

## Understanding Immunotherapy

### ■ What is immunotherapy?

Immunotherapy is a treatment using medication designed to boost the body's natural defenses to fight cancer. It uses materials made by the body or in a laboratory to boost, target, or restore a person's immune system. The immune system is a network of cells, tissues, and organs that work together to protect the body from infection.

Certain types of immunotherapy attack cancer or slow its spread to other parts of the body. Other types make it easier for the immune system to destroy cancer cells. Your doctor may recommend immunotherapy after or at the same time as another treatment, such as chemotherapy. Or immunotherapy may be used by itself.

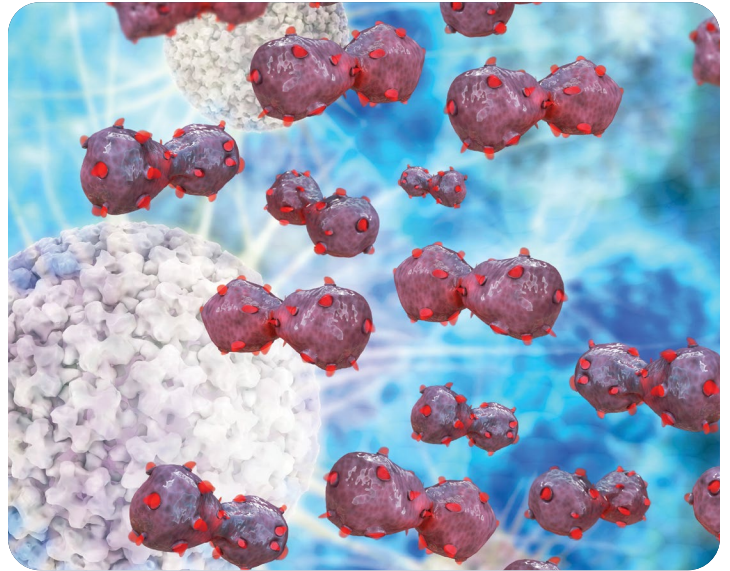
### ■ What are the types of immunotherapy?

There are several types of immunotherapy, including monoclonal antibodies, cancer vaccines, oncolytic virus therapy, T-cell therapy, and non-specific immunotherapies. Monoclonal antibodies act like the antibodies your body makes naturally to fight harmful substances.

They are designed to target a specific protein in cancer cells. Most of the new immunotherapies are monoclonal antibodies. These may also be called checkpoint inhibitors. Checkpoint inhibitors are a specific type of cancer drug that allows the immune system to destroy cancer cells. Some types of immunotherapy may deliver small radiation doses or other cancer drugs to the cancer cell. Cancer vaccines that treat cancer are still uncommon, but many are being studied in clinical trials. A cancer vaccine is a way of exposing the immune system to an antigen. This triggers the immune system to find and destroy that antigen or related materials. Oncolytic virus therapy uses viruses that have been changed in a laboratory to destroy cancer cells. In T-cell therapy, the doctor removes specific immune cells, called T cells, from your blood. Then, a laboratory adds specific proteins called receptors to the cells. The receptors allow those T cells to recognize cancer cells. The changed T cells are put back into your body. Once there, they find and destroy cancer cells. Examples of non-specific immunotherapies include interferons and interleukins.

### ■ What are the side effects of immunotherapy?

Immunotherapy is different from traditional chemotherapy and can cause different side effects. And different immunotherapies cause different side effects. Each person's experience also depends on the type of cancer and its location, treatment dose, and your overall health. Preventing and managing side effects is a major focus of your health care team. Talk with them right away about any changes in how you feel, even if you don't think the side effect is serious. Side effects from monoclonal antibody treatment can include rashes, low blood pressure, and flu-like symptoms, such as fever, chills, headache, weakness, and vomiting. Non-specific immunotherapies can cause flu-like symptoms, as well as an increased risk of infection, rashes, and thinning hair. Other types of side effects are possible, too. Ask your doctor what side effects you may have based on the specific medicine(s) recommended for you. Most side effects go away after treatment, although some long-term side effects may occur months or even years after treatment. Learn more about managing side effects at [www.cancer.net/sideeffectsimmuno](http://www.cancer.net/sideeffectsimmuno).



# Questions to ask the health care team

Regular communication is important for making informed decisions about your health care. It can be helpful to bring someone along to your appointments to take notes. Consider asking your health care team the following questions:

- ▶ What type of immunotherapy do you recommend and why?
- ▶ What is the goal of this treatment? To destroy cancer cells? To slow down the spread of cancer to other parts of the body?
- ▶ What immunotherapy clinical trials are available for me? Where are they located, and how do I find out more about them?
- ▶ Will immunotherapy be my only treatment or will other treatments be a part of my treatment plan?
- ▶ How will the treatment be given?
- ▶ How often will I receive this treatment? How long does each treatment session take?
- ▶ Where will I receive treatment?
- ▶ What will I experience when I receive this treatment?
- ▶ What can I do to get ready for this treatment?
- ▶ What are the possible short-term and long-term side effects of this treatment?
- ▶ How can those side effects be avoided or managed?
- ▶ How soon should I let you know about changes in how I'm feeling?
- ▶ How will this treatment affect my daily life? Will I be able to work, exercise, and perform my usual activities?
- ▶ If I'm worried about managing the costs of cancer care, who can help me?
- ▶ If I have a question or problem, who should I call?

Find more questions to ask the health care team at [www.cancer.net/immunotherapy](http://www.cancer.net/immunotherapy). For a digital list of questions, download Cancer.Net's free mobile app at [www.cancer.net/app](http://www.cancer.net/app).

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## Words to know

**Antibodies:** Proteins that fight infection.

**Antigens:** Harmful substances that cause your body to make antibodies.

**Biologic therapy:** Another name for immunotherapy.

**Clinical trial:** A research study that tests a new treatment or drug.

**Intravenous immunotherapy:** Medication given directly into a vein.

**Medical oncologist:** A doctor who specializes in treating cancer with medication.

**Oncolytic virus therapy:** A treatment that uses genetically modified viruses to destroy cancer cells.

**Oral immunotherapy:** Medication swallowed as a pill, capsule, or liquid.

**Radioimmunotherapy:** An immunotherapy treatment that delivers radiation directly to cancer cells.

**Side effects:** Problems that happen during or after treatment. These could be from the cancer or how the treatment affects your body.

**Targeted therapy:** Treatment that targets a cancer's specific genes, proteins, or the tissue environment that contributes to cancer.

**T-cell therapy:** A treatment that modifies a patient's own T cells to destroy cancer cells.

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