

Newly approved CAR-T therapy could mark breakthrough in cancer treatments

[Carl H. June, MD](#), is a professor of immunology at the University of Pennsylvania Perelman School of Medicine. He developed what is known as Chimeric Antigen Receptor T-cell therapy (CAR-T) which is an engineered version of a patient's T-cells to recognize and kill cancer. In a recent [interview](#) with the Wall Street Journal, Dr. June describes how his research focused on infectious diseases early in his career – specifically the Human Immunodeficiency Virus (HIV) – which ultimately inspired CAR-T therapy some 15 years ago.

HIV is a type of retrovirus, which means that it replicates in a specific manner and it targets human T lymphocytes, also known as T-helper cells (aka CD-4 cells) – a component of our acquired immunity. If you think of infection as a battle, then consider T-cells as the sword and B-cells as the shield, in the war against bacteria and viruses. When HIV infects CD-4 cells, it replicates by integrating its DNA into the DNA of host cells utilizing its own cut-and-paste tools to do so – modifying its host genome.

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[L]ast month, the Food and Drug Administration (FDA) [unanimously recommended approval of CAR-T](#) therapy for the treatment of pediatric and young adult B-cell acute lymphoblastic leukemias. Many studies show [impressive results](#) with complete or near-complete remission.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [HIV's Cut-And-Paste Inspires Cancer Cure](#)