# Understanding CAR-T* Therapy

## Some things you need to know about these treatment options

*CAR-T=chimeric antigen receptor-T cell.

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# What is CAR-T* therapy?

CAR-T therapy is a type of treatment for certain kinds of blood cancers. Blood cancer refers to cancer that starts and circulates in your blood and/or lymphatic system, or bone marrow. Types of blood cancer include lymphoma, leukemia, and multiple myeloma. Clinical studies are being conducted to learn more about CAR-T therapy across different cancers.

*CAR-T=chimeric antigen receptor-T cell.

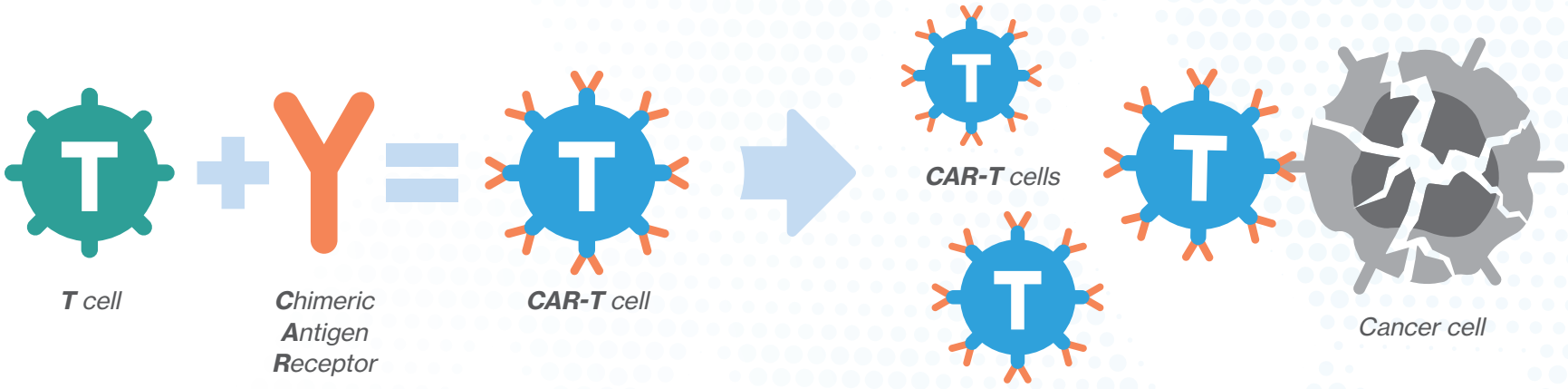
## CAR-T THERAPY IS A *PERSONALIZED* TREATMENT

CAR-T therapy is designed to fight cancer. CAR-T therapy is different than other cancer medicines because it is made from your own white blood cells, which have been changed (genetically modified) to recognize and attack the cancer cells in your body. It's also different because the treatment is delivered in a one-time infusion.

## WHEN IS CAR-T THERAPY APPROPRIATE?

Currently available CAR-T therapy requires that patients have been previously treated with other therapies for their cancer (such as chemotherapy or immunotherapy) and that those other treatments have stopped working, or their cancer has come back after those treatments.

# How does CAR-T therapy work?




**T cells** are members of the immune system that attack infection or a disease. But sometimes cancer cells can evade T cells, so the T cells do not attack them.

**CAR-T therapy** is a cancer treatment in which a person's own T cells are collected and genetically modified into CAR-T cells, which are designed to find targets on the outside of cancer cells.

The genetically modified parts of CAR-T cells are called **chimeric antigen receptors**, or CARs. CARs are the parts that have been added to a T cell specifically to recognize and attack a target found on the outside of multiple myeloma cells and healthy plasma cells.

These genetically modified CAR-T cells are returned to your body in a one-time infusion and start to track down cancer cells.

# The CAR-T treatment process

The decision to prescribe CAR-T therapy to a patient is usually a collaborative decision between your primary oncologist and a treating physician at a Certified Treatment Center. Together, they'll assess whether CAR-T therapy is right for you.

Because CAR-T therapy is highly personalized and requires monitoring for potential side effects, it is only available at Certified Treatment Centers. These centers feature doctors and nurses who are specially trained in delivering CAR-T therapy. They'll work closely with you and your existing healthcare team to set up and manage your treatment, ensuring a smooth transition to the Certified Treatment Center and back to your primary oncologist.

There are 5 steps to the CAR-T treatment process from cell collection through initial monitoring after the infusion of your CAR-T cells. You'll need to stay at or near the location where you received your CAR-T infusion for approximately 4 weeks after your infusion so your healthcare team at the Certified Treatment Center can monitor you for side effects.

## CAR-T THERAPY TREATMENT PROCESS

*The CAR-T treatment process, from cell collection through initial monitoring.*

**STEP 1**
**CELL COLLECTION**

**STEP 2**
**GENETICALLY MODIFYING YOUR T CELLS**

**STEP 3**
**PRE-INFUSION TREATMENT**

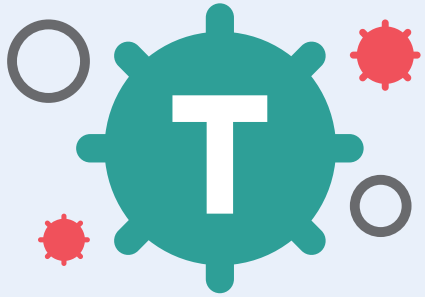
**STEP 4**
**ONE-TIME CAR-T INFUSION**

**STEP 5**
**MONITORING**


*Between cell collection and pre-infusion treatment, your doctor may prescribe additional therapy to treat your cancer, often called **bridging therapy**.*

# The CAR-T treatment process (more)

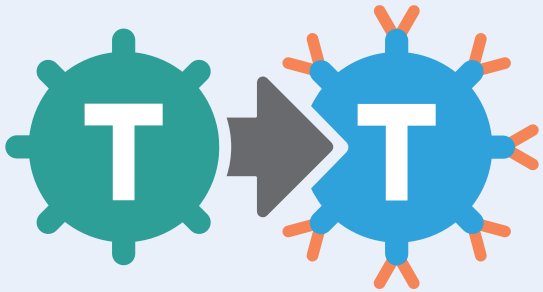
STEP 1



## CELL COLLECTION

Some of your blood is collected into a machine that separates the white and red blood cells, collects some of the white blood cells (including T cells), and returns the rest of the blood into your body. This process is called **leukapheresis** (loo-kah-fur-ee-sis).

STEP 2



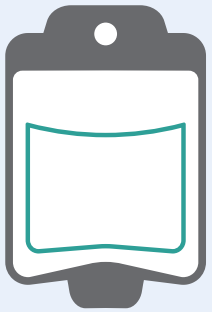
## GENETICALLY MODIFYING YOUR T CELLS

Your white blood cells are sent to a manufacturing site, where the T cells are isolated and changed to include specialized receptors that can recognize and attach to a target on the outside of cancer cells. Your CAR-T cells are then sent to your healthcare team at the Certified Treatment Center who will administer the treatment.

*Between cell collection and pre-infusion treatment, your doctor may prescribe additional therapy to treat your cancer, often called **bridging therapy**.*

# The CAR-T treatment process (more)

STEP 3



## PRE-INFUSION TREATMENT

You will receive infusions of chemotherapy to help prepare your body for the CAR-T infusion by clearing out some of your white blood cells to make space for your new CAR-T cells. This is called **lymphodepletion**. These infusions will be given to you daily for 3 or 4 days about a week before receiving your CAR-T cells.

*Between cell collection and pre-infusion treatment, your doctor may prescribe additional therapy to treat your cancer, often called **bridging therapy**.*

STEP 4


## ONE-TIME CAR-T INFUSION

About a month after your initial cell collection, and following lymphodepletion, you'll be given your CAR-T cells through a one-time intravenous (IV) infusion. Your healthcare team at the Certified Treatment Center will guide you through what your infusion day will be like and how to prepare.

# The CAR-T treatment process (more)

STEP 5

## SHORT-TERM MONITORING

Your healthcare team at the Certified Treatment Center will monitor you closely for any side effects you may experience after the infusion of your CAR-T cells. You should plan to stay at or near the location where you received your treatment for approximately 4 weeks after the infusion. This is in case you develop any side effects from treatment that require medical attention.

Following the initial monitoring, the healthcare team at the Certified Treatment Center will partner with your primary oncology team to provide ongoing care and assess how you feel.

## LONG-TERM FOLLOW-UP AND MONITORING

You'll continue to be under medical care and monitored by your primary healthcare team and primary oncologist after this period. At this point, depending on the decision of your CAR-T healthcare team, you may be able to return home and resume care with your primary oncologist. Be sure to let your primary healthcare team and primary oncologist know if any symptoms arise or if you're not feeling well, to help ensure they can manage your care appropriately.

# Side effects

Many people experience side effects to CAR-T treatment that can be severe or life-threatening. This is why you'll need to stay at or near the Certified Treatment Center where you received your CAR-T infusion for approximately 4 weeks after receiving your CAR-T cells. CAR-T therapies are only available at Certified Treatment Centers where the healthcare teams are trained in recognizing and managing serious adverse reactions related to the infusion treatment.

## SERIOUS SIDE EFFECTS OF CAR-T THERAPY INCLUDE:

- **Cytokine release syndrome (CRS)**, which can cause fever, rapid heart rate, low blood pressure, and other symptoms
- **Neurologic toxicity**, which can cause confusion, tremors, difficulty with motor function, or difficulty with communication
- **Prolonged cytopenias,** which are a reduction of cells circulating in the blood for an extended period of time
- **Hypogammaglobulinemia,** which occurs when the amount of antibodies in blood is low, increasing risk of infection
- **Serious infections,** which can develop into life-threatening infections

**Call your healthcare team or get emergency help right away if you experience any of these symptoms.**

Because of the risk of CRS and neurologic toxicity, CAR-T therapy is available only through restricted programs under a Risk Evaluation and Mitigation Strategy (REMS). The healthcare team at each Certified Treatment Center must be trained in recognizing and managing CRS and neurologic toxicity and have emergency treatments available.

### TRAINED CAR-T HEALTHCARE TEAM

CAR-T therapy is administered by a specialized healthcare team qualified to manage these serious side effects. Talk with your doctor and your healthcare team about the potential risks of treatment and how to monitor for reactions.

# You'll need support from family or friends

## CAREGIVERS PLAY AN IMPORTANT ROLE

It's essential that you have a friend or family member to help with your care. They will need to help provide support to you throughout the CAR-T treatment process:

- Monitoring and tracking side effects
- Scheduling appointments
- Providing transportation to appointments and keeping you company
- Managing your schedule and letting visitors know when you do or don't feel up to seeing them
- Helping communicate with your healthcare team (for example, sharing health details, providing insurance information, asking questions)
- Calling your doctor if you're not feeling well
- Taking care of responsibilities at home
- Offering support and being there to talk

### FOR CAREGIVERS

Be an advocate for the person you care for—if they have any questions about treatment, be sure to ask a member of their healthcare team. The doctors and nurses expect you to have questions, and they know that helping support you is an important part of successful treatment.

# Questions to ask your doctor or healthcare team

If you want to learn more about CAR-T therapy, and whether it is an appropriate treatment option for you, here are a few questions to start the conversation with your doctor during your next appointment.

- Is there a CAR-T therapy for the type of cancer I have? Could CAR-T therapy be a treatment option for me?
- How does CAR-T therapy work?
- How is CAR-T therapy different from other treatments I've received for my cancer?
- Do I need someone to help care for me during the process?
- How long do I need to be away from home during this process? Will I be in the hospital the entire time?
- How well does CAR-T therapy work?
- What are the potential side effects associated with CAR-T therapy and can they be managed?
- Are there support programs or offerings to help me with my CAR-T treatment?

**Talk to your doctor or healthcare team about whether CAR-T therapy is available for your type of cancer, and whether it could be an option for you.**

# Glossary

Below you will find definitions for terms related to CAR-T therapy that may be unfamiliar to you.

**Bridging therapy**—anti-cancer treatments given between cell collection and pre-infusion treatment. The goal of bridging therapy is to control the disease while CAR-T cells are being manufactured.

**CAR (chimeric antigen receptors)**—a receptor that is reprogrammed in your T cells at a specialized facility to identify cancer cells.

**CAR-T cells**—T cells that have been reprogrammed in a specialized facility to effectively identify targets on cancer cells in order to attach to targets on the surface of cancer cells and destroy them.

**CAR-T therapy**—a cancer treatment in which your own T cells are collected and then reprogrammed to create customized CAR-T cells that will fight your cancer. These CAR-T cells are then returned to your body in a one-time infusion.

**Cytokine release syndrome (CRS)**—a life-threatening or even fatal condition where your body reacts to the CAR-T cell infusion by releasing cytokines, a type of immune cell.

**Leukapheresis (loo-kuh-fur-ee-sis)**—the first step of the CAR-T treatment process where your blood is collected and passed through a machine that collects some of your blood, separates out some of your white blood cells, and then returns the rest of the blood to your body. The collected T cells are then sent to a specialized facility, where they will be used to make your unique CAR-T cells.

**Lymphodepletion**—chemotherapy given over three days to prepare your body to receive CAR-T cells. You will be given infusions of low-dose chemotherapy daily for several days. This treatment reduces the number of white blood cells in your body, giving the CAR-T cells room to multiply once they are returned to your body. This step in the CAR-T treatment process takes place a few days before your infusion of CAR-T cells.

**Neurologic toxicity**—a side effect that happens when exposure to a substance (such as a medical treatment) changes the normal activity of the brain or nervous system. This can happen from changes to the way signals are transmitted and processed in the brain and other parts of the nervous system.

**T cells**—cells that patrol the body for signs of infection and diseases and initiate a response to attack both.

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