

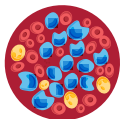
WHY ARE CANCER PATIENTS AT AN INCREASED RISK OF INFECTION?

Risk of a patient with cancer for contracting infections, including infection from SARS-CoV-2, varies depending upon the type of cancer and/or treatment. Additionally, certain medical conditions can increase the risk of infections among patients with cancer.

The type of cancer a patient has—

Blood cancers, such as leukemias, lymphomas, and multiple myeloma

Because these cancers often cause abnormal proliferation and compromised functions of immune cells and a weakened immune system.



Solid tumors, such as lung, breast, or prostate cancer

Because these cancers can enter bone marrow and compete with normal cells for space and nutrients, which can compromise production of new immune cells.



Other ways patients with cancer can become more vulnerable to infections include:

- A **tumor growing on skin** can damage the skin layers and cause pathogens to enter the body.
- A **tumor growing near major blood vessels** can press on them, thus restricting the circulation of oxygen, nutrients, and immune cells to nearby normal tissues, and making them susceptible to pathogens.
- A **tumor growing in lung** can block drainage of mucus, which normally functions as a protective layer of airways, but can provide an environment for growth of pathogens if persistently accumulated.

The type of treatment a patient with cancer is receiving—



Certain drugs that target and deplete or alter the function of normal B cells, which make infection-fighting antibodies

Examples include CAR T-cell therapies; drugs that target specific proteins, such as CD20 and CD38, found on the surface of B cells; inhibitors of proteins important for the B-cell function; and corticosteroids. Based on the current knowledge, this is the most important treatment-related risk factor for severe disease.



Certain surgical procedures

Examples include patients with cancer who have their spleens surgically removed, because the spleen plays an important role in detecting and clearing pathogens in blood.



Certain radiation therapies

Because they can result in a decreased number of white blood cells.



Certain chemotherapeutics

Because they can result in a decreased number of immune cells that help fight infections.



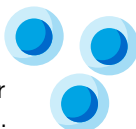
Certain molecularly targeted therapies

Because they can weaken the immune system, depending on the protein the drugs are targeting in cancer cells.

Other factors—

Stem cell transplantation

This procedure to replenish the bone marrow stem cells destroyed by the cancer treatment can weaken the immune system.



Poor nutrition

Malnourishment, either because of the type of cancer or anticancer treatment, can weaken a patient's immune system.

