

# Immunotherapy

Immunotherapy is an advanced cancer treatment that helps your body's immune system fight cancer. It can be an effective way to treat blood disorders and is one of the most promising innovations available today for the treatment, cure and prevention of certain blood cancers like multiple myeloma, acute lymphoblastic leukemia, non-Hodgkin lymphoma and Hodgkin disease.

The cancer specialists at Miami Cancer Institute are among the leaders developing this groundbreaking treatment. They collaborate with a multidisciplinary team of experts to provide comprehensive treatment solutions that work together to address all aspects of your care.

## Why choose Miami Cancer Institute?

Miami Cancer Institute is the only facility in the state that is a member of the Memorial Sloan Kettering Cancer Alliance. This critical collaboration allows us to share expertise and scientific learning with some of the top innovators in cancer care. Our partnership also gives us access to numerous clinical trials that offer leading-edge diagnosis and treatment options.

Our specially equipped laboratory is a certified Good Manufacturing Processing (GMP) facility, which means our equipment, processes and services meet stringent quality guidelines to ensure you receive the best care possible. We are one of the only facilities in the area with the expertise and equipment onsite to complete the cell processing that forms the basis for immunotherapy treatment.

## How does immunotherapy work?

Your immune system provides protection from illness by detecting bacteria and viruses and producing antibodies that attack and destroy the infected cells. Your immune system doesn't always recognize cancer cells, which allows them to escape detection.

Immunotherapy is different than chemotherapy. Chemotherapy drugs affect all types of cells and can eliminate healthy cells along with those that are cancerous. Immunotherapy stimulates your immune system to target and eliminate cancer cells.

In many cases immunotherapy can:

- Slow or stop cancer cell growth.
- Prevent the cancer from spreading to other areas of your body.
- Improve your immune system's ability to target and eliminate cancer cells.
- Replace chemotherapy for treatment with minimal or no side effects.
- Provide effective treatment when other efforts fail.

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## What conditions are treated with immunotherapy?

While researchers are still exploring the different applications for immunotherapy, promising results have been achieved treating several blood disorders, including:

- Multiple myeloma – a cancer that causes abnormal plasma cells to build up in your bone marrow and form tumors, and that can damage and weaken your bones.
- Non-Hodgkin lymphoma – cancer that affects your lymphatic system.
- Hodgkin’s disease – cancer of the lymphatic system.
- Acute lymphoblastic leukemia – fast-growing cancer that produces an excess of immature white blood cells.

## What type of immunotherapy treatments are available?

Miami Cancer Institute offers several different types of immunotherapy. Some are targeted therapies that help your immune system identify and attack cancer cells. Others concentrate on your immune system to help it attack cancer cells. Treatment may use your own cells or donor cells, as well as antibodies or vaccines. It can be administered by IV therapy, injection or pill, depending on the specifics of your personalized treatment plan.

## CAR-T cell therapy

Chimeric antigen receptor T-cell therapy (CAR-T) is a type of treatment that uses your own modified T cells — white blood cells that destroy abnormal cells — to help your immune system detect and eliminate cancer cells.

The process for CAR-T therapy typically proceeds like this:

- Your blood is collected, and the T cells are removed.
- Your T cells are genetically altered with chimeric antigen receptors to increase their ability to detect cancer cells.
- The newly created cells are grown in a laboratory until millions more cells are produced.
- You undergo chemotherapy to help protect the new cells when they are introduced to your bloodstream
- The modified T cells are infused back into your body where they release toxins that kill cancer cells
- CAR-T cells remain in your body long after your infusion process to help fight your cancer if it returns

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## Checkpoint inhibitors

Checkpoints are proteins made by your immune system that limit the ability of T cells to help your body fight infection and destroy cancer cells. Checkpoint inhibitors are drugs that enable your immune system to attack the cancerous cells.

Checkpoint inhibitors are administered intravenously. The number and timing of each treatment depends on your individual needs and typically takes 30 to 60 minutes to complete. The treatment is less toxic and less invasive than conventional chemotherapy and requires less pretreatment preparation.

## Cancer vaccines

Cancer vaccines, which are also called therapeutic vaccines, train your body to protect itself against its own abnormal or damaged cells.

They can:

- Prevent cancer from returning.
- Destroy remaining cancer cells left by other treatments.
- Prevent the cancer from growing or spreading to other parts of your body.
- Currently, most cancer vaccines are only available through participation in a clinical trial.

## Antibody conjugates

Antibody drug conjugates are targeted immunotherapies that use a monoclonal antibody to deliver cancer-killing agents directly to cancer cells. Once they've been introduced into your bloodstream, the antibody circulates throughout your blood in search of cancer cells. Once the cancer cells are located, the antibody penetrates and destroys them. The process prevents cancer cells from returning and limits the exposure of healthy cells to toxic drugs.

## What are the benefits of immunotherapy?

Immunotherapy is one of the most exciting options currently being used to treat cancer. It offers many benefits over chemotherapy, including:

- Faster recovery with few or no side effects.
- Better quality of life.
- No immune suppression issues.

To learn more, visit <https://cancer.baptisthealth.net/miami-cancer-institute/cancer-care/treatments-and-services/immunotherapy>.