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PDF generated on July 19, 2016 from

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## **Side Effects of Chemotherapy [1]**

This section has been reviewed and approved by the [Cancer.Net Editorial Board \[2\]](#), 08/2015

Chemotherapy treats many types of cancer effectively. But like other treatments, it often causes side effects. These are different for each person. They depend on the type of cancer, location, drugs and dose, and your general health.

### **Why does chemotherapy cause side effects?**

Chemotherapy works on active cells. Active cells are cells that are growing and dividing into more of the same type of cell. Cancer cells are active, but so are some healthy cells. These include cells in your blood, mouth, digestive system, and hair follicles. Side effects happen when chemotherapy damages these healthy cells.

### **Can side effects be treated?**

Yes. Your health care team can help you prevent or treat many side effects. Today, many more medications are available for side effects than in the past. Preventing and treating side effects is now an important part of cancer treatment. It is part of a type of care called palliative care.

Also, doctors and scientists work constantly to develop drugs, drug combinations, and ways of giving treatment with fewer side effects. Many types of chemotherapy are easier to tolerate than they were a few years ago.

### **Common side effects**

Different drugs cause different side effects. Certain types of chemotherapy often have specific

side effects. But, each person's experience is different.

Tell your doctor about all the side effects you notice. For most types of chemotherapy, side effects do not show how well treatment is working. But they can for some types of drugs called targeted therapies. Learn more about [targeted therapy](#) [3].

Below is a list of common side effects of traditional chemotherapy.

**Fatigue.** Fatigue is feeling tired or exhausted almost all the time. It is the most common side effect of chemotherapy. Learn more about [how to cope with fatigue](#) [4].

**Pain.** Chemotherapy sometimes causes pain. This can include:

- Headaches
- Muscle pain
- Stomach pain
- Pain from nerve damage, such as burning, numbness, or shooting pains, usually in the fingers and toes

Pain usually gets less with time. However, some people have permanent nerve damage. This can cause symptoms for months or years after treatment.

Doctors can treat pain by:

- Treating the source of the pain
- Giving pain-relieving medications
- Blocking pain signals from the nerves to the brain with spinal treatments or nerve blocks

Learn more about [cancer pain](#) [5] and [how to manage it](#) [6].

**Mouth and throat sores.** Chemotherapy can damage the cells inside the mouth and throat. This causes painful sores in these areas, a condition called mucositis.

Mouth sores usually happen 5 to 14 days after a treatment. The sores can get infected. Eating a healthy diet and keeping your mouth and teeth clean can lower your risk of mouth sores. Mouth sores usually go away completely when treatment ends. Learn more about [managing mucositis](#) [7] and [oral health during cancer treatment](#) [8].

**Diarrhea.** Some chemotherapy causes loose or watery bowel movements. Preventing diarrhea or treating it early helps keep you from getting dehydrated (losing too much body fluid). It also helps prevent other health problems. Learn more about [managing diarrhea](#) [9].

**Nausea and vomiting.** Chemotherapy can cause nausea (feeling sick to your stomach) and vomiting (throwing up). Whether you have these side effects, and how much, depends on the specific drugs and dose. The right medications given before and after each dose of chemotherapy can usually prevent nausea and vomiting. Learn more about [nausea and vomiting](#)

[10]. Read [ASCO's guideline for preventing these side effects](#) [11].

**Constipation.** Chemotherapy can cause constipation. This means not having a bowel movement often enough or having difficult bowel movements. Other medications, such as pain medication, can also cause constipation. Drinking enough fluids, eating balanced meals, and getting enough exercise can lower your risk of constipation. Learn more about [managing constipation](#) [12].

**Blood disorders.** Your bone marrow is the spongy tissue inside your bones. It makes new blood cells. Chemotherapy affects this process, so you might have side effects from having too few blood cells.

Your health care team uses the following tests to check for blood disorders:

- [Complete blood count \(CBC\)](#) [13]- This test shows the levels of red blood cells (RBCs) and white blood cells (WBCs) in your blood.
  - Not enough RBCs causes a condition called anemia. Symptoms include fatigue, dizziness, and shortness of breath.
  - Not enough WBCs causes a condition called leukopenia. This raises your risk of getting infections. Getting one when your WBCs are low can be serious. If you get an infection, you need antibiotics as soon as possible.
  - Platelet count - This test measures the number of platelets in your blood. Platelets are cells that stop bleeding. They do this by plugging damaged blood vessels and helping blood form clots.
    - Not having enough platelets causes a condition called thrombocytopenia. You can bleed and bruise more easily than normal.

Medications can treat all these blood disorders, and prevent leukopenia for patients with a high risk. The medications help your bone marrow make more blood cells. Learn more about managing [anemia](#) [14], [infection](#) [15], and [thrombocytopenia](#) [16].

**Nervous system effects.** Some drugs cause nerve damage. This can cause the following nerve or muscle symptoms:

- Tingling
- Burning
- Weakness or numbness in the hands, feet, or both
- Weak, sore, tired, or achy muscles
- Loss of balance
- Shaking or trembling

You might also have a stiff neck, headache, or problems seeing, hearing, or walking normally. You might feel clumsy. These symptoms usually get better with a lower chemotherapy dose or after treatment. But damage is sometimes permanent. Learn more about [managing nervous system side effects](#) [17].

**Changes in thinking and memory.** Some people have trouble thinking clearly and concentrating after chemotherapy. Cancer survivors often call this chemo brain. Your doctor might call it cognitive changes or [cognitive dysfunction](#) [18].

**Sexual and reproductive issues.** Chemotherapy can affect your fertility. For women, this is the ability to get pregnant and carry a pregnancy. For men, fertility is the ability to make a woman pregnant. Being tired or feeling sick from cancer or treatment can also affect your ability to enjoy sex. Talk with your doctor about these possible side effects before treatment starts. Learn more about [managing sexual and reproductive side effects](#) [19].

Chemotherapy can harm a fetus (unborn baby). This is especially true in the first 3 months of pregnancy, when the organs are still developing. If you could get pregnant during treatment, use effective birth control. If you do get pregnant, tell your doctor right away. Learn more about [pregnancy and cancer](#) [20].

**Appetite loss.** You might eat less than usual, not feel hungry at all, or feel full after eating a small amount. If this lasts through treatment, you may lose weight and not get the nutrition you need. You may also lose muscle mass and strength. All these things lower your ability to recover from chemotherapy. Learn more about [managing appetite loss](#) [21].

**Hair loss.** Some types of chemotherapy cause hair loss from all over your body. It may come out a little at a time or in large clumps. Hair loss usually starts after the first several weeks of chemotherapy. It tends to increase 1 to 2 months into treatment. Your doctor can predict the risk of hair loss based on the drugs and doses you are receiving. Learn more about [managing hair loss](#) [22].

**Long-term side effects.** Most side effects go away after treatment. But some continue, come back, or develop later. For example, some types of chemotherapy may cause permanent damage to the heart, lung, liver, kidneys, or reproductive system. And some people have trouble with thinking, concentrating, and memory for months or years after treatment.

Nervous system changes can develop after treatment. Children who had chemotherapy may develop side effects that happen months or years after treatment. These are called [late effects](#) [23]. Cancer survivors also have a higher risk of second cancers later in life.

## Care after cancer treatment is important

Getting care after treatment ends is important. Your health care team can help you treat long-term side effects and watch for late effects. This care is called follow-up care. Your follow-up care might include regular physical examinations, medical tests, or both.

ASCO has [cancer treatment summary forms](#) [24]. The forms help you keep track of the cancer treatment you received and develop a survivorship plan after treatment.

## More Information

[Side Effects](#) [25]

[Fear of Treatment-Related Side Effects](#) [26]

## Additional Resources

[National Cancer Institute: Chemotherapy and You](#) [27]

[CancerCare: Understanding and Managing Chemotherapy Side Effects](#) [28]

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## Links

[1] <http://www.cancer.net/navigating-cancer-care/how-cancer-treated/chemotherapy/side-effects-chemotherapy>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24729>

[4] <http://www.cancer.net/node/25048>

[5] <http://www.cancer.net/node/25259>

[6] <http://www.cancer.net/node/24585>

[7] <http://www.cancer.net/node/25051>

[8] <http://www.cancer.net/node/24499>

[9] <http://www.cancer.net/node/25247>

[10] <http://www.cancer.net/node/25052>

[11] <http://www.cancer.net/node/29891>

[12] <http://www.cancer.net/node/25246>

[13] <http://www.cancer.net/node/24716>

[14] <http://www.cancer.net/node/25926>

[15] <http://www.cancer.net/node/25256>

[16] <http://www.cancer.net/node/25261>

[17] <http://www.cancer.net/node/25258>

[18] <http://www.cancer.net/node/25044>

[19] <http://www.cancer.net/node/25240>

[20] <http://www.cancer.net/node/25197>

[21] <http://www.cancer.net/node/25043>

[22] <http://www.cancer.net/node/25251>

[23] <http://www.cancer.net/node/25396>

[24] <http://www.cancer.net/node/25394>

[25] <http://www.cancer.net/node/25238>

[26] <http://www.cancer.net/node/24492>

[27] <http://www.cancer.gov/cancertopics/coping/chemotherapy-and-you/page5>

[28] [http://www.cancercare.org/reading\\_room/booklets/cc\\_c\\_chemo.html](http://www.cancercare.org/reading_room/booklets/cc_c_chemo.html)