

## CAR-T Therapy: Putting the Immune System to work against Leukemia and Lymphoma

- A revolutionary type of blood cancer treatment that programs a patient's own altered white blood cells to kill cancer cells
- Suitable for leukemia and lymphoma patients, who have undergone at least two previous treatments
- Success rate: approximately 90% in children and about 70% in the total patient population
- Sheba Medical Center was recently named for the third time between TOP 10 best hospitals in the world by Newsweek
- The entire treatment process is performed in Sheba by a highly trained specialists

### How does CAR-T work?

CAR T-cell therapy is a revolutionary type of blood cancer treatment that programs a patient's own altered white blood cells to kill cancer cells. Advanced technology is used to separate white blood cells (an essential part of your immune system) from the rest of your blood cells. The white blood cells are then sent to a specialized laboratory, where they are engineered to produce specific chimeric antigen receptors (CARs) on their surface. Before returning these cells to the patient, they are multiplied in a laboratory in order to obtain millions of modified cells.

These CAR T-cells are then injected back into your bloodstream. Now, the new CARs can help the modified cells latch on to the coordinating antigen on tumor cells – effectively hunting down and killing cancerous cells.



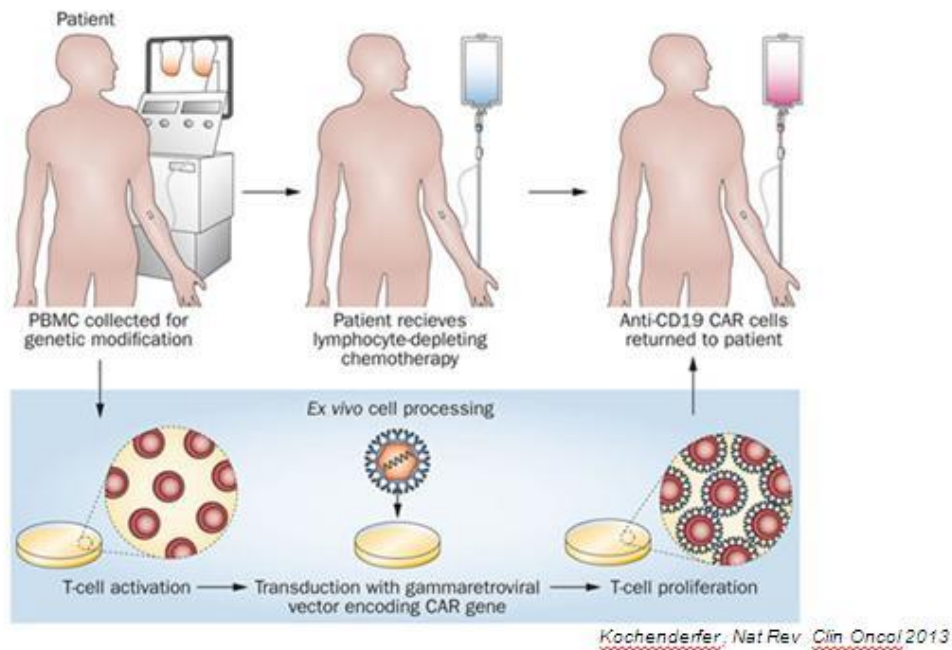
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When other blood cancer treatments fail, CAR T-cell therapy has worked, putting some people's cancers into remission. A significant benefit of CAR T-cell therapy is that it not only instructs the T-cell to kill the cancer, but it also triggers the T cell to grow and divide. Therefore, after just one CAR T-cell treatment, the cells remain in your body and continue to attack the tumor for months or even years.

## CAR T cell production



### What are the possible side effects from CAR-T therapy?

In general, most patients who receive CAR T-cell therapy do not experience the typical side effects that are associated with chemotherapy, such as nausea, vomiting, and hair loss. However, there are risks of other serious side effects. Because CAR T-cell therapy is given as a one-time infusion (and not in sessions, like chemotherapy), most of the possible complications occur within the first one to two weeks after treatment. They are usually temporary and can be resolved with medication.



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### Who is a candidate for CAR-T?

- The therapy is only provided to leukemia and lymphoma patients, who have undergone at least two previous treatments

CAR-T treatment has been quite successful in younger patients. For example, young children have experienced a total recovery rate of about 85-90%. Approximately 80% of teenagers receiving the treatment have made a complete recovery from their leukemia. A success rate of about 70% has been achieved in the total patient population.

### Why choose Sheba for CAR-T therapy?

CAR T-cell therapy is highly specialized and personalized, and it is available at a limited number of cancer centers around the world. At Sheba Medical Center in Israel, our oncologists have trained at premier medical institutions and we are pleased to offer this breakthrough therapy. We feature all of the advanced medical facilities necessary for administering CAR T-cell therapy as part of a clinical trial on our comprehensive campus, including a state-of-the-art laboratory where the T-cells are engineered. Our physicians provide CAR T-cell therapy with a customized and holistic approach that pays attention to your unique needs and the overall well-being of your whole body.

At Sheba, we offer therapy for the following types of cancer:

- [Acute Lymphocytic Leukemia \(ALL\)](#), Adult
- [Non-Hodgkin Lymphoma \(NHL\)](#), Adult and Child
- [Leukemia \(ALL\)](#), Child
- [Multiple Myeloma](#)



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Your medical team at Sheba will design your customized CAR T-cell therapy to target your specific type of cancer. We are committed to clear and open communication with every patient, so there is no confusion and you always know what to expect.

Our highly trained professionals who provide the CAR-T treatment:

Adults:

[Prof. Arnon Nagler](#), Director of both the Division of Hematology and the Bone Marrow Transplantation and Cord Blood Bank at Sheba Medical Center.

[Dr. Abraham Avigdor](#), Director of the Institute of Hematology, Division of Hematology and Bone Marrow Transplantation at Sheba Medical Center.

Children:

[Prof. Amos Toren](#), Director of the Pediatric Hemato-Oncology and BMT Department at Sheba Medical Center.

[Dr. Elad Jacoby](#), Attending Physician at the Pediatric Hematology and Oncology Department, Investigator in Pediatric Cancer Immunotherapy at the Pediatric Research Institute, Sheba Medical Center.