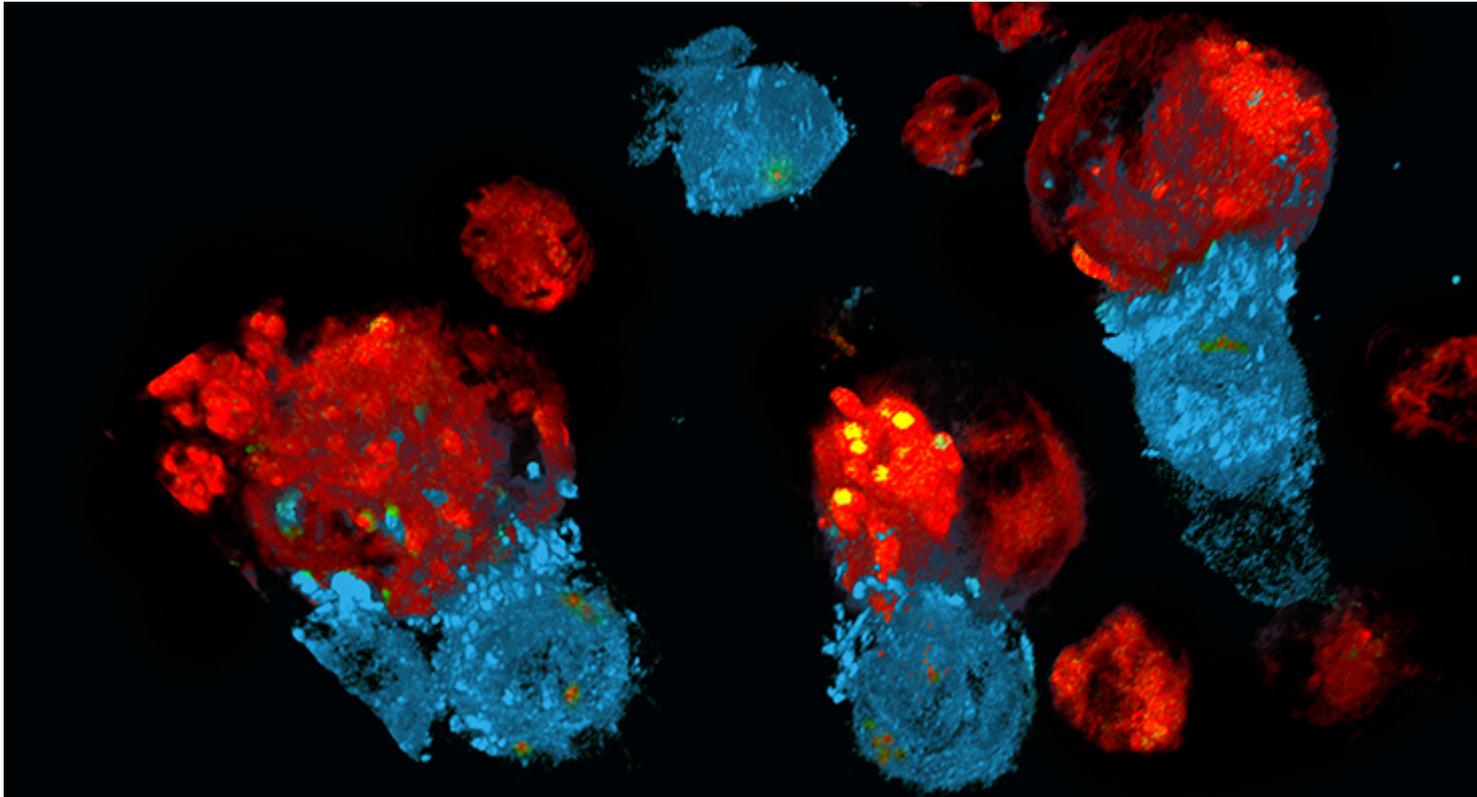


What is CAR-T cell therapy? ^[1]



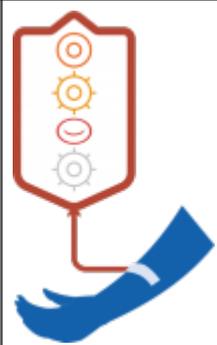
Currently approved CAR-T cell therapy is an individualized treatment designed specifically for each patient.

CAR-T cell therapy is a cutting-edge immunotherapy that uses specifically altered cells from your immune system to fight cancer in your blood. Currently, CAR-T is approved for patients with certain blood cancers.

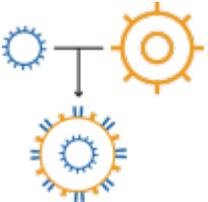
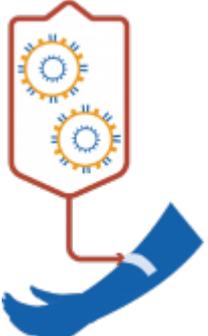
Certain types of blood cancers, like some forms of leukemia and lymphoma, develop when B cells become cancerous, grow, and spread. A new type of immunotherapy called CAR-T cell therapy harnesses the power of a patient's T cells to fight and destroy cancer.

CAR stands for chimeric antigen receptor. A CAR is a receptor that is introduced to patients' T cells to recognize specific characteristics on cancer cells. When a CAR is added to the patient's T cells, they become CAR-T cells. These reprogrammed cells are able to specifically target certain molecules on cancer cells and destroy them.

Creating CAR-T^{1,2}

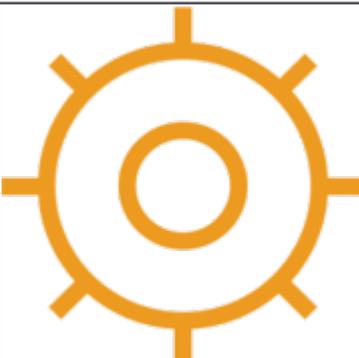


T cells are collected from the patient's blood.

	<p>T cells are reprogrammed in a lab with all of the information needed for them to have a CAR on their surface. The reprogrammed T cells can now produce CARs on their own, and are multiplied in the lab.</p>
	<p>CAR-T cells are infused back into the patient and begin detecting and destroying the cancer.</p>

What are B cells and T cells?^{2,3}

The immune system defends the body from infection. B cells and T cells, also called lymphocytes, are a key part of the immune system. Their mission is to fight specific infections and remember them in order to protect the body during future attacks.

	
<p>T cells</p> <p>T cells recognize foreign particles in the body, fight them, and even recruit additional cells to fight (including B cells).</p>	<p>B cells</p> <p>B cells are defenders of the body. They fight against foreign particles by releasing antibodies (small particles that bind to the infected cell and destroy it). Sometimes B cells may start growing out of control and become cancerous, as in the case of B cell cancers such as ALL and DLBCL.</p>

Disclaimer:

References:

1. Kymriah Summary of Product Characteristics. Novartis Pharma AG; 2018.
2. American Cancer Society. CAR T-cell therapy to treat cancer. <https://www.cancer.org/treatment/treatments-and-side-effects/treatmenttypes/immunotherapy/car-t-cell1.html> [2]. Updated October 31, 2017.

Accessed October 10, 2019.

3. American Cancer Society. What is non-Hodgkin lymphoma?

<https://www.cancer.org/cancer/non-hodgkin-lymphoma/about/what-isnon-hodgkin-lymphoma.html> [3]. Updated August 1, 2018. Accessed January 24, 2020.

Source URL: <https://www.novartis.com/our-focus/cell-and-gene-therapy/car-t/what-is-car-t-cell-therapy>

Links

[1] <https://www.novartis.com/our-focus/cell-and-gene-therapy/car-t/what-is-car-t-cell-therapy>

[2] <https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy/car-t-cell1.html>

[3] <https://www.cancer.org/cancer/non-hodgkin-lymphoma/about/what-isnon-hodgkin-lymphoma.html>