



CANCERcare®

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# fact sheet

## WHAT IS IMMUNOTHERAPY?

**Immunotherapy, also called biologic therapy, is a type of cancer treatment that uses the body's immune system to fight cancer.**



### WHAT IS THE IMMUNE SYSTEM?

The immune system's job is to identify and destroy potentially harmful invaders within the body, such as viruses and bacteria that can cause infections. Cells in the immune system are programmed to find differences between foreign cells and our own cells, and to selectively attack the foreign cells.

**There are two main parts of the immune system:** the humoral (also called antibody-mediated) immune response and the cell-mediated immune response. These two sides work together to keep the body safe from infections.

As part of the humoral immune response, B-cells generate antibodies in the blood that help us fight off infections in the lymph or blood, and provide us with lasting immunity to ward off future infections.

**The activity of the immune system has to be carefully balanced:** both an overactive and an underactive immune system can be harmful. Our growing understanding of how the immune system keeps its balance is the heart of the field of immuno-oncology that has led to the development of immunotherapies to treat people with cancer.

### IMMUNOTHERAPY TO TREAT CANCER

**One concept behind immuno-oncology is to find ways to convince a person's own immune cells that the cancer is a foreign body that needs to be attacked.** This is hard because as abnormal as cancer cells are, the differences between them and healthy cells are quite small.

**A key to the development of effective cancer immunotherapies is achieving the balance** of being able to turn on the immune system to recognize a cancer cell that is not all that different from a normal healthy cell, while at the same time overcoming the defenses of the cancer cell, and preventing over-activity of the immune system which could damage the patient's healthy cells.

With the body's immune system, immunotherapies help fight cancer the following ways:

- Stopping or slowing the growth of cancer cells
- Preventing the cancer from spreading to other parts of the body
- Helping the immune system work better at destroying cancer cells

(over)

## IMMUNOTHERAPY TO PREVENT CANCER

**For many years, we have known that cancers are caused by genetic changes.** More recently, immuno-oncology researchers have discovered that also chronic inflammation from substances in our environment, like tobacco smoke and viral infections, can promote cancer development.

It's through this inflammatory process that certain high-risk types of human papilloma virus (HPV) can not only cause genital warts but also lead to cervical, anal, mouth, vulval, and throat cancers. To prevent HPV infection, two vaccines on the market are recommended for use in children 11 to 12 years old.

**These vaccines are very effective at eliminating the pre-cancerous changes** that can lead to the development of cancer through this inflammatory process. These vaccines are great examples of how we can use the immune system to help prevent cancer.



### QUESTIONS TO ASK YOUR DOCTOR ABOUT IMMUNOTHERAPY

- Does immunotherapy have a role in treating my diagnosis?
- What are the goals of this treatment?
- What are the possible side effects of immunotherapy, both in the short term and the long term?
- How will this treatment affect my daily life?
- Will I be able to work, exercise, and perform my usual activities?
- Are there immunotherapy clinical trials available to me?

### CancerCare® Can Help

Founded in 1944, CancerCare is the leading national organization providing free support services and information to help people manage the emotional, practical and financial challenges of cancer. Our comprehensive services include counseling and support groups over the phone, online and in-person, educational workshops, publications and financial and co-payment assistance. All CancerCare services are provided by professional oncology social workers and world-leading cancer experts.

To learn more, visit [www.cancercares.org](http://www.cancercares.org) or call **800-813-HOPE (4673)**.

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