

# CAR T Cell Therapy

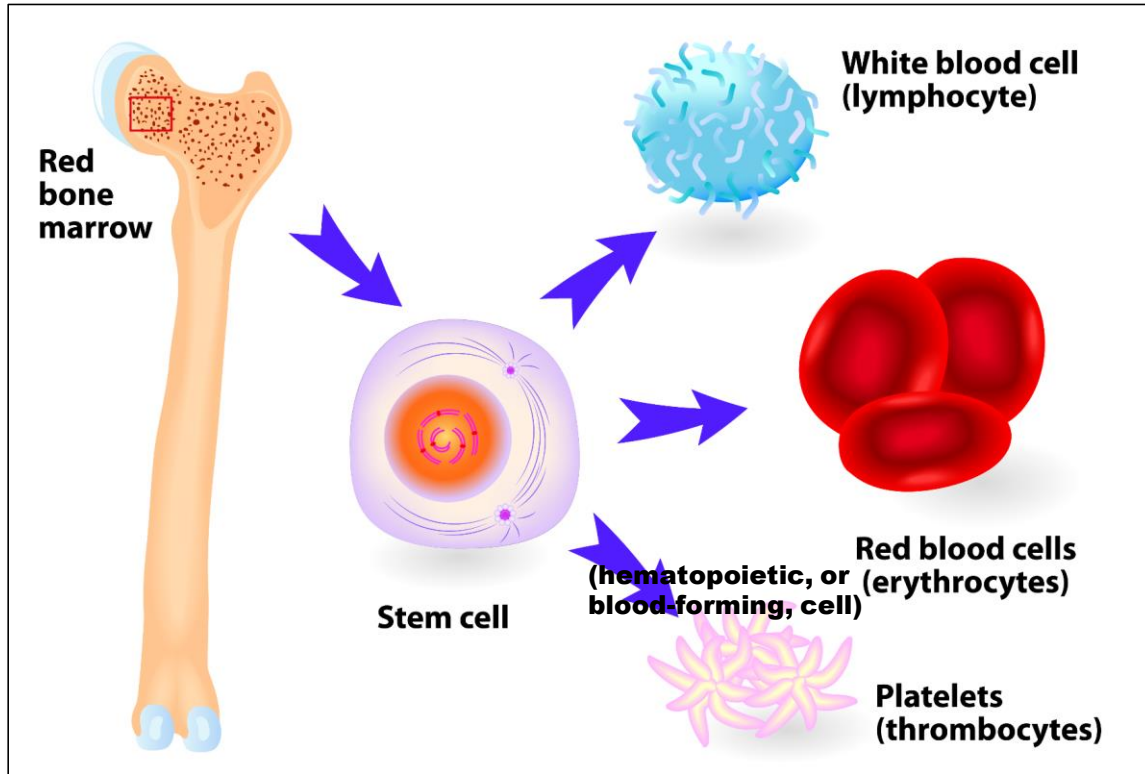
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# In This Presentation

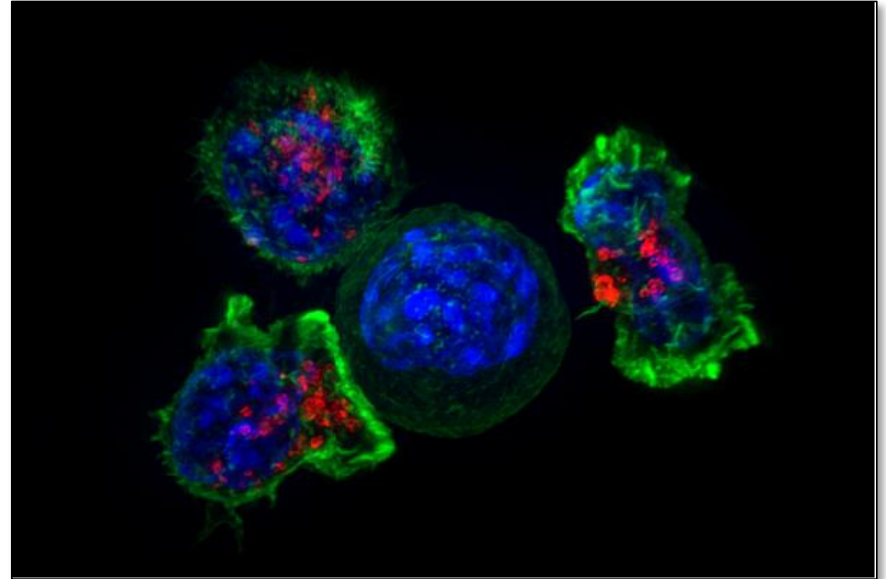
- What is a T cell?
- What is CAR T cell therapy and how is it done?
- If I must stay in the hospital, what can I expect?
- What are the possible side effects of CAR T cell therapy?
- What should I do if I have side effects after CAR T cell therapy?

# Basics of Bone Marrow



# What Is a T Cell?

- Your body makes a type of white blood cells called T cells.
- T cells have “hooks” that let them attach to cancer cells in your body and destroy them.
- Cancer cells can change so the hooks on your T cells no longer attach.



T cells surrounding a cancer cell  
(Image courtesy of National Cancer Institute)

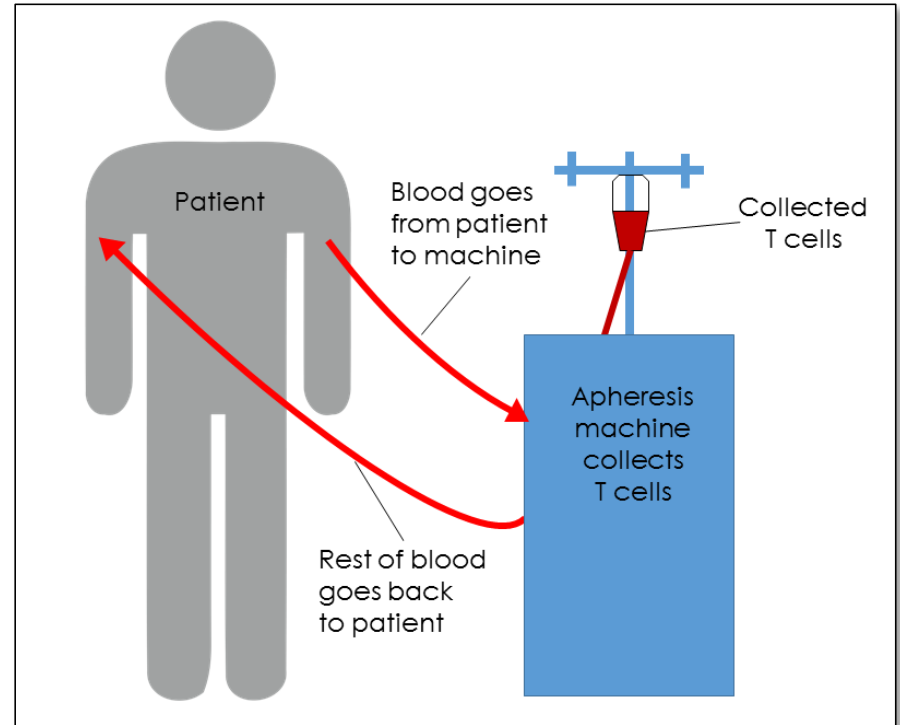
# What Is CAR T Cell Therapy?

**CAR** stands for  
**C**himeric  
**A**ntigen  
**R**eceptor

- Doctors take T cells from your blood and add a new hook called a CAR.
- Together, these are called CAR T cells.
- You get the CAR T cells back through an infusion.
- The CAR T cells attach to cancer cells and destroy them.

# How Do You Collect My T Cells?

- We use a process called **apheresis**, also referred to as “**leukapheresis**” to collect T cells from your body.
- Your blood goes through your central line to a machine that collects only the T cells. The rest of your blood returns back to you through your central line.
- Apheresis usually takes 4–6 hours.



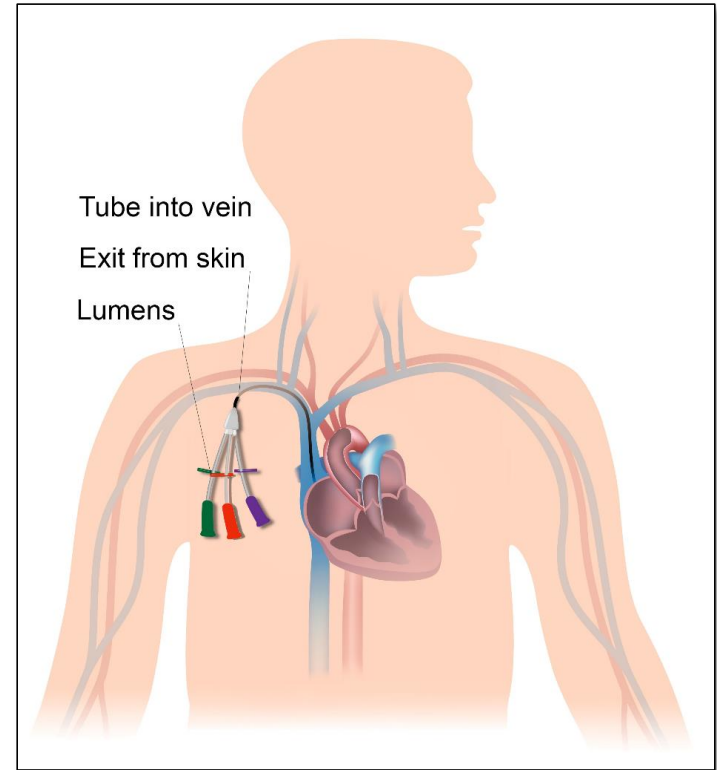
# What Is a Central Line?

- The central line is a tube that goes into a major vein near your heart.
- With a central line, it's easier to give you treatments, chemo, blood products, and fluids.
- It's also easier to draw your blood for lab tests.
- You get fewer needle sticks.
- There are two types of central lines. Your care team may place a temporary line prior to apheresis and a tunneled line before starting lymphodepletion chemotherapy.



# Your Central Line: Tunneled Venous Catheter

- A tunneled venous catheter is one type of central line.
- A long, flexible tube goes into a large vein just above your heart.
- Three tubes called lumens are on the outside of your chest.
- The lumens are where your care team takes blood for tests and gives you medicines and infusions.





# Treatment Before CAR T Cell Infusion

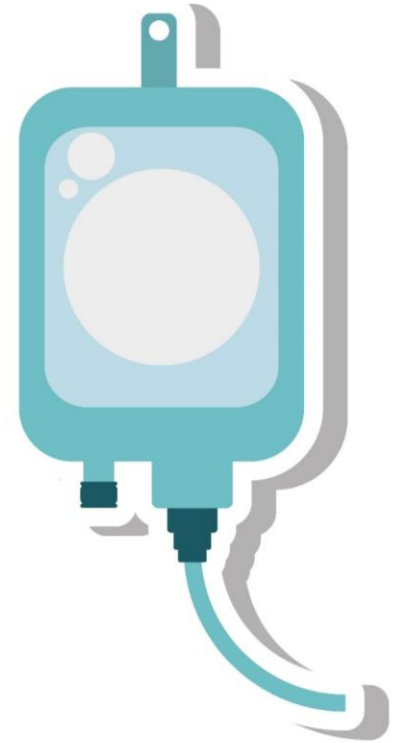


Generally, it takes 3-6 weeks for the manufacturer to grow your new cells. Because of this, you may receive additional treatment to manage your disease between apheresis and CAR T cell infusion.

Additional treatments may include chemotherapy or radiation. You may hear this referred to as “bridging therapy”.

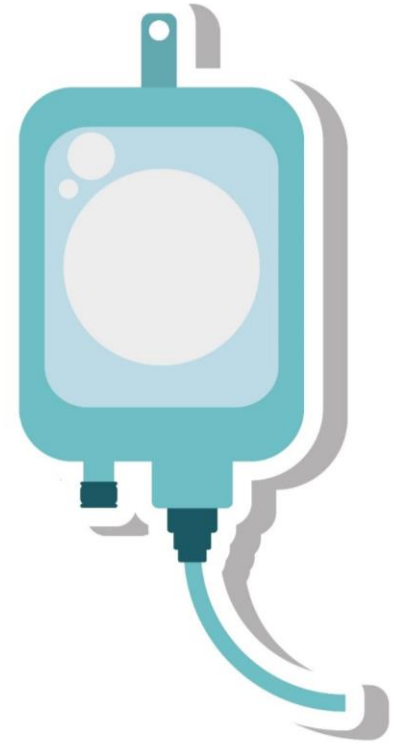
# Lymphodepletion

- You will receive lymphodepletion chemotherapy prior to receiving your CAR T-cells.
- The purpose of this is to decrease the number of immune system cells in your body to create space for the new cells.
- This chemotherapy is generally given for 3 days during the 5 days leading up to the CAR T- cell infusion.
- Most often this chemotherapy is given in the outpatient setting.



# CAR T Cell Infusion

- If you are admitted to the hospital for your infusion, the infusion happens in bed in your room.
- If you are not admitted, it happens in the BMT infusion room.
- Before the infusion, your care team gives you medicines to prevent nausea and allergic reactions.
- You get your CAR-T cells back through your central line.
- Your care team watches you closely during and after the infusion.



# What to Expect During Your Hospital Stay

Doctors, nurses, social workers, and others care for you.

- Prevent infections and other complications
- Measure food and liquid intake
- Track solid and liquid waste
- Weigh you every day
- Care for your central line
- Test your blood
- Keep strict visitor policy



# What We Expect During Your Hospital Stay

- Keep a personal hygiene routine.
  - Mouth care
  - Daily shower
  - Handwashing
- Walk daily.
- Stick with your food plan.
- Talk with the BMT team.
  - Needs or concerns
  - Anything that's not quite right

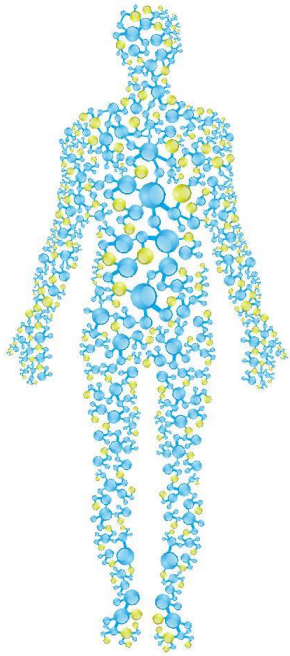


# Possible Side Effects

CAR T cell therapy can have serious side effects:

- Flu-like symptoms—Your care team may call it cytokine release syndrome (CRS).
- Infections—Your immune system may have trouble fighting germs.
- Changes in mental state—Your care team may call this neurotoxicity.

# Possible Side Effects: CRS and Infections



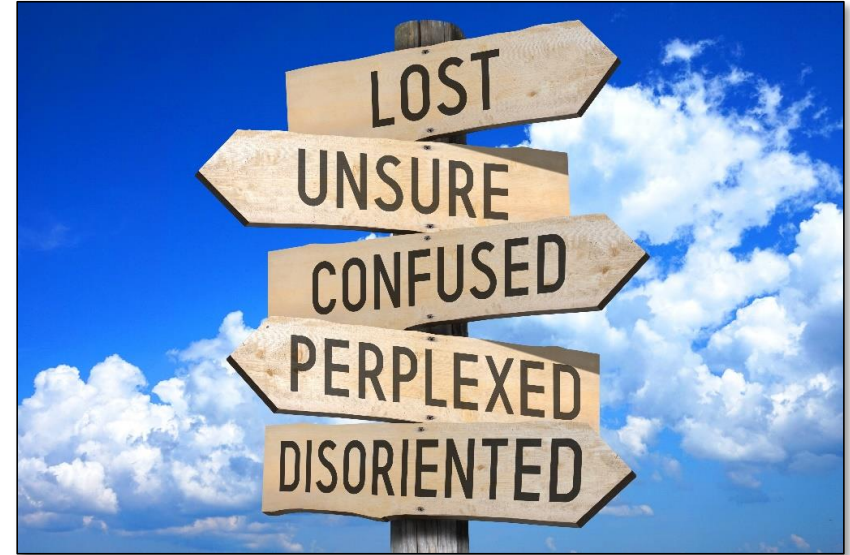
Many of the signs of CRS and infections are similar:

- Fever of 100.4°F or greater
- Bleeding
- Body aches, chills, or shivering
- Hard time breathing
- Dizziness
- Fast or irregular heartbeat
- Low blood pressure
- Nausea, vomiting, or diarrhea
- Pain when urinating
- Rash
- Red or swollen place on the body
- Sore throat or coughing

Read more in the factsheet  
“Side Effects of CAR T cell therapy”

# Possible Side Effects: Mental Changes

- Confusion
- Memory loss
- Anxiety
- Hard time sleeping
- Feeling very tired or weak
- Hard time speaking
- Dizziness
- Hallucinations
- Headache
- Seizures
- Uncontrollable shaking



Read more in the factsheet  
“Side effects of CAR T cell therapy”



# When You Leave the Hospital

- You will have follow-up appointments with your care team often.
- You will need to have a caregiver 24 hours a day for 30 days after your CAR T infusion.
- You will need to stay within a 40 miles or a 60-minute drive of the hospital for 30 days after your infusion.

# When to Call for Help—and Who to Call

**If you have any signs of  
CAR T cell therapy side effects,  
call us right away.**

## **Nurse Lines:**

Monday–Friday, 8 a.m.–5 p.m.

- Multiple Myeloma diagnosis: 801-587-4687
- All other diagnoses: 801-587-4686

## **After Hours:**

- Monday–Friday after 5 p.m., weekends, and holidays

801-587-7000- ask for the BMT hospitalist

Read more in the factsheet  
“Side effects of CAR T cell therapy.”



# In Case of Emergency

If you have life-threatening symptoms **Call 911**  
or go to the Emergency Department at the  
**University of Utah Hospital in Salt Lake City .**

**Always carry your Patient Wallet Card**



# Support Services – Huntsman Cancer Institute

- Patient & Family Support: BMT Unit Social Worker
- Wellness and Integrative Health Center
- Financial Advocates
- Cancer Learning Center
- Chaplain and Spiritual Care Services
- Chapel and Meditation Room
- Volunteer Services

Learn more at [huntsmancancer.org](https://huntsmancancer.org)

