

# Breast Cancer: Chemotherapy



## What is chemotherapy?

Chemotherapy uses anticancer medicines to kill cancer cells. The medicines are made to attack and kill cancer cells that grow quickly. Some normal cells also grow quickly. Because of this, chemotherapy can also harm those cells. This can cause side effects.

The medicines travel all through your body in your bloodstream. They may stop cell growth, kill cancer cells, or help your immune system attack the cells.



## When might chemotherapy be used for breast cancer?

Chemotherapy may be able to cure breast cancer. This means the tumor disappears and doesn't grow back. If a cure isn't possible, chemotherapy may help keep the cancer from growing or spreading. If the cancer is advanced and can't be controlled, chemotherapy may help ease symptoms caused by cancer and improve your quality of life. A healthcare provider with special training in cancer treatment (oncologist) will talk to you about the goals of chemotherapy and the best treatment plan for you.

Your oncologist may advise chemotherapy in any of these situations:

- **Before surgery.** This is called neoadjuvant chemotherapy. Chemotherapy may be used to shrink the tumor so that it's smaller. This may allow you to have surgery to remove just part of the breast (breast-conserving surgery), instead of the entire breast (mastectomy).
- **After surgery.** This is called adjuvant chemotherapy. Adjuvant chemotherapy helps keep any cancer cells that are left from growing and spreading. Whether your oncologist advises it depends on the size of the tumor, if it has spread to lymph nodes, and other factors. Chemotherapy is often given after surgery to remove breast cancer. It may be given every 2 or 3 weeks.
- **When the breast cancer has spread to other parts of your body.** Chemotherapy travels around the body to kill cancer cells. So it can be used to kill cancer cells that have spread. How long this treatment lasts depends on how much the tumors shrink.

## How is chemotherapy given for breast cancer?

The oncologist will determine how often and how long the treatments will be. Most often, more than one medicine is used. The medicines may be given in your home, a hospital outpatient facility, a healthcare

provider's office or clinic, or a hospital. The medicines may be given in any of these ways:

- **IV (intravenous) infusion.** A bag is filled with medicine that drips through a tube into a small catheter that's put into a vein in your hand or arm. Another choice for this is a semipermanent kind of IV called a vascular access device (VAD). Some examples of VADs are ports, PICC lines, and Hickman catheters. A VAD may be used if you need IVs often, if your veins are hard to find, or if you're taking more than 1 medicine by IV.
- **Oral.** You swallow the medicines as pills.
- **Injection.** You get the medicines through a needle that's put into a vein, into muscle, or under the skin.

You will be watched for reactions during your treatments. Ask your healthcare provider or nurse what your treatment will be like. Some treatments last for a while, so you may want to take along something that is comforting to you, such as your favorite music. You may also want to bring something to keep you busy, such as a deck of cards or a book.

You get chemotherapy in cycles over a period of time. That means you may take the medicine for a set amount of time and then you have a rest period. Each period of treatment and rest is one cycle. This schedule may continue for multiple cycles. Having treatment in cycles helps by:

- **Killing more cancer cells.** The medicine can kill more cancer cells over time, because the cells aren't all dividing at the same time. Cycles allow the medicine to fight more cells.
- **Giving your body a rest.** Treatment is hard on other cells of the body that divide quickly. This includes cells in the lining of the mouth and stomach. This causes side effects, such as sores and nausea. Between cycles, your body can get a rest from the chemotherapy.
- **Giving your mind a rest.** Having chemotherapy can be stressful. Taking breaks between cycles can let you get an emotional break between treatments.

## What are the medicines used to treat breast cancer?

The medicines most often used include:

- **Doxorubicin.** This is an IV medicine. The medicine is red in color, and it turns urine red for several hours after treatment. This medicine is most often given with cyclophosphamide. This combination is referred to as AC.
- **Cyclophosphamide.** This is a medicine that can be given by IV or orally in tablet form. This medicine is most often given with doxorubicin.
- **Methotrexate.** This medicine is usually given by IV. It's yellow in color. It's most often given with both cyclophosphamide and fluorouracil. This combination is referred to as CMF.
- **Fluorouracil (5-FU).** This is an anticancer medicine that is given by IV. The medicine is clear. This medicine is most often given with both cyclophosphamide and methotrexate. This medicine combination is referred to as CMF.
- **Epirubicin.** This is a medicine similar to doxorubicin and is given by IV.
- **Paclitaxel, docetaxel, protein-bound paclitaxel.** These belong to a group of medicines called taxanes. Paclitaxel is for treating early and advanced breast cancer. Docetaxel is for treating locally advanced, recurrent, or metastatic breast cancer. Protein-bound paclitaxel is for treating metastatic or recurrent breast cancer. Protein-bound paclitaxel is a form of paclitaxel that may be used to decrease the chance of having an adverse reaction to the medicine.
- **Capecitabine.** This is an oral medicine that is converted into fluorouracil in the body.
- **Gemcitabine.** This is an IV medicine.
- **Vinorelbine.** This is an IV medicine.

- **Ixabepilone.** This is a new IV medicine that can reduce tumor size or slow tumor growth in some women with advanced, recurrent, or metastatic breast cancer.
- **Eribulin.** This IV medicine works somewhat like ixabepilone. It can be used to treat recurrent or metastatic breast cancer in women who have already had an anthracycline and a taxane medicine.

You may also be given other medicines during chemotherapy. These may fight the cancer in a different way, help the chemotherapy work better, or help prevent or ease side effects.

## What are common side effects of chemotherapy?

Chemotherapy medicines are designed to attack and kill cells that grow quickly, including cancer cells. These medicines can also affect normal cells that grow quickly. These include hair follicles, intestines, mouth, and bone marrow. The side effects of chemotherapy are different for everyone. They usually go away when the treatment ends. Most side effects can be treated.

The most common short-term side effects of chemotherapy include:

- Loss of appetite
- Nausea and vomiting
- Easy bruising or bleeding, from low levels of blood platelets
- Tiredness, from having low levels of red blood cells
- Infections, from low levels of white blood cells
- Hair loss
- Diarrhea
- Mouth sores
- Numbness, tingling, or pain in fingers or toes (neuropathy)
- Memory changes (chemo brain)
- Nail changes
- Sexual changes and fertility problems
- Skin changes, such as redness or dryness

Possible long-term side effects of chemotherapy include:

- **Early menopause.** Some chemotherapy medicines can harm your ovaries and cause long-term side effects if you haven't gone through menopause yet. If you think you might want to have a child after chemotherapy, talk with your healthcare provider before you start treatment.
- **Heart damage.** Some of these medicines can cause permanent heart damage called cardiomyopathy. Your healthcare team will closely watch for symptoms of this and do tests to check how well your heart is working.

## Working with your healthcare provider

It's important to know which medicines you're taking. Write your medicines down, ask your healthcare team how they work, and what side effects they might have.

Talk with your healthcare providers about what signs to look for and when to call them. Make sure you know what number to call with questions, even on evenings, holidays, and weekends.

It may be helpful to keep a diary of your side effects. Write down physical and emotional changes, as well as changes in the way you think (rational). A written list will make it easier for you to remember your questions when you go to your appointments. It will also make it easier for you to work with your healthcare team to make a plan to manage your side effects.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions  
This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.