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[Infection](#) [1]

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

An infection occurs when the immune system is not able to quickly destroy harmful bacteria, viruses, or fungi or yeast. People with cancer are more likely to develop infections because both cancer and cancer treatments weaken the immune system.

About the immune system

The immune system fights bacteria, viruses, and fungi that try to invade the body. The immune system includes:

- The skin
- The spleen
- Lymph nodes
- Bone marrow, which is the spongy, fatty tissue found inside larger bones
- White blood cells called leukocytes and neutrophils, which help fight infections and destroy harmful substances.

A low level of neutrophils, called [neutropenia](#), [3] often increases the risk of developing dangerous infections. Leukopenia is when the body does not have enough white blood cells to fight infections.

Relieving side effects is an important part of cancer care and treatment. This is called symptom management or [palliative care](#) [4]. Although infections are treatable, they can be serious and potentially life-threatening. Talk with your doctor about any symptoms you experience, including any symptoms of an infection or a change in symptoms.

Signs and symptoms of an infection

People with cancer, neutropenia, or a low white blood cell count are more likely to develop a serious infection.

Infections may start almost anywhere. Common places for an infection to start include the mouth, skin, lungs, urinary tract, rectum, and the genitals. Talk with your doctor right away if you experience any of the following signs of infection:

- A fever, which is a temperature of 100.5°F or higher
- Chills or sweating
- Sore throat, sores in the mouth, or a toothache
- Abdominal pain
- Pain near the anus
- Pain or burning when urinating, or urinating often
- Diarrhea or sores around the anus
- A cough or shortness of breath
- Any redness, swelling, or pain, particularly around a cut, wound, or where a catheter was placed
- Unusual vaginal discharge or itching

Possible causes of an infection

The following factors related to cancer and cancer treatment can affect white blood cells and lower the immune system:

- Lack of sleep, stress, poor diet, and other side effects
- Chemotherapy
- Radiation therapy given to larger areas of the body or to the pelvis, legs, chest, or abdomen
- Cancers that affect the bone marrow directly, such as leukemia and lymphoma
- Cancers that spread to the bone

Treating infections

Sometimes, you may receive preventive antibiotics or antifungal medications if you have a high risk of developing an infection. Neutropenia, some types of chemotherapy, and radiation therapy may place you at a higher risk.

You may receive antibiotics or antifungal medications if you develop an infection. If you develop neutropenia with a fever, you may need to stay in the hospital until the infection is gone.

If you have had or have a higher risk of developing neutropenia with a fever, your doctor may prescribe medications called white blood cell growth factors. These drugs help the body make more white blood cells to reduce the risk of an infection. Learn more about [ASCO's](#)

[recommendations for white blood cell growth factors.](#) [5]

Tips for preventing infections

There are steps you can take to help prevent infections:

- Get plenty of rest and eat a well-balanced diet.
- Avoid contact with people who are sick.
- Do not share food, drink cups, utensils, or other personal items, such as toothbrushes and makeup.
- Wash your hands thoroughly and frequently or use antibacterial hand sanitizers, especially after using the bathroom and before eating.
- Shower or bathe daily and apply lotion to prevent your skin from becoming dry and cracked.
- Be careful using sharp objects, such as scissors or knives, and use an electric shaver to avoid cuts.
- Do not eat raw foods, including meats, shellfish, and eggs, and wash raw fruits and vegetables. [Learn more about food safety.](#) [6]
- Do not change cat litter or handle animal waste.
- Use gloves during gardening and housework, especially while cleaning.
- Clean your teeth and gums with a soft toothbrush and, if your doctor or dentist recommends one, use a mouthwash to prevent infections. [Learn more about dental health during cancer treatment.](#) [7]

More Information

[When to Call the Doctor During Cancer Treatment](#) [8]

[Side Effects of Chemotherapy](#) [9]

[Side Effects of Radiation Therapy](#) [10]

Additional Resources

[National Cancer Institute: Infection and Neutropenia](#) [11]

[Centers for Disease Control: Preventing Infections in Cancer Patients](#) [12]

Links

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

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

[3] <http://www.cancer.net/node/25053>

[4] <http://www.cancer.net/node/31921>

[5] <http://www.cancer.net/node/29816>

[6] <http://www.cancer.net/node/31516>

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

[8] <http://www.cancer.net/node/26366>

[9] <http://www.cancer.net/node/24676>

[10] <http://www.cancer.net/node/24677>

[11] <http://www.cancer.gov/about-cancer/treatment/side-effects/infection>

[12] <http://www.cdc.gov/cancer/dcpc/resources/features/PreventInfections/>