family member or friend to keep you company
- Books or magazines to read
- Sweater in case you get cold
- Snacks in case you get hungry
- Projects like knitting or writing

### Guided imagery podcast for chemotherapy

Please go to [kp.org/mydoctor](https://kp.org/mydoctor)  
and search for guided imagery.

Infusion centers often have an open layout with comfortable chairs in both open and semiprivate areas. Some facilities have private rooms. You will be able to use the restroom.

Expect to see other patients receiving infusions during your appointment. Some patients like to talk to others while receiving their treatment, while others prefer more privacy or to listen to music or watch a program during their visit. If you feel like you may want more privacy during your first visit, talk to your care team ahead of time.



# Self-Care during Treatment

There may be limitations on what you can do during treatment, but for the most part you should be able to continue with your daily routine. Keep a normal schedule and continue with your usual routine as best you can. There may be times where you need extra rest or help. Give yourself these necessities.

It's important to take good care of yourself while having chemotherapy. Your body will also need some time to recover after treatment ends. There are several important things you can do, such as maintaining good nutrition and physical activity. The most significant ones are outlined below.

## Flu shot

Every chemotherapy patient should get a flu shot.

## Nutrition

When you have chemotherapy, get as much good nutrition as you can to maintain your strength. Weight loss and decreased appetite are common for patients undergoing treatment for cancer. Chemotherapy can cause side effects that affect appetite as well as your ability to eat enough. Overcoming these challenges and getting good nutrition throughout your treatment is very important.





Dietitians are available to discuss your nutritional needs during treatment and beyond. Although there is usually no prescribed diet for cancer patients, following these basic guidelines may be useful:

- Eat regular meals and healthy snacks.
- Include protein-rich food with every meal.
- Eat a variety of fruits and vegetables daily to get enough vitamins and minerals.
- Drink enough fluids to stay hydrated.
- Avoid fast food, packaged products, fried food, and sugary drinks (especially soda).
- Change the consistency of food if you experience discomfort or pain eating or swallowing.
- Experiment with different flavors to suit your tastes.
- Discuss any new side effects with your care team as soon as you notice them.
- If you drink alcohol, drink in moderation.

Not everyone has trouble eating during chemotherapy. If you do, let your care team know. One of our dietitians is ready to help you.

## Activity level

Each patient responds to chemotherapy differently. You may feel well enough to continue working, or be too tired. Some patients work fewer hours or take time off around their chemotherapy treatments.

Regular exercise can improve your physical function and quality of life. Try to be as physically active as possible during treatment. Walking is a great way to exercise, especially if you didn't exercise regularly before your diagnosis.

This is the time to focus on you and your health. If you don't feel well, rest. Remember that participating in your regular daily activities can help life feel more normal.

## Seek help when needed

Tell your care team if you have trouble eating or keeping food down. We have dietitians and other resources to help with these common problems during chemotherapy.

## Exercise to maintain strength

We encourage regular exercise during chemotherapy. Talk to your care team about a rehabilitation specialist who can help with strength and exercise training during treatment.



## Personal care

Before starting chemotherapy:

- Eat healthy to build your strength.
- Visit your dentist. It's important to have a healthy mouth before chemotherapy begins.
- Learn about your cancer, and know what to expect from your chemotherapy.
- Talk with us about any treatment anxiety or worries.

Asking for help isn't always easy. However, it can help to reach out to family and friends when needed. Someone else can go to the grocery store for you or run errands.

## Managing difficult feelings

It's normal to have a lot of emotions about your diagnosis and treatment. You might feel worried, sad, scared, and even angry. If you continue to feel very sad or depressed, let your cancer care team know. Our counselors and social workers are here to help.

# Managing Side Effects

Most patients worry about the side effects of cancer treatment. You'll likely have some side effects, depending on the type of chemotherapy used. We're here to help you manage any that you might develop.

Managing one side effect will often improve another. For example, managing sleep issues can also help with fatigue. Take as much control over managing your symptoms as possible.

## What's normal?

It's not easy to know when side effects are "normal." They can range from mild to severe. Not everyone has the same side effects, even with the same type of chemotherapy.

For example, nausea and vomiting are common side effects. But if they continue or get worse, contact your cancer care team. Talking with your team can help you understand what is and isn't normal.

Some symptoms must be evaluated by your doctor. If you aren't sure about a symptom, ask your care team.

There are general methods used to manage the most common side effects and even those that are less common. However, follow your cancer care team's specific recommendations when treating your side effects.



## When to contact us

### Notify your care team if you have:

- Redness, blistering, or pain where the IV was inserted into the skin.
- Any sore that is red, draining, and doesn't heal.
- Uncontrolled nausea, mouth sores, or throat pain that interferes with your ability to eat or drink.
- Continued lack of appetite with little or no food intake.
- Continued weight loss.
- New or worsening cough.
- Diarrhea not controlled with Imodium.
- Constipation not helped with laxatives or stool softeners.
- Blood in your urine, vomit, or stool.
- Pain or burning when you urinate.
- New pain or pain that can't be controlled with current pain medication.
- Rectal or anal bleeding.
- Bleeding that doesn't stop.

### Contact your care team immediately or seek urgent care if you have:

- Ongoing fever over 100.4°F.
- Any spike in fever of 101.5°F or higher.
- Signs of infection, such as fever, chills or shaking (with or without a fever), new or worsening cough.
- Chest pain.
- Pale, cold, or moist skin.
- Rapid pulse.
- Severe dehydration.
- Sudden, severe vomiting.
- Blurred vision.
- Severe abdominal pain.
- Vomit that contains blood or looks like coffee grounds.
- Uncontrolled bleeding.
- Difficulty breathing.
- Loss of balance, dizziness, or passing out.
- Severe headache, mental confusion, or mood changes.
- Thoughts of giving up or harming yourself.

## Pain

Pain may be a symptom of cancer or a side effect of treatment. It can be:

- Short-term (acute), such as the pain you feel after touching a hot oven.
- Long-term (chronic), such as constant or nagging pain that lasts weeks, months, or years.

Your care team can help you manage pain with medication and therapies (integrative) that focus on the whole person. Seek treatment for pain right away.

To help manage pain:

- Keep a pain diary to help us identify the best treatment. The diary should include pain location, intensity, timing, and what you did to control it. This helps us identify the treatment.
- Talk with your care team about pain medication. Some over-the-counter pain medications may mask a fever and signs of infection, so don't take these without talking with your care team first. They'll tell you which medications are safe and how to take them. They may prescribe stronger medication for pain if necessary.
- Maintain normal activities as much as you can.
- Try integrative therapies such as relaxation techniques, guided imagery, massage, and acupuncture.
- Apply heat or cold to the painful area.

**Contact your care team immediately** if you have:

- New pain or pain that can't be controlled with your current medication.
- Severe pain or difficulty with moving (immobility).
- Chest pain.
- Pain associated with weakness or loss of sensation in any part of your body.

## Fatigue

Tiredness (fatigue) is common. It can occur during chemotherapy and last for weeks or months after treatment stops. Other side effects can make the fatigue worse, such as:

- Low red blood cell count (anemia)
- Pain
- Infection
- Sleep problems
- Depression
- Shortness of breath
- Poor nutrition

### Treat side effects early.

Talk with your care team to learn how to manage side effects before they occur. Your care team has the best experience and knowledge in treating side effects.

Once you learn how to manage side effects, you may prevent them from worsening, except for fatigue.

Fatigue affects patients differently. Let us know if it's a continuing problem for you. You may wish to keep a diary of your energy levels and moods to better understand triggers and patterns of fatigue.

To help manage fatigue:

- Get plenty of rest and maintain good sleep habits.
- Use relaxation techniques before bed to help you sleep better. For example, try deep breathing and simple meditation.
- Eat a healthy diet and stay hydrated.
- Try light exercise every day and stay active if you can.
- Ask for help when needed.

## Memory and concentration

Many patients treated with chemotherapy report problems with short-term memory, concentration, and multitasking. This doesn't mean you're losing brain cells or becoming less intelligent.

Some people describe it as mental foginess. Although frustrating, it's temporary.

To help manage problems with memory and concentration:

- Keep detailed notes in a daily planner or calendar to help you remember important information.
- Exercise your brain, such as with crossword puzzles or learning something new.
- Focus on one task at a time.
- Try to keep the same daily routine and stay organized.
- Give yourself extra time to complete tasks.
- Ask others for help when needed.

## Anxiety and depression

Anxiety and depression are common responses to cancer and cancer treatment. While it's normal, you don't have to live with constant anxiety and depression. Ways to help manage your feelings include:

- Support groups
- Exercise
- Psychosocial support
- Medications

Getting help for anxiety and depression may decrease other symptoms, such as fatigue and difficulty sleeping.

To help manage anxiety and depression:

- Do activities you enjoy, such as listening to music or spending time with friends.
- Engage in physical activity, such as walking or yoga.
- Pray, meditate, or practice guided imagery.
- Tell us if the anxiety or depression becomes severe.

## Nausea and vomiting

Chemotherapy often upsets your gastrointestinal system, causing nausea and vomiting. Symptoms may decrease as your body adjusts to treatment. We may recommend effective medications (antiemetics) to prevent or reduce symptoms.

Some activities, such as climbing stairs, may trigger these symptoms. Taking medications and avoiding activities that trigger symptoms should help.

Talk to your care team before your first treatment to make sure you're prepared with any medications.

To help reduce nausea and vomiting:

- Avoid triggers such as foods with strong odors, and greasy, salty, and fatty foods.
- Eat smaller, more frequent meals.
- Consider a BRAT diet (bananas, rice, applesauce, and toast) or clear liquids when needed.
- Practice relaxation techniques. Meditation, yoga, deep breathing, acupuncture, and visualization exercises before treatment can help reduce nausea.
- Take any anti-nausea medications prescribed by your doctor.
- Many anti-nausea medications can be safely combined. Talk to your care team about the best way to take these medications.

## Difficulty sleeping (insomnia)

Difficulty sleeping is a common issue during chemotherapy. Stress, anxiety, and other treatment side effects can make sleeping problems worse.

If you have trouble sleeping, talk with your care team. You may need medicine to help you sleep.

To help you sleep better:

- Practice good sleep habits.
- Limit alcohol.
- Get light exercise, preferably before evening.
- Do your best to reduce stress and anxiety.
- Avoid caffeine after lunchtime.
- Try integrative therapies such as relaxation techniques and massage.

## Mouth problems (mucositis)

Chemotherapy can affect rapidly growing cells that naturally occur in the body. These include the cells of the lips and lining of the mouth and throat. This can cause:

- Mouth sores
- Mouth infections
- Dry mouth
- Heightened sensitivity to hot and cold foods
- Changes in taste
- Discomfort during eating

It's important to practice good oral hygiene during chemotherapy. These problems gradually resolve after chemotherapy is complete.

To help reduce mouth problems:

- Use a soft or extra soft toothbrush.
- Rinse your mouth 4 times per day, especially after meals. Use a half teaspoon of salt or baking soda mixed in a glass of water or gentle mouthwash (nonalcohol based).
- Floss gently once daily. Avoid bleeding or painful areas.
- Avoid hot, spicy, and salty foods, and foods with sharp, rough edges, or textures.
- Choose soft foods or puree foods in a blender if your mouth is tender.
- Suck on a popsicle or ice chips to reduce mouth pain.
- Schedule pain medicine doses 30 to 60 minutes before meals.
- Drink plenty of fluids to stay hydrated.
- Remove dentures if sores develop under them. Avoid using adhesive or wearing loose dentures. Clean them after meals.

## Visiting the dentist

It's important to visit your dentist before you begin chemotherapy. This can prevent problems that could occur during treatment, such as a mouth infection.

Routine dental cleanings are not recommended during chemotherapy as your risk of infection is higher.

Let your dentist know if you're about to begin or have had chemotherapy.







## Skin changes

Chemotherapy and other drugs used to treat cancer may affect normal nail and skin cells. The changes are not usually permanent and often get better after treatment is complete.

To help manage skin and nail changes:

- Use mild soaps when bathing.
- Apply thick lotions or creams daily over your entire skin to keep it moist.
- Avoid using products on the skin that contain alcohol, including certain aloe products.
- Limit your time in the sun and avoid tanning. If you must be in the sun, wear sunscreen, protective clothing, and a hat.
- Take 5- to 10-minute, warm (not hot) showers.
- Pat your skin dry, instead of rubbing. Avoid using washcloths.
- Protect your scalp by wearing sunscreen or a hat if you're losing hair.

## Hair loss

Chemotherapy damages cells that trigger hair growth. This can cause mild to complete hair loss (alopecia). The loss of hair can occur anywhere on your body, including your head, underarms, pubic area, arms, and legs. For some patients, this is the most difficult side effect of chemotherapy and can cause feelings of anger or embarrassment.

- You may notice hair loss 2 to 3 weeks after beginning chemotherapy.
- Your hair may start growing back even while you're still having chemotherapy.
- Your hair usually returns after treatment is over.

To help manage hair loss:

- Use a mild shampoo, such as baby shampoo.
- Avoid using hair products, like hairspray or dye.
- Avoid using hairdryers or curling irons.
- Get a wig before you lose your hair, if you're thinking of wearing one.
- Consider shaving your head or cutting your hair very short before hair loss. If so, use an electric shaver instead of a razor.
- Remember that hair usually grows back after treatment stops.

## Infection

Chemotherapy reduces your body's ability to fight infections. It's important to avoid sources of potential infection. Even a minor cold can become a serious problem.

To help prevent infections:

- Avoid contact with sick people and crowded public spaces.
- Wash your hands often.
- Wash all raw food and vegetables and avoid raw or undercooked meat and eggs.
- Follow any special precautions when staying in the hospital.
- Follow your doctor's recommendations, such as wearing a mask or respirator.
- Don't clean pet litter boxes, cages, or fish tanks. They often contain substances harmful to people with weakened immune systems.

Signs of infection include:

- Cough
- Rash, swelling, or redness
- Chills
- Headache, earache, or stiff neck
- Painful sinuses or sinus pressure
- Painful or frequent need to urinate, or bloody or cloudy urine

## Cough

A new or worsening cough during treatment may be a sign of infection. Let your care team know if you have a cough, especially if you have additional symptoms such as fever or other signs of infection.

To help manage a cough:

- Drink warm liquids.
- Use an over-the-counter cough suppressant.
- Ask your doctor for prescription cough medicine.

## Diarrhea

Chemotherapy can harm healthy cells that line your intestines. As a result, you might have frequent bowel movements that are soft, loose, or watery (diarrhea). Diarrhea can also be caused by infections or medications used to treat constipation. We may order a lab test to check for an infection.

To help manage diarrhea:

- Drink plenty of fluids.
- Avoid foods that cause diarrhea, such as caffeine and dairy.
- Try a BRAT diet. One of our dietitians can help you select foods to control symptoms.
- Wipe gently after a bowel movement.
- Clean your bottom with mild soap and water.
- Take a sitz bath to reduce discomfort.
- Stop taking stool softeners and laxatives.

If you haven't taken antibiotics in the last 4 weeks, try an over-the-counter (Imodium) or prescription (Lomotil) antidiarrhea medication.

## Fever

A fever is your body's natural response to an infection. Because your immune system is weakened during chemotherapy, your risk of infection is much higher. Contact your care team if you have an ongoing fever over 100.4°F or a spike in fever of 101.5°F or higher.

Don't take medications (even over-the-counter medications) for a fever without first talking with your care team. Your care team needs to identify the cause of the fever, such as an infection.

To help manage a fever:

- Call your care team to ask if you can take medicine to reduce fever.
- Keep track of your temperature to see if your fever is rising.
- Don't use a rectal thermometer.
- Continue to watch for signs of infection.
- Maintain good personal hygiene and oral care.
- Avoid crowds and exposure to anyone with signs of infection.

## Neuropathy

Chemotherapy may injure parts of your nervous system. This can cause numbness, tingling, cold or burning sensations, and weakness in your arms and legs (neuropathy).

Make sure to tell your care team as soon as you begin to have any neuropathy symptoms.

Certain medications may reduce symptoms. However, it's important to talk with your doctor first. Some over-the-counter medications and vitamin supplements may react poorly with chemotherapy drugs.

Talk with your care team if neuropathy symptoms are interfering with your daily activities.

## Inability to have children (infertility)

Chemotherapy and radiation therapy may reduce or eliminate your ability to have children. If you plan to have children, talk with your doctor about fertility preservation before you begin treatment. A specialist will explain your options to protect your ability to have children in the future.

## Sexual function

Sexual desire or ability may be reduced during chemotherapy. It's important to talk with your care team about how treatment might affect your sexual function. It's no different than any other side effect you might be concerned about.

These symptoms often go away after treatment stops. If they continue, let your care team know.

To address sexual function:

- Talk with your care team about any concerns related to sexual function.
- Remember these symptoms are likely to go away after treatment is over.

## Weight loss

Losing weight is a common symptom of cancer and its treatment. Your weight is monitored closely during treatment. Excessive weight loss is associated with muscle wasting, weakness, fatigue, and slow recovery. It's important that you're getting enough nutrition and staying as physically strong as possible.

To help manage weight loss:

- Eat a healthy diet.
- Talk with a dietitian if you're having trouble getting the right nutrition.
- Ask your care team about ways to stay fit during treatment.

## Constipation

Constipation is commonly caused by medications used to treat pain and nausea. A healthy diet and light exercise can help prevent constipation, along with medications that provide relief.

The goal is to have at least 1 soft bowel movement every 1 to 3 days without cramps or straining. Let your care team know right away if you have constipation.

To help prevent or manage constipation:

- Drink six 8-ounce glasses of fluids per day (including juices) unless directed otherwise by your care team.
- Drink a glass of warm or hot water 30 minutes before the time you normally have a bowel movement.
- Increase the amount of fiber you eat.
- Avoid foods that worsen constipation, such as dairy, bananas, white rice, and cooked carrots.
- Walk 15 to 20 minutes twice daily if possible.



## Medications for constipation

If you have diarrhea after taking laxatives or stool softeners, reduce or stop taking them. It's likely you'll only need them at certain times, such as when you're taking pain medication. Ask your care team if you have questions about when or how much to take.

When to take	Medication	Dose
To prevent or treat constipation:	Start with Colace (docusate sodium).  Take Senna (senokot) with Colace.	1 tablet (250 mg) of Colace (docusate sodium) every 12 hours with breakfast and dinner. If needed, you can take a 3rd tablet with lunch.  1 to 2 tablets of Senna (senokot) every 12 hours with breakfast and dinner, <b>especially if you take pain medication regularly.</b>
If no relief from Colace and Senna:	Take MiraLAX (PEG 3350) powder.  Ask your care team if you should continue to take Colace and Senna.	1 packet MiraLAX (PEG 3350) powder once daily. Dissolve in 8 ounces of water.
If no relief from MiraLAX:	Take Dulcolax (biscodyl) with MiraLAX.  Ask your care team if you should continue to take Colace and Senna.	2 to 3 tablets (5 mg) of Dulcolax (biscodyl) with MiraLAX, every other day. Take with a glass of water on empty stomach for rapid relief.  Avoid taking within 1 hour of having milk, other dairy products, or antacids.
If no relief from Dulcolax:	Add Milk of Magnesia (magnesium hydroxide) with Dulcolax and MiraLAX.	Take 2 to 4 tablespoons with a tall glass of water. You can take up to 4 times in a day.

Talk to your care team if you're still not getting relief. They'll recommend additional products and prescriptions that are safe for you to use. This may include an enema product.

### When to call us:

- No bowel movement for 3 days
- Blood in or around your anal area
- Diarrhea for more than 24 hours
- Vomiting or cramping



# Integrative Oncology

Many patients find complementary or integrative care helpful. This care may be used along with your treatment plan.

Complementary therapies are used to treat the mind, body, and spirit. While they aren't an alternative or substitute for regular treatment, they can:

- Improve symptoms.
- Make treatment more comfortable.

Many patients continue to use complementary therapies long after treatment is over.

You may choose to use several complementary therapies or none. The choice is yours.

Your oncologist and care team select the most current, evidence-based treatment plan available. Integrative medicines may be used along with, **but never as an alternative or substitute for**, your care plan.

Check with your care team before starting any new complementary therapy, or stopping your current treatment.

## Choosing complementary or integrative care

Knowing which therapy to choose can feel overwhelming. Talk with your care team about your symptoms. They can help you identify complementary therapies that are safe and effective.

- Consider the symptoms you want to reduce.
- Work with your care team to select therapies that complement your care plan.

You may also choose complementary therapies, such as aromatherapy, simply to make your day brighter, and that's a good reason to try them.

We've listed some of the most common complementary therapies that have been studied and shown to be helpful. It's not an all-inclusive list—just the most common options. However, not every patient benefits from these therapies. You might also receive benefits from a therapy that isn't included on this list.

Symptoms	Mindfulness, Meditation, and Relaxation Techniques	Massage, Acupressure, and Reflexology	Yoga and Pilates	Tai Chi and Qi Gong	Acupuncture
Cancer-related and chronic pain	✓	✓		✓	✓
Joint pain, osteoarthritis			✓	✓	✓
Neuropathic pain	✓				✓
Stress, anxiety, depression	✓	✓	✓	✓	
Fatigue	✓	✓	✓	✓	
Quality of life	✓	✓		✓	
Memory "chemo brain"			✓		
Difficulty sleeping (insomnia)	✓	✓	✓	✓	
Nausea, vomiting					✓
Headache	✓	✓	✓	✓	✓

Be sure to let your care team know about any new complementary therapies you try. Your care team will answer any questions you might have.

## Where to find complementary or integrative care

Kaiser Permanente offers many complementary therapies at your local medical center. Ask your care team for a schedule of services.

You may also want to go outside of Kaiser Permanente for complementary therapies. To help you, Kaiser Permanente members can use **choosehealthy.com**. This is an online program and directory of complementary health providers. Discounted rates may be available for:

- Massage therapy
- Acupuncture
- Chiropractic care
- Fitness club membership



## Herbs, supplements, and vitamins

We want to ensure your treatment is safe. Many herbs, supplements, and vitamins that are normally safe and effective can have harmful interactions with chemotherapy. Because supplements aren't regulated, their quality and safety are often unknown. You should be cautious since reactions can be dangerous. Don't try supplements based on the manufacturers' claims. Talk with your care team about any supplements you're currently taking or thinking about taking. If your doctor recommended you take a supplement, continue to take it.

### Learn more

Natural Medicines Database: [kp.org/naturalmedicines](http://kp.org/naturalmedicines)

Complementary and Integrative Health Information: [kp.org/cam](http://kp.org/cam)

Directory of massage, chiropractic, and acupuncture providers: Search "choose healthy" on [kp.org/mydoctor](http://kp.org/mydoctor).

## Palliative care

Palliative care is a type of medical care for those with serious illness. It's appropriate for patients of any age and at any stage who have this type of illness. It can be combined with treatments used to cure cancer, such as chemotherapy, radiation, and surgery.

This type of care gives patients relief from the symptoms, pain, and stress of cancer. It helps you live as well as possible while facing a serious illness. The goal of palliative care is to improve quality of life for you and your family.



# Additional Care and Services

## Fertility Preservation

If you plan to have children, talk with your doctor or case manager before you begin treatment. Chemotherapy and radiation drugs may cause infertility (the inability to have children). This doesn't happen to every patient. You may want to consider options that will allow you to have children in the future. The process of collecting sperm or eggs can take time, so it's very important to begin as soon as possible.

### For men:

- Your sperm can be preserved at a fertility clinic. This involves collecting and freezing samples of sperm before your treatment begins.
- When you and your partner are ready to have children, the frozen sperm can be used to get your partner pregnant.

### For women:

- Your eggs can be collected before chemotherapy or radiation treatment at a fertility clinic. If necessary, we can also collect your eggs during cancer treatment.
- If you have a partner, your eggs can be fertilized by your partner's sperm and then frozen as embryos. If you do not have a partner, you may choose to use donor sperm or have your eggs frozen without being fertilized. They can then be fertilized with sperm from a future partner or donor.
- When you're ready to have a family, the embryos can be transferred to your uterus.

These are the most common options, although yours may be different. Fertility-sparing medicines or surgeries, surrogacy, and adoption may also be possibilities. Your doctor will refer you to a fertility specialist called a reproductive endocrinologist to help you understand your options.

### Questions to ask your doctor:

- ◆ How will treatment affect my ability to have children?
- ◆ If I am able to get pregnant or get my partner pregnant after treatment, is there a higher risk of birth defects or complications?
- ◆ How long after treatment should I wait to start a family?
- ◆ Is there anything we can do to protect my fertility during treatment?

Coverage for infertility services varies, depending on your health plan. To determine which services are covered, be sure to review your policy, check with your employer benefits office, or call a Kaiser Permanente patient financial advisor.

For questions about eligibility, call Eligibility and Financial Services to speak to a Patient Financial Advisor at (925) 979-7768 and (925) 979-7789 (en Español).

## Insurance and Employment

It's likely that treatment will affect your ability to maintain a normal work schedule. At some point, you will need to take time away from work during treatment. This may mean reducing your hours, or not working at all during treatment.

There are insurance and employment resources to help you manage these changes. Primary concerns may be maintaining your income and health insurance. We want to avoid any stress you may encounter in securing your benefits. Your social worker will walk you through the process of getting these resources as soon as possible.

Resources include:

- State Disability Insurance (SDI)
- California Paid Family Leave Program
- Federal Family and Medical Leave Act (FMLA)

### California State Disability Insurance (SDI)

Please visit [www.edd.ca.gov/](http://www.edd.ca.gov/) and then select "File and Manage a Claim."

SDI may take some time to be processed by employers and the State of California. The process involves registering yourself for SDI with the State, and gathering paperwork from the Release of Medical Information (ROMI) Department at Kaiser Permanente. Your social worker can assist you with filing paperwork for these benefits.

## Life Care Planning

Another resource available to patients is Life Care Planning. Life Care Planning is a service that assists you and your family in planning for future health care decisions.

While you're able to communicate for yourself, your health care team will always ask you directly about health care decisions. Life Care Planning involves considering a situation that leaves you unable to speak for yourself.

When considering such situations, two of the most important choices you can make are who you would like to speak for you if you could not communicate, and what would you want that person to say? This person is called your health care agent. Life Care Planning helps prepare your agent by allowing you to share your wishes with them.

All adults, including those with early stage cancer, are encouraged to start with **My Values: First Steps** in which you can begin the planning process by choosing a well-informed health care agent and sharing your wishes with them. To begin the first steps of your Life Care Plan, please visit [kp.org/lifecareplan](http://kp.org/lifecareplan).

If cancer spreads or recurs, we recommend you have an additional conversation called **My Choices: Next Steps**. This involves exploring the type of treatment you would or would not want if you experienced a severe complication from cancer or its treatment. The best time to think about your treatment options is before a serious complication happens. During a Life Care Planning conversation, you discuss your wishes with your chosen agent and a specially trained Kaiser Permanente provider (facilitator).

The third step in Life Care Planning is for people with a serious illness who are nearing the end of life. As we age or become ill, the decisions we make for our health care become particularly important. In these conversations you will make informed, specific, and timely decisions about life-sustaining treatment options. **My Care: Advanced Steps** is a service for people who are frail, elderly, or those nearing the end of life due to a serious illness.

Your written plan guides your medical care. It includes treatment decisions that match your personal goals.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult your doctor. Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only. Some photos may include models and not actual patients.

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